Increasing the impact of higher education in developing countries through capacity building projects

Editors

Roberto Escarré & Javier de León

Associated Editors

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McGraw Hill

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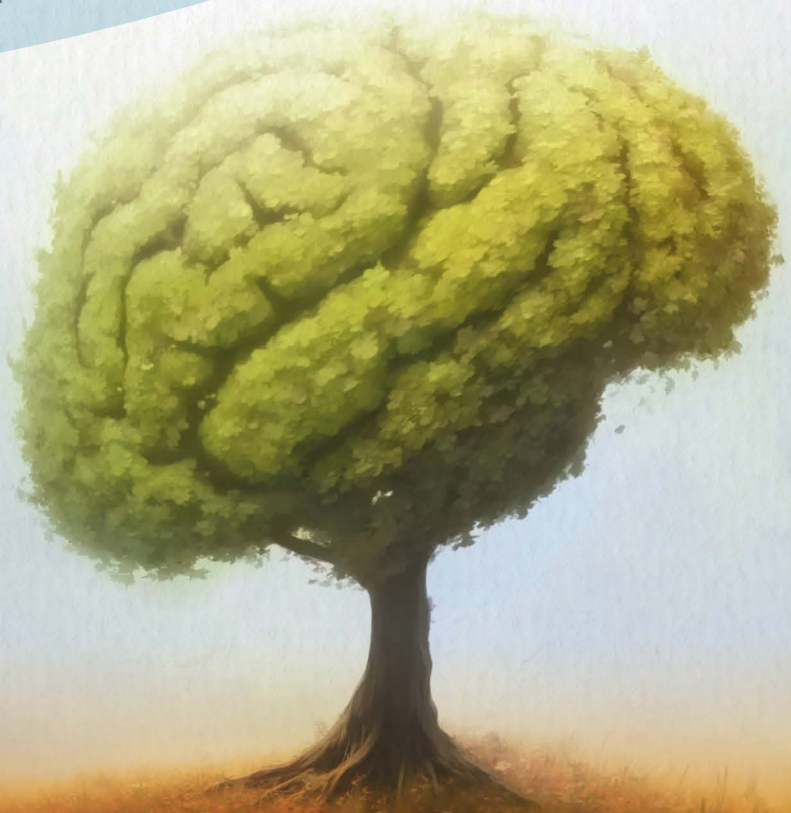**Associated Editors**

Carmelo J. León

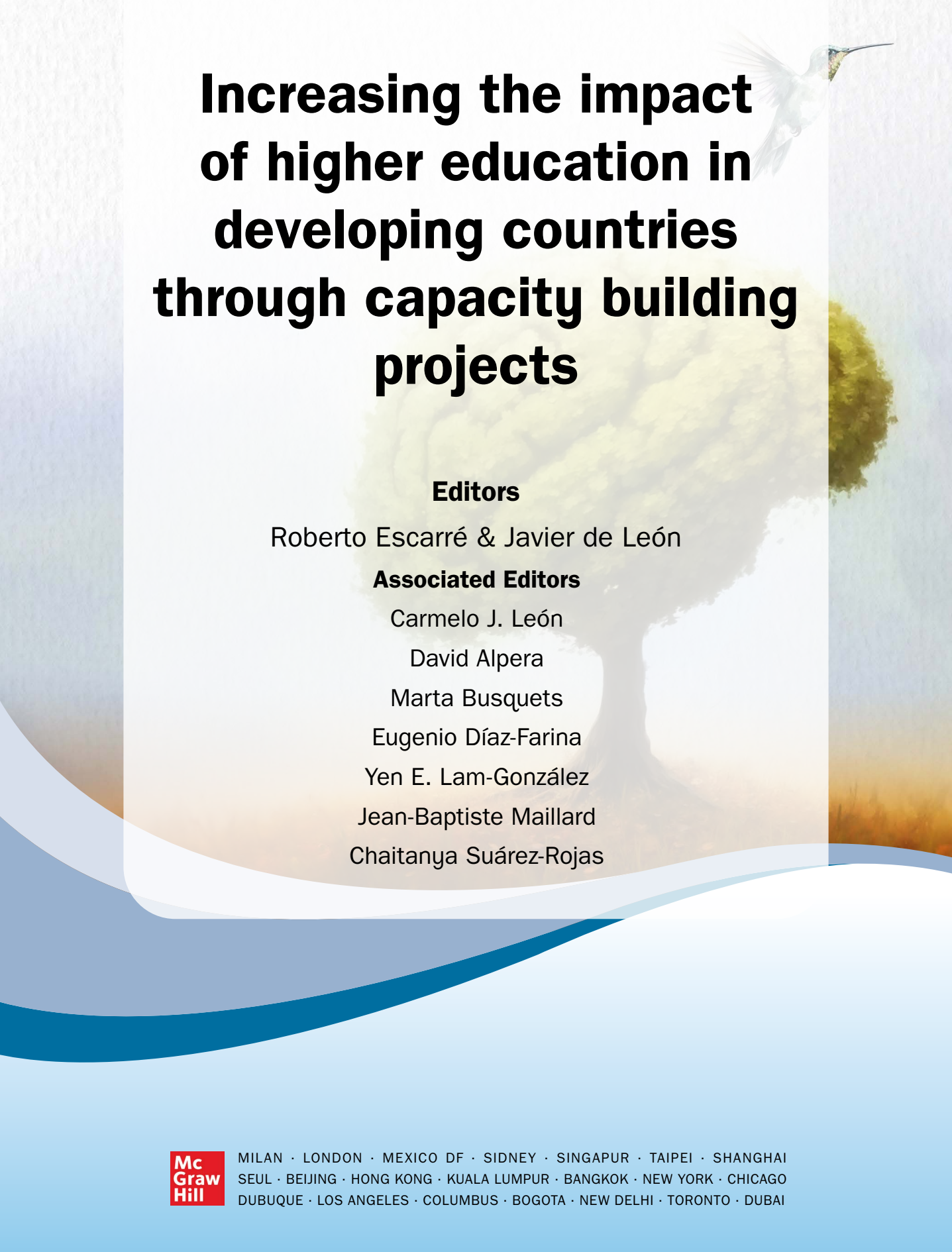David Alpera

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INCREASING THE IMPACT OF HIGHER EDUCATION IN DEVELOPING COUNTRIES THROUGH CAPACITY BUILDING PROJECTS

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FOREWORD

It is an honor to present the book *Increasing the Impact of Higher Education in Developing Countries through Capacity Building Projects*, a work that addresses one of the most pressing challenges of our time: empowering higher education as a tool for social transformation and sustainable development. This work not only reflects on the challenges faced by developing countries in the field of higher education, but also offers tools, strategies and case studies that invite action.

In today's global context, where educational inequalities persist and resources are limited, higher education stands as a catalyst for change. This book masterfully captures how capacity-building projects can transform institutions, generate relevant knowledge, and connect communities to the Sustainable Development Goals (SDGs). It also highlights the role of higher education institutions as key agents in promoting equity, innovation and sustainable development.

At the UNESCO International Institute for Higher Education, we have witnessed the transformative impact of such initiatives, working to train leaders and strengthen higher education systems in multiple regions of the world. Our experience has taught us that the most successful projects are those that combine a global vision with local action, adapting to the cultural, social and economic contexts of each region.

However, it is crucial to reflect on the fine line that separates international cooperation from new and subtle forms of academic colonialism. At times, the design and implementation of international projects can perpetuate unequal relationships if they do not focus on the real needs of local people and institutions, which should be defined by them to begin with. This book, aware of these risks, emphasizes an approach centered on the leading role of the beneficiary communities, recognizing their knowledge, experience and capacity to lead their own development.

I believe that international cooperation should be, by definition, a two-way street. Both the institutions and people receiving support and the international cooperants mutually enrich each other. South-South and triangular collaboration, in particular, provides a platform for the exchange of experiences and innovative solutions that transcend borders. This approach allows the lessons learned in local contexts to be shared globally, also benefiting those who originally provided the cooperation. The capacities of international development workers are strengthened as they are exposed to new challenges, perspectives and methodologies that enrich their own practices.

This publication is an outstanding example of this approach. The book's coordinators, Roberto Escarré and Javier de León, have brought together a diverse group of experts whose knowledge and dedication are reflected on every page. We are deeply grateful for their leadership and the collaboration of all the authors and associate editors, who have contributed unique and valuable perspectives.

The book also highlights the importance of international partnerships and the joint efforts of donors, policy makers, practitioners and beneficiaries. These collaborations enable knowledge to be shared, resources to be mobilized and more effective interventions to be designed. The experience accumulated in projects such as those funded by organizations like VLIR-UOS, DAAD or by the European Commission (Erasmus+) demonstrates that investments in higher education not only benefit the participating institutions, but also generate a lasting impact on local communities and economies.

In the following pages, you will find a pragmatic and thoughtful guide to maximizing the impact of higher education interventions. Each chapter offers clear insights and solid evidence to guide policymakers, academics, and institutional leaders on their journey toward more resilient and inclusive education systems. In addition, the case studies presented inspire with success stories that can be replicated and adapted in other contexts.

As Director of the UNESCO International Institute for Higher Education, I reiterate our commitment to promoting quality higher education for all. This book is a significant contribution to that cause, and I am confident that it will serve as an essential resource for those seeking to build a more equitable and sustainable future.

I invite readers to immerse themselves in these pages with the same spirit of curiosity and determination that has guided its authors. May this book be a source of inspiration and a tool to transform realities, building together a world where higher education is truly a right and an opportunity for all.

Francesc Pedró

Director, UNESCO International Institute for Higher Education

SETTING THE STAGE
FOR IMPACTFUL
HIGHER EDUCATION

Contents

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* *Javier de León, University of Las Palmas de Gran Canaria, Spain*

This book aims to serve as a resource for various stakeholders, including policymakers, donor agencies, practitioners, consultants, and recipients, to foster a nuanced understanding of Higher Education Capacity Building (HECB) initiatives. It emphasizes the importance of strategic investments in higher education systems, particularly in light of the challenges posed by the COVID-19 pandemic. Additionally, the text underscores the significant role higher education plays in achieving the Sustainable Development Goals (SDGs), highlighting the multifaceted nature of this relationship. The introduction chapter sets the stage for a comprehensive discussion on the effectiveness of HECB initiatives in developing countries, underscoring the critical need for evidence-based policies and effective implementation strategies to amplify the impact of these interventions. It concludes by offering definitions for key terms like capacity building and HECB projects, paving the way for detailed discussions in subsequent chapters on strategies to enhance the impact of these projects.

Roberto Escarré, University of Alicante, Spain
Javier de León, University of Las Palmas de Gran Canaria, Spain

1. Rationale

The rationale of this publication defines the scope of the content, specifying the particular aspects of HECB initiatives that the publication will concentrate on. The purpose, on the other hand, elucidates the objectives the publication aims to achieve, which might range from providing a comprehensive overview of current initiatives to suggesting future directions for policy and practice. As for the intended readership, the target audience is selected based on their potential interest in the thematic focus and their role in the application or advancement of the knowledge shared within the publication.

1.1. What is the thematic focus and purpose underlying the creation of this publication?

The aim of this book is to capture the views of different involved actors on the planning, the execution and the evaluation on Higher Education Capacity Building (HECB) interventions in developing countries. Thus, the primary goal is to enrich the discourse on HECB projects by providing concrete case studies, tools, and strategies aimed at amplifying the impact of these initiatives. The underlying belief emanating from this book is that a thorough exploration and documentation of evidence pertaining to the effectiveness of these interventions can foster the development of more efficient programs and projects, as well as inform the creation of evidence-based policies that positively influence the development trajectories of these countries.

To lay the groundwork for their analysis, the authors embarked on an extensive review of existing literature related to capacity building in higher education within the context of developing nations. This initial exploratory phase aimed to uncover research gaps that could inform their inquiry. The literature review highlighted the expansive nature of concepts relevant to the discourse, such as "higher education in developing countries" and "capacity building or capacity development initiatives," while also revealing a paucity of conceptual research specifically targeted at these intersections. The majority of existing publications consist of case studies or assessments evaluating the outcomes of capacity building projects that have been funded by industrialized nations for the benefit of developing countries. Notably, there is a scarcity of research focused on the methodologies employed by various stakeholders (including donors, practitioners, consultants, etc.) in the planning, execution, and evaluation of these capacity building initiatives.

This gap in the literature signals a critical need for a more nuanced understanding of the mechanisms through which HECB initiatives are developed and implemented, as well as how their impacts are measured and evaluated. By addressing this need, the book aims to contribute to a more comprehensive and practical knowledge base that can guide the formulation of more effective capacity building interventions in higher education, ultimately supporting the sustainable development of developing countries. Through the provision of detailed case studies and the identification of effective tools and strategies, the authors aim to inspire a shift towards more impactful and evidence-based approaches in the field of higher education capacity building.

1.2. To whom is this publication directed?

This book addresses the different actors involved in the ecosystem of the HECB initiatives. Those are mainly policymakers, donor agencies, practitioners, consultants and recipients. Each actor offers distinct perspectives, resources, and expertise to address the challenges and opportunities in the field.

In the context of higher education and capacity building, recipients are the individuals or institutions that benefit directly from the initiatives, programs, or funding provided. This includes individuals who receive trainings or participate in enhanced educational programs, as well as educational institutions that benefit from capacity-building projects. Recipients are the primary focus of higher education and capacity-building efforts, with the goal of improving their educational outcomes and opportunities.

Policymakers are responsible for developing, enacting, and implementing policies that shape the landscape of higher education and capacity building. They work within governmental bodies, educational institutions, or international organizations, setting standards, regulations, and strategies that govern educational systems and influence their development and quality.

Donor agencies provide financial or material support to higher education and capacity building initiatives. This support can come from a variety of sources, mainly government agencies, international organizations and private foundations. Donor agencies aim to facilitate improvements in educational quality, access, and innovation through their contributions, often targeting specific challenges or opportunities within the educational sector. They usually have also some regional or country preferences/strategies, in the framework of the developing countries.

Practitioners are the on-the-ground professionals who implement educational projects and initiatives directly. They include educators, administrators, and staff working within higher education institutions.

Practitioners are crucial for the operationalization of educational policies, the delivery of curriculum, the management of institutions, and the direct engagement with students and other stakeholders.

Consultants in higher education and capacity building are experts hired to provide specialized advice and solutions to improve educational systems, strategies, and operations. They offer guidance on a wide range of issues, including the monitoring and evaluation of the projects, organizational efficiency, policy implementation, helping institutions and consortiums navigate challenges and capitalize on the results of the capacity building initiatives.

2. Context. Higher education systems in developing countries

This point inquiries into the complex landscape of higher education in developing countries, addressing the pivotal challenges these systems face. It explores the intricate relationship between higher education and the Sustainable Development Goals (SDGs), illustrating how achieving these goals is interwoven with educational progress. Further, the chapter examines how Higher Education Capacity Building (HECB) initiatives can be instrumental in enhancing educational frameworks, contributing to the overall improvement and sustainable advancement of higher education in these regions.

2.1. Which are the main challenges of Higher Education systems in developing countries?

In a recent report the World Bank identified the following long-standing and emerging challenges in the evolving landscape of world higher education (World Bank, 2022). Main challenges are summarised in Table 1.1.

In addition to this, the lack of stable and consistent funding in the higher education systems is probably the main challenge for developing countries. Economic studies consistently show that investing in higher education yields significant private and societal benefits, as highlighted by Montenegro and Patrinos (2014). These advantages encompass increased employment and income, enhancements in productivity and innovation, improved social cohesion, more efficient government administration, heightened civic participation, and superior health outcomes. The drawbacks of not adequately investing in higher education are severe, including the loss of talent, restricted access to practical research for addressing local issues, impeded economic development due to a less skilled workforce, inferior quality of teaching and learning across all education levels, and notably, exacerbated income disparities both within and across countries. Nations that allocate more to higher education tend to enjoy greater innovation and attract more investment. However, focusing the investment on infrastructure and human capital could be insufficient, and capacity building initiatives should consider the local context and the cultural environment (Lee & Kuzhabekova, 2019).

The COVID-19 pandemic has severely impacted educational systems globally, intensifying an already critical learning crisis and resulting in significant educational setbacks. This situation has underscored the critical importance of strategic and impactful investments in higher education to nurture human capital effectively. The disruptions caused by the pandemic have not only affected current learning outcomes but also emphasized the role of higher education in preparing a resilient and adaptable workforce capable of facing future challenges.

Table 1.1. **Word challenges in Higher Education vs. developing countries context**	
Challenge	**Developing countries context**
Global Expansion of Access	Higher Education is becoming standard in higher-income areas, yet many countries, especially in Sub-Saharan Africa with enrolments below ~9 percent, struggle with expanding access. This discrepancy exacerbates global inequalities between those integrated into the knowledge economy and those excluded.
Digitalization	Technology has the potential to equalize education but currently acts as a divider due to inconsistent connectivity, inadequate infrastructure, and limited device access, hindering the neediest students from benefiting from digital learning platforms.
Quality and Relevance	Developing countries face challenges in ensuring the quality and relevance of tertiary education. Despite high average returns, there is a heterogeneity in outcomes and persistent skills mismatches, indicating a need for tertiary systems to develop skills for sustainable, inclusive growth.
Internationalization and Regional Cooperation	While global interconnectivity and cooperation offer substantial benefits, impactful internationalization remains a privilege of the global elite. Regional cooperation is highlighted as a means to enhance tertiary education impact through strategic resource pooling.
Learning across a Lifetime	Higher Education Institutions (HEIs) must adapt to remain relevant as lifelong learning providers in a rapidly changing environment. However, in developing countries, regulatory frameworks based on traditional education models pose significant challenges to such adaptation.

Source: Own elaboration based on Steering Tertiary Education: Toward Resilient Systems that Deliver for All Washington, D.C. World Bank Group (2022).

2.2. What is the relationship between the Sustainable Development Goals and the higher education systems in developing nations?

The link between the Sustainable Development Goals (SDGs) and higher education systems in developing countries is multifaceted and critical for achieving sustainable development on a global scale (Chankseliani & McCowan, 2020). The SDGs, adopted by the United Nations in 2015, are a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity by 2030. These goals recognize that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities while

Table 1.2. **How HE systems in developing countries may contribute to the SDGs by area**

Area	Link with the Sustainable Development Goals (SDGs)
Research and Innovation	Universities and higher education institutions are centers for research and innovation, contributing to scientific and technological advancements that can address SDG-related challenges such as renewable energy, sustainable agriculture, water and sanitation, and healthcare.
Education and Learning	Higher education institutions are directly linked to SDG 4, which aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. They help in producing a skilled workforce that is essential for economic development and can contribute to other areas such as health (SDG 3), reducing inequalities (SDG 10), and industry, innovation, and infrastructure (SDG 9).
Capacity Building	Universities can support capacity building in developing countries by enhancing their educational infrastructure, improving the quality of education, and ensuring that curricula are aligned with sustainable development principles. This also involves training educators and developing future leaders who are knowledgeable about the SDGs and committed to implementing sustainable solutions.
Partnerships for the Goals (SDG 17)	Higher education institutions can foster partnerships at the local, national, and international levels, promoting collaboration between governments, private sector, civil society, and other stakeholders. These partnerships can facilitate knowledge exchange, joint research initiatives, and mobilization of resources to support sustainable development.
Community Engagement and Policy Advocacy	Universities can play a significant role in community engagement and policy advocacy, raising awareness about the SDGs and influencing policy decisions. They can engage with local communities to understand their needs and challenges, and work towards solutions that are sustainable and inclusive.
Sustainability Practices	Higher education institutions in developing countries can lead by example by integrating sustainability into their operations, from sustainable campus management practices to incorporating sustainability principles into their governance and administration.

Source: Own elaboration based on Ashida (2023), and Demaidi and Al-Sahili (2021).

tackling climate change and environmental protection. While there are numerous viewpoints that adopt a highly critical stance on this subject matter (Heleta & Bagus, 2020), the prevailing sentiment within the discourse acknowledges the significance of the SDGs within the realm of higher education. In this framework, according to Ashida (2023) and Demaidi and Al-Sahili (2021), Higher Education systems in developing countries play a pivotal role by contributing to the achievement of the SDGs in several ways (Table 1.2).

In summary, higher education systems in developing countries are crucial for advancing the SDGs. They not only contribute to the direct achievement of these goals through education, research, and innovation but also play a strategic role in fostering the intellectual and ethical foundation necessary for sustainable development. By aligning their activities with the SDGs, higher education institutions can ensure that their contributions have a lasting impact on society and the environment.

2.3. How HECB initiatives may contribute to improve higher education in developing countries?

HECB initiatives play a critical role in enhancing higher education in developing countries by addressing systemic challenges and leveraging international support to improve local educational capacities. The underlying premise is that, by bolstering the capabilities of Higher Education Institutions (HEIs), these countries can achieve long-term, sustainable development.

The following are some examples of potential contributions of HECB initiatives in the higher education systems of developing countries:

– *Human Capital Development.* HECB initiatives often focus on developing the skills and knowledge of faculty, administrators, and students. By providing training and professional development opportunities, these initiatives help create a more qualified workforce that can contribute to both the academic community and the local economy.

– *Enhanced Research Capacities.* Developing countries often lag in research output and innovation. HECB initiatives can facilitate research by providing access to modern technologies, methodologies, and collaborations with international research institutions, thereby fostering an environment conducive to cutting-edge research.

– *Combating Brain Drain.* One of the persistent issues in developing countries is the migration of highly educated individuals to developed countries in search of better opportunities. HECB initiatives can mitigate this by improving the quality and relevance of higher education, providing incentives for talented individuals to stay and contribute to their home country's development.

– *Exchange of Knowledge and Best Practices.* Partnerships between HEIs in developing and developed countries enable the sharing of expertise and resources. These exchanges can lead to improvements in curriculum design, teaching methods, and administrative practices.

– *Systemic Challenges.* Addressing systemic challenges such as the quality of instruction, equitable access to higher education, and the implementation of evidence-based policies are essential for the success of CB initiatives. These challenges require comprehensive approaches that consider the unique contexts of developing countries.

3. Terminology and definition of Capacity Building for Higher Education (CBHE) projects

This publication primarily concentrates on initiatives aimed at strengthening the capabilities of higher education institutions to fulfil their educational, research, and societal roles more effectively. However, it is acknowledged that donor organizations and various stakeholders may adopt alternative frameworks to interpret these initiatives. Consequently, the authors have incorporated a segment to succinctly examine the terminology employed throughout this text.

3.1. Higher Education vs. Tertiary Education

While "higher education" and "tertiary education" are frequently used as synonyms, they can convey slightly different meanings. Tertiary education encompasses all post-secondary education, including vocational and technical training, community colleges, and universities. It is the educational level following the completion of a school providing a secondary education, such as a high school, secondary school, or gymnasium. Tertiary education includes non-degree programs that lead to certificates and diplomas plus six-degree programs (associate, bachelor's, master's, professional, and PhD levels). In some countries, tertiary education includes further education (FE) as well as higher education (HE).

Higher education refers to the education provided by universities and colleges —public or private—, focusing on academic disciplines and advanced learning. It typically includes undergraduate programs such as bachelor's degrees and postgraduate programs such as master's and doctoral degrees. The missions of Higher Education Institutions (HEIs) can vary somewhat depending on their specific context and objectives, but they generally include: 1. Education and Teaching; 2. Research; 3. Service to Society; 4. Preservation and Dissemination of Knowledge; and 5. Cultivation of Critical Thinking and Citizenship. Overall, universities serve as hubs of learning, innovation, and social engagement, playing a vital role in shaping the future of individuals, communities, and societies. The authors have opted for "higher education" because it aligns more closely with the context of Capacity Building initiatives within the higher education sector.

3.2. Capacity building vs. capacity development

Distinctions between capacity building and capacity development exist, with various approaches adopted by development agencies. Generally, these terms are often used interchangeably by many donors, although capacity development typically encompasses a broader spectrum, both in its potential contributions to development and its duration, often extending over the long term. Conversely, capacity building tends to have a more specific focus and is commonly associated with shorter-term interventions (Escarré, 2015).

Moreover, capacity building is frequently associated with technical cooperation, aiming at enhancing skills, providing training, and facilitating technology transfer. Given these considerations and the emphasis of this study on interventions in Higher Education within developing nations, the authors opt to employ the term "capacity building." Within this context, the authors adhere to the OECD definition of capacity building as "the process by which individuals, groups, organizations, institutions, and societies increase their abilities to: perform core functions, solve problems, define and achieve objectives; and

understand and deal with their development needs in a broad context and in a sustainable manner" (Enemark & Williamson, 2004).

3.3. Higher Education Capacity Building projects (HECB Projects)

VLIR-UOS[1] offers a comprehensive definition of HECB projects, elucidating their objectives and scope capacity building for VLIR-UOS is more than just giving a training. Capacity building is about long-term investments in human capacities (e.g., during 1-2-year master ex-post coaching after trainings, 4-year PhD trajectories, etc.) in a spirit of true partnership. By focusing on human capital, and especially by focusing on international networks of academics, VLIR-UOS interventions are by nature relatively sustainable. Focusing on capacity building (research and education capacity, among others) and the building of (inter)national networks allows our partners to use expanding networks to sustainably acquire new skills and new sources of funding. This leads to both academic and financial self-reliance (VLIR-UOS, 2016).

Thus, HECB projects have different strategies that are related with their capacity level and objectives. Table 1.3. summarises the usual strategies of HECB interventions in developing countries.

Table 1.3. **Usual strategies of HECB Interventions in developing countries and Capacity Level**

Capacity Level	Kind of activity/ies	Examples
Individual	Scholarships, Awards, Fellowships, Internships	PhD Scholarships, most frequently in developed countries
Organisational	Curriculum Reform/Development projects	Updating of degrees or masters' curricula in crucial subjects for the country (Ex. Health, Agriculture, etc.)
	Modernisation of governance, management and functioning of HEIs projects	Projects improving the financial management of HEIs
	Strengthening the relations between HEIs and the wider and economic and social environment projects	University-Industry Cooperation projects
Systemic	Modernisation of governance, management and functioning of Higher Education systems	Projects implementing credit systems or accreditation procedures
	Strengthening the relations between Higher Education systems and the wider and economic and social environment	Projects developing/modernising Technology Transfer Networks at National Level

Source: Escarré (2015).

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[1] VLIR stands for Vlaamse Interuniversitaire Raad (Flemish Interuniversities Council), while UOS represents Universitaire Ontwikkelingssamenwerking (University Development Co-operation).

3.4. **Developing countries**

In this publication, the designation "developing countries" is predominantly employed to delineate the geographical focus of the research, particularly within the sphere of Higher Education Capacity Building (HECB) interventions. The selection of this term is not indicative of an internationally standardized classification, as the distinction between "developing" and "developed" countries is not universally defined or accepted. It is acknowledged by the authors that the term "developing countries" may inadvertently homogenize a collection of nations with vastly distinct characteristics and development paths. Alternative nomenclature such as "Global South," "low- and middle-income countries," or "emerging economies" has been suggested to more precisely encapsulate the diversity and complexity of these states, thereby eschewing the binary framing that implicitly holds "developed countries" as the benchmark. Nonetheless, the term "developing countries" has been retained in this study to underscore the specific socio-economic challenges pertinent to these nations, including limitations in resources and educational access, which may not be as explicitly conveyed by other terms.

4. **Conclusion**

Addressing the disruptions and challenges identified before in the higher education systems of developing countries require varied strategies. Different actors support higher education systems in developing countries through various means, aiming to bolster human capital, enhance research capacities, and mitigate global issues like brain drain. One prominent method is through capacity building programs and partnerships that facilitate the exchange of knowledge, resources, and best practices (Escarré, 2015).

The effectiveness of these initiatives depends on addressing systemic challenges (such as quality of instruction, access to higher education, and the implementation of evidence-based policies), and an efficient planning and implementation of the capacity building actions. This involves setting clear goals, ensuring stakeholder engagement, monitoring progress, and making necessary adjustments to meet the objectives. To maximize the impact of HECB initiatives, it is essential to understand their scope, priorities, and functioning.

Having agreed the terminology and the capacity level (organisational and systemic), the forthcoming chapters mentioned, such as the donors' perspective, case studies and strategies for increasing impact, will likely delve into how these initiatives can be tailored to address specific needs and yield tangible benefits. Thus, our objective is to offer new insights, strategies, or evidence-based recommendations that could be adopted by policymakers, educators, and international donors to enhance the effectiveness of these programs.

By focusing on these areas, HECB initiatives can significantly contribute to the improvement of higher education in developing countries, creating a robust educational system that can support national development and reduce inequalities in global education.

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HIGHER EDUCATION CAPACITY BUILDING INTERVENTIONS IN DEVELOPING COUNTRIES. THE DONORS' PERSPECTIVE

Contents

2.1 Global perspectives on higher education capacity building: donor experiences and lessons learned

This chapter explores the crucial role of Higher Education Capacity Building (HECB) in advancing global educational development, particularly in developing countries. It examines the diverse strategies and impacts of donor agencies, including VLIR-UOS, DAAD, and the European Union in enhancing the quality, accessibility, and relevance of Higher Education Institutions (HEIs). Through long-term investments, international cooperation, and strategic partnerships, these programs address systemic challenges, promote inclusivity, and align with the Sustainable Development Goals (SDGs). The chapter highlights how these initiatives foster sustainable improvements in educational standards, facilitate knowledge exchange, and support socio-economic development. By focusing on quality education, innovation, and equity, donor programs like IUC (VLIR-UOS), DIES (DAAD), and Erasmus+ (EU) contribute significantly to the resilience and self-reliance of HEIs, ensuring that higher education serves as a catalyst for broader global development. The insights and lessons learned from these donor experiences provide valuable guidance for future HECB initiatives, emphasizing the importance of contextually relevant and sustainable interventions.

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1. Introduction

Higher Education Capacity Building (HECB) is a cornerstone of global educational development, particularly in the context of developing countries where educational infrastructure and resources are often limited. The aim of HECB initiatives is to enhance the quality, accessibility, and relevance of higher education institutions (HEIs), thereby empowering them to play a pivotal role in the socio-economic development of their regions. This chapter explores the diverse strategies and significant impacts of various donor agencies in supporting and advancing higher education in these contexts.

The necessity for strategic investments in higher education has become increasingly evident, especially in light of the challenges posed by global phenomena such as the COVID-19 pandemic and the ongoing quest to achieve the Sustainable Development Goals (SDGs). Higher education is not only about imparting knowledge; it also involves nurturing critical thinking, innovation, and leadership skills that are essential for addressing complex global challenges. HECB initiatives, therefore, are designed to strengthen the capacity of HEIs to deliver high-quality education, conduct impactful research, and engage meaningfully with their communities.

Donor agencies play a crucial role in these capacity-building efforts by providing the necessary financial, technical, and institutional support. Their programs are tailored to meet the specific needs of HEIs in developing countries, ensuring that interventions are contextually relevant and sustainable. This chapter delves into the experiences and contributions of three prominent donors in this area: VLIR-UOS, DAAD, and the European Union, highlighting their strategies, achievements, and the lessons learned from their interventions.

2. Donor experiences

VLIR-UOS emphasizes the importance of partnerships in fostering sustainable change within higher education systems. By investing in long-term capacity building initiatives, VLIR-UOS aims to enhance the capabilities of HEIs through human capital development, curriculum reform, and the establishment of international networks. These partnerships are designed to be mutually beneficial, promoting academic and financial self-reliance among partner institutions.

VLIR-UOS's approach involves a comprehensive strategy that includes scholarships for students and staff, joint research projects, and the development of new educational programs that are aligned with the local context and needs. By focusing on the long-term development of human resources and institutional capacities, VLIR-UOS helps partner institutions to become more resilient and capable of addressing their own challenges independently. This strategy not only improves the quality of education but also ensures that the benefits of these initiatives are sustainable over time.

The German Academic Exchange Service (DAAD) has been a key player in promoting educational quality and fostering international cooperation. DAAD's programs are tailored to address specific needs within developing countries, promoting academic exchange and collaborative research. Through scholarships, capacity building projects, and strategic partnerships, DAAD aims to strengthen higher education institutions, improve research capacities, and combat brain drain.

DAAD's initiatives are characterized by a strong emphasis on academic excellence and international collaboration. By facilitating the mobility of students, researchers, and faculty members, DAAD helps to build bridges between HEIs in Germany and those in developing countries. This exchange of knowledge and expertise contributes to the development of high-quality educational programs and the enhancement of research capabilities. Furthermore, DAAD's efforts to address brain drain by providing opportunities for talented individuals to study and work in their home countries are crucial for ensuring that the benefits of higher education are retained within the local context.

The European Union Approach, via the Erasmus+ Capacity Building for Higher Education (CBHE) action, has been focused on modernizing, internationalizing, and increasing the accessibility of higher education across partner countries outside the EU. This program has been pivotal in advancing educational systems by aligning them with global standards through legislative reforms, quality assurance improvements, and governance enhancements. Erasmus+ promotes intercultural understanding and cooperation, preparing global citizens to meet the challenges of a dynamic world.

The Erasmus+ CBHE action leverages a comprehensive framework that includes a wide range of initiatives aimed at improving the overall quality of higher education. These initiatives encompass curriculum development, the modernization of governance and management structures, and the enhancement of cooperation between HEIs and the broader economic and social environment. By fostering partnerships

between European institutions and those in partner countries, Erasmus+ ensures that educational reforms are both effective and sustainable. The program's emphasis on inclusivity and equity further ensures that the benefits of these initiatives are accessible to all, including marginalized and disadvantaged groups.

3. Synergies and shared goals

The donor programs discussed in this chapter —IUC (VLIR-UOS), DIES (DAAD), and Erasmus+ (EU)— though diverse in their approaches and specific objectives, share a unified vision: the enhancement of higher education systems in developing countries as a means to foster sustainable development. This shared vision manifests through several synergies and common goals that drive their initiatives and amplify their collective impact.

Enhancing Educational Quality and Relevance. One of the primary synergies among these donor programs is their focus on enhancing the quality and relevance of higher education. Quality education is fundamental to equipping students with the necessary skills and knowledge to thrive in a rapidly changing global landscape. VLIR-UOS emphasizes long-term investments in human capacities and the establishment of robust academic networks, thereby ensuring sustainable improvements in educational standards. Similarly, DAAD's initiatives are designed to elevate educational quality through academic exchange and the development of innovative curricula. Erasmus+, with its comprehensive approach, supports the modernization of curricula and teaching methodologies, ensuring that education is aligned with contemporary global standards and labor market needs.

Promoting International Cooperation and Partnerships. International cooperation and the fostering of strategic partnerships are central to the efforts of VLIR-UOS, DAAD, and the European Union. By building bridges between HEIs in developed and developing countries, these programs facilitate the exchange of knowledge, best practices, and resources. This international collaboration not only enriches the educational experience but also promotes mutual understanding and cultural exchange. VLIR-UOS's partnerships are grounded in a spirit of mutual benefit, while DAAD focuses on academic exchange to strengthen research capacities. Erasmus+ extends this cooperation to a global scale, involving a wide range of stakeholders to ensure comprehensive and sustainable educational reforms.

Addressing Systemic Challenges. Addressing systemic challenges in higher education is another shared goal of these donor programs. Developing countries often face numerous obstacles, including inadequate infrastructure, limited access to quality education, and insufficient funding. VLIR-UOS, DAAD, and Erasmus+/EU initiatives are designed to tackle these issues head-on by supporting projects that enhance institutional governance, improve financial management, and develop comprehensive quality assurance systems. For instance, Erasmus+ focuses on legislative reforms and governance enhancements, ensuring that HEIs are better equipped to manage their resources and deliver high-quality education.

Fostering Inclusivity and Equity. Inclusivity and equity are at the heart of these donor programs' objectives. Ensuring that all students, regardless of their socio-economic background, have access to quality higher education is crucial for reducing educational disparities and fostering social cohesion. VLIR-UOS emphasizes long-term capacity building that benefits all stakeholders, including marginalized groups. DAAD's scholarship programs and capacity building projects are designed to provide

opportunities for underrepresented communities. Erasmus+ prioritizes equity of access and inclusivity through its comprehensive framework, promoting educational opportunities for disadvantaged and marginalized groups.

Supporting Sustainable Development Goals (SDGs). The alignment of higher education initiatives with the Sustainable Development Goals (SDGs) is a key synergy among VLIR-UOS, DAAD, and Erasmus+. Higher education plays a critical role in achieving the SDGs by fostering innovation, promoting sustainable economic growth, and addressing social and environmental challenges. These donor programs support SDG-related projects that contribute to the development of sustainable technologies, promote environmental stewardship, and enhance social equity. By integrating SDG principles into their educational initiatives, these programs ensure that higher education contributes to broader global development goals.

Encouraging Innovation and Research. Innovation and research are vital components of the strategies employed by these donor programs. Enhancing research capacities and fostering a culture of innovation are essential for the advancement of higher education and the development of knowledge economies. VLIR-UOS supports joint research projects that address local and global challenges, while DAAD promotes collaborative research through academic exchange programs. Erasmus+ facilitates research partnerships and innovation in educational practices, ensuring that HEIs remain at the forefront of scientific and technological advancements.

4. Conclusion

The exploration of donor experiences in Higher Education Capacity Building (HECB) underscores the pivotal role that strategic investments and international collaborations play in enhancing educational systems in developing countries. Programs like IUC (VLIR-UOS), DIES (DAAD), and Erasmus+ (EU) demonstrate how tailored initiatives can address systemic challenges, promote inclusivity and equity, and align with global development goals such as the Sustainable Development Goals (SDGs).

Through their focus on quality education, international partnerships, and innovation, these donor programs collectively contribute to the sustainable development of Higher Education Institutions (HEIs). Their efforts not only improve educational standards but also empower institutions to become self-reliant and resilient, capable of driving socio-economic progress in their regions.

As this chapter has shown, the synergies and shared goals of these programs amplify their impact, fostering a global community of practice that advances higher education and supports sustainable development. The lessons learned from these donor experiences provide valuable insights for future initiatives, highlighting the importance of contextually relevant and sustainable interventions in the quest to enhance higher education worldwide.

2.2 The VLIR-UOS institutional university cooperation partnerships – a story of drivers of sustainable change

Higher Education and Science Institutions (HE&SIs) play a pivotal role in addressing complex global challenges, particularly those outlined in the United Nations' 2030 Agenda for Sustainable Development. VLIR-UOS is the leading platform for Flemish higher education to collaborate in the context of Higher Education and Science for Sustainable Development. With funding from the Belgian federal government, VLIR-UOS serves as the primary funding body for partnerships and scholarships concerning sustainable development between academics from Flanders and from its partner countries in Africa, Latin America, and Asia.

VLIR-UOS stands for 'sharing minds, changing lives' and is famous for its long-term partnerships. This article focuses on a flagship of its cooperation, the Institutional University Cooperation (IUC), whereby it has supported since 1996, 38 long-term projects, in 18 countries over 3 continents. IUC Partnerships run over a period of 12 years and have an average budget of around 6.000.000 EUR of dedicated funding.

These partnerships aim to strengthen the institutional performance of a selected number of partner universities building capacities in research, education and service delivery, and ultimately aim at enabling these institutions as drivers of change for sustainable development. The IUC program operates through distinct phases, emphasizing capacity building, consolidation, and sustainability.

Key to the effectiveness of IUC partnerships is the comprehensive approach to capacity strengthening at individual, organizational, and policy levels. This involves academic theme-based projects and transversal projects targeting institutional policy domains. Moreover, IUC projects prioritize societal impact, seeking to address local, national, and global challenges through multidisciplinary collaboration and stakeholder engagement. Through scholarships, capacity-building initiatives, and stakeholder engagement, IUC projects foster a new generation of critical global citizens committed to sustainable development.

The success of IUC partnerships is evident in their tangible contributions to improved research and educational capacity, organizational performance, and societal change. Overall, VLIR-UOS's IUC partnerships represent a promising model for fostering sustainable development through higher education collaboration, driving innovation, and empowering communities to address the world's most pressing challenges.

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1. Introduction

1.1. Higher Education and Science for Sustainable Development

The world seems to spin too quickly at times. Societal problems have become multidimensional, as crises get more and more complex. It is clear we need to be increasingly flexible and responsive to find answers for emergencies in a volatile environment. In the wake of a perspective-changing pandemic, we understand even more that we will not be able to solve these problems on our own.

Realizing the need for a global approach that transcends sectors and communities, the UN published the 2030 Agenda for Sustainable Development, a plan of action for peace and prosperity for people and the planet. This agenda establishes 17 Sustainable Development Goals (SDGs), thematic strategies that identify the required steps towards a safer and more sustainable future. None of the 17 SDGs can be achieved without the contribution of Higher Education and Science Institutions (HE&SIs). In Flanders, Belgium, and across the globe, HE&SIs are increasingly acknowledging their pivotal role in contributing to the necessary changes for the global goal of sustainable development.

HE&SIs are in a unique position to have a direct and decisive impact on sustainable development. The universal nature of Agenda 2030 provides entry points for HE&SIs to incorporate global citizenship education, decolonization, and a broader understanding of sustainable development into their three-fold mission: research, education and knowledge mobilization. **Research** generates new knowledge and ideas that can facilitate the attainment of Agenda 2030. **Education** provides new generations of engaged citizens and agents of change with the necessary knowledge, skills and competences to be resilient, agile, and critical global citizens. **Knowledge mobilization** extends the impact of research and education to a wide array of stakeholders in society and enables them to take action for sustainable development.

1.2. VLIR-UOS

Established in 1998 under the umbrella of VLIR, the Flemish Interuniversity Council, VLIR-UOS is the leading platform for Flemish higher education to collaborate in the context of Higher Education and Science for Sustainable Development. With funding from the Belgian federal government, VLIR-UOS serves as the primary funding body for partnerships and scholarships concerning sustainable development between academics from Flanders and from its partner countries in Africa, Latin America, and Asia.

'Sharing minds, changing lives' – that is our slogan. The creation, exchange and uptake of information, knowledge, ideas and experiences, starting from global and local societal challenges, must lead to changing and improving lives and communities. In university cooperation for development, there is no way other than cooperation. Through cooperation, universities and academics can connect with expertise and talent that is available in the world, crossing language barriers and national borders, going beyond institutions and disciplines.

In their position to drive sustainable development, HE&SIs have a responsibility to go beyond the purpose of research for its own sake. That is why we are committed to both the scientific and societal impact that our partnerships realize. By translating the findings of our research projects into real-world impact and by gearing educational development to societal needs, it is in our DNA to have an impact on local and global communities. By supporting partnerships that target mutual capacity development, we

strengthen HE&SIs worldwide, empowering them to act as drivers of change and to actively contribute to their country's economic and social systems.

VLIR-UOS awards scholarships for study programs in Flanders and supports the education of individual agents of change by aligning the individual needs of students and professionals with the global need for experts to deal with sustainable development challenges. By mobilizing these scholars to become experts in relevant fields, we empower the next generations of academically trained critical professionals, dedicated to making a change in their communities and beyond.

VLIR-UOS also stimulates HE&SIs to integrate sustainable development as a core dimension in their policies, education, and research. Engaging them to look beyond the scientific purpose of their projects nurtures the global understanding and intercultural awareness of their academics and students, motivating them to act as global citizens.

1.3. Equal partnerships and mainstreaming transversal themes

VLIR-UOS actively focuses on the three SDG principles and mainstreams them with a holistic approach throughout its ambitions, policies, portfolio, programs, partnerships and scholarships: Leaving No One Behind (LNOB) & inclusiveness, interconnectedness & indivisibility, and multi-stakeholder partnerships.

VLIR-UOS lays a heavy focus on developing equal and mutually beneficial partnerships, as they are crucial to preserving knowledge co-creation, sharing, and mobilization both inside and outside the border of its partnerships. Fostering international collaboration between HE&SIs and non-academic actors, VLIR-UOS actively promotes intercultural communication and understanding. By encouraging the diversity of its partners, the organization promotes a culture of respect for each partner's skills, perspectives, and limitations.

In line with the SDGs, VLIR-UOS tangibly works on a number of transversal and priority themes like gender, environmental impact, human rights, decent work, Global Citizenship, and digital transformation in education and research. The organization encourages their project partners to take these themes into account in addition to their own discipline. By paying attention during the formation of partnerships and in the conception of projects, VLIR-UOS strives to ensure their equity and sustainability.

2. Institutional University Cooperation partnerships

2.1. Introduction

A flagship of VLIR-UOS cooperation is the Institutional University Cooperation program via which selected number of long-term Institutional University Cooperation (IUC) partnerships between a university in a partner country and Flemish universities and universities of applied sciences and arts are supported.

The IUC program envisions to strengthen partner universities' capacity via transversal institutional strengthening and academic theme-based sub-projects hereby improving their institutional performance

in their threefold mission (education, research and service delivery); and enabling them to operate as driver of change for sustainable development.

Since 1996 VLIR-UOS has supported 38 long-term IUC projects, in 18 countries over 3 continents, with a major focus on Africa with 26 IUC projects followed by Latin America (7) and Asia (5). It represents a budget of over 180 million EUR.

2.2. Partnership stages and set-up

The IUC partnership project with a duration of approximately 12 years is developed via different cooperation phases:

- Phase In (min. 1 year): preparing the operational and management set-up and support structure, identification of (PhD) scholars and project formulation activities.

- Two main project phases (5 activity years each) with a Phase 1 focussing on creating the conditions and capacity building and a Phase 2 with focus on consolidation, valorization and sustainability.

- Phase Out (preparing for post-funding, closing event and administration).

IUC Program Cycle	Phase In – Pre-Partner Program	Phase 1 Partner Program Capacity Building					Phase II Partner Program Consolidation and Valorization					Phase Out: Valori-zation	
Year	0	1	2	3	4	5	6	7	8	9	10	11	12
Partnerships	Max. 18 months	5Y					5Y					2Y	

A typical IUC project had a variable budget between 2.5 million and 6.7 million EUR over this 12-to-13-year period, starting with the Phase In and ending with a Phase Out. IUC partnerships adopt a **multi-institutional setup** and involve **multiple teams of academics and specialists** at the level of the partner institution and at the Flemish level (participation of multiple Flemish universities and universities of applied sciences and arts). IUC partnerships are expected to structure as well as monitor their activities and deliverables around six core domains: (i) education programs and methods, (ii) research programs and methods, (iii) individual capacity strengthening, (iv) outreach and policy support, (v) networks and partnerships and (vi) systems, policies and infrastructure.

2.3. Drivers of change

The IUC partner universities are not only selected based on their ambition to improve institutional performance with regard to their threefold mission (education, research and service delivery), but also based on the potential to operate as drivers of change in a national context which is translated in the fact that

priority for IUC partnerships is given to universities that see this role as driver of change as their explicit mission. Considering this, typically an IUC partner university is not a first-tier institution in a country, but a mid-range institution with sufficient academic capacity to build upon, and strongly embedded in its environment. Preference is also given to universities that because of distance, communication and/ or other factors are less privileged in terms of accessing national or international resources.

VLIR-UOS projects aim at having an impact on society (e.g., the VLIR-UOS motto "sharing minds, changing lives") and this not only after but also during the intervention, from its very start onwards, via early stakeholders' involvement and creation of conditions for uptake. Societal impact requires uptake to happen, i.e., uptake of new knowledge created by projects, applications, products, services, etc. This 'uptake' does not happen automatically. It is important that IUC projects develop the necessary capacities and strategies to create the conditions for this uptake.

IUC partnerships strengthen capacity at HE&SIs to tackle interlinked SD challenges faced at local, national and global levels by enhancing the institutional capacity to provide multidisciplinary and transdisciplinary teaching and research, approach complex development challenges through systems-thinking and create the conditions for uptake through engagement in multistakeholder partnerships. This co-creation and uptake of knowledge among students, academics, professionals and decision-makers, allow HEIs to play a critical role in fostering innovation, resilient infrastructure and inclusive and sustainable industrializations (SDG 9) as well as the achievement of other SDGs depending on the topical/thematic focus of the generated knowledge. As such, IUC projects can address training and research gaps and enhance the performance in SD-relevant sectors in partner countries. During the IUC Phase In process, the set-up and conditions for engaging in a long-term partnership are put in place and a solid stakeholder analysis and engagement strategy is elaborated.

Assessing institutional capacities

As part of the intake process, and to establish a clear baseline, VLIR-UOS organizes institutional assessments at the level of partner institutions. The approach is based on the Core Capabilities model (developed by ECDPM, European Centre for Development Policy and Management) and was further developed and translated to the context of higher education for sustainable development. The approach identifies an institution's strengths and weaknesses and conducts targeted data collection to have a well-documented baseline of the partner's capabilities. It looks at five core capabilities that are further divided into a set of domains and descriptors. This approach allows, in a relatively efficient way, for a 360° view of an institution. The institutional assessment (IA) consists of two phases: (a) a self-assessment by the university of its institutional capacity and (b) a joint assessment of the university's institutional capacity by external assessors. The IA involves discussing, assessing and documenting each criterion, or domain, including the identification and justification of the current maturity level, rated on a scale from 1 (absent or extremely weak) to 6 (a role model).

1. Capability to achieve coherence	1.1 Vision and strategy
	1.2 Principles
	1.3 Governance

2. Capability to deliver on development relevant objectives and commitments	2.1 Education
	2.2 Research
	2.3 Driver of Change
3. Capability to relate to external stakeholders	3.1 Conditions for networking
	3.2. Network use
	3.3. Additional funding
4. Capability to act and commit	4.1 Effective organization
	4.2. HR
	4.3 Infrastructure
	4.4 Financial management
	4.5 Administration, procurement, logistics
	4.6. Project management and quality assurance
5. Capability to adapt and self-renew	5.1 Adaptive management
	5.2 Continuous improvement
	5.3 Knowledge management

2.4. Improved institutional performance

An IUC envisions a change process within the partner university leading to improved performance of the institution as a Higher Education Institution (HEI) in a number of institutional priority domains. The change within an institution is proposed as capacity building at different levels, having different dimensions (see below).

	Capacity creation	Capacity utilization	Capacity retention
Individual level	Development of adequate skills, knowledge, competencies and attitudes (e.g., PhD).	Application of skills, knowledge, competencies on the workplace (e.g., PhD holder applies new knowledge and skills).	Reduction of staff turnover, facilitation of skills and knowledge transfer within institutions (e.g., PhD remains staff member).
Organizational level	Establishment of efficient structures, processes and procedures (e.g., introduction of lab procedures).	Integration of structures, processes and procedures in the daily workflows (e.g., well-functioning lab).	Regular adaptation of structures, processes and procedures (e.g., Integration of regular evaluation mechanisms for lab management).
Institutional and policy environment level	Establishment of adequate "institutions", policies, rules and regulations (e.g., development of a new research/ accreditation/ HR policy…)	Enforcement of rules and regulations for good governance (e.g., implementation of new research, accreditation/ HR policy…)	Regular adaptation of institutions, rules and regulations (e.g., evaluation mechanisms for research, curricula, HR…)

This change is realized through **academic theme-based projects** (research and educational strengthening of involved departments) and mandatory **transversal (institutional strengthening) projects.** These "transversal projects" are expected to focus on institution-wide organizational capacity building in a number of prioritized institutional policy domains (research policy, curricula/accreditation, university management, HRD, international relations, finance department, gender policy); and/or in domains of internal service delivery (ICT, library, language, basic sciences labs…); and/or in domains of external service delivery (outreach services, dissemination, extension/ Research and Technology Transfer (RTT) - offices, communication…).

2.5. Uptake strategy in view of societal change

Uptake refers to the use of research and education results by non-academic actors (e.g., policymakers, NGOs, private sector, farmers). It involves activities that facilitate the application of research evidence from Higher Education Institutions (HEIs) by various stakeholders. Realizing this uptake, or creating the conditions for this uptake, is crucial for IUC projects that need to go well beyond purely academic results. Focusing on uptake allows the project to bridge the gap between scientific research and societal needs, ensuring that academic outputs contribute to sustainable development. Integrating explicit uptake
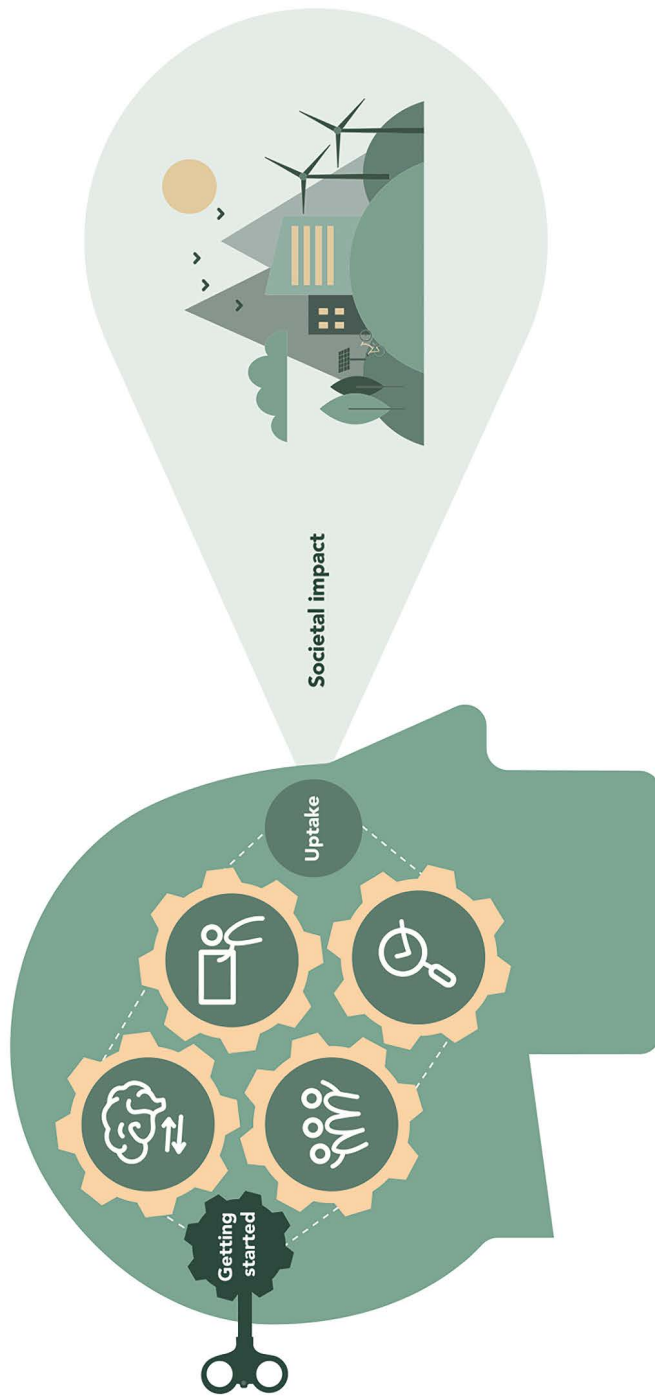
Getting started
- Knowing the context, the broader system and structural barriers
- Relevance & policy priority
- Knowing stakeholders, potential beneficiaries and/or intermediaries
- Partnership

Knowledge communication
- Information intermediary
- Knowledge translator
- Knowledge broker
- Innovation broker

Stakeholder engagement
- Needs-orientation & participation
- Collaboration with end-users
- Frequency of interaction, trust and mutual respect

Capacity building
- Capacities for uptake of knowledge producers
- Capacities for uptake of knowledge users
- Capacities for uptake of intermediaries

Impact-oriented planning & monitoring
- Planning for uptake
- Monitoring for uptake

Figure 2.2.1. Creating conditions for uptake
Source: Brochure of VLIR-UOS (2020).

strategies in IUC projects help maximize the impact of academic results on society. In order to help projects in developing effective uptake strategies, VLIR-UOS has developed a model which identifies a number of preconditions, and a number of mechanisms that are conducive for creating the conditions for uptake and societal impact.

VLIR-UOS identifies a number of elements to consider when starting/implementing a project (preconditions), and four main mechanisms to successfully create the conditions for uptake. These preconditions (if met) and mechanisms (if used) will increase the likelihood of a successful uptake, and ultimately reach some impact.

These mechanisms (and preconditions) are summarized in Figure 2.2.1 and described in more detail in the following sections.

Getting started: preconditions for successful uptake

– Understanding the context, the broader system and structural barriers (e.g., for knowledge users): It is essential not only to understand the broader context of the policy sector but also to identify structural barriers for stakeholders (in uptake).

– Relevance and Policy Priority: Projects which with high degree of alignment between the targeted actors' capacities and needs and the generated knowledge, technologies, services etc. tend to be more successful in creating the conditions for uptake.

– Already having a good understanding of stakeholders, potential beneficiaries, end-users and/or intermediaries allows interventions to identify actual needs, capacities, power relationships, etc. which can be considered when designing the intervention.

– Strong partnerships: Pre-existing and strong partnerships are a success factor for uptake. These may result from previous/predecessor projects, structural factors or through collaboration with intermediaries.

Mechanisms for successful uptake

VLIR-UOS identifies 4 key mechanisms for successful uptake in VLIR-UOS projects:

1. Knowledge communication:

– Effective communication of research results to non-expert audiences.
– Involves targeted dissemination and engagement (two-sided) **throughout** the project lifecycle.
– Being aware of different knowledge roles and acting upon it (e.g., knowledge intermediary, knowledge translator, knowledge broker, innovation broker).

2. Stakeholder engagement:

– Continuous involvement of stakeholders (e.g., local communities, governments, NGOs) from the start (needs-orientation and participation).
– Collaboration with end-users.
– Building trust and mutual respect through regular interactions and participatory methods.

3. **Capacity building for uptake:**

   – Capacities for uptake of knowledge producers (enhancing ability to work on uptake, e.g., knowledge communication).

   – Capacities for uptake of knowledge users and intermediaries (enhancing abilities to access and apply research findings).

4. **Impact-oriented planning & monitoring:**

   – Integrating uptake considerations into project planning and evaluation.

   – Using a Theory of Change approach to map out the desired impact and necessary steps to achieve it.

2.6. Description of partnership strategy

The IUC program has been constructed bottom-up as a proposal from within VLIR-UOS community whereby it was seen as the next level of institutional cooperation as compared to the more targeted cooperation developed by teams of academics at departmental level projects, emphasizing the importance of long-term cooperation and strong partnership to achieve true institutional and societal change. Over the years the program has been improved thanks to the exchanges between academics involved in IUC worldwide during policy workshops and learning events. These international exchanges created a true partnership community over the years.

An IUC is based on a partnership concept. Therefore, the proposed cooperation project is not only guided by both developmental and institutional priorities (mission and vision, strategic plan of the institution) guaranteeing local ownership and embeddedness, it also must be matched with the expertise from the Flemish HE partners. The successful implementation and post-project impact achieved by an IUC builds upon the development of this **strong partnership** between the partner university and the involved Flemish HEIs. The partnership is **jointly** managed by the partner university and the Flemish coordinating university according to the 'blueprint' IUC management structure and is governed by a tripartite agreement clarifying the roles and main responsibilities of involved parties. Different phases of cooperation are foreseen and for each multiannual phase detailed partner project documents support the proposed project outcomes. Trust and balanced partnership cooperation is guaranteed by sound project management, **aligned and integrated into local systems and procedures. Involvement of the partner university leadership/management** in the formulation and implementation of the successive project phases is crucial. This also implies vertical linkages between the **IUC project management** via the **combined leadership of the Flemish/local IUC coordinator** and the **Joint Steering Committee** and the decision-making structure of the partner university.

The implicated institutions also jointly bear the responsibility for the identification and follow-up of scholarship students (e.g., decentralized selection of "embedded" scholarships) in accordance with the general principle that the scholar contributes to capacity building at the level of the partner university and acts as an agent of change within and beyond the HEI setting.

VLIR-UOS seeks to empower institutions and individuals as critical drivers as well as agents of change through higher education partnerships for sustainable development. In particular, VLIR-UOS aims to stimulate sustainable, balanced, mutually beneficial and knowledge-driven partnerships across the borders of nations, institutions, disciplines and sectors to find solutions to the global challenges. VLIR-UOS primarily supports partnerships between universities and university colleges, but the commitment

to the SDG principles implies that collaboration with governments, private companies and civil society organizations is equally gaining importance in view of addressing interlinked development challenges through multi-stakeholder partnerships. Even more so because effective stakeholder management and engagement are also expected to yield a conducive environment for knowledge valorization and eventual societal change.

Finally, IUC partnerships have a strong link between partners and target groups. The direct beneficiaries of IUC partnerships are partner universities and the (academic) staff, researchers and students working/ studying in the IUC partner institution. IUCs involve directly an academic community of coordinators, project leaders and team members. In terms of composition, the teams are composed of a diverse group of academics, researchers, lecturers, professionals from partner countries that can collaborate with Flemish universities and/or universities of applied sciences and arts, characterized by often complementary roles in HEfSD. While universities hold expertise on scientific and fundamental research, universities of applied sciences and arts bring in their expertise regarding practice-oriented research and educational innovation, proceeding from concrete problems and working towards applicable solutions often with the involvement of external stakeholders.

2.7. Effectiveness of the IUC partnership concept

To achieve the IUC objectives, the (sub-)projects organized within the framework of each IUC partnership are expected to adopt a holistic approach to capacity strengthening at institutional and individual level. To this purpose, VLIR-UOS has identified six domains —reflecting the key components of higher education institutional capacity drawing upon evidence/lessons from previous experiences and similar cooperation models operated by sister organizations (e.g., Nuffic, DAAD, NORAD, ARES)— around which projects can structure as well as monitor their activities and deliverables: (i) research programs and methods; (ii) education programs and methods; (iii) systems, policies & infrastructure; (iv) outreach and policy support; (v) people and (vi) networks and partnerships. Projects can decide on which domains they focus but are expected to keep the available timeframe in mind when setting the projects ambitions.

The realistic and achievable nature of the desired changes in **research capacity** through IUC projects has been demonstrated in various evaluative reports. IUC projects are expected to improve the quality and needs-orientation of research conducted within their HEIs. It is anticipated that this can be realized through the combination of activities and deliverables in the six domains referred to above. Only a few examples are listed here. Research programs (e.g., production of high-quality peer-reviewed research publications, adoption of transdisciplinary research approaches), people (e.g., master and PhD scholarships), systems, policies and infrastructure, education programs (e.g., integration of Research Based Learning (RBL) approaches in curricula), outreach and policy support and networks and partnerships. The evaluations thereby highlight the interconnectedness of the changes within these domains, forming diverse, non-linear causal mechanisms. For instance, the provision of master and PhD scholarships was found to be particularly effective in yielding high quality research publications and training manuals because of the build-up of expertise within the HEIs. Moreover, improvements in terms of the research processes and structures constitute a causal mechanism for the successful acquisition of (external) research funds and development of new partnerships with various stakeholders.

Along the same lines, IUC projects have been found to be effective in realizing the desired changes in **educational capacity**. IUC projects are expected to improve the quality and inclusiveness of the educa-

tional processes, structures, methodologies adopted and provided by the HEIs. These desired changes are realistically achievable through activities and deliverables. The available evidence base resulting from previous evaluations also underscores the interconnectedness between education and research.

Furthermore, the achievable and expected contributions to the creation of improved conditions for **uptake of new knowledge, applications or services** by diverse stakeholders has been explored as part of the impact evaluation of university development cooperation (UDC) and IUC evaluations and input from the Midterm thematic evaluation (MTE) (Syspons GmbH, 2019) of VLIR-UOS departmental projects focussing on creating the conditions for uptake. These evaluations concluded that structured and planned dissemination processes organized with project support (e.g., seminars, workshops) foster the uptake of generated knowledge by early adopters and intended users. The MTE evaluation also demonstrated that uptake was most common among civil society actors and local community, but rare among private sector actors, NGOs and international agencies.

For the desired changes in the area of **organizational capacity**, IUC projects are expected to improve the organizational processes and structures at partner HEIs primarily through activities and deliverables in the domains of systems, policies and infrastructure (e.g., outlining of new institutional policies, upgrading of labs, etc.) and networks and partnerships (e.g., research parks and tech-transfer units). The impact evaluation of the Belgian university development cooperation (Special Evaluation Office of the Belgian Development Cooperation / SEO, 2018) also highlighted that organizational capacity development is more likely to occur within the context of a long-term institutional partnership, and based on its recommendations, improvements were made to the IUC Theory of Change with its transversal (institutional strengthening) subprojects strongly supported by the university's management and interconnected academic subprojects.

Moreover, **embedded scholarships** have proven to be an effective instrument to strengthen individual capacity among staff, students and alumni of the HE&SI and eventually realize societal impact. Preconditions for effective individual capacity strengthening through scholarship schemes include identification of relevant target groups, highly satisfactory program content to avoid/reduce drop-out, effective transmission of thematic knowledge and methodological competencies, provision of a supportive and inclusive learning environment, support to strengthen soft/transversal skills and opportunities to build social, academic and professional network relations. Under these conditions, scholarships are likely to yield transformative effects on systemic institutional and societal change well beyond the personal benefits and internationalization of research and education.

Evidence from an impact evaluation of the Belgian university development cooperation (Special Evaluation Office of the Belgian Development Cooperation / SEO, 2018) and from other studies (e.g., Dassin et al., 2018) suggests that **recipients of embedded scholarships are more likely to stay with the same organisation or institution post-scholarship compared to individual scholarship holders, and how the scholarships contributed not only the recipients, but also in professionalizing the organization/institution.**

Also, according to the study of Dassin et al. (2018), scholarships contribute to social change via five pathways: (i) supporting individuals to become agents of change, (ii) creating social networks, (iii) widening access to (higher) education, (iv) stimulating diversity and (v) realizing international understanding. The first two pathways constitute the core of VLIR-UOS scholarship strategy (which expect scholarship students to act as agents of change applying and passing on knowledge, skills, and attitudes in their (professional/private) environment (multiplier effect). The latter three pathways are taken into consider-

ation throughout the scholarship trajectory (= design, selection, on-award and post-award phase). Given a context of unequal access to HE and potential (gender) bias in setting research agendas and standards, IUC projects will, as of recently, be strongly encouraged to consider gender equality and diversity when **selecting embedded scholarship students.** The IUC scholars are (projected) staff members of the partner university and are expected to be/remain employed after graduation. They are expected to contribute to higher quality education and research at the level of the institution, enhanced (evidence-based) policymaking, etc. Finally, the supportive networked environment in which scholars have been capacitated also sets the stage for future knowledge-driven and SD challenges centred partnerships with the aim to foster institutional capacity through VLIR-UOS or other funding opportunities.

The **project selection system** considers the integration of the effectiveness principle amongst others by looking at the feasibility of the proposal, the quality of the planning and risk management and the attention paid to a number of priority and transversal themes such as the SDG principles (Leaving No One Behind, Multistakeholder partnerships and Interconnectedness), and more specifically gender and environmental sustainability in their project design. During implementation, projects annually report on identified unintended effects, lessons learned on success factors and barriers to achieve results, adaptations to the operational plan and progress towards the proposed outcomes.

As a non-implementing organization, VLIR-UOS relies for its MEAL system upon information gathered by selected projects. The outcome indicators seek a balance between quantitative and (quantified) qualita-

38,309 persons reached by presentations (community related) or extension workshops

1,106 Articles published in peer reviewed journals

1,383 presentations (community related) or extension workshops

783 new courses or training modules

135 new or substantially updated Master programmes

385 Master students graduated

225 PhD students graduated
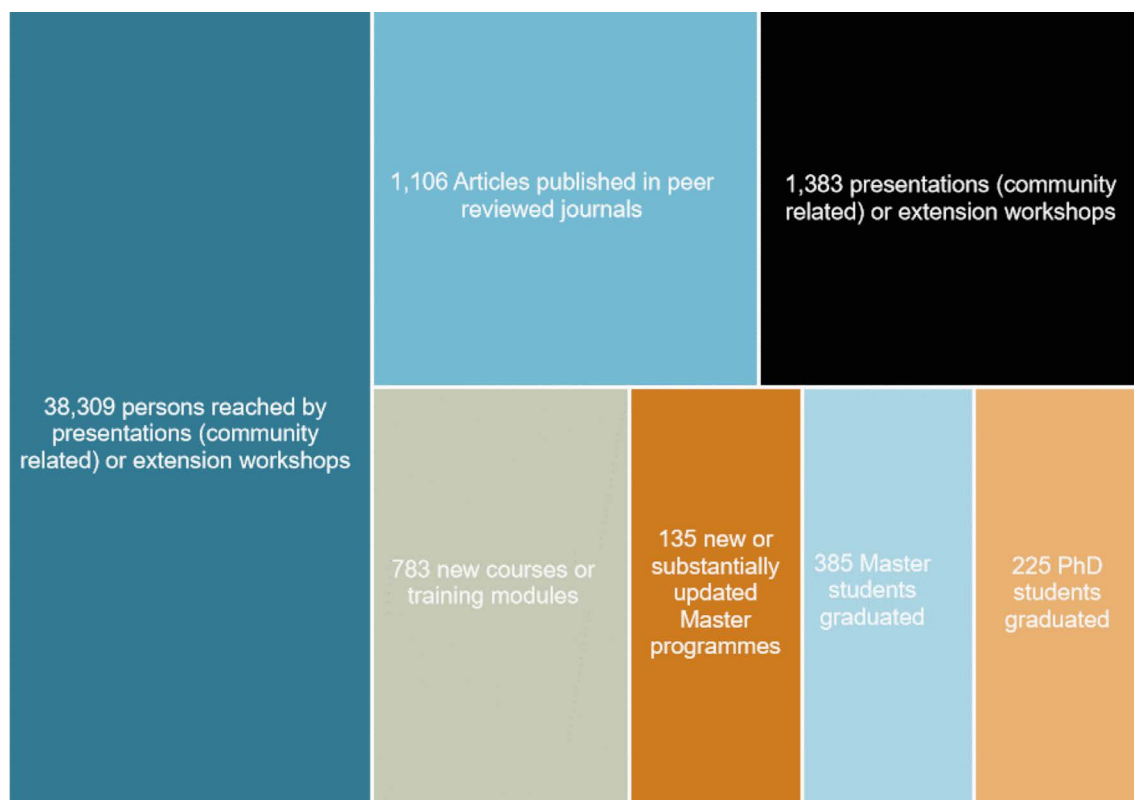
Figure 2.2.2. Number of presentations and persons reached by community workshops.
Source: own elaboration.

tive indicators to grasp the individual and institutional capacity development. Quantitative indicators are largely based on agreed/mandatory standard indicators relating to the core domains captured via projects' annual progress reports. As for the (quantified) qualitative indicators, VLIR-UOS draws upon the Five Capabilities (5C) model used to assess institutional capacity.

Summarised IUC programs contributed during the Five-Year Program 2017-2021 of VLIR-UOS to very significant numbers of scientific publications, upgraded staff capacity of partner universities (e.g., high numbers of PhDs, staff of partner universities) and showed high levels of community engagement (e.g., number of presentations and persons reached by community workshops) (see Figure 2.2.2).

2.8. Description of the expected impact

By facilitating IUC projects, diverse teams of academics explore, build and contribute with the long term IUC partnerships with and between (non-)academic actors around specific sustainable development challenges. This academic and scientific capacity strengthening and partnerships are a crucial lever for achieving Agenda 2030. The knowledge-driven partnerships are instrumental in sustaining exchanges of innovative ideas, cross-fertilization of expertise, and increased attention for SD within research, education and service delivery at HEIs well beyond the end of the project. In addition, the uptake of knowledge, applications and services by intended users within and beyond HEIs (e.g., communities, governments, CSOs, private companies) and their introduction and adaptation to new contexts bring about sustainable solutions and innovation at the level of policy (evidence-based policies), professional practice and eventually society. The IUC partnership concept and role as driver of change that IUC partner universities perform in their community also leads to indirect impact at the level of local, regional and even national governments.

By creating conducive, inclusive environments for students, staff and alumni to act as critical global citizens, IUC projects nurture new generations of connected leaders and skilled professionals who can drive sustainable and equitable development through their contributions in relevant sectors. Thus, the co-creation, exchange and application of SD-relevant knowledge within projects and the accompanying incremental changes in behavior as well as underlying norms and values are likely to inform and reinforce the achievement of all six systemic transformations for SD.

3. Sharing minds, changing lives: stories of impact

3.1. Cuba

When talking about Flemish-Cuban university cooperation for development, we always speak about a 'before' and an 'after'

15 May 2019. The audience at the Brussels venue BOZAR cheers as minister José Ramón Saborido Loidi takes the stage. For his lifelong dedication to Cuban university cooperation for development, he is about to receive an honorary degree as part of the celebrations of twenty years of VLIR-UOS. From the time when he was still rector at Universidad Central "Marta Abreu" de Las Villas (UCLV) to his current days as Cuban Minister of Higher Education, minister Saborido Loidi has been closely following

university cooperation for development projects. "I believe in Belgium and Cuba, we have a comparable vision of higher education: universities are important for solving the grave problems we are facing today," he summarises.

Where research meets society

The IUC research project at the Faculty of Agriculture of UCLV focused on improving food and feed production, for example by making certain crops such as bananas, plantains and beans more resistant to diseases. The success of the project is the result of a close and fruitful collaboration with many professors from several Flemish universities. Through the IUC, the UCLV staff strengthened their administrative and scientific capacities and developed better communication skills, allowing them to successfully apply and implement nationally and internationally financed, competitive collaborative projects, and publish their research in peer-reviewed international journals with high scientific impact. They also established many partnerships with universities in Central and South America and in Africa.

Apart from a huge academic impact, the IUC project's research results have also found their way to society. More sustainable practices in plant and animal production have improved food and feed security and production. Several outputs result from the use of classical breeding techniques and advanced molecular biology methods. For example, UCLV's Instituto de Biotecnologia de las Plantas (IBP) developed methods involving in vitro cultures for high-yielding banana and plantain plants, enabling cheaper production and reducing susceptibility to environmental stresses. This technology is now successfully used nationwide.

Another example is the development of seeds of different varieties of potato with high productivity, reducing the need for seed imports. Within the grain breeding program, high-quality seeds with the desired properties of sorghum and beans were developed and are now planted all over the country.

A third illustration is the development of drones that can be used as excellent tools in precision agriculture. For example, they can determine the fertilizer requirements of the soil, or detect damage to crops early, allowing appropriate measures to restrict the damage. Thanks to collaborations with UCLV computer specialists, mobile devices that allow farmers to increase productivity were developed.

A digital revolution

'Digitalization for development' is another theme that the Cuban government put high on the political and higher education agenda. "During the Special Period in the 90s, UCLV had the scientific potential, but didn't have the means to carry out high-level research," recalls Hector Cruz Enriquez, who was ICT project leader in the IUC program at UCLV. The IUC team was determined to bring about a wind of change. It wanted to enhance the campus computer network so that all university campuses would have sufficient ICT capacity for their academic and administrative activities. Another goal was to improve ICT infrastructure to support teaching, learning and research. The country needed highly skilled people who could help in the national digitalization process —another mission UCLV wanted to accomplish by training competent PhD and master students.

Supercomputers and big data

But that was only the beginning. Thanks to exchanges with Flemish ICT experts within the IUC, working with high-performance computing and big data are indispensable, especially for modern scientific discoveries. High-performance computing can, for example, help scientists analyze diseases or develop new drugs. By the end of the VLIR-UOS IUC partnership, a high-performance computing data centre

was set up. Cuban society —including hospitals and businesses— is also very interested in super-computers, as they can make complex calculations and analyses in a few minutes as opposed to days or weeks in the past. There is now cooperation with Biocubafarma, a Cuban national biotechnology and pharmaceutical research and development company consortium, on the early detection of arboviruses (viruses transmitted by arthropods) and the evaluation of the health impacts of the Cuban vaccine against Streptococcus pneumoniae using calculations with a big data approach.

The foundation for a NETWORK program

The drive and results within the IUC at UCLV laid the foundations for a broader ICT VLIR-UOS NETWORK program. Since 2008, digitalization has been put on the agenda of the two-yearly 'Universidad' confer-ences, organized by the Cuban Ministry of Higher Education, which follows trends and developments in higher education. Thanks to university cooperation for development and IUC support, Flemish and international experts have participated in these conferences as well. The NETWORK program helps uni-versities keep up with the fast-changing evolutions in computer sciences through training on big data, training courses for PhD and post-doc researchers, and through workshops to the industry in Cuba.

Contributing to the development of eastern Cuba

Another top priority for Cuba is the development of its eastern region, which is less favoured by inter-national cooperation and therefore more excluded from support and opportunities. The Universidad de Oriente (UO), one of the universities in eastern Cuba, set up an IUC program in 2013, working on developmental topics related to public health, food security and sustainable development, clean and renewable energy, biological products and cultural heritage. Here too, ICT capacity and digitalization are key.

"ICT capacity has been one of the main successes of the program until now," says Teresa Orberá Ratón, local promoter of the IUC program with UO. "We have Internet and Wi-Fi connections in all three campuses of our university which are open to everybody thanks to VLIR-UOS. We have created a data centre which offers services to society, and have invested massively in computer equipment." In this IUC as well, digitalization found its way to society, contributing to the 'Joven Club de Computación'. IT specialists from UO installed the necessary hardware and software and continue to maintain the infrastructure.

3.2. Ethiopia

From health research at Jimma University…

The IUC project with Jimma University was the first collaboration of this kind. Kora Tushune, the local coordinator of the program at Jimma, confirms that the university has undergone substantial change throughout the years of the IUC. "We have generated more than 50 PhDs, along with many scientific publications. Our teaching infrastructure has improved as well."

The research on topics including environmental health/ecology and infectious diseases/epidemiology has also had a vital impact outside of the university. For example, infectious disease studies on malaria have led to a policy overhaul within the national government. A lot of treatment was done with in-house spraying, but the problem was that this spray seemed toxic to people, not to the mosquitos. The mos-quitos were actually resistant —a problem which was prevalent everywhere in Ethiopia. The Ethiopian government was pumping in thousands of dollars without any effect, except for the negative impacts

on humans. Policy briefs and meetings with the Ministry stopped the use of the ineffective insecticides and shifted to more effective ones.

… to crop research at Mekelle University in Ethiopia

Alemtsehay Tsegay, a PhD graduate within the framework of the IUC program in Mekelle and local project leader, has seen the university move closer to reaching the main goal of the project: filling the need for qualified personnel in various areas of research. "The project has generated about 28 local PhDs," she explains. "We have published 130 research articles in internationally renowned journals, and this has had a direct impact on the reputation and ranking of the university, both nationally and internationally." Moreover, the project has strengthened the university's teaching programs by developing new master programs and PhD curricula. In addition to its enormous impact on Mekelle University, the program has managed to reach out to the rural communities and farmers in the Tigray region, and it has focused its research on alleviating local poverty. Alemtsehay provides a few examples: "We introduced apple trees in the highlands of the region to increase the income of farmers and contribute to their nutrition. We have transferred fishing techniques and supported local fishing associations."

Two decades of impact

"Thanks to the collaboration between Ethiopian and Flemish universities through VLIR-UOS, Ethiopian universities are now able to create new Master and PhD programmes," notes Tsegay. "Many scholars have the opportunity to study in-country, which is an advantage because it allows them to focus more on problem-solving research within the context of their own countries." If anything can improve conditions within a country, it's education at any level. The VLIR-UOS projects can give people the tools to change society, and knowledge is one of the best tools to have.

Education increases human capital within a country's labor force, thereby increasing labor productivity and, ultimately, generating a higher level of output. Education can also help a country's economy to be more innovative, as knowing about new technologies and products promotes growth. "I strongly believe in the VLIR-UOS motto of 'Sharing Minds, Changing Lives'," Tsegay concludes. "If countries, development organizations or even individuals do not share what they have with others, it will remain in their own hands and minds, and it will not have any impact on the world. This is why the VLIR-UOS 'sharing minds' principle has been able to bring about many changes in the lives of others, particularly in developing countries."

3.3. Tanzania

The IUC with Nelson Mandela African Institution of Science & Technoloy (NM-AIST): an innovative approach[2]

The VLIR-UOS program at NM-AIST significantly impacted institutional capacity, research innovation, and community engagement. Between 2019 and 2023, NM-AIST saw marked improvements in core capabilities, enhancing its academic and research profile. The IUC led to academic staff development, with notable contributions from PhD graduates, and updated several master's programs. It fostered specialized research areas, like banana research, resulting in the proposed establishment

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[2] Extract from the Final Evaluation of the IUC with Nelson Mandela African Institution of Science & Technology', 2024.

of a major research centre. The IUC also increased research output, evidenced by 26 peer-reviewed publications, and advanced the development of a Technology Park, boosting technology transfer capabilities. Infrastructure improvements in digitalization, ICT, and labs significantly upgraded NM-AIST's resources and technological capacity. The university's strategic reorientation towards multi-disciplinary research groups and updated policies reflected a maturing research ethos. Collaborative initiatives with various stakeholders enriched the university's research and community involvement. The program's impact on the community included empowering farmers with improved agricultural techniques and driving wastewater management innovations. Entrepreneurial initiatives emerged, demonstrating the program's influence on innovation and application. Overall, the VLIR-UOS activity at NM-AIST made substantial contributions to institutional development and community empower-ment, reflecting its broad and positive impact.

Technology and wastewater management

The development of new technologies, such as a prototype for treating water from textile companies and an app for disseminating information/knowledge with researchers and the community, highlights the university's growing focus on research and innovation. The construction of a wetland on campus, funded by VLIR-UOS, has not only served as an educational and research resource, but has also contributed to environmental conservation by treating wastewater from student accommodations.

The VLIR-UOS program has played a pivotal role in the development of a Technology Park at NM-AIST. This includes the establishment of an Incubation Centre, Technology Transfer Office (TTO), and the Commercialization Office; completed with institutional policies, guidelines, dedicated staff, and physical infrastructure, all facilitated by the project's support and capacity-building efforts. These components, which are essential for the transfer of technology and innovations to industry and for fostering economic growth and sustainability, are now in initial stages of effective embedment into the University's structure.

The IUC fostered enhanced collaboration among diverse stakeholders —academics, researchers, stu-dents, NGOs, other academic institutions, community members, and local farmers. This collaborative approach has enriched research, extended knowledge sharing, and promoted community involvement, contributing to sustainable development. For instance, the program has led to innovations in wastewater management, and NM-AIST's expertise in constructing wetland systems for wastewater treatment has been applied to address environmental challenges faced by five companies and organizations. The com-pany representative indicated that the system had not only resulted in a substantial reduction in opera-tional costs for waste treatment and in significant improvement in environmental sustainability, but also generated significant interest from other companies. Moreover, public authorities, as the meat processing company representatives had noted, were highly satisfied with the waste treatment system in place.

The establishment of a banana research centre

One of the most important impacts of the program is the development of specialized research domains, notably in banana research. By boosting banana productivity, the project hoped to contribute to poverty alleviation, economic advancement, and food security in northern Tanzania. The initiative to develop high-yield banana varieties and technologies for enhancing banana productivity has culminated in the University Council approving a plan to establish a major banana research centre at NM-AIST. This cen-ter, which has already been allocated land, aims to encompass the entire banana value chain, from agronomy to packaging, positioning Tanzania as a key banana exporter in the region.

Community members indicated that the program has empowered and equipped them with knowledge, training, resources, and tools to boost productivity. Substantial evidence indicated that improved farming practices led to significantly higher banana yields, tripling in some instances. The implementation and expansion of demonstrated improvements in banana varieties, soil nutrient management, and water management practices led to better livelihoods for participating farmers and their neighbours. For instance, smallholder farmers indicated that they benefited from improved crop production techniques, access to clean plant materials (such as in vitro banana plants and maize seeds), and sustainable farming practices. Farmers reported that the increased income from higher yields, coupled with savings from reduced production costs, was utilized to cover school fees, enhance their housing, and reinvest in additional income-generating activities.

Overall, the project engaged with approximately 1000 farmers. The planned establishment of the Banana Research Centre is poised to further elevate the university's academic influence. This centre is expected to focus on improving both the productivity and profitability of banana cultivation, thus contributing significantly to food and nutrition security in Eastern Africa, a region where bananas provide up to 40% of the total caloric intake.

3.4. Uganda

How IUC changed Mountains of the Moon University (MMU)

Mountains of the Moon University (MMU) was established in 2005, founded and governed by the local community and most importantly, working for and accountable to the community. Compared to the rest of universities in Uganda, MMU was academically less developed and fragile, located in a predominantly agrarian area with largely a peasantry population that has remained below the national average. However, as a community founded university, together with its interaction with local stakeholders and other actors, MMU had quite a unique and innovative university model, being of great interest for various actors in sustainable community development.

MMU becoming a public university

The IUC program that was launched in 2013 has initiated changes at MMU and a notable success was the acquisition of a University Charter before the end of Phase 1 in 2018. This is remarkable because it was one of the objectives that the program set out to realize within 12 years of collaboration, and yet it happened half-way this period. This was attributed to investments made in human resource capacity building, establishment of science laboratories, library upgrade, improvement in ICT infrastructure and enhanced community engagement. The program since then continued to consolidate, and in July 2022 MMU was officially taken over by the government of Uganda.

How change came through…

The decision of the government to position a new research and policy center on food within the Faculty of Agriculture, was a clear sign of recognition and confidence in MMU as a driver of change. A major contribution to this capacity, according to the Final evaluation of the IUC with MMU (Kibwika & Dhaene, 2024), is the establishment of MMU radio under the IUC program. The MMU radio is an important instrument for continuous engagement with the community. Every faculty is allocated airtime every week to engage community on various topics of interest —also a mechanism for dissemination of knowledge generated in the university but also a training facility for students of journalism. MMU is

currently benchmarking with other universities in the East African region which have strong orientation to community development to learn lessons on how to strengthen and maintain the development role in an academic institution.

The training of MMU staff at PhD level through the IUC program has generated a large number of publications in high quality international peer reviewed journals. These trained staff have continued to engage in several research projects with a wide range of partners to contribute to global knowledge. Research equipment acquired for PhD research has improved the laboratories to produce better quality research results to the extent that other stakeholders in the private sector (tea and coffee estates) trust and bring their soils to the laboratories for analysis. According to the evaluation, A major contribution to this capacity is the collaboration with experienced Flemish universities offering quality education at PhD level. The university is growing even stronger with recent recruitment of more academic staff including PhD holders under the new dispensation of public university.

… and turned into impact

Based on the evaluation, impact of the IUC partnership on education is in the trainings of staff and students on e-pedagogy and effective use of e-learning tools. This was the only way to sustain learning in the university during the COVID-19 lockdown. E-learning is now widely applied across all faculties as it leverages the constraint of teaching space and supports distance learning programs in the faculties of Health and Education. The other area of impact is in curriculum development and review —making curriculum responsive by integrating stakeholder interests. This intervention led to the review of two master's programs and the development of a BSc in aquaculture and water resources management.

The IUC also invested in increasing capacity of staff members in proposal writing and development of a positive attitude towards building external partnerships for academic activities and additional funds. The impact of this capacity building is long lasting with a steady increase in external funded projects.

Farmers know who to contact when they have challenges. Besides contacting MMU, they sometimes invite people from extension services to their meetings to provide technical information on selected topics. They have access to online sources and look for information on the internet. Some of them have become members in other groups and networks and/or invest in study visits to other regions to visit model farmers for purposes of learning in order to improve their dairy enterprises. The farmers are also more aware of the importance of nutrition and adopted practices for improving nutrition of their animals. Their increase in milk production enabled them to acquire a milk cooler, with the support of a government program, which they operate. This has helped them to increase incomes from their collective action to add value to milk by cooling and transporting it to Fort Portal city for better prices than what is offered in their villages.

3.5. Vietnam

Can Tho University's (CTU) social commitment

CTU, one of the main universities in the poorer Mekong Delta, wanted change for the region. It wanted to deploy its research, technology and human resources for a better economy and to improve farmers' living conditions, but also for the socio-economic development of the country in general. When the Flemish universities and CTU started their VLIR-UOS projects, they focused on themes relevant to farmers in the Mekong area, such as agriculture, aquaculture and marine culture.

In general, the projects at CTU aimed at diversifying the agricultural sector in the Mekong Delta to get more people out of poverty and to build the university's capacity by focusing on research areas such as aquaculture, food technology and production, biodiversity, environment, e-learning, management and ICT infrastructure.

Small organism, big impact

A huge obstacle in the country's aquaculture development was the fact that the brine shrimp *Artemia* —a type of small shrimp-like organism that can be found in salty environments such as salt lakes and salt pans— is not naturally present in Vietnam. *Artemia* can produce dormant eggs, known as cysts, that can be stored and hatched for live feed when needed —making the brine shrimp very suitable for use in fish and shrimp aquaculture. Together with UGent specialists, CTU researchers looked at the production cycle of *Artemia* in the Vinh Chau salt ponds, developed and improved technologies for *Artemia* production, and organized workshops to persuade farmers to use this new technology. After the first production cycle, the farmers could request help from the university by calling a telephone helpline. The university also trained so-called 'extension officers' that could provide farmers with information. Apart from workshops and a helpline, researchers produced several other kinds of materials providing information to local farmers, such as leaflets, flyers and posters in Vietnamese. The team also created a documentary for Can Tho television.

"The land and environment in the Mekong Delta are very well suited for Artemia production," says Ha Thanh Toan, rector of CTU, who has been managing the cooperation from early on. "The quality of our *Artemia* cysts improved and became number one in the world in terms of production. Locally, in the Mekong Delta, production skyrocketed," he adds. The type of *Artemia* that the farmers use today is also more nutritious than the one caught in natural environments. Twenty years ago, the national income from aquaculture was maybe a few hundred thousand dollars. Now, the last numbers say seven billion dollars per year. In general, the projects at CTU aimed at diversifying the agricultural sector in the Mekong Delta to get more people out of poverty and to build the university's capacity by focusing on research areas such as aquaculture, food technology and production, biodiversity, environment, e-learning, management and ICT infrastructure.

An increase in yields and income

Aquaculture is just one chapter of the story though. The Mekong Delta's most important crop is rice: in 2000, more than half of all Vietnamese rice was produced in this region, known as the country's 'rice bowl'. Although once successful, rice production in the Mekong Delta was gradually declining, forcing the government and farmer communities towards new cropping systems with rotations of rice and upland crops. In all these cases, CTU was consulted by local authorities, agricultural extension agents and farmers to come up with solutions. Together with their Belgian counterpart, the university took up the challenges and kick-started a research project as part of the IUC program. This research cooperation proved successful: the researchers came up with two models for farmers to attain this goal. This resulted in a higher productivity per year compared to traditional farming methods, and an increase in income for the farmers. Farmers also mention that these new models increase yields between 10 to 20% per year on average.

After a decade of IUC cooperation in Vietnam, what are the researchers' conclusions?

"The VLIR-UOS IUC programme was a big achievement for CTU in terms of human resources for the university," says Ha Thanh. In the case of CTU, the IUC project funded 22 PhD and 32 master scholarships. CTU is now an important centre for research and technology on aquaculture and food technology, spreading the knowledge to local farmers. Thanks to the cooperation, research has improved in quality and has been more widely spread among the population in the Mekong Delta. Farmers' incomes in 2018 have increased, on average, by about 500 euros per month. Poverty in the province decreased from 26.9% in 2008 to 12.5% in 2015, according to local governments and farmers, thanks to the new *Artemia* farming methods. The newly developed methods for rice production have increased farmers' incomes by 136.62 euros per month and 161.66 euros per hectare. Farmers themselves explain that this extra income has helped them pay for their children's schooling, build houses and purchase land. They believe it has given them more life security and stability. Today, the university is also reaching out to other partners in Vietnam and the Global South, as VLIR-UOS also wants to support local institutions to join forces.

For example, after the IUC cooperation, CTU led a national NETWORK project funded by VLIR-UOS, in collaboration with Vietnam National University of Agriculture, Hue University, Nha Trang University and the Research Institute for Aquaculture. The NETWORK program, which unites the institutes around Bioscience for food, is a spin-off of the IUC program with CTU, and helped Vietnam to develop research-based education on aquaculture and food technology. It also strengthened the linkages with the Flemish higher education institutes solidifying links with existing master programs in Flanders. The Network was quite successful in confirming Can Tho University as a hub for the internationalization of these master programs, and as a hub in Vietnam and South-East Asia for the South-South cooperation with other HE and science institutes.

Uptake at Hué University

The final evaluation of the IUC at Hué University, conducted by an external evaluation consortium led by C-Lever (Vander & Dao, 2023), reported on the uptake of research based learning by teaching staff (in other courses) and the integration of the IUC subject of family medicine into the regular medical program of the Hué University of Medicine and Pharmacy were complemented by the establishment of a first ethical commission. The latter initiative, dedicated to the evaluation of animal-related experiments and research protocols, led to the creation of an ethical committee that not only assesses the ethical dimensions of such experiments but also rigorously scrutinizes manuscripts for plagiarism. Subsequently, the program's influence extended to other academic institutions across Vietnam.

In addition, the Family Medicine Centre (FMC) at Hué showed great impact since it played a vital role in primary health care policy development in Vietnam. Because of the activities and successful results, produced by the project, it enjoys a great reputation in Vietnam and allowed FMC to be involved in preparatory policy processes and to influence policy. This is based on a strong relationship with the Ministry of Health, developed through consultations and participation in conferences and workshops (in conjunction with other important influences, such as from the Family Medicine

Department of Hanoi Medical University). This is a case of strong external coherence, managed by the government.

4. Conclusions

In a rapidly changing world marked by multifaceted challenges, higher education and science institutions (HE&SIs) have emerged as critical agents for sustainable development. The United Nations' 2030 Agenda for Sustainable Development underscores the importance of global cooperation in addressing issues such as poverty, inequality, climate change, and environmental degradation. In response to this imperative, VLIR-UOS, in collaboration with Flemish and partner country universities, has spearheaded the Institutional University Cooperation (IUC) program as a means of advancing sustainable development through higher education partnerships.

The success of the IUC program lies in its holistic approach to capacity building, emphasizing individual, organizational, and policy-level change. By fostering equal partnerships and mainstreaming transversal themes such as gender equality, environmental impact, and human rights, IUC projects aim to create inclusive and sustainable solutions to complex development challenges. Through academic theme-based projects and transversal initiatives, IUC partnerships contribute to improved research and educational capacity, enhanced organizational performance, and societal change.

Moreover, the IUC program prioritizes societal impact, seeking to address local, national, and global challenges through multidisciplinary collaboration and stakeholder engagement. By empowering individuals as critical global citizens and fostering a culture of innovation and collaboration, IUC partnerships play a vital role in driving sustainable development at both local and global levels.

Looking ahead, the effectiveness of IUC partnerships will continue to depend on their ability to adapt to evolving challenges and opportunities. This includes strengthening collaboration with diverse stakeholders, leveraging emerging technologies, and addressing emerging issues such as digital transformation and global health. By remaining agile and responsive, VLIR-UOS and its partners can build on the success of the IUC program to create a more sustainable and equitable future for all.

With this publication, we were keen on showing the specific added value, diversity and true impact of the VLIR-UOS model for higher education cooperation, focusing specifically on its long-term cooperation modality of Institutional University Cooperation. We want to show the shared commitment, the hard work, but also the passion and added value of working on this together. Because it is not only about sharing minds and changing lives. It is equally about changing minds and sharing lives. We want to inspire new academics to join the VLIR-UOS community and contribute to society through research, education and service to society. Additionally, we want to illustrate that universities and universities of applied sciences and arts have an important role to play within development cooperation, within the overall SDGs challenges' framework and the broader Agenda 2030.

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2.3. Dialogue on innovative higher education strategies – creating knowledge, initiating sustainable change

Higher Education Institutions (HEIs) around the world are operating in an increasingly dynamic environment characterized by global challenges. This also holds true for HEIs in the Global South, where the demand for tertiary education has risen sharply in recent decades. In view of these developments, higher education management in all its aspects has become of vital importance for the development of higher education capacities in the Global South. The German Academic Exchange Service (DAAD, for its acronym in German) is an independent association of the German HEIs and their student bodies with the overall objective to promote international academic exchange and cooperation. To this end, it offers a wide range of international scholarship programs and project funding schemes, which is constantly being developed and adapted to the respective needs. One of these programs is the "Dialogue on Innovative Higher Education Strategies" (DIES) program, which focuses on capacity building in higher education management in the Global South. Higher education managers (deans, vice-deans, heads of international offices, etc.) are frequently academics without any formal or even informal training and preparation for their administrative tasks. DIES offers various capacity building measures (training courses, dialogue events, joint initiatives with regional partner organizations) to equip higher education managers with the skills needed for their job, to strengthen the administrative and managerial processes at the university, and to promote sustainable change at an institutional level. Higher education management acts as a lever that affects the entire university and can be a decisive factor for positive development, especially in the challenging contexts in which many HEIs in the Global South operate. The United Nations' 2030 Agenda for Sustainable Development serves as a global framework for the DAAD's activities in the Global South. To evaluate the impact of its scholarship and its project cooperation programs for the Global South the DAAD has established a results-oriented monitoring system that continually monitors the effectiveness of its programs and improves the quality and transparency of its work.

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1. Introduction

Higher Education Institutions (HEIs) all over the world are operating in an increasingly dynamic environment characterized by global challenges. Universities are in intense competition for students, highly qualified researchers, and third-party funding. This also applies to countries in the Global South, where the demand for tertiary education has risen significantly in recent decades. This is partly due to the sharp rise in student numbers, but also to the increased demand for qualified specialists and managers who are urgently needed to tackle local and global challenges. "Higher education institutions and other academic institutions are key to social, economic and technological development. They play a central role in achieving the 2030 Agenda's Sustainable Development Goals. Germany is working to expand and improve cooperation with developing countries and emerging economies in the area of higher education and science." (Federal Ministry for Economic Cooperation and Development (BMZ), 2023). HEIs are of particular importance in this context. The UN 2030 Agenda for Sustainable Development explicitly calls for the expansion of higher education and research to achieve the goal of high-quality education (SDG 4) and provides, among other things, for a significant increase in the provision of scholarships for people from countries in the Global South (SDG 4.3). Furthermore, HEIs have a key role in the successful realization of all other Sustainable Development Goals, for example in the areas of food security (SDG 2), health (SDG 3), sustainable growth (SDG 8) and climate protection (SDG 13). The German Academic Exchange Service (DAAD) is an independent association of German HEIs and their student bodies, which is committed to the internationalization of the university and academic system. The DAAD is the world's largest funding organization for international academic cooperation and the international exchange of students, researchers, and lecturers. The UN Agenda 2030 serves as the global framework for the DAAD's work. This is especially important for its activities in the Global South where the DAAD focuses on a partnership-based approach taking in account the regional needs and collaborating with local experts. The Federal Ministry for Economic Cooperation and Development (BMZ, for its acronym in German) as the main sponsor of DAADs funding programs for the Global South has recently published its strategy on "Feminist development policy".

This strategy identifies solutions to discrimination and oppression, and it places women at the centre in their role as knowledge carriers and decision-makers. Further increasing the contribution of higher education and research to sustainable development with a strong focus on equitable participation and access is therefore a strategic goal of the DAAD. Due to the funds from BMZ —around 55 million EUR in 2023— the DAAD can offer a broad range of programs in the area of individual funding and project funding and thus support the role of HEIs in the Global South as drivers of change towards sustainable development. HEIs make an important contribution to strengthening all levels of the education system by offering teaching, research, and counselling. They support evidence-based policy advice and contribute to the development of innovative solutions in the key areas of the UN 2030 Agenda. Furthermore, HEIs play a key role on the path to more employment by offering relevant and practice-oriented study programs, strengthening entrepreneurship, and serving as an important location factor for local economic development. The DAAD together with its member institutions and local experts and stakeholders has designed various capacity building programs to support HEIs in the Global South to effectively address the challenges they face and to strengthen their role as drivers of innovation. This approach is based on the idea that global challenges can only be solved together and that German HEIs need strong partners worldwide.

One of these programs is the Dialogue on Innovative Higher Education Management (DIES) program, with its particular focus on higher education management. DIES has been jointly developed and coordinated

by the DAAD and the German Rectors' Conference (HRK, for its acronym in German) since 2001. Funding is provided by the BMZ. DIES aims to strengthen capacities in higher education management, both on individual and institutional level to contribute to the improvement of core HEI processes and institutional higher education and to the development of efficient and internationally networked universities. DIES offers various tailored measures —training courses, dialogue events and regional sustainability activities— that foster the competences of HEI leadership and academic staff and contribute to the enhancement of institutional management at HEIs in the Global South.

2. The German Academic Exchange Service (DAAD)

The DAAD is an independent association of German HEIs and their student bodies, committed to the internationalization of the academic and scientific research system. With a budget of 774,8 million EUR (2022) and around one thousand employees at its headquarters in Bonn, the DAAD is the world's largest funding organization for international academic cooperation and the international exchange of students and researchers. The motto of the DAAD is "Change by Exchange" —a concept that applies to more than the students and researchers it supports. For the DAAD as a funding organization, change means welcoming the challenges of this dynamic process and participating in shaping it. With its broad range of scholarship programs, the DAAD supports students, researchers, and university lecturers to take advantage of the best study and research opportunities. Since 1950 around 2.9 million scholars in Germany and abroad have received DAAD funding. Yet, its activities go far beyond simply awarding grants and scholarships. The DAAD supports the internationalization of German HEIs, promoting the internationalization activities of German HEIs and research organizations, strengthening German cultural and language studies abroad and helping countries in the Global South establish productive higher education institutions.

The DAAD's activities can be divided into three main categories:

1. Promote excellence and broaden perspectives of education and science through international exchange

The aim of international exchange is to enable top-performing individuals to study, teach and research at locations where they can optimally develop their potential. It has always been the case that international experience strengthens academic excellence. In an increasingly interconnected globalized world, international experience is the key to innovative solutions, with which research problems can be viewed from various angles. In 2023, more than 140.000 individuals received DAAD funding and scholarships —almost half of them students, graduates and researchers who came to Germany from abroad, the other half Germans who went into the world. More than 50% of all funding recipients were women. In addition to individual scholarships, the DAAD supports academic cooperation projects. Around 3.580 projects were funded in 2023.

2. Enhance international collaboration for the benefit of science, industry and society

An internationally networked research environment is essential to Germany's performance; it comprises the foundation for knowledge-based participation in political discourse. Political decision-making processes require an increasing degree of scientifically sound advice for responding to the complexity of globally determined relationships. A partnership-based understanding of scientific cooperation and

networks has been our orientation and guideline from the very beginning. Since 1950, the DAAD has funded 1.73 million Germans and 1.19 foreign students, graduates, and scientists —all of them together build a huge and diverse international academic community and alumni network. On the institutional level, 57 DAAD offices strengthen ties all around the globe. This international network provides on-site perspectives and regional expertise.

3. Assume global responsibility and contribute to development and peace

Global challenges, such as climate change, species extinction, flight and displacement, poverty and epidemics affect us all. It is therefore of vital importance that globally networked researchers and academics work together to find solutions to these challenges. The research sector in Germany can only assume a relevant role in this process if it can rely on lively academic exchange. International academic cooperation serves to mitigate existing inequalities and injustices, advance the development of the Global South, prevent conflicts, and surmount crises. The DAAD is committed to establishing productive structures at HEIs in the Global South and it supports German HEIs in the joint realization of research projects on global issues.

2.1. Strengthening HEIs and higher education systems in the Global South

As an intermediary organization, the DAAD supports German HEIs and their international partners in their development policy engagement. In doing so the DAAD favours a partnership-based approach, adding a civil society component to development cooperation policies at a governmental level. Especially when political relations are strained, such projects present alternative pathways for German development cooperation beyond bilaterally negotiated agreements. Higher education and science have become increasingly important in cooperation with countries of the Global South. And for good reason, because the lack of well-trained skilled labour and the lack of access to global knowledge production are two major reasons that prevent many countries in the Global South from improving their challenging living conditions. Especially the rapidly expanding higher education systems in Africa are facing an enormous lack of highly qualified university teachers and professionally relevant degree programs.

The DAAD contributes to strengthening HEIs and higher education systems in countries of the Global South by funding cooperation projects and university partnerships. The DAAD's portfolio ranges from supporting the development of up-to-date practice-oriented study programs to fostering the establishment of globally linked academic centers of excellence for the implementation of the SDGs.

For more than 25 years the DAAD has been supporting projects carried out by HEIs in Germany with their partners in countries of the Global South. The funding focuses on the sustainable strengthening of structures at the partner HEI in teaching and research as well as in university and science management. The range of topics is broad and interdisciplinary approaches are particularly in demand.

In addition to the cooperation projects, the DAAD addresses the strengthening of higher education management capacities in countries of the Global South through, among other things, professional conferences and workshops and specially designed training courses for higher education managers. Other activities comprise the implementation of transnational higher education projects, the support of higher education associations in improving the quality and practical relevance of study programs and the funding of centres of excellence at German universities that collaborate closely with international partners to conduct research and provide teaching on the SDGs.

The DAAD programs help to modernize teaching at higher education institutions in the Global South and adapt it to the requirements of the labor market. They contribute to professionalize university administration, develop a joint understanding of quality and relevance in higher education, and to improve the training of university lecturers. They also increase academic mobility and facilitate the mutual recognition of academic achievements and degrees. Broadening access, improving quality, and raising relevance are key words for DAAD's activities in countries of the Global South. By coordinating individual and institutional capacity development, the DAAD can respond more effectively to the needs of its partners and funding recipients.

3. How to measure the impact: Results-oriented monitoring, evaluation, and studies

Cooperation projects build on the existing capacities of partner HEIs, strengthen their ownership, and thus enable long-term development successes. A results-oriented monitoring system ensures the effectiveness of the funding programs and improves the quality and transparency of the projects. Higher education and science are critical areas of cooperation with countries of the Global South, as efficient and international HEIs are principal factors for social development. Against this background, the DAAD has designed its funding instruments specifically to address the needs of the Global South. A results-oriented monitoring system helps the DAAD to continually monitor the effectiveness of its programs and improve the quality and transparency of its work. In addition to a results-oriented planning, monitoring and evaluation are also an integral part of the DAAD programs. Dialogue with German HEIs and their partners in the Global South helps to complete the picture. In this way, the DAAD is guided by the basic principles of effective development cooperation agreed in the Aid Effectiveness Agenda (OCD, 2024). Based on these objectives, the programs funded by the BMZ and other funding bodies are regularly reviewed by external experts for their relevance, effectiveness, and impact. At the same time, the DAAD releases its activities, results and the extent to which its objectives have been achieved in annual reports. As a non-governmental organization, the DAAD is dependent on the results-oriented project planning, management and reporting of the HEIs as the implementing bodies. Continuous dialogue is part of the DAAD's learning experience. In this way, the DAAD can align its work with the needs and requirements of the various partners and develop the funding programs accordingly.

The instrument of results-oriented monitoring (RoM) is a key factor in the continuous monitoring of the results and impact of the DAAD's involvement in HE capacity building in the Global South. The DAAD understands this to mean a continuous process of data collection and evaluation using SMART (Specific, Measurable, Attainable, Relevant, Time-Bound) indicators to compare actual changes with expected changes. During the implementation of a program or measure, conclusions can be drawn about the extent to which the intended results (outputs) and short and medium-term objectives (outcomes) of the program or measure are likely to be achieved. The DAAD reviews the effectiveness of its funding programs by enquiring about the program indicators in a structured manner in the annual reports. The results also form the basis for the project steering. Results-oriented monitoring also forms an important basis for the implementation of evaluations and studies through continuous data collection. These make it easier to assess whether a program has achieved its long-term goals (impact) or triggered unintended effects, for example. The DAAD uses evaluations for the internal management and further development of funding programs and for accountability to the public and donors. Furthermore, evaluation results

contribute to the public and academic dialogue on the internationality of research and teaching. The evaluation of development cooperation is based on five key criteria agreed upon by the international donor community in the Development Assistance Committee (DAC): relevance, effectiveness, efficiency, overarching developmental impact and sustainability.

4. Dialogue on Innovative Higher Education Strategies (DIES) - training individuals, strengthening institutions

Alongside the rapidly growing demand for higher education in the Global South, there is a general trend towards globalization in the higher education sector. The resulting need for internationalization and quality assurance of HEIs and study programs worldwide represents a major challenge for higher education in the Global South. The demand for further training in the field of higher education management has been at a high level for years. In view of these developments, higher education management in all its forms has become increasingly relevant in the field of international capacity building in higher education in the Global South. The Dialogue on Innovative Higher Education Strategies (DIES) program, which is jointly coordinated by the DAAD and the HRK and has been funded by the BMZ since 2001, offers various tailored measures —training courses, dialogue events and regional sustainability activities— that foster the competences of university leadership and academic staff and contribute to improve institutional management at HEIs in the Global South. The UN Agenda 2030 and the BMZ's Strategy on Feminist Development Policy serve as political reference frameworks for the DIES program. The DIES funding opportunities are offered in the regions of Africa, Spanish-speaking Latin America, and Southeast Asia, with the objective to promote the professionalization of institutional management processes, the adaptation of study programs to international quality standards and the strengthening of research capacities. "During the different modules of the [DIES] course we developed a Strategic Action Plan with well-defined objectives, indicators, milestones, possible benching points, and actions for our institutions." (*María Alejandra Alquijay Aguilar, Dean of Admissions, Partnership and Collaboration at Universidad del Valle de Guatemala*). What all DIES components have in common is that they pursue a practice-oriented approach, facilitating change by means of developing the skills and competencies of individual members of staff. DIES thereby aims to improve institutional higher education management and align higher education systems with national and regional development goals to contribute to develop stronger and more international HEIs in the Global South in the long term.

4.1. Background

HEIs are playing an increasingly significant role in the Global South. Through the systematic expansion of primary and secondary education, broader sections of the population gain access to higher education. The need for highly qualified workers is rising and investment in tertiary education is increasingly seen as a sustainable growth strategy. However, the expansion of the higher education sector also presents countries in the Global South with new challenges, particularly regarding the financing and management of the higher education system. To make optimal use of the performance and innovation potential of HEIs, there is increasing emphasis on decentralizing university systems and strengthening university autonomy. In return, HEIs must deal more closely with questions of quality assurance, the

relevance of the study courses offered and the efficient use of resources and train their employees to "manage" these requirements accordingly. Even in countries with currently opposing higher education policy movements (e.g., Myanmar or Ecuador), it is important to strengthen capacities in higher education management to ensure the connectivity of the higher education system to the international scientific community through resilient HEIs, even under difficult conditions. Against this background, DIES supports various measures that promote dialogue on current issues of higher education management, strengthen the skills of higher education managers and improve institutional management at HEIs in the Global South.

4.2. Program objectives

In the short and medium term, DIES measures are intended to initiate reforms in higher education management at the institutional or system level. In addition, participants in the DIES program and DIES alumni should be active as multipliers and implement organizational changes at their universities. Finally, another program goal is to establish a professional exchange between the participating HEIs and/or non-university actors.

4.3. Target groups

The DIES program is aimed primarily at middle and senior management level HEI staff in the DIES partner regions in Africa (including North Africa), Southeast Asia and Spanish-speaking Latin America. The participants work in organizational units of HEIs that are of crucial importance for higher education management —be it in administration (e.g., heads of human resources management, directors of quality assurance centres or heads of international academic offices) or in faculty positions (e.g., deans, heads of institutes, etc.).

4.4. Development policy effects and impact

At the impact level, the intended effects of DIES are the contribution to sustainable development and the establishment of efficient and cosmopolitan universities. To achieve this, DIES measures should contribute to improving higher education management and core university processes and lead to better orientation of higher education systems and their actors towards national and regional development goals. At the same time, the program aims to contribute to the internationalization of the HEIs and institutions involved. The UN 2030 Agenda is dedicated to the global challenges outlined at the beginning and holds industrialized, emerging and developing countries equally responsible. The 17 SDGs set the milestones that should be achieved by 2030 as part of a global partnership. SDG4 "Quality Education" underlines the priority importance of equitable and high-quality education (including higher education) for sustainable development and thus represents an important frame of reference for the DIES program. Quality and access to higher education, gender equality and inclusion must be mentioned in this context. But the practical relevance of university education and opportunities for cooperation with non-university actors, e.g., in the university-business sector, also play a key role. The Federal Government's Voluntary State Report states the importance of SDG 4: "Education plays a decisive role in determining people's chances of developing their individual abilities, achieving their professional goals and participating in society." In addition to SDG 4, SDG 17 "Partnerships to achieve the goals" also forms an important reference framework for the DIES program. DIES pursues a partnership approach to

contribute to capacity and competence building in countries of the Global South and to tailor its offerings as closely as possible to actual local needs. This also includes the expertise of partner institutions in the DIES partner regions, with which long-term and close collaborations have been established within the framework of DIES. The focus on the area of higher education management allows a leverage effect on all core university areas in order to contribute to achieving the SDGs through individual competence building and sustainable institutional change processes.

4.5. Program objectives, results and impact

In the short and medium term, DIES measures are intended to initiate reforms in higher education management at the institutional or system level. In addition, participants in the DIES program and DIES alumni should be active as multipliers and implement organizational changes at their home HEIs. Finally, another program goal is to establish professional exchange between the participating HEIs and/or non-university actors. At the impact level, the intended effects of DIES are to contribute to sustainable development and the establishment of efficient and cosmopolitan HEIs. To achieve this, DIES measures should contribute to improving higher education management and core university processes and lead to better orientation of higher education systems and their actors towards national and regional development goals. At the same time, the program aims to contribute to the internationalization of the universities and institutions involved. Quality and access to higher education, gender equality and inclusion should be mentioned in this context.

4.6. DIES portfolio – practice-orientation and intercultural dialogue

DIES comprises two main program lines with training courses and dialogue events designed to promote practice-oriented exchange on higher education management issues in order to strengthen the competencies of higher education managers in the Global South. In addition, the DIES program aims to contribute to the improvement of institutional management at HEIs in the Global South. DIES training courses are offered on different topics for different target groups. DIES dialogue events create forums for regional and supra-regional exchange on current reform topics in higher education management. Beyond that, cross-sectional measures are offered in the areas of alumni work and regional sustainability activities. The National Multiplication Training (NMT) gives DIES alumni the opportunity to pass on the knowledge they have acquired from DIES training courses in their home countries, thereby increasing the impact and sustainability of the courses. The regional sustainability activities are generally designed and implemented with regional partner institutions. The aim is to permanently anchor the capacities built up through DIES measures in the region and to jointly develop ideas and concepts for new projects and joint activities. The DIES training offerings are designed as intensive, multi-part training courses for different target groups in higher education management. They consider the challenges that higher education managers face at administrative or departmental level in the Global South in a needs- and target group-oriented manner. A key goal is for participants to develop the leadership and management skills necessary to conduct their administrative tasks. The DIES training courses thus combine an individual and an institutional approach with the aim of building sustainable Higher education management capacities. In addition, participants receive support for the duration of the course in the development and implementation of transfer projects at their home HEIs. The DIES training courses thus combine an individual and an institutional approach,

with the aim of building sustainable higher education management capacities.

The DIES portfolio includes the following courses:

International Deans' Course (IDC) in Africa, Southeast Asia, and Latin America

This training course on faculty management is aimed at newly elected deans and vice-deans. The multi-component course is based on a blended-learning approach and includes modules on strategic, financial, research, and higher education management, quality assurance and internationalization. The courses for Africa and Southeast Asia are run jointly by Osnabrück University of Applied Sciences and the Centre for Higher Education (CHE) in collaboration with international trainers and experts. The Latin American edition is jointly organized by Saarland University and the University of Alicante (Spain) in collaboration with international trainers and experts.

University Leadership and Management Training Program (UNILEAD)

UNILEAD is aimed at prospective young managers in higher education institutions from Africa, Southeast Asia, Latin America, and the Middle East who are employed in central administrative bodies at their universities. The course takes a blended-learning approach and covers three modules on the topics of Project Management, Strategic Management & Academic Leadership and Human Resource Management. The course is run by Carl von Ossietzky University of Oldenburg.

Management of Internationalization (MoI)

The DIES training course on the management of internationalization targets the heads of international offices and university managers responsible for coordinating international activities at their university. In this three-part course at the Leibniz University Hannover, universities in Africa, Latin America and Southeast Asia are given support to improve the management of key tasks in an international office. The main topics of the course are internationalization, strategic management, management of partnerships, mobility at home and abroad, as well as counselling and marketing.

Training on Internal Quality Assurance (TrainIQA)

TrainIQA targets designated Quality Assurance managers at Higher Education Institutions in Anglophone and Francophone Africa and Southeast Asia (ASEAN) with proven experience in their field. Its overall aims are contributing to the institutional development of the local universities and enhancing the dialogue between German and involved HEIs in the target regions as well as among the local HEIs themselves. The modular course is based on a blended-learning approach and conducted by the Center for Quality Development at the University of Potsdam along with regional partners.

National Multiplication Trainings (NMT)

In the frame of the National Multiplication Trainings (NMT), the University of Potsdam has been offering support since 2017 for DIES alumni around the world in running independent, self-designed peer-to-peer training measures and multiplication activities. All training components ought to address those issues and challenges that are most relevant in the respective regional or national context. The NMTs are designed and implemented individually by the respective DIES alumni. All courses are offered in a blended-learning format consisting of different modules and combine practice-orientation and intercultural dialogue.

4.7. Looking ahead – New trends for DIES in higher education management

One of the current trending topics in higher education and beyond is Artificial Intelligence (AI) and how AI will change our world. In the DIES context all courses were converted to a completely online format during the coronavirus pandemic. This has led to a major boost in knowledge relating to digitalization on all sides. Nevertheless, all courses have returned to a blended learning format, albeit with a much more pronounced digital component. Of course, this also has a background regarding the ongoing sustainability discussions. As a reminder, we are talking about training courses with participants from three regions of the world.

The importance of AI for higher education management may also become a topic for DIES training courses in the medium term. This year, as a first small initiative, a DIES dialogue event will be held on the topic of 'Digitalization and AI: Opportunities and risks for higher education teaching and learning'. With the BMZ's strategy for feminist development policy, a second major future topic has been set for the DIES program, which we have already taken up: Female Leadership. A new DIES training course on the topic for female vice presidents is planned for 2025 to specifically strengthen the representation and access to resources of women in HEI top management and to initiate sustainable change processes at the participating HEIs. The DIES program thus remains true to its claim of constantly developing new innovative approaches for higher education management through dialogue.

5. Conclusions

The globalization of higher education is forcing universities to develop efficient management and quality assurance structures in order not to fall behind in the global competition for resources (funding, highly qualified researchers, and students). This is particularly true for HEIs in the Global South, where conditions are especially challenging, and the environment is developing incredibly dynamically. The DIES program jointly coordinated by the DAAD and the HRK, addresses precisely this need for capacity building in higher education management. Since 2001, DIES has supported more than 7,000 participants in training courses and projects. After the completion of the training, the participants are DIES alumni and share their acquired knowledge with HEIs in their home countries and regions, thus multiplying the impact at a national level. A partnership-based and practice-oriented approach which combines individual competences building and institutional effects together is characteristic for all DIES measures. The UN Agenda 2030 and the Strategy for Feminist Development Policy of the BMZ serve as a political framework for the program. The result-oriented monitoring system is a key factor in the planning process of new projects and in the continuous monitoring of the results and impact of the program. SMART indicators allow the DAAD to closely monitor the results of DIES and to draw conclusions about the effectiveness of the implemented activities and to initiate changes if necessary.

This monitoring system is supplemented by in-depth evaluations, which provide a deeper insight into the effects of the program. However, all this data would only be of limited use if there were not a continuous consultation process with stakeholders to ensure that the activities carried out are closely aligned with local and regional needs. Some results from the DIES tracer study (completed in 2024) underline the effectiveness of this approach. In total, all DIES alumni who participated in training courses between 2010 and 2020 were invited to take part in the survey. The response rate was over 40%, and a total

of 409 questionnaires were analyzed. Among the participants, 98% of respondents confirm that they use the knowledge they have acquired in the training courses, thus proving the relevance of the DIES measures. Regarding the intended institutional higher education management capacity building, it is a strong indicator that 65% of respondents state that they were able to implement their transfer project to a large or very large extent at their home HEI. This number shows that despite of internal (governance structure, lack of funding) and external (lack of HEI autonomy, political crises) factors that cannot be influenced more than half of the DIES training course alumni initiated structural change processes at their home HEIs thus contributing to the development of the whole institution. The high number of applications for the DIES training courses that exceed the available places many times over, emphasizes that there is an ongoing need for practice-oriented capacity building in higher education management in the Global South, with new topics such as Female Leadership or the importance of KI for higher education emerging.

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2.4 Erasmus+ capacity building for higher education. The European Union approach

The Erasmus+ Capacity Building for Higher Education (CBHE) action, initiated by the European Union, focuses on modernizing, internationalizing, and increasing the accessibility of higher education across partner countries outside the EU. This action has played a pivotal role in advancing educational systems by aligning them with contemporary global standards through projects that span legislative reforms, quality assurance improvements, and governance enhancements.

The article discusses the CBHE's strategy to foster intercultural understanding and cooperation between European institutions and those around the world. Through a variety of initiatives launched over decades —starting with the Tempus program and evolving through Erasmus Mundus to the current Erasmus+ framework— the program has significantly contributed to the educational and societal development by addressing systemic educational challenges and promoting equity and inclusion.

By engaging a wide range of stakeholders in these educational transformations, the Erasmus+ CBHE action ensures that the reforms are comprehensive and sustainable, thereby preparing global citizens to meet the challenges of a dynamic world. The ongoing commitment to enhancing educational standards globally not only underscores the EU's role in international development but also ensures continued improvement in educational access and quality in the years to come.

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1. Introduction

Education has always been considered one of the cornerstones of international development. Building human capacities has proven a useful tool in alleviating global inequalities. Given the consequences —poverty, wars and migration among many others— there is an urgent need for international organizations as the European Union to act. In this general framework, the EU has traditionally supported the modernization of education policies, systems and institutions, to help improve the lives of millions worldwide. It supports the global exchange of ideas and knowledge to improve the overall quality of education on offer. Building the capacities of higher education institutions helps provide students with an education that is more aligned to the needs of the labor market and society. It better prepares them to tackle the challenges of the modern world. The EU supports the internationalization of higher education institutions around the world. The resulting human interactions promote greater intercultural awareness and understanding between people from

different countries and cultures. It broadens their minds to different ways of being, acting, and seeing. It promotes greater tolerance and less prejudice —more necessary than ever.

The EU funds capacity building projects in higher education as a means to reach these goals. These are transnational cooperation projects between higher education institutions in Europe (so-called 'program countries'[2]) and around the world ('partner countries'[3]). They work together in a project partnership to bring about change. The focus of the projects can be at grass-roots level, working directly with professors, administrative staff and students. Building their skills, knowledge and expertise leads to a bottom-up approach to change in higher education institutions. EU capacity building projects can also work at a higher level with rectors and governing bodies managing the institutions, to introduce new quality assurance systems and management processes throughout the higher education institution. EU capacity building projects also work at national level with Ministries of Higher Education. These projects focus on reforming policies in areas such as quality assurance, the recognition of degrees or qualifications frameworks. Whatever the level, the aim of these capacity-building projects is ultimately to improve the quality of education for its key beneficiaries: the students.

2. Three decades of EU-sponsored higher education development: a brief review of capacity building programs

Over the past three decades, the European Union has consistently funded capacity building actions in higher education, targeting the enhancement of educational quality and relevance within partner nations. These programs were designed to bolster cooperation among EU Member States and these countries, and to facilitate people-to-people contacts, mobility, and academic collaboration. Reflecting shifts in the EU's external development policy priorities, the changing global higher education environment, and the specific requirements of partner countries, these initiatives have undergone significant evolution. The following provides an overview of the principal stages and specific programs implemented during this period.

1990s: Initial Endeavours and the Tempus Program

Initiated in 1990, Tempus (Trans-European Mobility Scheme for University Studies) represented one of the European Union's foundational efforts to bolster higher education in partner nations, particularly targeting the post-socialist states of Eastern Europe to support their transitions towards market-driven economies and democratic governance. As the program matured, it extended its reach to include the Western Balkans, the Mediterranean area, Central Asia, and subsequently, the Eastern European Neighbourhood and Russia. The focus of Tempus projects was primarily on curriculum modernization, governance enhancement, and the building of administrative capacities within higher education institutions.

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2   Program countries include all 27 EU Member States plus additional countries like Iceland, Liechtenstein, North Macedonia, Norway, Serbia, and Türkiye that are part of the Erasmus+ Programme.

3   Partner countries are third countries not associated to the Programme usually are regrouped according to the EU's external action instruments, namely the Neighbourhood, Development and International Cooperation – Global Europe Instrument (NDICI-Global Europe) and the Instrument for Pre-Accession Assistance (IPA III).

2000s: Erasmus Mundus and Broader Capacity Development. Erasmus Mundus (2004–2013)

Though best known for its role in fostering international master's programs and individual student mobility, Erasmus Mundus additionally played a crucial role in capacity building. It did so through fostering partnerships and projects that aimed to elevate the quality and global appeal of European higher education. During this era, Tempus underwent further development, broadening its inclusion of partner nations and placing a greater emphasis on institutional and systematic higher education reforms. These were aligned increasingly with the principles of the Bologna Process and the framework of the European Higher Education Area.

2010s: Integration of Efforts under Erasmus+. Erasmus+ (2014-present)

The inauguration of Erasmus+ in 2014 marked a significant consolidation of EU educational initiatives, merging elements of both Tempus and Erasmus Mundus into a unified, comprehensive framework. The Capacity Building in Higher Education (CBHE) component of Erasmus+ is designed to advance the modernization, accessibility, and internationalization of higher education systems in non-EU partner countries. Typically, these projects involve collaborative efforts among consortia composed of institutions from both EU Member States and partner countries, with objectives focused on enhancing curricula, governance, and management practices, thereby fostering robust academic cooperation.

3. Capacity Building in Higher Education action. The EU approach

The Capacity Building in Higher Education (CBHE) action is included under the umbrella of the Key Action 2 of the Erasmus+ Programme (Cooperation among Organisations and Institutions). The following is a summary of the action, extracted from the Erasmus+ Programme Guide (2023).

3.1. Scope and objectives of EU Capacity Building projects

In the framework of the Erasmus+ Programme, EU Capacity building projects are transnational cooperation projects based on multilateral partnerships, primarily between higher education institutions (HEIs) from Programme and eligible Partner Countries. They can also involve non-academic partners to strengthen the links with society and business and to reinforce the systemic impact of the projects. Through structured cooperation, exchange of experience and good practices and individual mobility, capacity-building projects aim to:

– Support the modernization, accessibility and internationalization of higher education in the eligible Partner Countries.

– Support eligible Partner Countries to address the challenges facing their higher education institutions and systems, including those of quality, relevance, equity of access, planning, delivery, management and governance.

– Contribute to cooperation between the EU and the eligible Partner Countries (and amongst the eligible Partner Countries).

– Promote convergence with EU developments in higher education.

– Promote people-to-people contacts, intercultural awareness and understanding.

These objectives are pursued in the eligible Partner Countries, through actions that:

– Improve the quality of higher education and enhance its relevance for the labour market and society.

– Improve the level of competences and skills in HEIs by developing new and innovative education programs.

– Enhance the management, governance and innovation capacities, as well as the internationalization of HEIs.

– Increase the capacities of national authorities to modernize their higher education systems, by supporting to the definition, implementation and monitoring of reform policies.

– Foster regional integration and cooperation across different regions of the world through joint initiatives, sharing of good practices and cooperation.

3.2. Types of activities and strands

Capacity building projects typically focus on one of three main activities: curriculum development activities, modernization of governance and management of HEIs and systems or strengthening of relations between higher education and the wider economic and social environment.

Organizations can choose from three project strands:

– Strand 1: Fostering access to cooperation in higher education, which are designed to cater for newcomers to the program, less involved countries/regions, and for disadvantaged targeted groups (i.e., through modernization of management/administrative capacity, increase of the accessibility of students/staff with fewer opportunities, etc.

– Strand 2: Partnerships for transformation in higher education, which aim to have a large and wider impact on innovation, university/business relations and institutional governance.

– Strand 3: Structural reform projects, which focus on the macro level of policy reforms required to foster internationalization and require the involvement of education authorities and ministries.

3.3. Priorities of the program

The main priorities of the action are the following:

Green Deal

Higher Education systems are crucial for supporting the Green Deal, through developing knowledge, competences, skills and values, and potentially enabling a profound change in people's behavior. In this context, priority will be given to projects that aim to:

– Support the modernization of economies, making them more competitive and innovative, while ensuring a just green transition, stimulating green jobs and paving the way to a climate neutral society with a gender-transformative approach, not exclusively focusing on male-dominated fields.

– Provide applicable answers to environmental challenges, including urban and rural development, green and efficient energy, health, water and waste management, sustainable transport, desertification, biodiversity loss and sustainable use of natural resources, strengthening agri-food value chains at national and regional level.

– Increase climate awareness, sustainability and resilience, in all sectors of society and economy.

– Accelerate the transition towards a just green and circular economy and tackle regional and transregional environmental challenges, in particular by strengthening links with the private sector and by enhancing the knowledge and green skills needed for a modern work force.

– Develop competences in various sustainability-relevant sectors, green sectorial skills strategies and methodologies, as well as future-oriented curricula that better meet the needs of individuals.

Digital transformation

Raising the quality and inclusiveness of education through digital technologies, whilst also enabling learners to acquire essential digital competences and sector-specific digital skills is of strategic importance for the EU and many countries of the world. The higher education system is increasingly impacted by the digital transformation, but also has an essential role to harness its benefits and opportunities and tackle digital divides. In this context, priority will be given to projects that aim to:

– Support the development and uptake of digital skills to make the digital transformation as comprehensive and nclusive as possible.

– Help to bridge the digital divide by promoting digital literacy, digital entrepreneurship, gender-sensitive programs and strategies, specifically in remote and rural areas and vulnerable communities.

– Develop connectivity solutions empowering citizens through distance learning and teaching innovations.

– Support the digital economy and reinforce scientific, technical and innovation capacities by fostering links between education, research and business in the area of digitalization, including through projects related to data infrastructure, data management and SME/business digitalization.

– Improving digital education eco-systems, by reinforcing digital skills and competences of teachers and academic staff.

Integration of migrants

Education and training systems play a key role in addressing the challenges of migration as well as unlocking migration's benefits. They help newcomers acquire necessary labor market skills, understand the cultures of the host country and help the native population with being open to diversity and change. In this context, priority will be given to projects that aim to:

– Support recognition of degrees and credentials and contribute to a regional credit transfer system to build regional higher education areas and intra-regional connectivity.

– Granting access to education to migrants and displaced persons in receiving countries, including language education and scholarships.

– Develop holistic models that address the unique needs of refugee students and ensure access to education with a strong support for academic, social, physical and psychological development.

Governance, peace, security and human development

Commitment to the rule of law, human and fundamental rights, equality, democracy and good governance are the bedrock of stable, fair and prosperous societies. This action can help lay the foundations for strengthening active citizenship and building specific expertise in these areas. CBHE projects can help identify long-term solutions to problems of weak governance in higher education. In this context, priority will be given to projects that aim to support academic cooperation and initiatives in the following areas:

– Governance, rule of law, democracy, fundamental values, protection of human rights, and the fight against corruption.

– Fight against discrimination, promote media literacy and the role of an independent media and civil society.

– Peace and security, human development, intercultural dialogue, respect for diversity, tolerance, gender equality, women and youth empowerment.

– Social, economic and cultural rights, health and well-being.

Sustainable growth and jobs

Higher education is needed to build skills for life and work. Higher education also supports employability and is a precondition for sustainable growth. A key objective is to tackle the existing mismatch between education outcomes and labor market demands, including the development of work-based learning. In this context, priority will be given to projects that aim to:

– Foster the offer and uptake of Science, Technology, Engineering, Arts and Maths (STEAM) skills —and related gender inclusiveness— with linkages with the just green transition towards climate neutrality.

– Promote youth and women entrepreneurship, develop innovation hubs and start-ups to help generate local employment opportunities and prevent brain drain.

– Strengthen links between the academic sector, research and business to address current and future skills needs, primarily entrepreneurship, and skills needed for value chains development on national, regional level.

– Support the upskilling of the young population.

– Strengthen links with the labor market to promote jobs creation, job opportunities and private sector involvement in skills-development.

– Develop primary and secondary teacher education and in-service trainings to address structural causes of school dropouts and counter persisting economic and gender inequalities.

3.4. Aligning CBHE with the EU's Global Gateway Initiative

The European Union's Global Gateway is a strategic framework aimed at boosting global connectivity and implementing EU policy priorities in partner countries through infrastructure development, digital transformation, and fostering sustainable growth. This initiative is pivotal in ensuring that the capacity-building actions within the Erasmus+ program are synergistic with the EU's overarching external policies.

The Erasmus+ Capacity Building for Higher Education (CBHE) projects are designed not only to enhance educational standards but also to contribute significantly to the Global Gateway's goals. By modernizing higher education systems and fostering international collaboration, these projects help build robust educational infrastructures that are aligned with the EU's objectives for global development.

Specifically, the Global Gateway is reflected in the Erasmus+ Programme Guide under the award criteria for CBHE. These guidelines ensure that funded projects are coherent with the priorities set out by the Global Gateway, emphasizing the importance of educational reforms that support sustainable and inclusive growth, digital and green transitions, and connectivity improvements at the country level.

– By incorporating the principles of the Global Gateway, CBHE projects aim to:

– Enhance the quality and relevance of higher education to meet global and local labor market needs.

– Foster innovation and governance improvements in higher education institutions.

– Promote equitable access to education, addressing social and economic disparities.

– Support sustainable development goals through education that emphasizes green and digital skills.

Integrating the Global Gateway's strategic priorities into the CBHE framework not only strengthens the impact of these educational initiatives but also ensures that they contribute to broader EU objectives, fostering a cohesive and sustainable approach to global educational development.

4. Enhancing higher education systems: key focus areas of EU capacity building projects

The European Union's capacity building actions in higher education have consistently emphasized a holistic approach to improving higher education systems in partner countries. These initiatives aim not only to elevate the academic standards but also to ensure that higher education institutions contribute effectively to their societies and economies. Below is an expanded discussion of the key focus areas.

Curriculum development and modernization

Efforts in this area aim to align higher education curricula with global standards and local needs, ensuring that programs are both relevant and forward-looking. This involves integrating new scientific and technological advancements, enhancing the interdisciplinarity of programs, and incorporating skills that are critical in the modern workforce such as critical thinking, creativity, and digital literacy. One interesting example in this area was the HiCure project (Development of Health Informatics integrated curricula in Computing and Health-oriented undergraduate degrees / 561776-EPP-1-2015-1-PS-EPPKA2-CBHE-JP). In the framework of the project, the four HiCure Jordanian and Palestinian partner universities successfully established 12 competence-based undergraduate courses integrating 60 detailed case studies. During the life of the project, the developed HiCure courses were taught 67 times in all the partner universities and the total number of students who benefited from them is quite remarkable (1603 students). Alignment with the Bologna principles is visible in the use of ECTS for each of the established courses.

Quality assurance and accreditation

Quality assurance and accreditation processes are vital to maintaining high educational standards and fostering trust in higher education qualifications both domestically and internationally. EU programs

support the development of robust quality assurance systems that include both internal and external review mechanisms, adherence to international standards, and continuous improvement practices in teaching and learning. The HICA project (Harmonization and Innovation in Central American Higher Education Curricula: Enhancing and Implementing the Regional Quality Framework / 561531-EPP-1-2015-1-ES-EPPKA2-CBHE-SP) could be included in this area. As part of the project, Central American universities networked and reinforced their regional cooperation capacity. Moreover, associations and the Ministries of Education will benefit from a regionally agreed tool that they can use for quality assurance and teaching reforms for their own systems as well as for the recognition of studies abroad.

Governance and management

Improving governance and management in higher education institutions is another critical area. This includes enhancing the capabilities of leadership through training and policy development, improving financial management, and ensuring that institutions are responsive to changes in the educational and social context. A good example in this area was the TACTIC project (Through Academic Cooperation Towards Innovative Capacity / 561653-EPP-1-2015-1-CZ-EPPKA2-CBHE-JP). The project contributed to the modernization and reform of the management system within HEIs and to strengthen the competencies of top and middle managers of universities in Cambodia, Mongolia and Vietnam, so that the universities can face the new challenges brought by globalization and the knowledge society. Staff Advisory Offices (SAOs) have been established at all partner universities as centers of a modern approach in solving managerial problems.

Higher education and society

EU initiatives often focus on how higher education can serve society more broadly, addressing the development of graduate employability skills, teacher training, and creating effective linkages with industry and community. This focus area aims to enhance the contributions of higher education to social and economic development through community service, lifelong learning, and active engagement with local and global challenges. A relevant example in this category was the EDULIVE project (Transforming higher education to strengthen links between universities and the livestock sector in Argentina and Peru / 561541-EPP-1-2015-1-AT-EPPKA2-CBHE-JP). The aim of EDULIVE was to strengthen the cooperation between Latin American universities and all relevant livestock sector stakeholders to ensure they offer demand-driven higher education programs and to increase their capacity in responding to the innovation needs of this sector. The project made significant efforts to involve stakeholders in the project activities, in particular with companies working in the field of Animal Science. This collaboration has been reinforced thanks to the organization of a series of workshops with private companies, farmers' associations, research organizations and NGOs in order to discuss and develop possible cooperation mechanisms in teaching, research and extension services.

Digitalization and innovative educational technologies

Recognizing the transformative impact of digital technologies on education, EU-funded programs encourage the adoption of innovative educational technologies. This includes the use of learning management systems, online learning platforms, and digital tools that enhance teaching and student engagement, as well as preparing students for a digitalized world. The ACADEMICA project (Accessibility and Harmonisation of Higher Education in Central Asia through Curriculum Modernization and Development / 561553-EPP-1-2015-1-BG-EPPKA2-CBHE-JP) could be included in this area. This project modernized university curricula in Kazakhstan, Uzbekistan and Turkmenistan, by integrating ICT based methods and

contents. Innovative e-learning courses were developed for HEI staff to equip them with the necessary transversal competences. The courses are available in a virtual learning environment, where users also exchange information, experiences and educational resources.

Sustainable development and climate change

Given the global challenges of sustainability and climate change, EU programs are increasingly prioritizing education that supports sustainable development. This includes integrating sustainability into curricula, promoting research on sustainable technologies and practices, and preparing students to contribute to a sustainable future. An interesting example in this area was the UNICAM project (Implementing quality of education & training of the young Universities in rural area of Cambodia / 562006-EPP-1-2015-1-ES-EPPKA2-CBHE-JP). A comprehensive Master Curriculum in Sustainable Agriculture (MSA) has been successfully accredited and launched at three universities in rural areas in Cambodia. Overall, the project improved the academic capacities of the Cambodian universities in terms of designing curricula according to new standards, training of lecturers and new generations of master students. In a more extensive way, the project successfully promoted international cooperation in the field of sustainable agriculture.

Inclusion, equity, and access in higher education

Promoting social inclusion, equity, and access to higher education for all students, including disadvantaged and marginalized groups, is a cornerstone of EU capacity building efforts. Programs focus on removing barriers to access and participation in higher education through scholarships, support services, inclusive policies, and outreach programs aimed at increasing diversity within higher education institutions. The MUSE project (Disability and modernity: Ensuring quality education of disabled students / 561745-EPP-1-2015-1-CL-EPPKA2-CBHE-JP) fully fits in this category. The MUSE International Network supported regional cooperation, and is still active in the international, Inter-Latin-American framework on disability issues. The network promotes and supports all kinds of initiatives aimed at establishing public policy for the inclusion of students with disabilities in HEIs, and at promoting employment. The fact that institutions from other countries can join the network and broaden the exchange of good practices added value to this cooperation. In particular, the role of Chile (the coordinating institution is from Chile) in the development of the region is essential, because its economic and political stability could contribute to development in other neighboring countries.

5. Structural impact of the Erasmus+ CBHE projects. The SPHERE report

The European Commission and the Education, Audiovisual and Culture Executive Agency (EACEA) commissioned the SPHERE consortium, composed of the University of Barcelona and the European University Association, to conduct an assessment. This evaluation focused on the impact of the Erasmus+ Capacity Building in Higher Education (CBHE) initiative, specifically examining Structural Projects, on the higher education systems within Central Asia, the Eastern Partnership, Russia, the Southern Mediterranean, and the Western Balkans. The request for this study coincided with the conclusion of the Erasmus+ programming period from 2014 to 2020, as preparations were being made to develop future actions for the 2021-2027 period.

The report evaluated the influence of these projects during the 2014-2020 programming period, with an eye towards shaping future actions for 2021-2027. The focus was particularly on Structural Projects aimed at reforming higher education systems at national or regional levels in various regions including Central Asia, Eastern Partnership countries, Russia, the Southern Mediterranean, and the Western Balkans.

The report reveals that these projects have led to tangible impacts in several key areas:

1. Legislative Reforms: There have been notable reforms or amendments to national legislation concerning higher education.

2. Quality Assurance Systems: Significant advancements have been made in developing quality assurance systems.

3. Bologna Process Alignment: There has been greater alignment with the Bologna Process which enhances compatibility and comparability of higher education systems across Europe.

In addition to these direct benefits, there were structural changes at institutional levels such as the introduction of new structures, strategies, and policies that are in line with broader educational reforms. Moreover, many of these impacts were scaled up through dissemination to other national or regional bodies or by inspiring related projects and ventures.

The intangible impacts, though harder to measure, included enhanced staff development and human resource pools, increased research capacity, advancements in internationalization, and attitudinal shifts that underpin these developments. However, the report points out challenges in measuring these impacts accurately, as many ministries lacked the tools to do so, and often impacts were not easily attributable to single projects due to the influence of various overlapping national and international initiatives.

One significant finding is the cumulative effect of multiple EU projects over time. For example, prior Tempus program projects often laid the groundwork for later Erasmus+ initiatives, facilitating gradual systemic change. This historical perspective highlights how successive projects contribute to a broader evolution in higher education systems.

The report also emphasized the importance of conducting ex-post impact assessments to gain a clearer understanding of the long-term effects of these projects on the policy landscape and institutional practices. Additionally, it suggests that more flexibility in project design could enhance the effectiveness of future initiatives, recommending a reduction in administrative burdens and a more inclusive approach to stakeholder engagement in project planning and implementation.

Overall, the report underscored the substantial contributions of Erasmus+ CBHE projects to the development of higher education systems in partner countries, advocating for improvements in project assessment and implementation to amplify their structural impact further.

6. Conclusions

In the European Union's concerted efforts to enhance higher education systems globally through the Erasmus+ Capacity Building for Higher Education (CBHE) program, a significant evolution has been observed. The program, integral in fostering the development of higher education across various regions including Central Asia, the Eastern Partnership, the Southern Mediterranean, and the Western Balkans, emphasizes modernization and internationalization.

The Erasmus+ CBHE program has been pivotal in transforming education systems by aligning them with contemporary global standards and integrating them more deeply into the European educational framework. Through its focus on various strategic areas such as legislative reform, quality assurance, and governance enhancement, the program has facilitated substantial educational reforms. This is evidenced by improved legislation related to higher education, enhanced quality assurance systems, and increased adherence to the Bologna Process, which aims to harmonize European higher education.

Furthermore, the program's impact extends beyond infrastructural and policy modifications. It fosters a broader educational cooperation between EU and non-EU countries, promoting intercultural exchange and understanding which are vital in today's globalized world. This is achieved through structured partnerships involving both academic and non-academic institutions, which work collaboratively on projects that not only modernize educational systems but also address key challenges such as equity of access, relevance to the labor market, and institutional governance.

As Erasmus+ plans for future programming periods, it continues to prioritize flexibility and inclusiveness in project design to effectively respond to evolving educational needs. The program's commitment to enhancing educational quality and relevance across the globe underscores its role as a cornerstone in international educational development, advocating for a holistic approach that incorporates green initiatives, digital transformation, and inclusivity.

Overall, the Erasmus+ CBHE program demonstrates the EU's strategic commitment to leveraging education as a tool for social and economic development, preparing global citizens to tackle the challenges of the modern world through enhanced cooperation, modernized systems, and shared knowledge and values. This ongoing effort is crucial for sustaining the impact of higher education reforms and for ensuring that these systems continue to contribute positively to global development.

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EVALUATION OF HIGHER EDUCATION CAPACITY BUILDING PROGRAMS AND PROJECTS

Contents

3.1. Framework for evaluating higher education capacity building initiatives in developing regions

This chapter explores the evaluation of Higher Education Capacity Building (HECB) initiatives in developing countries. It outlines the distinction between monitoring and evaluation (M&E), emphasizing their unique roles within project management and assessment. The publication reviews literature highlighting the scarcity of systematic evaluations in higher education investments in developing regions. It presents a conceptual framework addressing the challenges of evaluating HECB, including data accessibility, varied program types, and constrained budgets. The document categorizes HECB interventions by capacity level —individual, organizational, systemic— providing a detailed evaluation framework and identifying specific challenges at each level. Conclusively, it differentiates between external and impact evaluations of HECB interventions, focusing on their scope, purpose, and methodologies. This comprehensive approach aims to enhance understanding and effectiveness of HECB evaluations in fostering development.

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1. Background

This publication is primarily devoted to discussing different aspects of HECB initiatives within developing nations. This specific chapter is focused on specialized evaluations related to these initiatives, and this introduction aims to provide a background to the broader field of evaluation, aiming at relating these concepts as closely as possible to the context of higher education capacity building in developing countries.

Evaluation is usually linked with Monitoring. Indeed, the expression Monitoring and Evaluation (M&E) might suggest that these terms are synonymous or can be used in place of one another; however, recognizing their multiple differences is crucial for their proper application. As outlined by Ubels et al. (2010), monitoring constitutes a systematic and routine evaluation of a project's progression over time. Within the context of a project or program, the monitoring of capacity building undertakings is a component of the broader project management functions. It is generally executed by personnel who are consistently engaged with the project's daily operations. This task typically involves the accumulation of both quantitative information (e.g., the number of attendees at a training event and the financial outlay for the said activity) and qualitative information (e.g., evaluations from those training

events and interviews with the attendees). It is common practice for donors to provide templates for monitoring reports that can be utilized to document and oversee both the concrete and abstract deliverables of a project.

Ubels et al. (2010) characterize evaluation as the structured and formal process used for the appraisal of work and the generation of feedback. In the context of a project or programme, the evaluation of capacity building activities involves the intermittent analysis of, for instance, the relevance, effectiveness, efficiency, or impact of the activities in relation to their intended purpose and goals. This process often encompasses the review of reports and outputs, and may extend to include on-site inspections, interviews, and other forms of direct engagement. Evaluations are typically carried out by the donors or by independent specialists, guided by detailed Terms of Reference (ToR) or the contractual stipulations of the programme.

For academic clarity, it would also be convenient at this point to delimit and define the terms "program" and "project", which are often confused in this field of study. Following the Evaluation Methods for the European Union's External Assistance (EC 2006):

- A program is a set of simple, homogenous interventions grouped together to attain global objectives.
- A project is an indivisible operation, delimited in terms of schedule and budget, and usually placed under the responsibility of a single operator.

Thus, programs are made up of projects with a similar approach to a predefined framework, and this publication is focused on HECB interventions in developing countries, which include both programs and projects. In the previous chapter, Donor Agencies described how do they plan and execute HECB programs in developing countries. And in Chapter 4 there are several examples of HECB projects in developing countries.

2. Review of related literature

The MIHED Conference (Measuring Impact of Higher Education for Development, LIDC, 2012) established that systematic evaluations and the application of statistical and economic methodologies in assessing higher education investments in developing countries are noticeably scarce (Boeren, 2005; ACU, 2012). Additionally, the domain of investments extends to capacity building initiatives which, as later noted in this chapter, are acknowledged to be 'difficult to measure'. Recent articles (Bich Khuyen Dinh et al., 2023) confirm a lack of empirical studies exploring the effectiveness and impacts of HECB interventions.

The majority of existing publications in this specific area —evaluation of HECB in developing countries— consist of an evaluation of programs or projects (Escarre, 2015). These evaluations are organized by the donor agencies or by the project coordinators, and they could usually be found in their websites, for promoting transparency and accountability. On other occasions, the evaluation reports are not published and are used internally by the donor agencies.

Besides that, it is very complex to find relevant exercises comparing Higher Education Capacity Building (HECB) schemes around the world. Probably one of the most relevant in this area was funded by the German Rectors' Conference (HRK, for its acronym in German) and the German Academic Exchange

Service (DAAD), taking advantage of the tenth anniversary of the IDC Programme[1] in 2017. *The study is called State of Play: Higher Education Management Training Schemes in the Field of Development Cooperation* (Rumbey et al., 2017).

The document reviewed the Dialogue on Innovative Higher Education Strategies (DIES) program, initiated by the DAAD and the HRK to enhance higher education management in developing countries. It focused on practical training for managerial staff and facilitates regional exchange on university management reforms. The study evaluated global higher education management training, identifying key players, training types, effectiveness, and challenges. It concluded with insights on the need for coordinated, evidence-based, and innovatively funded training programmes to meet the growing demand for higher education management training in the international development context.

3. Conceptual framework for evaluating HECB in developing countries

Evaluating HECB efforts in the developing world poses several challenges due to limited data accessibility, constrained evaluation budgets, and a variety of program types. Nonetheless, the inherent long-term nature of capacity building does not justify the absence of assessments (UNDP, 2010). It is imperative for funders to validate that their investments are effectively enhancing the higher education framework within these nations.

Moreover, the proof of this progress must be transparent to all stakeholders, including those who may not grasp the intricacies of international development. This presents an initial dilemma that encompasses:

- The responsibility of donors to account for their contributions (Ortiz & Taylor, 2009).

- The obstacles faced by recipients and practitioners in applying traditional cause and effect scrutiny to capacity building. This complexity arises because capacity building is an ongoing, non-linear process, and the benefits to the involved parties may only become apparent towards the conclusion of the endeavour (Simister & Smith, 2010).

However, data accessibility and digitalization are providing an opportunity to the evaluation of HECB initiatives in developing countries (ECLAC, 2021). While accessing data remains a challenge, there has been significant progress in digital technologies that facilitate data collection, analysis, and sharing. The use of mobile technologies, cloud computing, and big data analytics has improved the capacity to gather and analyze data from remote and underserved areas.

In order to facilitate the evaluation process, Ortiz & Taylor (2009) proposed to breakdown by type of capacity building intervention for successfully measuring those actions. The more specific the assessment's focus, the more accurate results will be obtained. Escarre (2015) proposed the following taxonomy and evaluation strategies for HECB in developing countries, considering the capacity levels already described in the introduction (Chapter 1. Introduction, Table 1.2.1).

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[1]   The International Deans' Course (IDC) is part of the DIES program (Dialogue on Innovative Higher Education Strategies) offered by the German Academic Exchange Service (DAAD) in cooperation with the German Rectors' Conference (HRK), and the Alexander von Humboldt Foundation. (AvH https://www.international-deans-course.org/home

Table 3.1.1. **Types of HECB interventions in developing countries by capacity level, evaluation framework and challenges**

Capacity Level	Evaluation Framework	Challenges
Individual	- Tracer studies are usually applied to assess program/project effects and impact. - In-depth studies may consider variables like gender, scientific publications or career developments (job changes), although they're not common practice. - Qualitative methods are preferred over quantitative, using surveys, interviews, and case studies.	- Low alumni response rates to surveys challenge the accuracy of these studies. - Studies typically lack further research to assess impact across different levels and lack employer participation in assessments (Creed et al., 2012). - Cost-benefit analyses are rarely conducted, with no evidence of rate of return methodologies in reviewed programs. - Widespread absence of evidence for donors' capacity building investments outcomes, as a British Council and DAAD (2014) study on global student mobility confirms.
Organizational **Systemic**	- Evaluations are often conducted by external experts based on frameworks provided by donors, including criteria (DAC[1] criteria usually), evaluation questions, etc. - Data sources include call documents, project documentation, monitoring data, and questionnaires, supplemented by interviews and field visits. - Evaluations seek evidence of know-how transfer, course development, and sustainability, with some outcomes being tangible and others intangible, such as policy modernization.	- Evaluation quality depends mainly on the evaluators' expertise, theoretical framework, time, and budget. - The Logical Framework Approach is commonly used, despite its known limitations (Gasper, 2000): - There is a notable lack of focus on cost analysis and effectiveness in hese evaluations, largely due to gaps in monitoring systems.

Source: Escarré (2015).

[1] DAC or OECD DAC Criteria. Development Assistance Committee https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm

4. Evaluation of proposals and selection of projects for funding

The various donor agencies managing Higher Education Capacity Building (HECB) programs meticulously organize the selection of projects to ensure transparency, fairness, and alignment with international development goals. The process begins with a clear set of eligibility and selection criteria. Proposals must first meet the minimum requirements, which include the eligibility of applicants, budget constraints, implementation period, and submission modalities.

The selection of experts for these evaluations is crucial. The composition of the evaluation commission is carefully curated to include independent international experts with no affiliations to any participating institutions, thereby ensuring impartiality. Members usually bring diverse professional and cultural backgrounds, along with expertise in curriculum development, institutional building, and other relevant fields. To further ensure objectivity, members typically sign a deontological code of conduct, which includes clauses to prevent conflicts of interest.

The selection procedure itself is designed to be rigorous and thorough. After submission, the donor agencies check the eligibility of the proposals. These are then evaluated based on a detailed set of criteria, often those defined by the Development Assistance Committee (DAC) of the Organization for Economic Co-operation and Development (OECD). Donor agencies usually include specific requirements with topical or geographical content. Most calls emphasize relevance and coherence with the Agenda 2030 for Sustainable Development, the quality of the project design, the strength of the implementation plan, and the potential long-term impact and sustainability of the project. Each criterion has specific descriptors that provide a clear framework for assessment, ensuring consistency and fairness in the evaluation process.

By employing a rigorous and transparent selection process, involving diverse and expert assessment commissions, and adhering to detailed selection criteria, donor agencies ensure that only the most impactful and sustainable projects receive support.

5. Conclusions and organization of the chapter

This chapter will not focus on the evaluation processes that the different capacity building programs have in order to select the projects which will be funded in their calls, which has been described briefly in the previous point.

Thus, the chapter adopts a strictly practical perspective, deliberately steering clear of the theoretical aspects of the term 'evaluation' and the myriad evaluation types such as formative, summative, process, and outcome evaluations. Instead, it concentrates on providing a clear applied guide to organizing evaluations for HECB interventions.

Following this idea, the authors of the chapter consider two main types of evaluations: External Evaluations and Impact Evaluations. The following table summarizes the main difference between those two types of evaluations considering the scope & focus, purpose and methodologies.

In summary, while both types of evaluations are crucial for assessing HECB interventions in developing countries, external evaluations provide a holistic view of the intervention's performance, and, on the other hand, impact evaluations focus on understanding the long-term causal effects of the intervention on specific outcomes.

Table 3.1.2. **Differences between External Evaluations and Impact Evaluations applied to HECB interventions in developing countries**

HECB interventions	External Evaluations	Impact Evaluations
Scope & Focus	- External evaluations can cover a broad range of aspects related to capacity building interventions, including effectiveness, efficiency, relevance, sustainability, and the immediate outcomes of the intervention. - External Evaluations mainly consider the process, implementation, and immediate results of the interventions.	- Impact evaluations specifically focus on measuring the long-term effects and the broader impact of interventions on the target population or sector. - They seek to attribute changes in outcomes directly to the capacity building intervention, distinguishing these changes from those caused by other factors.
Purpose	- The primary purpose is to provide an objective assessment of the intervention's performance, identify strengths and weaknesses, and offer recommendations for improvement. - These evaluations aim to inform stakeholders, including funders, implementers, and beneficiaries, about the value and effectiveness of the intervention.	- The aim is to determine the cause-and-effect relationship between the intervention and observed outcomes. - Impact evaluations help understand whether and how an intervention contributed to the desired changes in capacities, behaviors, practices, or development indicators.
Methodologies	- External evaluations employ a variety of methodologies, both qualitative and quantitative. - These can include surveys, interviews, focus groups, document reviews, and case studies. The choice of methods depends on the evaluation questions and the nature of the capacity building intervention.	- Impact evaluations typically require more rigorous statistical methods to establish causality, such as experimental designs (randomized control trials) or quasi-experimental designs (e.g., difference-in-differences, propensity score matching). These methods help isolate the effect of the intervention from other external factors that might influence the outcome.

Source: Own elaboration.

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3.2. External evaluations

This article aims to serve as a comprehensive guide for External Evaluations of Higher Education Capacity Building (HECB) projects, highlighting the significance of stakeholder engagement, evaluation question development, budgeting, tendering, and evaluator selection in the planning stage. It stresses the importance of considering various data-collection methods, the choice of which depends on the specific evaluation framework adopted. Theoretical frameworks like the Theory of Change are recommended for a structured evaluation, offering an alternative to traditional Logical Framework Approaches. These frameworks enable evaluators to trace complex causal relationships and anticipate outcomes, thus serving the strategic planning of donor agencies and organizations. The article also outlines the structure of an effective evaluation report, emphasizing the utility-focused evaluation approach. It discusses the need for clear communication of results and findings, which is vital for the exploitation of evaluations. This involves effectively conveying findings to stakeholders, using evaluation results to inform decision-making, and applying technological tools to enhance the evaluation process. The document concludes by underscoring the importance of transforming evaluation recommendations into actions, engaging stakeholders in interpreting results, and fostering evidence-based decision-making. It references several resources that offer guidance on conducting and exploiting evaluations in the context of higher education in developing countries.

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1. Planning: preparing for an evaluation

1.1. Identifying stakeholders

One of the critical factors considered when preparing for an external evaluation of a HECB project is not only identifying but addressing the external stakeholders involved in the ecosystem of these initiatives. In order to facilitate the described identification, for this publication, external stakeholders are defined as individuals, organizations, or groups outside of the project or program who have an interest or are affected by its outcomes. Engaging the external stakeholders effectively enhances relevance, credibility and impact of the evaluation findings and recommendations. A non-exhaustive list of usual external stakeholders of HECB projects is included in Table 3.2.1.

In addition to this, available specific tools provide a valid framework for stakeholder mapping in any context (USAID, 2018)

Table 3.2.1. **Usual external stakeholders considered when planning for an external evaluation of HECB interventions vs. potential interest in the initiative**

External stakeholders	Interest
Donor agencies	Ensuring that their funding is not only effectively used but also achieves set outcomes.
Government agencies / Policymakers	Regulatory role and objective of an impact of capacity building actions and efforts on the overall higher education system.
Consultants in higher education and capacity building	Offering independent expertise and objectivity to the external evaluation process.
Industry partners	Relevance of education programs to industry needs and employability of graduates.
Professional organizations	Setting curriculum guidelines, professional development activities or setting accreditation standards relevant to the capacity building projects and programs.
Research institutions	Collaborating on research projects, serving as peer reviewers for external evaluation reports or cooperating on related research projects.
National and international educational partners (HEIs)	Enhancing the overall quality of the international, national, and regionals, higher education systems.
Alumni networks	Acting as potential mentors and advocates, as well as providing valuable insights into the impact of their education on their careers and communities.
Community organizations	Ensuring equitable access to educational opportunities.
General public and media	Influencing public opinion, funding decisions, and policy priorities.

Source: Own elaboration.

1.2. Developing evaluation questions

In order to start planning for evaluating HECB projects in developing countries, preparing evaluation questions is a crucial step. In this context, the most used evaluation criteria (commonly known as DAC Criteria, following the OECD Development Assistance Committee —DAC—), are effectiveness, efficiency, coherence, relevance, impact, and sustainability. They are used in guiding evaluators, and other actors, to determine the merit of the interventions being addressed. It is evident that evaluation questions to be developed must be adapted to the specific context of the HECB intervention.

Formulating evaluation questions must consider the use of both quantitative and qualitative approaches for an improved holistic understanding of the initiatives' performance and impact. Additionally, it becomes critical to involve relevant stakeholders to ensure that the questions are comprehensive, meaningful and aligned with the main aims of the intended evaluation (OECD, 2021).

Effectiveness' evaluation questions first assesses if objectives and goals of the intervention were achieved or are expected to be achieved. Second, if developed activities have been appropriate and consistent to the results. And third, to what extent did, participants achieve the intended learning outcomes and competencies —along with the evidence of a successful delivery and implementation of educational activities.

Efficiency addresses how adequately have resources (material, human, financial) been utilized and allocated in the capacity building initiatives. Next, main evaluation questions in this point would contribute to determine the existence of inefficiencies in the delivery of the foreseen educational activities.

Evaluation questions focusing on coherence aim to determine the extent to which the activities undertaken enable donor agencies to meet their policy goals. Furthermore, they critically appraise whether the underlying logic and the order of the executed activities align effectively with the established objectives.

The relevance-related evaluation questions assess if objectives of the HECB interventions in developing countries are consistent and aligned with the beneficiaries' (e.g., students, faculty, industry, community) requirements and needs. Additionally, they measure to what extent do the initiatives address identified challenges and gaps in higher education, analyzing likewise if learning materials, training modules or curricula are relevant to current trends in the respective fields.

Impact evaluation questions provide a view not only at the potential long-term effects produced —and linked evidence—, directly or indirectly, intended or unintended, but determine what measurable changes and outcomes have resulted from participating in the initiatives. Furthermore, they determine how these capacity building initiatives contribute to economic or societal development in factors such as innovation, entrepreneurship or social equity.

Finally, sustainability-oriented evaluation questions investigate whether the advantages of an intervention are likely to persist beyond its active phase. They also explore the factors that may contribute to the longevity of projects and programs, as well as the mechanisms established to maintain engagement and ongoing support from essential stakeholders.

In the context of the evaluation questions, however, there are more crucial aspects that must be taken into account —besides the above-mentioned standard DAC Criteria— such as quality assurance (feedback mechanisms, lessons learned for continuous improvement), partnerships and collaboration (with relevant stakeholders, challenges, how is the collaboration being fostered), equity, diversity and inclusion or innovation and adaptability (responsiveness to changing educational needs, societal trends or technological advancements). As previously mentioned, the nature of the evaluation questions will be primarily contingent upon the distinctive characteristics of the project.

1.3. Budgeting for an evaluation

Budgeting for an external evaluation of HECB intervention entails the consideration of several factors to ensure an effective and proper assessment. Given the specific context, aims, and requirements of the external evaluation, adjustments (and regular review of the budget) may be necessary. First, consultant fees are one of the key elements to be included in the budget, allocating proper funds for hiring evaluation firms or external individual consultants. These fees may vary due to a myriad of aspects such as the complexity or scope of the evaluation to be implemented. Second, travel and accommodation

need to be considered in the event of on-site visits or meetings (including the evaluation of stakeholder engagement), being mandatory for the implementation of the requested tasks.

In addition, other costs to be allocated could include the ones for such potentially necessary expenses as data collection (e.g., surveys, focus groups, interviews, document reviews), technology and equipment (e.g., hardware/software licenses), translation services or data analysis (once more, licenses or even necessary expertise). Notably, other examples of costs that could be factored include the associated with disseminating the evaluation findings or the highly recommended of the follow-up evaluations (to assess the impact of changes made based on evaluation findings).

Similarly, it might be required to contemplate the allocation of funds for ensuring quality assurance, monitoring the progress of the external evaluation or training and capacity building actions (towards enhancing stakeholders' understanding of the evaluation process, building their evaluation skills). Moreover, from a practical stance, standard checklists are an effective tool for both funding agencies and evaluators (Horn, 2001).

1.4. Tendering

The tendering for an external evaluation of HECB interventions seeks to ensure, throughout the tendering process, the essential principles of effectiveness, fairness, accountability and transparency. Consequently, most tendering processes involve different commonly identified steps and aspects. Within this process, a clear definition of the scope of the evaluation (e.g., goals, evaluation questions, methodology, deliverables, and timeline) becomes of critical relevance, ensuring that the said scope aligns with the requirements and objectives of the capacity-building intervention.

Second, developing the tender documents with the corresponding request for proposals, identification of the evaluation criteria, terms, conditions, and any other relevant information would allow for a clear communication of the requirements to potential bidders. Third, the advertisement of the tender —with sufficient information— through appropriate channels would be useful to reach potential bidders. The establishment of an evaluation committee to evaluate the received proposals (evaluating the proposals based on the predefined criteria and scoring system), follows on the timeline leading to the selection of the most qualified and suitable vendor based on the evaluation results (factoring technical expertise, experience, proposed methodology, cost-effectiveness, and overall suitability for the proposal).

Finally, steps to follow include the negotiation with the selected bidder to finalize the terms of the contract (deliverables, timeline, scope of work, payment schedule and any other relevant terms), the formal notification and awarding of the contract, the monitoring of the evaluation process and progress and the documentation and reporting (progress reports for stakeholders, ensuring, once again, accountability and transparency). In order to facilitate the basics of the tendering process and critical aspects to be considered, there are practical intuitive guides such as the one provided by Australia Institute of Family Studies (AIFS, 2019).

1.5. Selecting an evaluator

Addressing the selection of the right external evaluator (or evaluation team/firm) is critical for ensuring the credibility and effectiveness of the evaluation process. Therefore, the goals and objectives of the external evaluation aim to provide the outer framework for the requested tasks to be implemented. This initial stage

leads to the identification of the specific expertise and qualifications for the external evaluator (or team), needed for an effective accomplishment of the set evaluation goals.

In the selection process of the external evaluator, assessment of the qualifications such as relevant experience, proven track record, references or credentials in the field, is the following milestone, linked with the review of the submitted proposal. Additionally, conducting interviews and/or requesting presentations with shortlisted external evaluators are of great importance towards further clarifications, questions or assessment of interpersonal and communication skills. Very commonly found considerations in such processes include not only diversity and inclusivity but also ethical and professional standards.

2. Implementing and evaluation

In the absence of a unified methodology for appraising Higher Education Capacity Building (HECB) interventions, the evaluative process remains contingent upon the vast array of contextual variables that typify capacity building endeavours. The higher education sector lacks a definitive compendium of valid capacity building metrics, as well as a universal set of evaluative instruments suitable for every HECB initiative. This chapter provides a concise overview of some prevalent methods and analytical practices employed within this domain. The selection of these methodologies and practices is influenced by the evaluative framework or investigative approach adopted. The methodologies and analytical practices are considered apt only when they align with the aims of the evaluative questions posed. Notwithstanding, the explication of these practices furnishes practitioners with insights into their application and delineates the fundamental steps entailed.

2.1. Applying Theory of Change to HECB interventions

Previously, the Logical Framework Methodology (LFM) was the principal approach used in planning, monitoring, and evaluating HECB interventions, as well as in other sectors of development cooperation. However, LFM received several criticisms when applied to HECB because it was originally developed for general development projects and not specifically for capacity building actions, according to Gasper (2000). Despite this, Ringhofer and Kohlweg (2019) acknowledge that the Theory of Change (ToC) has reinstated some of the analytical and participatory elements that were initially intended in the LFM approach, although some practical issues persist. Other authors, such as Freer and Lemire (2019), suggest that using both methodologies together is acceptable, but the ToC is now more commonly adopted for HECB interventions.

In essence, ToC is a sophisticated methodology applied in program design, monitoring, and evaluation, gaining prominence within the international development sector. It is often depicted as a comprehensive guide or framework, akin to a roadmap, a blueprint, or an engine of change, as noted by Stein and Valters in 2012. ToC delineates the essential components and interconnections required to achieve a long-term objective. This approach facilitates the integration of specific interventions into broader strategic and transformative analyses. It stands out for its adaptability and effectiveness in laying out a clear vision for impactful social change, systematically identifying the steps needed to realize that vision. ToC is particularly apt for addressing complex issues such as Higher Education Capacity Building (HECB) interventions. In essence, ToC is a sophisticated methodology applied in program design, monitoring,

and evaluation, gaining prominence within the international development sector. It is often depicted as a comprehensive guide or framework, akin to a roadmap, a blueprint, or an engine of change, as noted by Stein and Valters in 2012. ToC delineates the essential components and interconnections required to achieve a long-term objective. This approach facilitates the integration of specific interventions into broader strategic and transformative analyses. It stands out for its adaptability and effectiveness in laying out a clear vision for impactful social change, systematically identifying the steps needed to realize that vision. ToC is particularly apt for addressing complex issues such as Higher Education Capacity Building (HECB) interventions.

Many donor agencies, with a dedicated interest in higher education, formulate an overarching ToC to articulate how their HECB programs can bolster institutional capacity. This approach is particularly beneficial for practitioners because it encompasses causal relationships and clarifies the expected outcomes that donor agencies anticipate from the varied actions encompassed in HECB programs.

2.2. Determining data-collection methods

As previously mentioned, the choice of data-collection methods and practices for evaluating Higher Education Capacity Building (HECB) actions is contingent upon the chosen evaluative framework or investigative approach. Nonetheless, Table 3.3.2 shows some of the most frequently utilized data-collection techniques, along with typical examples.

However, Table 3.3.2 does not intend to provide an exhaustive list of all the potential data-collection methods. For more information in this issue, the authors would like to recommend, among others, the following web resources:

- – Evalsed, the resource for the Evaluation of Socio-Economic Development. A web-based resource providing guidance on the evaluation of socio-economic development, describing various methodological approaches and techniques which can be used in evaluation
- – Betterevaluation.org / Global Evaluation Initiative. A collaborative platform knowledge focus on strengthening the monitoring and evaluation of developing countries.

2.3. The evaluation report

Prominent scholars and evaluators, such as Patton (2008), champion an evaluation approach centered on utility, emphasizing that the meaningfulness and relevance of evaluations are determined by their actual employment and practical usefulness. The assimilation and application of findings by stakeholders are intrinsically linked to the adept conveyance of these results.

There are two primary perspectives to consider when presenting results: the substance of the information being communicated and the method of its presentation. The overarching objective from both vantage points is to enhance stakeholders' comprehension and subsequent utilization of the findings. This encompasses a clear articulation of how the results were derived, the identification of emerging trends through systematic data gathering and analysis, and the strategic use of potent data visualization tools amidst the ongoing "data revolution." Discussions regarding the array of presentation modalities include traditional written documents, verbal briefings, and digital formats, with the recognition that while novel methods are gaining traction, written reports continue to be the mainstay.

Table 3.2.2. How they are applied in HECB evaluations (some examples)

Data Collection Methods	How they are applied in HECB evaluations (some examples)
Desk Review	Analysis of the project documents (proposal, deliverables, etc.), program call, previous actions, etc. If data is collected by a source other than the project/program, they are secondary data, and it should be ensured that they are of good quality.
Surveys	Online surveys to recipients of training actions, surveys to stakeholders of the action, etc. Questions can be open-ended, which generates qualitative data, or close-ended, which generates quantitative data.
Interviews	In-depth interviews, usually with a semi-structured open-ended questionnaire, with a handful of important stakeholders (beneficiaries, activity coordinators, etc.). Which key informants are chosen can have a big influence on findings.
Focus Groups Discussions	Small-group (8-12 people) discussions facilitated by the evaluator, usually using a semi-structured open-ended questionnaire. Participants should be somewhat homogeneous in order to encourage people to feel comfortable expressing themselves (e.g., all same occupation, as a focus group discussion for university financial managers).
Most Significant Change	The Most Significant Change methodology involves collecting narratives of change from program participants and selecting the most significant of these stories to assess the impact of a Higher Education Capacity Building (HECB) initiative, like identifying the key transformative experience of university administrators following a leadership development workshop.
Outcome Mapping	Outcome Mapping is an evaluation approach that focuses on tracking changes in behaviors, relationships, actions, and activities among stakeholders involved in a project. It is also commonly used to illustrate a program's theory of change in a participatory manner.
Case Studies	Case studies could be an appropriate tool because they allow to place the focus on the real-life context of a specific activity-issue of a HECB program, for instance, the set-up of a new institutional unit (e.g., Technology Transfer), and the analysis of its performance for a period of time.
Delphi Survey	To apply the Delphi Survey in evaluating a Higher Education Capacity Building (HECB) intervention, for instance, experts are repeatedly surveyed in iterative rounds to forecast and achieve consensus on the initiative´s effectiveness, ensuring anonymous input while refining responses through feedback, leading to informed decision-making about the initiative's future directions.
SWOT Analysis	By applying SWOT analysis in the evaluation of a HECB intervention, stakeholders may collaborate to pinpoint the initiative´s strengths, weaknesses, opportunities, and threats, then strategize on how to enhance strengths, address weaknesses, capitalize on opportunities, and minimize threats for program improvement and sustainability.

Source: Own elaboration.

In the realm of Higher Education Institutions (HEI), there is a marked preference for employing a wide spectrum of presentation styles, such as imaginative reporting and digital outreach, which reflects a commitment to participatory methodologies that engage a broad spectrum of sector stakeholders. Conversely, donor agencies primarily depend on detailed written reports, though they do incorporate oral presentations during the concluding stages of the evaluation process.

The advocated framework for an evaluation report consists of several key components: an executive summary, an introductory section, an elucidation of methodology, an exposition of findings, succinct conclusions, actionable recommendations, and supportive appendices. It is imperative to prioritize lucidity, brevity, and ethical integrity in the portrayal of findings. To encapsulate, the paramount goal of the evaluation report is to critically examine the efficacy and influence of the intervention on the fortification of Higher Education Institutions' capacities, thereby promoting the strategic use of the results to facilitate informed policy and decision-making processes.

3. Exploitation of an evaluation

3.1. Communicating findings and insights

The foundation for the exploitation of external evaluations for HECB interventions involves effectively and widely communicating the findings, insights and results to relevant stakeholders. This process commences with the identification of strengths, weaknesses, areas for improvement, and potential opportunities within the scope of the intervention. The final goal is to drive positive change within the participating institutions.

The main reasons for communicating findings of an external evaluation in this context are ensuring high-quality services are provided, promoting the use of and demand for project services, ensuring accountability for current project investments and sharing important information with project stakeholders and the field (Lammert et al., 2017). Besides that, it ought to be determined —identifying key stakeholders— who needs to be informed about the evaluation findings. Specific examples of target groups include, for instance, university administrators, faculty members, students, funding agencies, government bodies, and other relevant involved parties.

Additionally, the process of communicating findings encompasses crafting tailored messages that resonate with each group's concerns and priorities; and, with the same level of importance, it is necessary to note the choosing and using of appropriate communication channels to reach different stakeholders effectively (e.g., reports, presentations, workshops, meetings, emails, newsletters, social media, or websites). In regard to the content of communicating the findings and results to interested actors, such findings ought to be shared objectively, with a special focus on the actionable recommendations derived from the external evaluation.

Finally, the evaluator offers support and resources (best practices, expertise, training) towards helping stakeholders implement recommendations arising from the evaluation of the intervention. Monitoring the progress of initiatives implemented as a response to the evaluation findings and assessing the impact of the efforts on improving HECB interventions constitute the final actions within the process of communicating the findings of the evaluation.

3.2. Utilizing the process and results of evaluation

Exploitation of external evaluations of HECB interventions utilizing the process and results involves leveraging the findings and methodologies of evaluation efforts to drive improvements, inform

decision-making, and enhance overall effectiveness. Widely sharing the evaluation results, not only within the organizations but with key stakeholders, and informing of strategic planning efforts, leads to an effective identification of areas for improvement.

In addition to this, evaluation findings are of critical importance towards identifying areas where capacity building is needed within the organization(s) and/or among stakeholders. Continuous improvement is facilitated by incorporating evaluation process and results into existing monitoring processes. Resource allocation decisions are also guided by evaluation results and process, identifying priorities and areas of need. Evidence-based decision making is clearly encouraged using evaluation results, grounding decisions in data.

Overall, the relevance of utilizing and disseminating the results of an evaluation derives from converting the recommendations into actions, from stakeholders becoming aware, and supportive of the evaluation and results, and from reaching a stage of informed decision-making —thus, facilitating the project's or program's growth and improvement (ICF, 2021). Finally, it becomes of relevance to engage all relevant stakeholders in the interpretation and use of evaluation results, leading into their involvement in decision-making processes based on those results.

3.3. Resources

A myriad of resources —software, infographics, etc.—, towards enhancing the evaluation process and maximizing its impact, are commonly used in the exploitation of an external evaluation of HECB projects and programs. By leveraging these resources effectively, organizations do enhance the quality, efficiency, and impact of external evaluations of the interventions, ultimately driving continuous improvement and fostering evidence-based decision-making. Table 3.2.3 shows a summary of the most common technological resources used when planning for exploitation of an external evaluation of HECB interventions.

4. Conclusions

In conclusion, the present article has systematically detailed the elements critical for conducting External Evaluations of Higher Education Capacity Building (HECB) projects. We underscored that effective stakeholder participation, meticulous development of evaluation questions, prudent budget allocation, careful tendering, and strategic evaluator selection are foundational elements in the initial planning. Our investigation confirmed the merit of utilizing diverse data-collection methodologies, tailored to the chosen evaluative framework, with a strong recommendation for the Theory of Change. This progressive approach facilitates the identification of intricate causal linkages and forecasting of impacts, thereby enhancing strategic planning for donor entities and recipient organizations.

Our exposition further delineated the architecture of a cogent evaluation report, accentuating an evaluation philosophy centered on utility. The imperative of lucidly articulating results cannot be overstated, as it is instrumental for the effective application of evaluation findings. The elucidation of findings to stakeholders, the application of evaluation outcomes to guide decision-making, and the integration of technological advancements in the evaluative methodology emerged as salient themes.

We conclude by affirming that the transformation of evaluative recommendations into concrete actions and the involvement of stakeholders in the interpretive phase are pivotal for nurturing an environment of

Resources	How they are applied in HECB evaluations (some examples)
Evaluation Software (SMART, NVivo, EvalC3, EVA)	Streamlining data collection, analysis, reporting processes and supporting evidence-based decision-making for curriculum improvement and enhancement. These tools provide, among other features, qualitative data analysis, curriculum mapping, outcome evaluation, evaluation frameworks, comparative analysis or assessment management.
Data Visualization Tools (Tableau, Power BI, Infogram)	Assessing the impact of capacity building initiatives, tracking progress, and communicating findings to stakeholders, with a higher degree of rigor and transparency (e.g., outcome tracking, stakeholder engagement, impact assessment, qualitative data visualization, benchmarking analysis, etc.).
Survey and Assessment Tools (SurveyMonkey, Google Forms, Qualtrics)	Robust data collection and compiled feedback to inform decision-making, improve program effectiveness, and demonstrate the impact of capacity building initiatives on individual participants and institutional outcomes. These tools allow for the evaluation of capacity building programs, at the same time as they measure the perceived impact, conduct needs assessments among teaching staff and administrators and enable the administration of longitudinal surveys or data integration and analysis.
Project Management Software (Asana, Basecamp, Trello)	These platforms provide the needed infrastructure to manage complex evaluation projects, track progress towards key objectives and milestones, coordination of activities, improve communication, streamline collaboration or tasks organizations.
Learning Management Systems -LMS- (Moodle, Canvas, Blackboard)	Organizing training materials, delivering courses, assessing participant learning, and tracking progress with features such as discussion forums, interactive course content, course management, synchronous collaboration, personalized learning paths or peer assessment.
Documentation and Reporting Tools (Google Docs, Microsoft Word, Adobe Acrobat)	These universally known tools allow for effectively creating, organizing, and sharing evaluation reports, findings, and recommendations, ensuring the professionalism and integrity of evaluation documents in the higher education context.
Collaboration Platforms (Microsoft Teams, Zoom, Slack, Skype, WhatsApp)	These widely used collaboration platforms facilitate communication, collaboration, and coordination among evaluators, stakeholders, and participants, overcoming geographical barriers and providing the infrastructure needed to conduct virtual meetings, share resources, coordinate activities, and engage participants in the evaluation process.

Table 3.2.3. **Some technological resources commonly used when planning for exploitation of an external evaluation of HECB interventions, by category.**

Source: Own elaboration.

evidence-based decision-making. To that end, the article has offered a litany of resources that provide valuable insight into the execution and maximization of evaluations within the milieu of higher education in developing nations, ensuring that these evaluations do not merely end with reports but act as catalysts for development and capacity enhancement.

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3.3. Impact evaluations

This paper reviews the role of impact evaluations (IE) in Higher Education Capacity Building (HECB) projects, which aim to improve educational systems in developing countries. It explores different evaluation methods, including experimental, quasi-experimental, and non-experimental approaches, to assess the effects of these interventions. While randomized controlled trials (RCTs) are often considered the gold standard of the experimental methods, they face practical and ethical limitations. As alternatives, quasi-experimental methods like matching and difference-in-differences provide rigorous results when randomization is not possible. Non-experimental methods, such as case studies, also offer valuable insights, especially in understanding the context and mechanisms of interventions. The paper highlights common challenges in IE, such as bias, data limitations, and uncertainty. It suggests also practical solutions like triangulation, stakeholder engagement, and building local evaluation capacities. The recommendations focus on developing robust frameworks and methods that can offer both quantitative and qualitative insights. The main objective is to ensure that the evaluation results contribute to long-term, sustainable improvements in higher education systems.

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1. Introduction

Higher Education Capacity Building (HECB) projects aim to improve the quality and relevance of higher education systems in developing countries, not only by enhancing the capacities of the main actors in the area (students, teachers, researchers, and administrators) but also by strengthening the universities' units and policies. These projects involve different interventions, including curriculum development, teacher training, research support, infrastructure improvement, governance reform, or network building. To ensure the long-term success of HECB projects, it is essential to prioritize sustained evaluation practices. As Wade and Kallemeyn (2020) emphasize, sustainable evaluation involves the ongoing application of evaluative methods, continuously refining organizational processes and enhancing outcomes over time.

Based on DAC criteria, external evaluations of HECB projects usuallly assess performance through qualitative and quantitative methods, focusing on relevance, efficiency, or sustainability. However, they normally do not establish causal links. In contrast, impact evaluations specifically assess the causal effects of interventions on targeted outcomes. Using experimental and quasi-experimental methods, or non-experimental impact evaluations creates valid counterfactuals to estimate the intervention's attribution and contribution. They can also uncover the mechanisms behind the intervention's effectiveness. As a result, impact evaluations try to offer more robust evidence of an intervention's impact, while traditional evaluations provide a broader understanding of its design and implementation.

In summary, impact evaluation (IE) is a rigorous approach that assesses the causal effects of interventions by comparing observed outcomes with what would have occurred without the intervention. IE offers valuable evidence for policymakers, donors, and practitioners on the effectiveness of HECB projects and insights into the mechanisms and contextual factors influencing their impact. To enhance the impact of HECB projects, it is important to adopt strategies that address common challenges in evaluation. As Kumar Chaudhary et al. (2020) suggest, strategies such as hiring evaluation specialists and fostering organizational buy-in can significantly improve the effectiveness of evaluation efforts.

However, IE faces challenges such as defining impact, concepts as a well as theories (e.g., Theories of Change / ToC), choosing appropriate methods, addressing data limitations, and ensuring ethical and political feasibility. This paper aims to provide a comprehensive review of the current state of IE in HECB projects and programs by discussing the main methods and approaches, challenges, and best practices in the field. The paper is structured as follows:

- Section 2 provides a conceptual framework for IE in HECB projects by defining the key concepts and terms, and presenting a typology of HECB interventions and impacts.

- Section 3 reviews the main methods and tools for IE in HECB projects by describing their strengths and weaknesses, and illustrating their application with examples.

- Section 4 discusses how to overcome bias and uncertainty in IE for HECB projects by suggesting possible solutions and mitigation strategies.

- Section 5 concludes with some recommendations and directions for future research and practice in IE of HECB projects.

2. Conceptual framework for impact evaluation in HECB projects

This part of the study attempts to provide an assessment framework that can guide evaluation of Higher Education Capacity Building (HECB) projects through clearly defining terms and concepts and devising a typology of different interventions along with its impacts. We employ a broad definition of HECB that references the work of VLIR-UOS (2016) as explained in the introduction to this book. Moreover, we adopt the OECD (2010) approach to impact evaluation which also includes distinction of all sorts intended and unintended positive or negative effects a program can have on targeted individuals as well as society. This is essentially the use of a counterfactual —what would have happened had the intervention not been instituted. From these definitions we can infer the key ingredients of IE (see Figure 3.3.1).

In Figure 3.3.1, we observe that the four core concepts in IE for HECB projects are the intervention, outcome(s), counterfactual and impact. The specific action activity or set of actions that a HECB project puts in place, such as a curriculum change, teacher training effort, research grant program, or governance reform is referred to as the intervention. The outcome is the predicted or actual result or change following an intervention. These changes could be, for example, improvements in student learning, teacher effectiveness, quality of research, or governance. Counterfactual is the hypothetical scenario of what would happen to the outcome if the intervention had not been applied, which usually depends on a comparison group and a baseline measurement. An impact is the difference between observed and counterfactual outcomes which demonstrate the causal relationship connecting an intervention to
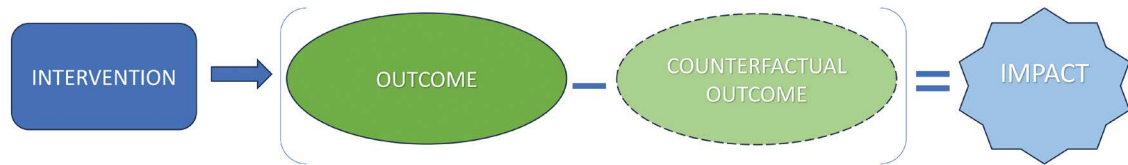
Figure 3.3.1. Elements of impact evaluation in HECB projects

an outcome. The effect of the intervention is the gap between what kinds of student learning outcomes were produced by a reform (e.g., if a HECB project delivers support for curriculum reform with an aim to advance student learning) and what kind of student learning outcomes would have happened in the absence of that reform Still, HECB projects do not limit IE to measuring the impact of a single intervention on a single result. Most of HECB projects could imply a number of inter-related interventions carried out over time at different levels and with different expected end results. Hence, measurement of the contributions of HECB projects cannot be compartmentalized without an element of its complexity. To accomplish this, we propose a classification of HECB interventions and effects based on their intervention type and intensity.

The level dimension is the level of implementation and measurement of the intervention and the impact, respectively. In this case, we distinguish between three levels, which are the individual, the institutional/ group and the system level. The individual level encompasses such actors as students, teachers, researchers, and administrators who are the main beneficiaries of and agents in implementing HECB activities. The institutional level takes into consideration the Higher Education Institutions (HEIs) such as universities, colleges and polytechnic which are major areas of HECB actions. This level also encompasses research groups, academic departments, faculties and other organizational units (called ¨groups¨) which are the mid-range levels of HECB operations. The system level refers to the level of the higher education system as a whole, which includes the policies, regulations, governance, funding, accreditation, and quality assurance mechanisms that shape and support HECB interventions.

The type dimension refers to the type of intervention and impact, according to the main domain or aspect of HECB that they address. We distinguish between four types: teaching, research, governance, and network. The teaching type refers to the interventions and impacts that relate to the core function of higher education, which is to provide quality and relevant education to students, and to develop their knowledge, skills, and competencies. The research type refers to the interventions and impacts that relate to the other core function of higher education, which is to produce and disseminate new knowledge and to contribute to innovation and development. The governance type refers to the interventions and impacts that relate to the management and administration of HEIs and systems, and to the mechanisms of accountability, transparency, and participation that ensure their effectiveness and efficiency. The network type refers to the interventions and impacts that relate to the collaboration and cooperation among HEIs and systems, and with other stakeholders, such as the government, the private sector, the civil society, and the international community.

Type refers to the type of intervention and its impact (i.e., into which main domain or aspect of HECB the interventions address). We distinguish between four types: teaching, research, governance and network. The teaching intervention category relates to the inputs and outputs from delivering of the core function of higher education which is training for students by providing quality and relevant knowledge, skills and competences. The second type of research is at the core function of higher education: the genera-

Table 3.3.1. **Illustrative matrix of HECB interventions and impacts for project evaluation**

Individual	Student learning outcomes	Research output	Administrative efficiency	Participation in networks
	Teacher performance	Research quality	Administrative satisfaction	Collaboration with peers
	Student satisfaction	Research impact	Administrative skills	Mobility opportunities
	Teacher motivation	Researcher productivity	Administrative leadership	Access to resources…
Group	Curriculum quality	Research capacity	Organisational culture	Network quality
	Curriculum relevance	Research focus	Organisational climate	Network diversity
/	Curriculum innovation	Research funding	Organisational structure	Network sustainability
	Teaching methods	Research infrastructure	Organisational performance	Network outcomes
Institutional	Educational quality	Research excellence	Institutional vision	Institutional collaboration
	Educational relevance	Research relevance	Institutional mission	Institutional cooperation
	Educational equity	Research contribution	Institutional strategy	Institutional integration
	Educational access	Research recognition	Istitutional governance	Institutional alignment
	Educational diversity	Research diversity	Institutional autonomy	Institutional influence
System	System quality	System excellence	System vision	System collaboration
	System relevance	System relevance	System mission	System cooperation
	System equity	System contribution	System strategy	System integration
	System access	System recognition	System governance	System alignment
	System diversity	System innovation	System accountability	System influence

tion and dissemination of new knowledge, contributing to innovation and development. The governance type refers to the interventions and impacts that relate to the management and administration of HEIs and systems, and to the mechanisms of accountability, transparency, and participation that ensure their effectiveness and efficiency. The 'network' type covers projects and impacts related to fostering collaboration and cooperation among HEIs/systems, and with other stakeholders (government, private sector, civil society national donors and international community).

Drawing on these four dimensions, we can create a matrix of HECB interventions and impacts (Table 3.3.1). This matrix illustrates different potential combinations between levels and types of HECB interventions (NCB or CB) as well as impacts, along with a few examples for each cell. Note that the matrix is not meant to be comprehensive, but rather indicative, and can be adjusted or augmented according

to the particular circumstances and goals of each HECB initiative. Given the plethora of methods and indicators that can be combined under different configurations, the matrix could become a handy tool for IE in HECB projects to help the identification and classification of those combinations which are more contextually pertinent and attainable to evaluate, as well as the choice & application of appropriate methods/methodologies/indicators per case.

3. Review of main methods and tools for IE in HECB projects and programs

3.1. Challenges and opportunities of impact evaluation exercises

Impact evaluation (IE) is a process of assessing the causal effects of an intervention on the outcomes of interest, such as health, education, income, or well-being. IE aims to answer questions such as: What works? For whom? Why? How? Under what conditions? At what cost? (Bando, 2013). IE can provide evidence to inform policy decisions, improve program design and implementation, enhance accountability and learning, and contribute to knowledge generation (Gertler et al., 2016).

In the context of health, education, culture, and development projects and programs, IE faces several challenges and opportunities. As Marjanovic et al. (2017) discuss, evaluating complex interventions, such as research capacity-building programs, requires an approach that accounts for the evolving and multi-dimensional nature of these initiatives. Some of the challenges include:

- Dealing with complex and dynamic systems that involve multiple actors, interactions, feedback loops, and contextual factors.

- Measuring intangible and long-term outcomes, such as social norms, cultural values, empowerment, or resilience.

- Balancing ethical and methodological considerations, such as ensuring informed consent, minimizing harm, respecting local cultures, and addressing power imbalances.

- Engaging with diverse and relevant stakeholders, such as beneficiaries, policymakers, practitioners, funders, and researchers, throughout the IE process.

- Communicating and disseminating IE findings in accessible and appropriate ways, such as using visual, narrative, or interactive formats, and tailoring messages to different audiences.

Some of the opportunities include:

- Leveraging new and emerging data sources and methods, such as big data, social media, geospatial analysis, machine learning, or citizen science.

- Incorporating multiple perspectives and dimensions of impact, such as gender, equity, sustainability, or human rights.

- Enhancing the validity and credibility of IE results, such as using mixed methods, triangulating data, conducting meta-analysis, or applying quality standards.

- Fostering a culture of learning and adaptation, such as using participatory approaches, embedding IE within program cycles, or facilitating feedback loops.

– Contributing to the global public good, such as sharing IE data, methods, and lessons, or collaborating with other IE actors and networks.

To address these challenges and opportunities, IE practitioners can choose from a variety of methods and tools, depending on the purpose, scope, and context of the IE. These methods and tools can be classified into three broad categories: experimental, quasi-experimental, and non-experimental.

3.2. Experimental methods

In order to establish comparable groups of intervention and control units (such as people, homes, schools, or communities), experimental methods use random assignment. Then, by comparing the outcomes between these groups, one can estimate the causal effect of the intervention. The most popular experimental design is the randomized controlled trial (RCT), in which the intervention is assigned at random to a subset of units that meet the eligibility requirements, and the intervention and control groups' outcomes are measured at baseline and endline. Because they can remove selection bias and confounding variables and produce objective and accurate estimates of impact, randomized controlled trials (RCTs) are widely considered as the gold standard for IE. For instance, students could be randomized to use the new online learning platform or stick to the traditional curriculum in an RCT to assess it. The platform's effectiveness can be estimated based on the disparity in their academic performance.

However, RCTs also have some limitations, such as:

– They can be costly, time-consuming, and logistically challenging to implement, especially in large-scale or complex settings.

– They can face ethical or political objections, as they involve withholding the intervention from some units, or introducing randomization in sensitive contexts.

– They can suffer from internal and external validity threats, such as attrition, spillovers, contamination, or heterogeneity, which can affect the reliability and generalizability of the results.

– They can be narrow in scope and focus, as they typically measure the average impact of a single intervention on a predefined set of outcomes, and may not capture the underlying mechanisms, processes, or contextual factors that influence the impact.

– As a consequence, RCT are not considered an appropriate tool in case of complex project and programs, or when institutional and system level changes are intended.

3.3. Quasi-experimental methods

Quasi-experimental methods are impact evaluation techniques used when a random assignment is not feasible. They estimate causal effects by comparing intervention and non-intervention groups using techniques like matching, difference-in-differences, regression discontinuity, or instrumental variables, aiming to evoke the randomization conditions and control for confounding factors. Key quasi-experimental methods include:

– **Matching methods.** These involve selecting comparison units with similar characteristics to intervention units based on observable variables, such as age, gender, income, or education. For

example, in a teacher training program, propensity score matching compares outcomes of trained teachers with untrained teachers who have similar characteristics (e.g., age, education level) to assess the program's impact on student learning in developing countries.

– **Difference-in-differences (DiD) methods.** DiD compares changes in outcomes over time between intervention and comparison groups. For example, in an impact evaluation of a new curriculum introduced at a university, DiD would compare student performance before and after the curriculum change, contrasting it with a university that did not implement the change.

– **Discontinuity methods.** These methods exploit a threshold or cutoff point that determines eligibility or intensity of the intervention and compare the outcomes of units just above or below the threshold. For instance, in a scholarship program awarded based on a Grade Point Average1 (GPA) cutoff, regression discontinuity design compares students just above and below the GPA threshold to evaluate the scholarship's impact on graduation rates in a developing country.

Certain experimental methods' drawbacks can be addressed by quasi-experimental approaches:

– Feasibility and flexibility. In situations where randomization is impractical, unethical, or undesirable, they are frequently more practical and adaptive.

– Broad scope. These techniques can take into account a variety of interventions, results, and context variables, thereby capturing the richness and diversity of the situation.

– Stakeholder engagement. By allowing stakeholders to participate in the design, execution, and interpretation of the evaluation while honouring their expectations and values, quasi-experimental methods can be more inclusive and participatory.

Nonetheless, quasi-experimental approaches encounter various obstacles:

– Selection bias and confounding. Unobserved or unmeasured variables that affect outcomes may cause biases because intervention and comparison groups are not fully comparable.

– Assumptions. These techniques must guarantee the lack of endogeneity, heterogeneity, or spillovers and frequently rely on strong, untestable assumptions about the validity of matching, regression, instrumental variables, discontinuity, or difference-in-differences models.

– Data and statistical rigor. They require large, reliable datasets, sophisticated statistical techniques, and robust sensitivity tests to ensure the accuracy and precision of estimates and verify the robustness of results.

3.4. Non-experimental methods

Because experimental and quasi-experimental designs are usually particularly expensive and time-consuming and are often very impractical to evaluate impact of complex programs and projects, non-experimental design are nevertheless often used in practice to map impact. The importance of a Theory of Change (ToC) is even more important in non-experimental designs than in (quasi-) experimental designs. After all, the ToC is the tool with the hypotheses assumed and the desired and proposed change chain.

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1 Grade Point Average is a standard measure of academic performance used in many education systems. It represents the average of a student's grades over a period, typically on a scale from 0 to 4 or 0 to 5, with higher values indicating better academic achievement.

While (quasi-) experimental designs usually statistically compare control groups to check whether ToC is valid and whether there are other possible factors that caused change, non-experimental usually use a mixed-method approach where different methodologies, such as focus groups, focus group discussions, key informant interviews, workshops and online/F2F survey are used within intended target groups of the intervention, i.e., without explicitly identifying control groups (although this cannot always be ruled out, but then it is more a qualitative comparison and not a statistical one).

Non-experimental methods use descriptive or exploratory approaches to analyze interventions and their outcomes, without creating comparable groups or estimating causal effects. Below we list the four (among many others) non-experimental approaches. Often they are also applied in a combined form.

Realist evaluation is a type of theory-drive evaluations that asks, "What works, for whom, in what respect, to what extent, in what contexts, and how?" Realist evaluation aims to understand the underlying mechanisms that explain how a program produces outcomes in a specific context. A realist evaluation does not only look at effectiveness (e.g., was the intended outputs and outcomes achieved), but focuses on the factors that explain success or failure. So, realist evaluation emphasizes context, interventions, mechanisms, and outcomes (CIMO) configuration statements. In particular, this methodology recognizes that outcomes are influenced by a combination of factors within a specific context and is particularly useful for evaluating complex interventions where multiple factors interact to produce results. Realist evaluation involves testing of hypotheses and relationships (cause-effect, including the Theories of Change), using mixed methods to understand program effectiveness, and focusing on the interplay between context, mechanisms, and outcomes to provide a comprehensive understanding of program impact. It values stakeholder participation, aims to uncover causal mechanisms, and can enhance transferability through theory development. Clearly, realist evaluation is an approach rather than a concrete methodology. Different methods (e.g., interviews, focus groups, surveys) can and should be used within this approach.

Contribution analysis can be linked in a direct way to the Theory of Change. As John Mayne stipulated "contribution analysis is based on the existence of, or more usually, the development of a postulated or espoused theory of change for the intervention being examined….the overall aim (of contribution analysis) is to reduce the uncertainty about the contribution the intervention is making to the observed results through an increased understanding of why the observed results have occurred (or not occurred) and the roles played by the intervention and other factors" (Mayne, 2017). The important question that implies the purpose of contribution analysis is: Is it reasonable to conclude that the program was an important factor to bringing about the (un)intended results? In most cases, where a ToC is available before the impact evaluations starts, four essential steps need to be completed:

- Gather evidence on the changes in the ToC. Focus on each of the different links in the results chain and alternative explanations for how the change (of the selected outcomes) might have happened.

- Develop a contribution narrative. Describe the development intervention's implementation process and how it affected the result (taking into account external circumstances and other interventions). Examine the narrative's credibility and pinpoint any holes in it. Further gathering evidence, mainly primary data collection e.g., interviews, focus group discussions and online interviews, surveys, etc.

- Final revision and strengthening of the contribution narrative. The new evidence will be assembled to develop a more profound credible narrative based on a broad range of evidence (triangulation).

Of course, a contribution analysis can be part of a realist evaluation approach.

Case study approach. When analysing phenomena (outcomes) that arise from the intricate interaction of multiple factors, a case study is an ideal tool. The case study method works well when there are many interacting variables that lead to changes. Case studies entail in-depth investigation and frequently make use of various methods of gathering data within the case (e.g., nation, region, project, target group, etc.), including participatory methods and field research involving interviews and focus groups. Examining different connections and relationships within the case itself is the goal. The method of case studies also makes it possible to choose and analyse several cases. When attempting to confirm the external validity of a particular Theory of Change (ToC), this can be especially helpful. Of course, within a case study approach, various methods and approaches can be applied. This means that elements of the CIMO framework outlined above, and contribution analysis, can be applied within a case study approach. Essential to the case study approach is the recognition of context and the understanding that a large number of variables determine that context, which in turn generates an impact on the identified changes.

Non-experimental methods can complement and enrich experimental and quasi-experimental methods by providing:

– More depth, nuance, and insight into the intervention and the outcome, such as the rationale, motivation, perception, or satisfaction of the stakeholders, or the challenges, opportunities, or lessons learned from the implementation.

– More breadth, diversity, and richness of the intervention and the outcome, such as the multiple and varied perspectives, dimensions, or aspects of the impact, or the contextual and situational factors that influence the impact.

– More flexibility, adaptability, and responsiveness to the intervention and the outcome, such as the ability to adjust to changing circumstances, emerging issues, or unexpected results, or the capacity to learn from and improve the intervention.

However, non-experimental methods also have some limitations, such as:

– They can be difficult to generalize, compare, or aggregate across different cases, settings, or populations, such as the lack of representativeness, comparability, or scalability of the findings, or the difficulty of synthesizing or integrating the results.

– They can be less rigorous, credible, or convincing in establishing the causality, attribution, or contribution of the intervention to the outcome, such as the inability to rule out alternative explanations, confounding factors, or spurious correlations, or the lack of counterfactual evidence, statistical inference, or robust estimation.

3.5. Synthesis and future directions for assplying IE methods in HECB projects

This review highlights the importance of a tailored approach to impact evaluation, considering the complexity and diversity of Higher Education Capacity Building (HECB) projects. While experimental methods, such as randomized controlled trials, offer rigorous and robust evidence of causal impacts, their applicability in complex, large-scale, or dynamic settings can be limited. Quasi-experimental methods,

such as matching or regression discontinuity, offer more flexibility and are valuable in contexts where randomization is infeasible, yet they still require strong assumptions and robust statistical techniques to ensure the validity of the results. Non-experimental methods complement these by providing rich insights into the processes and contexts underlying the outcomes, capturing the perspectives of key stakeholders and addressing intangible outcomes that quantitative methods may overlook.

Ultimately, the selection of methods should be context-sensitive, balancing the need for rigor with practicality, ethics, and stakeholder involvement. Future evaluations should strive for a combination of methods that not only estimate the causal impact of interventions but also provide meaningful insights into how and why these impacts occur, fostering learning and continuous improvement for future HECB projects.

4. Overcoming bias and uncertainty in impact evaluation for HECB projects

Kuyvenhoven (2014) pointed out that, especially in low-income nations, capacity-strengthening initiatives frequently encounter obstacles like insufficient institutional support and limited resources. However, bias and ambiguity in data collection, analysis, and result interpretation are two of the most significant obstacles and limits of IE in HECB programs. There are several things that might lead to bias and uncertainty, including:

– Selection bias. This can influence the desired results when there is an inequity or comparison between the intervention and comparison groups with respect to traits, preferences, behaviors, or environments. For instance, the outcomes might not accurately represent the intervention's average impact on the entire population if it solely targets the most skilled or driven teachers or pupils.

– Measurement bias. This is the result of using invalid, unreliable, inaccurate, or inconsistent indicators, tools, processes, or procedures to assess the outcomes. This might cause errors or inaccuracies in the data. The results might not accurately reflect the impact of the intervention, for instance, if the outcome indicators are not in line with the intervention's goals or if the instruments used to collect the data are not sensitive, appropriate, or culturally appropriate.

– Attrition bias. This happens when some participants leave the intervention or comparison group during the IE, which could have an impact on the results' generalizability, comparability, or representativeness. The results may overstate or underestimate the intervention's impact, for instance, if the dropout rate in the intervention group is higher than in the comparison group.

– Confounding bias. This happens when variables or other factors other than the intervention have an impact on the outcomes. These variables or other factors may distort or muddle the causal relationship between the intervention and the outcome. The results might not accurately represent the intervention's isolated effect, for instance, if there are outside trends, events, or interventions that have an impact on the intervention or comparison group in a different way.

– Reporting bias. This happens when information is reported, presented, or interpreted in a way that is selectively influenced by the expectations, preferences, or interests of funders, stakeholders, or researchers. This can have an impact on the IE's credibility, objectivity, or transparency.

For instance, the results might not accurately represent the whole or objective evidence of the intervention if they are skewed by social desirability, confirmation, or publishing bias.

Bias can be partially overcome by recognizing the importance of triangulation and applying it as well. The following three forms of triangulation, especially in the application of non-experimental designs, seem necessary:

– Data triangulation. Interviews and focus group discussions with different partners, stakeholders, and beneficiaries to include as many perspectives as possible.

– Researcher triangulation. The proposed core team members will be involved in the analyses of data; each researcher will cross-check the analysis of the colleague and internal team meetings should avoid that researcher bias does occur.

– Methods-based triangulation. Combination of qualitative (interviews, focus group discussion, workshops, document analyses) and quantitative data collection and analysis (existing qualitative data, surveys).

5. Conclusion and recommendations

The main ideas, difficulties, and methods in the impact evaluation (IE) of programs aimed at enhancing Higher Education Capacity Building (HECB) have been examined in this work. Through diverse interventions, these projects seek to improve education systems and communities' social and economic well-being in order to promote sustainable development. Owing to the intricate and situation-specific nature of IE, a thorough strategy combining meticulous preparation, reliable techniques, and stakeholder involvement is necessary. Impact evaluations, which prioritize causation, offer crucial perspectives on the efficacy of interventions. They furnish evidence that can inform policy decisions, enhance program design, and promote responsibility. For example, IE is frequently more appropriate for evaluating programs than individual projects because of the distinct scale and complexity of programs. Based on the review, the paper offers the following recommendations and directions for future research and practice in IE of HECB projects:

– Develop and apply appropriate and robust frameworks, methods, and indicators for measuring the impacts of HECB projects, especially the long-term, indirect, and intangible outcomes, such as social capital, empowerment, or innovation.

– Strengthen the use and integration of both quantitative and qualitative data and analysis, as well as the triangulation and synthesis of multiple sources and types of evidence to better capture the complexity, diversity, and dynamics of HECB projects and their effects.

– Describe and test the logic model or theory of change of the HECB projects; additionally, determine and evaluate the assumptions, contextual factors, and causal mechanisms that impact the outcomes, along with any potential competing theories, confounding variables, or spillover effects.

– Interact and work together with the pertinent stakeholders throughout the IE process to make sure that their needs, interests, and expectations are met as well as that their ideas, suggestions, and opinions are taken into consideration and represented in the design, data collection, analysis, and reporting of the IE.

- Communicate and disseminate the IE findings and recommendations in an accessible, timely, and actionable manner, and facilitate the uptake and use of the IE results by the stakeholders, especially the policymakers, funders, and practitioners, for learning, improvement, and accountability purposes.

- Encourage the implementers, evaluators, and beneficiaries of HECB projects to cultivate a culture of learning and reflection. Encourage them to share the best practices and innovations in IE of HECB projects, as well as their experiences, challenges, and lessons learnt from the IE process and outcomes.

- Develop the ability and expertise of the local researchers and institutions, as well as the implementers and evaluators of HECB projects, to carry out and take part in thorough, pertinent, and helpful IE of HECB projects, and to apply and modify the IE approaches, methods, and tools to their particular contexts and situations.

- Perform more thorough, systematic reviews and meta-analyses of the HECB project reports and current IE studies.

- Synthesize and compare the IE findings, methods, and implications across various themes, sectors, and settings. The selection of the evaluation questions, criteria, and indicators; the balance between the scientific rigour and the local relevance of the IE methods and tools; the power relations and conflicts among the stakeholders; the ownership, access, and use of the IE data and results; and the potential risks and harms of the IE process and outcomes for the participants and the communities are just a few of the ethical, political, and practical issues and dilemmas that may arise in the IE of HECB projects.

- Promote and support the collaboration and coordination among the HECB project implementers, evaluators, funders, policymakers, and researchers, and establish and strengthen the networks, platforms, and mechanisms for exchanging and learning from the IE experiences, knowledge, and evidence of HECB projects.

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CASE STUDIES. HIGHER EDUCATION CAPACITY BUILDING PROJECTS

Contents

4.1. Successful cases of capacity building in higher education projects

Academic training programs have become essential in enhancing the quality of higher education and bene-fiting broader communities, particularly in disadvantaged areas. These programs, which include seminars, workshops, and online courses, not only improve teaching, learning, and research but also contribute to staff development and institutional stability. A crucial aspect is the internationalization of academic insti-tutions, promoting global collaboration and broadening participants' educational experiences.

Many training initiatives focus on social innovation, using applied research to address societal cha-llenges. Successful projects share common traits: a holistic approach addressing pedagogy, research, and leadership; customization to fit institutional needs; continuous evaluation for improvement; and collaboration with other institutions. These programs often rely on support from organizations like the European Union and the World Bank, which provide funding and resources for their success.

Despite their success, challenges remain, particularly in ensuring long-term sustainability amid econo-mic or political instability. Nonetheless, these programs have demonstrated significant positive impacts on education and community development, offering replicable models for other institutions. This part of the book highlights 13 case studies of successful academic training projects, documenting their achievements, sustainability, and lessons learned. These examples serve as valuable guides for future initiatives aiming for sustainable development in higher education.

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Academic training programs have become a fundamental pillar of quality improvement in the field of higher education, extending their positive impacts to the wider community; in certain cases, even providing opportunities for social and economic development to traditionally disadvantaged groups, especially when these programs are rolled out in territories where disadvantage is widespread. These training programmes can include seminars, workshops, visits, online courses and further education programs, among others.

Adequate academic training not only improves the quality of teaching and learning, or the quality of research activity, but also contributes to staff stability and development, fosters a positive working

environment and supports the mission and vision of the institution. Moreover, training enables institutions to adapt to rapid changes in the educational, economic and social landscape.

A key aspect of training programs is the internationalization of the academic institution. Programs that promote international academic mobility, transnational research collaboration and the integration of global perspectives into the curriculum have contributed to the creation of a more diverse and enriched academic community. These efforts not only broaden the educational horizons of participants, but also foster collaboration and intercultural understanding.

The notion that universities have an important role to play in supporting social innovation has guided many of these capacity-building projects. Through applied research and collaboration with local communities, universities have developed innovative solutions to social and economic problems. This orientation towards social responsibility has strengthened the link between academia and society, demonstrating the positive impact that higher education institutions can have on their environment.

There are academic training projects that have been recognized as success cases. These successful projects share several common characteristics that have contributed to their effectiveness and sustainability. First, these academic training programmes adopt a holistic approach that encompasses various aspects of professional development, including pedagogy, research and leadership and management; this approach allows them to address the multiple dimensions of academic work. Secondly, these programmes are tailored to the specific needs and contexts of each institution and territory. Contextualization ensures that training is relevant and applicable, which increases its impact and effectiveness. In addition, implementing evaluation and feedback mechanisms is fundamental to the success of any training program; continuous evaluation allows for identifying areas for improvement and adjusting programs to maximize their effectiveness. Finally, collaboration with other institutions and participation in academic networks are essential components of successful training programs. These collaborations provide access to new ideas, resources and professional development opportunities.

The support of donor institutions has been instrumental in the success of many of these academic training projects. Organizations such as the European Union, the World Bank, the Inter-American Development Bank, the African Development Bank, and higher education institutions themselves, among others, have provided funding, resources and expertise for the development of training programs. These institutions not only provide funds, but also facilitate international collaboration, provide access to knowledge networks and encourage the adoption of global best practices. Publicly funded academic training is a strategic investment to improve the quality of education and promote the professional development of teachers and students. Successful projects in this area have demonstrated that through careful planning, innovative methodologies and continuous evaluation, it is possible to achieve significant impacts on the quality of education and the socio-economic development of communities.

Several important lessons have emerged from the implementation of these academic training projects. Customization of training programs to address the specific needs of participants and the institutional context is key to their success. In addition, collaboration across institutions and with external experts enriches training programs and expands professional development opportunities. Continuous evaluation and feedback are essential to adapt and improve training programmes, ensuring that they meet their objectives and respond to changing needs. Finally, the sustainability of training projects depends on institutional commitment and adequate resource allocation for implementation and continuity. Despite the successes achieved, the implementation of publicly funded academic training projects faces several challenges. One of the main challenges is to ensure the long-term sustainability of these programs.

Dependence on government funding can be a limiting factor, especially in contexts of economic instability or changes in educational policies.

Undoubtedly, academic capacity building projects in Higher Education Institutions (HEI) have proven to be an effective tool for improving the quality of teaching and research. Through comprehensive, adaptive and collaborative approaches, these projects have generated positive results and established replicable models for other institutions. The documentation and analysis of these success cases, largely supported by donor institutions, provide valuable lessons and recommendations for future initiatives, thus contributing to sustainable development and academic excellence in higher education.

This fourth part of the book is devoted to thirteen academic training success cases. In each of them, following the same structure, the different authors tell us about the background of their project, the main achievements, the products, results and impacts generated, the factors that led to success, the sustainability of the project and the lessons learned, closing their delivery with a section devoted to the final conclusions. As editors of this book, we would like to thank all the authors of these thirteen projects for their time and effort. Before addressing each project, a synthesis of each project is presented as a quick and easy read.

Rosa M. Batista-Canino and Silvia Sosa-Cabrera present a project of socio-economic relevance in the context of the countries in which it was developed. INSTART, Euro-African Network of Excellence for Innovation and Entrepreneurship, was designed as a 'Capacity Building in the Field of Higher Education Project' to enhance the knowledge triangle (i.e. education, research, and innovation) by promoting an entrepreneurial and innovative culture in higher education, and as a way of creating an effective interaction between universities, businesses and society. The Consortium was composed of 12 universities from the South Mediterranean Region (MED) (i.e. Algeria, Egypt, Libya, Morocco, and Tunisia) and 4 European universities from Spain, Portugal, Italy and Poland. These universities, along with several social partners, worked together to make the quintuple helix approach (i.e., university-industry-government-public-environment interactions) a reality. Almost five hundred people from the MED universities, including professors, students, university management teams, and university administration staff, took part in the various actions organized by INSTART, in which activities to support units for the innovation and entrepreneurship ecosystem, as well as a Transversal Acceleration Programme and Marathons for teaching staff, were the star activities of the project. INSTART also provided resources to equip new spaces for innovation and entrepreneurship, and Knowledge Transfer Offices in the participating universities. In a context in which the political turmoil in the wake of the Arab Spring challenged the stability of these countries, INSTART offered the opportunity to develop a favourable climate for collaboration to build a better future for the region.

Carlos Rodríguez Robaina, Raquel Quirós Pozo, Sara Ramírez Bolaños, Priscila Velázquez Ortuño and Lidia Robaina in their chapter entitled the ISLANDAP ADVANCED PROJECT highlight the importance of multidisciplinary work and working on a common goal to meet the needs of Higher Education Institutions (HEIs) to prepare professors and students in a coordinated way to achieve the United Nations' Agenda 2030 Sustainable Development Goals (SDGs), internationally and across regions. In this sense, the key role of HEIs in the socio-economic development of countries, regions, and cities in the context of today's global challenges and needs represents a real opportunity to strengthen inter- and intra-regional ties in order to address common challenges more effectively, with the conviction of achieving the necessary positive multiplier effects. The project´s main objective focuses on improving capacity building through institutional cooperation in three 'outermost regions' (Madeira, The Canary Islands and Cape Verde) involving three fields (aquaculture/aquaponics, tourism/economics and engineering) in order to freely

create synergies around aquaponics and the Circular Economy (CE) as a driver for transdisciplinary university networks geared towards advancements in research and teaching. The design of three areas of knowledge, which in turn interact with one another to address any needs that arise in order to achieve the model's sustainability results, seems to be easy to replicate with success. Therefore, the novel aspect of this case study is how new and improved competences to be developed during a similar project should represent added value during the writing of proposals and objectives.

Silvia Marchionne presents the outcomes of the SAGESSE project, which aimed to improve university governance and autonomy in Tunisia's higher education system. This initiative involved 20 institutions from four countries, including all Tunisian public universities, EU universities, the Tunisian Ministry of Higher Education and Scientific Research, associations, and a quality agency. Co-financed by the European Union under Erasmus+ (CBHE) and coordinated by UNIMED - Mediterranean Universities Network, SAGESSE was the first project uniting all 13 Tunisian public universities. It created a unique dialogue space for university leaders, decision-makers, and staff, in collaboration with the Ministry of Higher Education. Through a benchmarking study and capacity-building activities in Tunisia and Europe, Tunisian Higher Education Institution (HEI) staff enhanced their skills in strategic planning, accountability, financial management, and quality assurance mechanisms. This contributed to establishing a good governance framework and improving institutional autonomy. SAGESSE also created synergies with other national initiatives and programs to support the higher education reform strategy of the Ministry. The project's impact extended beyond its lifetime, as HEIs continued the reform process and joined a new CBHE project on research governance led by a Tunisian university. Finally, the project's lessons offer insights for similar initiatives. Notable outcomes include the development of unique software for qualitative analysis, adopted by all Tunisian HEIs, and the instillation of a culture of quality and results-based performance within the university community.

Carolina Madeleine of the University of Alicante, Spain, and Rofah Makin of Universitas Islam Negeri Sunan Kalijaga, Indonesia, presented a case study on the INDOEDUC4ALL project. This project, conducted from 2016 to 2020, involved multiple local and European partners and focused on addressing the severe underrepresentation of disabled individuals in higher education within Indonesia, a country where less than 1% of people with disabilities are enrolled at universities. The project's approach centred on creating Disabled Students' Support Centres equipped with assistive technologies and developing a national network to foster best practices in inclusive education. Key achievements included significant improvements in institutional capacities to support disabled students, the establishment of modern disability support centres, and the creation of a collaborative network enhancing inter-institutional relations. Ultimately, INDOEDUC4ALL has played a crucial role in promoting inclusive education policies and practices within Indonesian higher education, aligning with national legislation and international disability rights standards, thus contributing to a more equitable access to education for students with disabilities.

Domingo Verano-Tacoronte, Inmaculada Galván-Sánchez y Alicia Bolívar-Cruz presented the ARROW project. ARROW is aimed at enhancing Mongolia's scientific research and development capabilities by addressing key challenges in education, research and innovation. It recognised the need to align Mongolian standards with international benchmarks and promote a culture of high-quality scientific production. Despite significant economic growth, Mongolia lagged in scientific development due to a focus on teaching rather than on research. ARROW, implemented by a consortium of European and Mongolian universities, focused on capacity building through various activities. These included online courses on scientific databases, onsite English courses, workshops on plagiarism, writing skills, problem-solving, seminars on patents, and statistics courses. ARROW also established a mentoring network connecting

young Mongolian researchers with experienced European mentors. The factors that led to success included collaboration among consortium universities. The project's dissemination strategies, including social media engagement and recruitment of mentors, enhanced visibility and impact. Sustainability measures included maintaining the mentoring network, signing agreements for continued cooperation, and local development. The project's achievements included improved research skills, increased publication in international journals, and an enhanced recognition of Mongolia within the academic community. It also contributed to the diversification of research fields in Mongolia and strengthened research networks between Europe and Mongolia. Lessons learned emphasised the importance of active participation of local partners, multicultural management, clear quality assurance measures, and adaptability in the face of challenges such as the COVID-19 pandemic. Overall, ARROW facilitated knowledge exchange, capacity building, and sustainable collaboration, laying the foundation for scientific development in Mongolia.

Claudia Linditsch and Anita Maček presented the TOURIST project's efforts to advance sustainable tourism practices in Thailand and Vietnam. The project established seven competence centers, pivotal hubs for collaboration among students, lecturers, and staff. These centers influenced local communities, tourism associations and international representatives, promoting sustainable practices. The TOURIST project enhanced the reputation of participating universities, creating a robust network among higher education institutions and the tourism sector. It provided a practical roadmap for sustainable tourism, aligning with national policies in Thailand and Vietnam, and catalyzed initiatives such as "Travel Thailand in Style, Reduce Plastic Waste" and "CSR & SET in the Local - Life and Learn" in Thailand, while supporting the Green Growth Strategy in Tourism in Vietnam. Key outputs included a good practice catalogue, needs and GAP analyses, train-the-trainer events, and multiplier training sessions reaching over 250 stakeholders. The competence centers supported more than 100 organizations and communities. Additionally, the creation of an international online network facilitated global collaboration and knowledge exchange. The project's success was attributed to strategic alignment, dedicated teams, stakeholder engagement, collaboration with civil society, and innovative solutions. Sustainability measures ensured financial, institutional, and political longevity, supported by university commitments and alignment with national strategies. Lessons learned highlighted the importance of collaboration, interactive education, capacity building, and balancing economic growth with environmental conservation. The TOURIST project reshaped the sustainable tourism landscape in Thailand and Vietnam, leaving a legacy of responsible tourism practices and empowered individuals dedicated to sustainable tourism.

The CBHE Erasmus+ programme, which funded the LATWORK project, is primarily aimed at strengthening the operational structures of Higher Education Institutions (HEIs). As Victor F. Climent, Elisio Estanque and Meritxell Calbet point out, the needs analyses in LATWORK provided evidence that research activities lack the necessary level of regional structuring, which limits their replicability and visibility. LATWORK operates within this dimension, and the identification of this weakness in research on informal labor is a clear example of the enormous potential of the Erasmus+ program. Led by the UVM, the project' goal was to enhance the understanding of informal work through interdisciplinary cooperation between universities and labor market stakeholders in Chile, Argentina and Brazil. This approach aimed to reduce informality and promote labor rights, highlighting the need for more comprehensive knowledge about the internal and external dynamics of informal labor and its societal impacts. One of the significant achievements of LATWORK was creating a network of research centers and the RedLatt network for regional coordination. This improved interdisciplinary debate and understanding of the causes of informality. However, the project also revealed that the research on informal labor lacks regional structuring, impacting the replication and dissemination of findings. This limitation underlines the critical role of the Erasmus+

program in addressing these gaps. By funding projects like LATWORK, the program demonstrates its commitment to enhancing the capacities of HEIs. This enables them to conduct impactful research that can influence policy and improve social conditions, particularly in regions like Latin America where informal labor is a prevalent and complex issue.

Blanca Ruth Orantes presented the MEANING project, where the need for specialized training in countries such as Guatemala and El Salvador was identified, as well as the lack of articulation between university-industry, which led to a proposal to create master's programs that respond to the needs of the region's professional market and comply with European quality standards. In this context, the modernization of the higher education sector and the improvement of students' employability in the area of Engineering for Industry in both countries were proposed. During the execution of the MEANING project, the goal was to design and implement an innovative Master's Degree in Industrial Engineering with three specializations: Robotics, Telecommunications and Computer Sciences for El Salvador and Guatemala with a matrix of competencies generated from the needs analysis, the basis for the curriculum design recommended by European institutions involved, and the methodological training for faculty members from the beneficiary HEIs. The impact was the modernization of the regional industry with the optimization of production processes and the promotion of research for the industry. Furthermore, the specialization in specific application areas and professional practices in the industrial sector to have highly qualified professionals articulated efforts of the universities for the industrial sector. All the above-mentioned constituted a model for the modernization of other areas of knowledge taught in universities.

Cliona Maher, Yensi Flores and Mark Tangney presented the HONDURAN biotech project. The cornerstone of this training case is the creation of the Biotechnology Laboratory at the National Autonomous University of Honduras (UNAH) through donations of equipment and materials from the University College Cork (UCC). From there, UCC itself carried out the training of the UNAH staff in charge of the Lab, supported by the AMIDILA project —where UCC and UANH were partners— and funded by the Erasmus+ program, specifically by the International Credit Mobility (E+ICM) action (included in Key Action 1). The training activities took place in Cork, Ireland, and Tegucigalpa, Honduras, between 2015 and 2019. The academic mobility was aimed at fostering bio-innovation in UNAH and providing UNAH staff and students with training in synthetic biology research approaches, current technologies and methods. For European researchers, it aimed to provide them with knowledge about internationalization, global context and first-hand experience of issues that could be solved with synthetic biology. Coupling experience and knowledge with problem identification is a key driver of innovation. The aim of this experience was to translate into innovation, global citizenship and internationalization for both institutions, as well as the development and delivery of a replicable capacity building course. In this case study, the authors have summarized the most relevant elements of the process of setting up the laboratory and training through academic mobility, this project being an example of good practice in the field of *development cooperation* between Europe and Central America.

Marta Busquets Calopa, through the IMPALA program, explained the creation and implementation of a quality framework focused on impact assessment of third mission activities to equip Higher Education Institutions (HEIs) in Latin America. This new framework complements existing quality assurance systems traditionally focused on teaching and research, and equips HEIs with the skills to apply this framework to their contexts. This promotes a culture of impact assessment and enhances the quality and relevance of services offered by HEIs to their communities. The program, developed in three key phases, establishes and validates a new evaluation tool called the Impact Assessment Framework (IAF), which enables the evaluation and improvement of all university operations, especially community services;

defines the impact related to universities' "third mission" activities, acknowledging the complexity of this concept; and, finally, also develops and provides the IAF to HEIs, including the methodology and tools necessary to measure the impact of their third mission activities. Through specific tool development, the project benefited the consortium's HEIs and offered a useful approach for other Latin American HEIs to enhance their quality assurance by measuring the impact of their third mission activities.

Jean-Baptiste Maillard and Christophe Terrasse shared their analysis of FORINT —Fortalecimiento de la Internacionalización entre Europa y América Latina (Strengthening internationalization between Europe and Latin America). Between 2016 and 2019, the project gathered eight Cuban and Panamanian universities and the Cuban Ministry of Higher Education. It dealt exclusively with the internationalization of higher education and has introduced 500 participants to its diversity, activities and operationalization in European HEIs. This focus fostered a common understanding of this concept, allowing participants to exchange practices and solutions best suited to their situation and needs. Their knowledge was put into practice in designing and launching a long-term international development strategy validated by the academic board in each institution. This contributed to an increased cooperation between European and Latin American institutions, which is still active today. Five years after its completion, FORINT stands out as an example of a successful Erasmus+ Capacity-Building for Higher Education project. Looking back at the project, the authors identified that its relevance to the local needs and expectations, the partners' involvement in all the activities and the active support of the public authorities can collectively explain this success.

Responding to the nascent interest in social innovation as a driver of socio-economic change in countries across the world, the Lasin and Seasin projects were conceptualized to help universities support their communities more directly by establishing Social Innovation Support Units. As Mark Majewsky Anderson pointed out, these physical spaces would be specially designed to support social entrepreneurship incubation, knowledge exchange with private, public and third sectors, and help support direct engagement with local communities. The Units incorporated a makerspace with 3D printing, VR and IT facilities to help support the development of prototypes by users. Over the course of the two projects, the Social Innovation Support Unit model increased the generation of new social innovations, social enterprises and projects through the development of supportive ecosystems. It also generated new collaborations between university academics, students, communities and social programs at both a local and international level, particularly in low- and middle-income countries, benefitting more disadvantaged or marginalized (potential) entrepreneurs in resource poor environments. It provided students with opportunities for entrepreneurial co-curricular activities to enhance the curriculum and to access new funding opportunities, including microcredit resources. The projects facilitated university engagement with communities, providing students and academics with the capacity, motivation and experience to do so, whilst developing tools to demonstrate and measure the impact, as well as the potential to develop new innovative models for social change.

Elizabeth Bernal Gamboa and Luisa Fernanda Villamizar Rodríguez presented the results of the creation and implementation of the Model for the Management of Research and Innovation in the Andean Region of Latin America: MIMIR ANDINO. This international cooperation initiative, involving 20 institutions from six countries, including government entities, universities, associations, and quality agencies, was co-financed by the European Union within the framework of Erasmus+ projects (CBHE) and coordinated by the Colombian Association of Universities, with the support of OBREAL Global. The model developed includes principles and recommendations in strategic, execution, relational, and administrative components for managing research and innovation, as well as a proposal to redefine R&D evaluation in concert

with institutional characteristics and purposes. The pilots conducted allowed for adjustments to make the model useful for Higher Education Institutions (HEIs) with different maturity levels and contexts. Additionally, a platform for institutional self-evaluation in R&D management was built, some influence was achieved in public policy formulation in the involved countries, students were included in a topic usually exclusive to executives, the impact was expanded to other HEIs beyond project partners, and a Latin American network of coordinators for such projects was created, among other significant impacts. Finally, lessons learned were presented that offered insights for similar projects and, among the most important outcomes, the creation of a new project within the framework of CYTED for an Ibero-American network in research and innovation management, undoubtedly a crucial contribution to the consolidation of cooperation between Latin American, Caribbean and European countries.

4.2. The ISLANDAP ADVANCED project

The present case study is based on the project ISLANDAP ADVANCED titled "R+ D + i towards aquaponics development in the UP islands and the circular economy. Interregional forward challenges", from which transdisciplinary teaching and research methods have been evaluated towards higher education (HE) competences enhancements. The project was granted under the INTERREG VA Spain-Portugal MAC Cooperation program (Madeira-Azores-Canarias) 2014 –2020 (MAC2/1.1a/299). The consortium involved partners from 2 EU outermost regions: Madeira and Canary Islands and the Cape Verde Islands, all cooperating under the same circularity development objectives when the Circular Economy was still an abstract name difficult for society to define and complicated to start working within the framework of research and training in HE. Thus, from Cape Verde the University of Cape Verde (UCV; Biology Faculty), University do Atlántico (UTA, Sciences Faculty), Instituto Nacional de Investigação e Desenvolvimento Agrário (INIDA), Instituto do Mar I. P. (IMAR) who during the project associated the Escola do Mar Cabo Verde (EMAR) participated; from Madeira Islands, University of Madeira (Faculty Economy /Tourism) and the Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação Tecnologia (ARDITI); and from the Canary Islands 3 different institutions, Canary Islands Agricultural Research Institute (ICIA), Canary Islands Technological Institute (ITC) and the University of Las Palmas de Gran Canaria (ULPGC). The consortium was led by ULPGC with the participation of 3 well-coordinated groups (Economics and Business Management on the side of the tourism sector, Engineering and Renewable Energies, and the Aquaculture Research Group belonging to the Ecoaqua University Institute).

The main objectives and results of the project are summarized below, focusing on the case specifically on improving capacity building through institutional cooperation at inter- and intraregional levels in the regions. ISLANDAP ADVANCED project and its results have been used in different events as a model for the transdisciplinary needs at the HE and the Circular Economy towards 2030 United Nations Sustainable Development Goals (SDGs) inter & across regions. It is also a project well evaluated due to its connection with society and new associated project ideas under development.

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Lidia Robaina Robaina, University of Las Palmas de Gran Canaria

1. Background

Transdisciplinary teaching becomes an area to be completely improved according to urgent socio-economic needs for innovation and applied sciences in many sectors (Nordén, 2018). Besides, the transition from linear to Circular Economy (CE), emerges: "A circular economy is an industrial system that is restorative or regenerative by intention and design" (EMF, 2013). It replaces the 'end-of-life' concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models (MacArthur, 2013, p. 7). These two factors represent real challenges not only in terms of the need for skills' definition but also in how capacity building should be adapted or improved in our university communities (students, staff and professors) (de Abreu & Ceglia, 2018; Žalėnienėa et al., 2021). This is the context in which the ISLANDAP ADVANCED project was defined by combining these two challenges: start working on CE through transdisciplinary teaching and research.

To do so, the goals on which the project is based are:

1. *To create the team group around EU's Smart Specialization Strategies (S3)* (national/regional) of the participant regions (Cape Verde, Madeira & Canaries). The S3 priorities are defined in each region on their bespoke innovation strategies, aligning both, with local expertise and the global market demands (European Commission, 2023). Therefore, aquaculture and the tourism/economy sectors were at the center of the project developments linked to the agrifood sector and complemented by technological innovation. They have been defined as knowledge areas in which we need to prepare our students/staff/teachers for the near future goals.

2. *To find a unique objective from which the defined three areas may be connected in a circular model*. Aquaponic, a novel agro-green-blue sustainable food system production, where plant and fish growth complement each other through water as a shared medium, was selected as a working model. This is a system where fish feed is the main input and which also has a great need for technological development to achieve whole production sustainability, as well as to adapt to climate change and regional specificities.

The importance of the regional needs for the three defined areas regarding circularity was then reported, considering Blue Growth as a motor for the whole project development. Thus, aquaculture, the controlled aquatic farming production of animals and vegetables, represents more than 50% of the total consumed aquatic food products in the world and is one of the key food production sectors for the coming decades to complement food security, both in quantity and quality far all (FAO, 2021). According to that, aquaculture is among the five focus areas with high potential for Blue Growth in the EU and all territories (FAO, 2015), being under the focus of its expected rapid production development the system transformation to better adapt them to sustainability, circularity and the climate change (all systems and products for fresh, salt or brackish water aquaculture, warm/cold waters and outdoor/indoor).

On the other hand, tourism stands out as a vital activity for the three regions encompassed by the project. For example, in the case of the Canary Islands, tourism accounted for 35.5% of gross domestic product and 39.7% of employment in 2022 (Exceltur, 2023). However, it also causes considerable environmental impacts, exerting substantial pressure on local resources and resulting in adverse externalities, mainly due to the current linear model of production and consumption (Rodríguez et al., 2020). This underlines the crucial importance of implementing a circular economy in this sector, especially given its importance for the island territories that make up the project consortium.

Regarding engineering, this is a priority sector in the mentioned regions due to its capacity to drive innovation, generate employment, improve infrastructure, promote sustainability, and foster collaboration. By investing in engineering, the regions can strengthen their economy, enhance their resident's quality of life, and effectively address the challenges of the 21st century (Peña-Reyes, 2011). In the context of implementing aquaponic systems, engineering has been crucial in working multidisciplinary with various areas involved in the project. Designing, optimizing, and innovating in new technologies becomes essential to maximize resource efficiency and minimize waste.

As a summary, three groups (aquaculture/aquaponic, tourism/economic and engineering) worked together to create synergies and a transdisciplinary university network for research and teaching with aquaponic and the CE in the centre of the developments. This is where the significance of this project becomes evident in the II call of the INTERREG VA Spain-Portugal MAC Cooperation program (Madeira-Azores-Canarias) 2014 –2020, financed by the European Regional Development Fund, from where the research, technological development and innovation achieved within the previous ISLANDAP project (MAC/1.1a/207) has promoted the development of this second phase, ISLANDAP-ADVANCED (MAC2/1.1a/299). The project titled "R+ D + i towards aquaponics development in the UP islands and the circular economy. Interregional forward challenges", was granted under the (Axis 1) Strengthening research, technological development and innovation and (Investment priority PI1a), Improvement of research and innovation R&I infrastructures and of the capacity to develop excellence in R&I and promotion of centers of competence, especially those of inter-European scope. ISLANDAP ADVANCED project is being coordinated from the University of Las Palmas de Gran Canaria (ULPGC) in close collaboration with two other Canarian institutions (Canary Islands Agricultural Research Institute-ICIA and Canary Islands Technological Institute- ITC), and all other partners from Madeira (University Madeira-Faculty of Social Sciences-UMA, Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação-ARDITI) and Cape Verde (University of Cape Verde, Faculty of Biology-UCV, Technological University do Atlantico-Faculty of Science and Engineering-UTA, Instituto Nacional de Investigação e Desenvolvimento Agrário (INIDA) and Instituto do Mar I. P. (IMAR) which during the project associated the Escola do Mar Cabo Verde (EMAR)). The project has two main objectives:

1. To potentiate the R+D+i to promote the sustainable aquaponic production adequate to our regions, and the circular economy around organic matters.

2. To create a circular economy interregional network to promote sustainable primary production, bio-residues valorization, biotechnology, circular economy and education in all these areas.

To achieve these objectives, three actions were developed, each carried out in three consecutive sub-actions with their corresponding tasks:

- Action 1. a) Experimental developments in feeding, aquaculture and aquaponics; b) Experimental developments in hydroponics adapted to swimming and saltwater aquaponic systems; c) Developments in microalgae technologies.

- Action 2. a) Studies on the application of soft technologies for the production systems in all regions.

- Action 3. a) Dissemination and increase of participants in the Circular Economy Network in Islands (RECIS) (communication) and marketing studies of products and technologies; b) Experimental developments for the implementation of operational networking dynamics, development of ITCs and data processing.

2. Main achievement of the project

The interaction of teachers from different subjects in the resolution of specific common objectives has led to a small ecosystem for scenery co-creation with multi-area content. That is the first thing that was the focus of our attention, from where capacity building needs were considered along the project towards students at different levels (degree, master and PhD students). In this context, institutions from third countries are involved in training activities to enhance their own capacity building needs, students and professors, through granted Short Term Scientific Missions (STSMs) for staff among institutions.

Based on the above, upon concluding the project and referencing the project´s defining illustration (see Figure 4.2.1), the following approximation is achieved based on the acquired competencies.
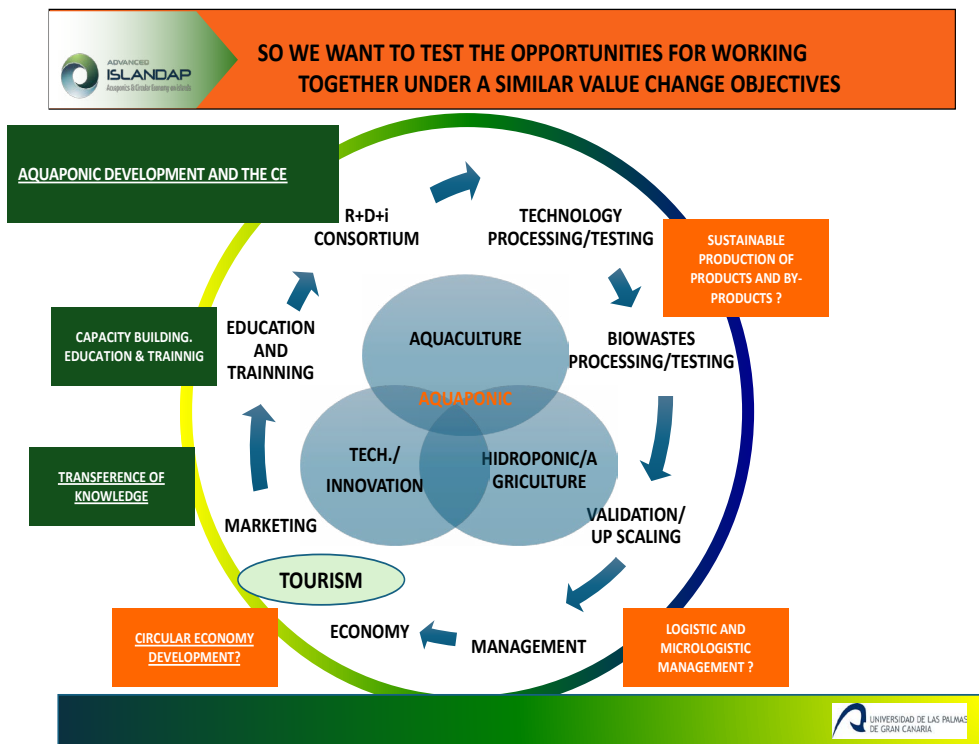
Figure 4.2.1. ISLANDAP ADVANCED project drawing
Source: Own elaboration.

As can it be seen in Figure 4.2.2, the acquired competences encompass a diverse range of skills and abilities, such as the ability to apply transdisciplinary knowledge in practice, competence in knowledge transfer and patents generation or the ability to generate working groups for the resolution of specific problems generated in a specific area of knowledge. Other competencies include for example by-products processing and technological watch, food safety and animal welfare, knowledge of the fundamentals of automation and control methods, competencies in logistic and micro logistic management or competencies in applied circularity under the tourism perspective.
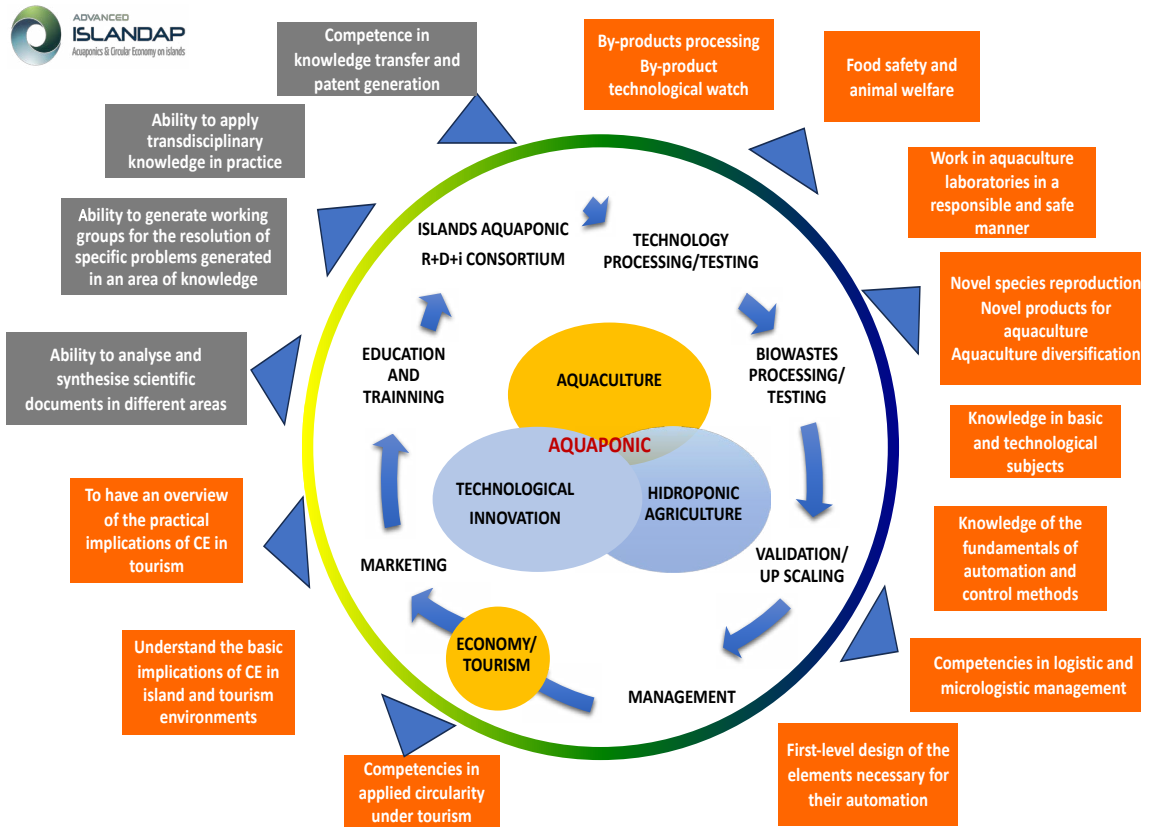
Figure 4.2.2. ISLANDAP ADVANCED associated project competences
Source: Own elaboration.

The students who have acquired these competences have achieved multidisciplinary training in different areas due to the joint work of the project's researchers. Therefore, Figure 4.2.2 clearly shows that due to the project's multidisciplinary nature, combined capacity building in different areas has been achieved.

3. Outputs, outcomes and impact

An aware, committed and active citizen is needed, and students are the seed of this profound change. They will form the decision-makers of tomorrow in companies, thus having the capacity to intervene in their consumption models by changing their behavior (De-Graaf, 2002), demanding the necessary policy changes to do so (Novo, 2018). The fundamental objective of these trainings is to promote the generation of critical thinking offered by experiences in order to make the magnitude of the need for system change visible from their learning; it is not only about knowing, but also about knowing how to do and knowing how to be (Delors, 1996). In agreement, the actual contribution of the project results to any of the involved knowledge areas is summarized throughout teachers and students' perspectives below.

In this context, the economy area of the project has had among its objectives the training and awareness of students in CE and tourism, mainly in the Degree of Business Administration and Management and Double Degrees of Business Administration and Management with Law and Engineering and Business Administration. This effort's outcome is reflected in the successful completion and defense of many final degree projects by students from different universities involved. Moreover, among the results, a new research line in the field of CE and tourism was achieved. Students' synergies have been generated between tourism and aquaculture making it possible for a student from the tourism area of the project to be aware of the quality controls that have to be carried out in the installation of aquariums in hotels even if it is not their area of expertise.

The engineering area drove to the adoption of clean technologies such as renewable energy, intelligent resource management, and process automation, significantly contributing to promoting CE training principles onwards and reducing environmental footprint along the different combined area purposes. In this sense, its comprehensive approach and capacity to design solutions were fundamental for addressing good practices and environmental challenges, overall traduced in a sizeable number of final graduated and postgraduate students' works developed with different areas skills contributions. For instance, according to the students, it was useful to share a closer biological approach to improve the design of the technological prototypes adapted to the specific queries of the plants or aquatic animals involved.

Regarding the aquaculture science, great opportunities have been opened and shared in HE with our third parties in Africa, but also at regional and even inside the own university by reconnecting 3 groups along the 4-year project with one objective to be improved from the different areas. Important outcomes were observed when applying new CE understanding knowledge contribution from the project partners and results in some of the theoretical classes in aquaculture and marine biotechnology, with really good results and acceptance from the students. Also, a high impact was observed not only in the number of students' final works at the ULPGC (degree, master, PhD), but most interestingly in the transdisciplinary nature of the student's research evolution along the whole project. For example, it was evidenced though different student works on the potential of the consumption of sustainable local fish species by promoting the synergy between sustainable aquaculture and the tourism sector.

In summary, working multidisciplinary in CE at HE level demonstrated to strengthen technical and professional capabilities in the different fields both in students and teachers, while facilitating knowledge and best practices transfer and reinforcing in general institutions and regions 2030 SDGs. Moreover, it promotes the development of innovative projects and technologies to effectively tackle current and future regional and global challenges.

All the aforementioned factors have exerted an influence on various beneficiaries, including universities and R&D centers that will see their knowledge and technologies strengthened in emerging research areas at a global level, improving their positioning for future projects; and companies, which will oversee putting this knowledge into value, generating wealth and employability in several regions. Also, regional organization centers will have greater support from R & D & institutions in matters of sustainability, environmental management and primary production. Finally, the general population will have access to the results and applications of the project through training and dissemination actions that will promote sustainability, the sustainable use of resources, the reduction of organic waste and its revaluation, water and energy saving, sustainable primary production, awareness for the maintenance of natural resources and biodiversity in the regions and environmental sustainability and tourism.

4. Success factors

To evaluate the present case study of the ISLANDAP ADVANCED project about transdisciplinary teaching and research methods for competence enhancement in HE, the metrics from the research carried out by our students and staff during the whole project period were designed. Thus from 2020 to 2023 a total of 40 final degree projects, 5 master's degree thesis, 2 PhD and 11 STSMs were developed among groups.

For the final degree thesis (40) different areas were involved: 7 (Algae, Biotechnology, Aquaponic, Aquaculture, Water & Waste Management); 1 (Aquaculture, Agriculture, Engineering-Alternative Energies); 3 (Engineering-Alternative EE, Engineering-electronic, Aquaculture); 1 (Aquaculture, Waste Management, Economy, Societal challenges); 1 (Economy, Business, Aquaculture, Environment); 1 (Waste Management, Engineering-Industrial Organization, Engineering-electronic); 7 (Waste Management, Engineering, Business, Societal Sciences); 3 (Economy, Business, Societal Sciences); 6 (Tourism, Economy, Societal Sciences); 10 (Tourism, Business, Societal Sciences, Engineering, Waste Management, Entrepreneur).

Furthermore, the different areas involved in a total of 5 final master's degrees were: 1 (Tourism and Societal Challenges for circular practices regarding by-products); 2 (Aquaculture and Waste Management, towards applied fish nutrition with novel local by-products like microalgae, fish processing industry discharges and palm seed fruits and extracts); 1 (Aquaculture, Engineering-electronic to study salinity changes on fish behavior and fish physiology using newly developed sensors) and 1 (Engineering-Alternative EE, Engineering-electronic and Aquaculture, for the design of an off-grid system powered by a hybrid wind/photovoltaic system).

Two PhD thesis were presented, one in the area of tourism which assessed the importance in the CE literature, studying the circular practices carried out by tourists and implemented by hoteliers in a mature island destination and proposing recommendations to achieve greater circularity in the tourism sector. The second PhD was in the area of sustainable aquaculture and marine ecosystems, focused on the optimization of the culture of local fish placed down in the food chain, and therefore, on their potential to use more sustainable feeds (for instance, valorizing local byproducts from vegetal origin).

Finally, Short Term Specialization Missions (STSM) for cooperation in the "intelligent specialization" have been developed among scientific-technical staff and students by joining different workshops, but mostly facilitating individualized training in specific areas. A total of 11 training staff exchanges have been facilitated, from which 5 correspond to African countries teaching defined needs. The STSMs were associated with the aquaculture production and system design, automation and control management of fresh and salt water aquaponic systems, the valorization of organic waste, algae biomass production, the aquafeed formulation, preparation and testing of diets in fish and plants, alternative energies implementation and tourism circular metrics.

In short, and apart from specific transdisciplinary research challenges obtained over the 4 years period, significant challenges could now also be agreed on the project success in terms of improvement of scientific-technical student's skills and staff training in novel competencies and transdisciplinary vision, in a coordinated manner between regions, as well as in creating a joint R+D+i platform for the whole region, optimizing resources and personnel, favouring participation in competitive projects.

5. Sustainability

In addition to the above mentioned challenges achieved in the improvement of training competencies in teaching and research, the following aspects can be mentioned as examples of other indicators of the adequate transdisciplinary of the project. Thus, the number of researchers working in improved research infrastructure facilities has increased from 1 in 2020 to 13 in 2023, with an increase from 8 to 10 in the number of research centers participating in the project. The project website received more than 10,000 visits, which we now hope to transfer to the project`s network (RECIS) website which will continue to operate under the same logo while being based on the Sustainable Development Goals and the necessary integration at all levels to achieve the SDG 2030. Together we have also achieved 49 media outreach events and 58 communication events for a total of 4,555 people, of which about 400 participated in third countries. Finally, 14 new research and development projects and collaborations have emerged from this project. All these reported data can signify the continuity of the activities under-taken and the success of the project design. Based on this, we understand that this work design can be perfectly replicated with any other objective. So much that the continuity of the design has already been requested in another completely different subject submitted from the same institutions and areas of knowledge, to support what has been done and achieved between all of us in these 4 years in the field of CE and regional sustainable growth.

6. Lessons learnt

In summary, the project activities were initially designed by the partners to address environmental sustainability and contribute to resource management plans (data collection and sampling campaigns) through Research and Innovation (R&I) cooperation, especially in emerging technologies. The strength-ening of R&I infrastructures and capacities and the joint work set out in the proposal were designed to enable the European UP regions to become international centers of excellence in research and innova-tion in emerging areas for their own sustainable growth. For those purposes, the partners committed themselves to collaborate from the beginning of the project to ensure that the different regions could move forward together in terms of both equipment and Research and Development (R&D), each with their own regional specificities. As a result, and largely complementing all the above, we can now share the evaluation of the presented project from a novel perspective, which considers how the initial basic research objectives reach, over time, competence improvements between and within institutions and regions. In addition, the creation of a CE network between researchers, companies and administrations will promote sustainable local management of bioresources.

Students account for most of the effort made to obtain the results achieved in testing and improving novel and sustainable ideas. Therefore, the importance of promoting in our own teaching sustainable practices and a circular understanding, as well as considering the importance of specificity although working in multidisciplinary teams represent valuable lessons we have acquired during this investigation.

7. Conclusions

The key role of HEIs for the socioeconomic development in countries, regions and cities in the context of today's global challenges and needs represents a real opportunity to strengthen inter- and intra-regional

ties to address common challenges more effectively, with the conviction of achieving the necessary positive multiplier effects. Moreover, on the science side, technological advances must be accompanied by a commitment to ecological harmony, so synergies must start from intra-HEI interaction and from there outwards, to fill the gaps needed to solve specific problems. Similarly, over the last decade, multiple programs, grants and networks have been addressed to fill the gaps (capacities/competences) of our neighboring regions of Africa and Macaronesia according to their strategic developments. The ISLANDAP ADVANCED project promotes this idea to help each other to fill our specific knowledge gaps at regional and interregional level, to measure the real impact obtained and to define future perspectives based on the improvements achieved. The project also considers the dissemination of knowledge and scientific advances to social actors as a key aspect, so the ADVANCED project is also a well-known example of innovation by disseminating its results at regional, national and international levels with important recognition in this sense. The basic of the innovation was focused on the EU report regarding the money injection in aquaculture EU products' promotion and the almost null results obtained, which found the problem in the scarce unspecified information offered on the production and quality of the product to the final consumers. Therefore, the idea was to provide our "knowledge consumers" with as much in-depth information as we could offer from the objectives and results of our projects.

The ISLANDAP ADVANCED consortium promotes, using experimental "intelligent" aquaponic prototypes as a concrete development objective, the generation of biotechnology and bioeconomy adapted to island specificities, where, due to logistical problems and scale, the reuse of bio-resources is even more complicated. Aquaponics, as the visible face of the project, is recognized as an emerging production sector in Europe, which requires the necessary progress in multidisciplinary R+D+i, the main bottleneck for its establishment on a commercial scale. Positioning the outermost island regions with experimental pilot prototypes will promote the involvement of the region in more competitive R&D at an international level, not only in aquaculture/aquaponics but also in areas of emerging regional interest such as engineering and tourism/economics and societal sciences which are necessary for the expected development of the local economy. Another challenge of the project is to multiply knowledge in these three areas in line with the achievement of the SDGs 2030.

From the presented ISLANDAP ADVANCED results, it can be highlighted the importance of multidisciplinary work and working on a common goal to achieve even more than the initial proposed objectives. The design of 3 knowledge areas that pivot on the same working objective freely, and which in turn interact with each other to accompany the needs that arise to achieve the model's sustainability results, seems to be easily replicated with success. The novel aspect found in this case study is how new and improved competences to be developed during a project should be an added value during the project proposal and objectives.

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4.3. The INSTART project

The Euro-African Network of Excellence for Innovation and Entrepreneurship, known as INSTART, is an already completed Erasmus+ Capacity Building in the Field of High Education project promoted by the European Union. The project was conceived to promote an effective innovation and entrepreneurial culture in universities, but also to foster associations and interactions between universities, businesses and society in South Mediterranean Region (MED). The consortium was composed of dozen universities from Algeria (Universite 8 May 1945 Guelma and Universite de Bejaia), Egypt (Cairo University and Alejandría University), Libya (Misurata University and University of Zawia), Morocco (Universite Cadi Ayyad, Universite Ibnou Zohr Agadir, and Universite Sidi Mohammed Ben Abdellah), and Tunisia (Sfax University, Universite de Gabes, and University of Sousse), as well as 4 European universities from Portugal (Universidade de Madeira), Polonia (Polonia Uniwersytet Szczecinski), Italy (Universita Degli Studi Di Roma La Sapienza), and Spain (Las Palmas de Gran Canaria University), all supported by social partners in the Mediterranean countries, and a science and technology park from EU (Fundación Canaria Parque Científico Tecnológico of Las Palmas de Gran Canaria University). The INSTART project aimed to develop innovative mechanisms to promote university excellence in innovation and entrepreneurship and to increase university-business cooperation through the Mediterranean institutions. This project started in 2017 and was completed in 2020.

The case analyzes the complexity of a peer-to-peer collaborative phenomenon and the key aspects that ensure its success, describing how such collaboration takes place in a real context. Thus, the illustrative case of the INSTART project for the promotion of entrepreneurship, the improvement of employability, and the increase of university-industry cooperation are examined in depth. After presenting the background of the project, the authors focus on the main achievements, products and results of INSTART, and present some reflections on the medium and long-term sustainability of the project, as well as highlighting the lessons learned from this exciting and rewarding experience.

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1. Background

Economic crises, unemployment or even the lack of innovation are socio-economic problems which encounter in entrepreneurship a key path to be solved (Ács et al., 2008; Xu et al., 2021). This explains the growing interest of governments and other institutions to promote business development policies and improvements in entrepreneurship education. In this context, the employability of individuals, understood as the possibility of obtaining and maintaining a job, also acquires special interest, given the

need for them to be more proactive in managing their professional career (Akkermans & Tims, 2017). In addition, Higher Education Institutions themselves face constant challenges in an environment where employability has become a critical factor in attracting new students. Fossatti et al. (2021) are precisely in favour of promoting employability through entrepreneurship education initiatives in Higher Education Institutions (HEI) themselves.

A variety of models have been adapted in an attempt to facilitate the development of these policies, with the quintuple helix model (Carayannis et al., 2012) inspiring many of the projects promoted by the EU in recent years, considering the need for high-level multi-stakeholder platforms (European Commission, 2019). This model, which extends the original triple helix model for driving economic growth by Etzkowitz and Leydesdorff (2002), requires constant interaction between five spheres of knowledge and action: educational, economic, political, cultural, and environmental spheres.

In order to investigate in depth this collaborative phenomenon, in which different institutions combine in order to promote economic growth, the development of case-based research is the preferred method. In the organizational field, Yin (1994) is the most cited author in this methodology and defines case studies as empirical research that studies a contemporary phenomenon within its real context, where the lines between the phenomenon and the context are not clearly visible, and where different sources of evidence are used for its preparation. In this sense, the case study is an in-depth analysis to investigate the context and processes involved in the phenomenon under study, so it can be considered an intensive study of selected examples.

The INSTART project is a good example of how the interaction of all these areas provides interesting returns for the promotion of entrepreneurship and innovation in developing countries (ERDF, 2018), allowing us to know how collaboration occurs in a real context and to describe the key aspects that ensure its success. The authors have participated in this project, so in addition to the documentary analysis and the review of other sources of information, their participation and direct observation make them key informants in this case study. As researchers, the authors have participated in a contemporary organizational event over which they have little or no control (Yin, 1994), with the aim of explaining how collaboration occurs, defining the case study as the most appropriate strategy for this work.

The Euro-African Network of Excellence for Innovation and Entrepreneurship, whose acronym is INSTART, is a completed Erasmus+ Capacity Building project in higher education (Key Action 2) promoted by the European Union. This project was funded to enhance the knowledge triangle, i.e. education, research, and innovation, by promoting an entrepreneurial and innovative culture in higher education, as a way to create an effective interaction between universities, businesses and society in the different domains mentioned above. The context selected to implement the INSTART Project was the South Mediterranean Region (MED), were Algeria, Egypt, Libya, Morocco, and Tunisia were the countries involved in this project, together with other European countries (Figure 4.3.1).

These countries still show high unemployment figures (Figure 4.3.2) which invite reflection on new ways of doing things in higher education in coordination with other players in the system, as encouraged by the quintuple helix approach. Creating a consortium of universities in the region, together with other European universities, is an important step in promoting the circulation of knowledge and mutual support for the benefit of their graduates and the surrounding business and social context. This network becomes the main support on which to pivot the proposals to be developed and the test laboratory for scaling up cooperation between universities, businesses and society to promote an entrepreneurial and innovative culture.
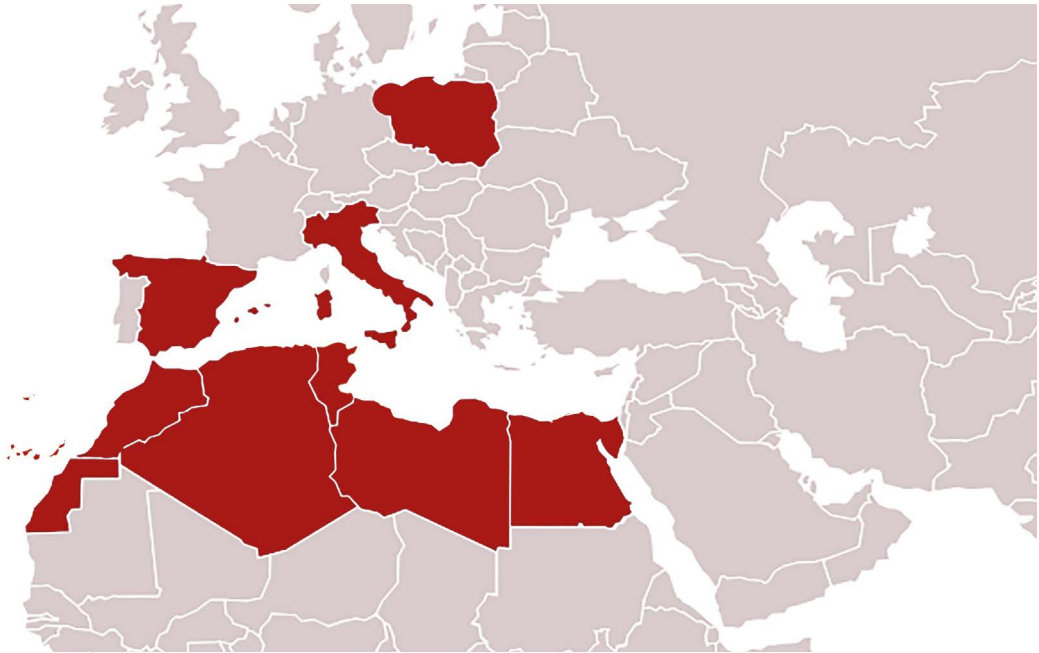
Figure 4.3.1. Countries involved in the INSTART Project
Source: INSTART website (https://instart.ulpgc.es/wp/).
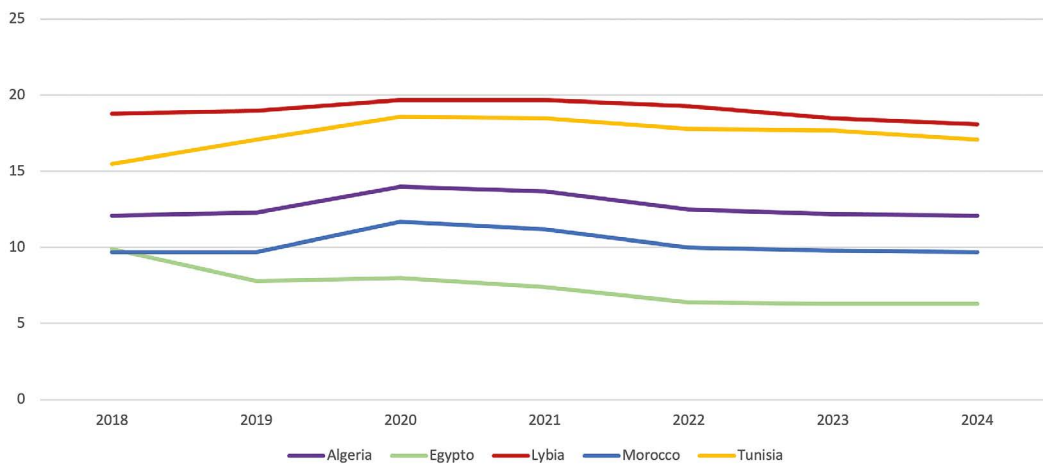
	2018	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Algeria	12.1	12.3	14.0	13.7	12.5	12.2	12.1
Egypt	9.9	7.8	8.0	7.4	6.4	6.3	6.3
Libya	18.8	19.0	19.7	19.7	19.3	18.5	18.1
Morocco	9.7	9.7	11.7	11.2	10.0	9.8	9.7
Tunisia	15.5	17.1	18.6	18.5	17.8	17.7	17.7

Figure 4.3.2. Unemployment rates in INSTART participating countries
Source: Based on data from International Labor Organization (2024).

The consortium was composed of 12 universities from the MED region, and 4 European universities from Spain, Portugal, Italy and Poland. These universities, together with several social partners such as chambers of commerce, clusters, business networks, and associations from the MED countries, as well as an EU Science and Technology Park, worked together to make the project a reality.

The North African universities participating in the project were mostly medium-sized: Universite 8 May 1945 Guelma and Universite de Bejaia, from Algeria; Cairo University and Alexandria University from Egypt; from Libya participated Misurata University and University of Zawia; Universite Cadi Ayyad, Universite Ibnou Zohr Agadir, and Universite Sidi Mohammed Ben Abdellah were the Moroccan universities participating in INSTART; and from Tunisia were Sfax University, Universite de Gabes, and University of Sousse. Table 4.3.1 presents the main figures that characterize the universities participating in the INSTART project at the date of the consortium's foundation.

Table 4.3.1. **Universities participating in INSTART: Key academic figures**

Country	University	Students	Lecturers	Support staff
Algeria	Universite 8 May 1945 Guelma	16,736	851	800
	Universite de Bejaia	46,000	1,663	1,000
Egypt	Alejandría University	176,000	9,000	18,000
	Cairo University	240,000	NA	11,000
Libya	Misurata University	17,000	1,223	1,460
	University of Zawia	48,800	3,300	3,400
Morocco	Universite Cadi Ayyad	63,000	1,400	850
	Universite Ibnou Zohr A Agadir	110,000	600	400
	Universite Sidi Mohammed Ben Abdellah	98,000	1,439	1,120
Tunisia	Sfax University	NA	NA	NA
	Université de Gabés	18,000	1,620	710
	University of Sousse	30,745	NA	NA

NA: Not available

Regarding European universities and countries, the following participated in the project: Universita Degli Studi Di Roma La Sapienza (Italy), Uniwersytet Szczecinski (Poland), Universidade de Madeira (Portugal), and University of Las Palmas de Gran Canaria (Spain), the latter acting as coordinator. The Fundación Canaria Parque Científico Tecnológico joined the consortium as a technological partner.

A total budget of 704,492 euros enabled the project to achieve its objectives. The INSTART's global aim was to develop innovative mechanisms to promote university excellence in innovation and entrepreneurship and to increase university-business cooperation through the Mediterranean countries. To this end, among other initiatives, INSTART implemented the Transversal Accelerator Training Program using innovative learning tools for lecturers, technical staff, graduates, and postgraduate university students, upgrading skills in innovation and entrepreneurship, and pursuing a transversal impact on different sectors and disciplines relevant for the region, e.g., agriculture, economics, education, engineering, etc. This training program included a visiting period in Europe to share best practices between MED and EU Universities. INSTART project was designed to encourage Mediterranean Higher Education Institutions to become a referent for innovation and entrepreneurship in the labor market and society as a whole.

2. Main achievements of the project

Making universities' academic activity accessible to society is key to contributing to economic growth, and it was a priority for the INSTART project to make the university supporting activities that facilitate this universally visible. However, the project was also designed to enhance the openness of Higher Education Institutions to innovation and entrepreneurship. In facilitating the process of generating this culture at Mediterranean universities, five work packages were carried out to help develop the entire project, from its launch to the dissemination of its achievements. In addition to the kick-off and follow-up meetings, three activities stood out above all others:

- In October 2019, European universities hosted 36 participants from Mediterranean universities to develop internships for two weeks in the Knowledge Transfer Offices (KTOs) and the European universities' support units for the innovation and entrepreneurship ecosystem, e.g., co-working spaces, design labs, patent offices, etc. During these internships, the participants learned first-hand about the type of activities carried out by these units at the service of their universities, but also became familiar with the management processes that needed to be carried out for this purpose. This internship program was preceded by online training provided by staff from the KTOs of European universities for the staff of MED universities, both from KTOs already established and in the process of being established. This training was framed in the work package of the "Creation and Reinforcement of Knowledge Transfer Offices (KTOs) in Mediterranean Universities".

- Universita Degli Studi Di Roma La Sapienza was in charge of developing, in collaboration with the participating European universities and the beneficiaries themselves, the "Transversal Acceleration Program" (TAP). This training program, delivered in June 2019, was the core of the work package of the same name. The program, developed on-site at the university, trained 29 lecturers and university staff from the 10 Mediterranean universities participating in the project. Workshops were held to develop disruptive and dynamic teaching methodologies in innovation and entrepreneurship. Good training practices and training-ready materials in these subjects were shared and tested in those sessions that teachers could then put into practice with their students at the host universities. The four-day program employed highly creative teaching approaches, while not disregarding training in what is already known about the elements that explain the entrepreneurial intention of university students, as well as more operational aspects of launching,

growing and expanding innovative companies and projects. The course was divided into three conceptual and practical modules taught with the following contents: (1) capitalization of past experience, (2) evaluation of technologies to create value, and (3) creativity and key approaches to create new businesses. The program included a visit to the first FABLAB of Sapienza University and the business accelerator for university students based in Rome. The face-to-face training was preceded by a complete online training program that trained almost 270 academic staff from the participating universities from which those who would participate in TAP were selected. The European universities participating in the project were responsible for the preparation of the teaching materials used in these trainings.

- Finally, the INSTART Marathons, held in October 2020 at the participating universities, aimed to develop innovative ideas and initiatives in the context of the MED universities. All three groups involved in the project were invited to participate. The working groups were energized by the participants of the Transversal Acceleration Program.

These actions were preceded by the development of a detailed report on the most significant characteristics of both the countries and the universities participating in the project, which allowed contextualizing the project as well as providing useful information to all institutions and individuals involved in its activities. In addition, there were INSTART Talks by relevant and inspiring personalities from the business and social sphere in which all INSTART target groups were invited to participate.

3. Outputs, outcomes and impact

The INSTART project was an initiative of the University of Las Palmas de Gran Canaria (Spain) resulting from an intense collaboration with the participating universities and non-academic institutions in the MED region. The celebration of several meetings and forums with African universities opened the door to a more intense collaboration between Higher Education Institutions. In this context, the "III ULPGC-Africa Forum: Common Horizons, Global Solutions" held in 2014, provided the basis for building a fruitful network of working groups to create new collaborative projects, in which INSTART was a high-quality outcome of these meetings.

Regarding the outputs of INSTART, more than five hundred people from the 12 southern Mediterranean universities, including professors, students, university management teams, and university administration staff, took part in the different activities organized by INSTART. The mobilization of people and institutions from the business and education ecosystems of the countries involved was undoubtedly important.

The program also provided resources to equip new spaces for innovation and entrepreneurship, but also for their KTOs in the participating universities in the southern Mediterranean arc. Specialized equipment in the form of 3D printing machines, the latest generation computers and laptops, projects, video-conference equipment and specific software have been left as a result of the project to provide multidisciplinary work spaces in which to develop programs to improve the employability of students, and in which companies in the area can develop training and recruitment activities.

The above are the main achievements of the project in the short term and in the context of the project's development, i.e. they are the primary results that the project set as objectives. However, the long-term impacts of INSTART are even more promising. In this sense, we believe that this project has left

physical equipment and reference material, so that teaching and administrative staff could evolve in the coming years. But also, INSTART has left behind important intangible assets with which the universities can contribute to the development of their communities to generate a climate of concord and mutual understanding between all the socio-economic actors in the region. In this sense, it is important to highlight that the ties between the participating universities have also been strengthened, allowing the development of joint collaborative projects in this region.

4. Success factors

The INSTART project enjoyed several milestones that made it a successful project despite the difficulties in its implementation, as the closing of the project was affected by the COVID-19 pandemic. This last fact suggests that the main success factor of the project is precisely its conclusion without giving up all the objectives that had been proposed. Thus, the final drawback, since a meeting was necessary to close the project, was solved, as elsewhere on the planet, by means of a virtual meeting.

The second and perhaps the most important success factor of the project was the high degree of commitment and interest of the participants in the program, both the representatives and managers of the participating universities, as well as the lecturers and service staff of the universities who participated actively, enthusiastically and with commitment. This was the case both in the southern Mediterranean universities and in the European universities involved in the project.

The third success factor has to do with the provision of spaces in the participating universities for the development of innovation and entrepreneurship activities involving students and professors, which are already being actively used. In these spaces, meetings are held between different disciplines and extracurricular activities are carried out to promote the soft skills that are so important for the employability of students.

And finally, it is also important to consider the involvement of social agents in the project, which allows the project's achievements to be amplified. Thus, for example, the University of Sfax participates in exhibitions and fairs with different partners in its reference area, which has allowed it to better connect with the entrepreneurial ecosystem of its region; the University of Zawia has established a collaboration agreement with the chamber of commerce of its city; and the participating universities in Morocco in collaboration with other regional partners, through INSTART, have developed the City of Innovation in the region of Souss Massa. Promoting the necessary connection between the entrepreneurial ecosystem of each of these countries and the universities is at the very heart of this project, so having achieved their active participation in its development is also, without a doubt, one of the main success factors of INSTART.

Considering these factors, it is important to highlight what we consider to be the greatest success of the project, which is the creation of a network of universities linked by a common interest. This common interest is none other than to establish strong collaborative links between these universities and their social and economic environments, to facilitate the reinforcement of the quintuple helix and, with all this, to generate an environment rich in opportunities for young university students and their contemporaries. It is precisely this last objective that most motivates universities who seek not only to promote the talent of young people but also to retain it in their country in order to promote a better quality of life and hope for a better future.

5. Sustainability

Sustainability is a central element of any project that seeks to develop key capacities for the better development of a context, a region or a country. This is precisely one of the variables that makes it possible to assess the interest of a given project, and particularly the importance of pursuing its objectives. In this case, if we understand the sustainability of a project as everything that it provides and that can be sustained, allowing the effects of this project to endure and even amplify over time, the sustainability of INSTART effects will depend on three main conditions:

- That the direct participants of the project put into practice everything they have learned in the project and show the potential of the actions learned in their institutions, facilitating innovation and entrepreneurship of students and teacher staff in their institutions, as well as an open and continuous dialogue with the university environment.

- That they become trainers of trainers, passing on the knowledge they have learned to those who did not benefit from the program and to new recruits in the institution.

- Finally, there is a need for a real commitment from the government of the host institutions. Without the active commitment of the university government teams, it is impossible to sustain this type of initiative over time. They are the ones who must provide the budget for the program and its sustainability over time, ensure stable relations with the university environment and promote the development of internal support units for innovation and entrepreneurship in their universities.

Undoubtedly, a key element for the long-term sustainability of the project's effects is that the recipient universities play an active role in the education and entrepreneurial ecosystem of their countries, promoting the relationship of all the actors in these ecosystems and serving as an example to other universities in their environment. Only in this way will the project achieve all its purposes. To this last point should be added proactive research activity on the part of the universities that responds to the needs of their social and economic environment, thus connecting all the key elements for developing entrepreneurial universities.

Moreover, the proper use and longevity of the materials and equipment that the project provided to the recipient institutions will require a maintenance and replacement plan by the management teams of these institutions, an aspect that, logically, was not covered by the project.

Finally, the financial sustainability of participating universities is a key issue that INSTART also facilitates. In this sense, the existence of the project has itself generated a favourable environment that allows these universities to establish permanent frameworks for collaboration with companies, often providing a new source of funding for Higher Education Institutions. The development of joint and collaborative projects, the contracting of services and/or product development, or the foundation of university-industry chairs on subjects of interest to the signatories of an agreement are examples of the possible frameworks for collaboration that these universities are in a position to develop in the light of the keys that INSTART has granted them.

6. Lessons learnt

Projects designed to develop key capacities know how they start, as the objectives are usually clear and precise about how the project will be implemented, but not how they end. Our past experience has

shown that when contextualized and translated into practical application on the ground, it is an enriching experience for institutions in the more developed countries that are supposed to transfer their knowledge. The implementation context is often rich in experiences, insights and adjustments from which all participating universities can learn. The network that is forged is strong and offers many opportunities for new collaborations. This type of project is therefore a two-way journey in which the lessons learned are a living memory that remains with the human capital involved in and surrounding the project.

Thus, three major lessons can be learned from this project as a result of its implementation:

- Regarding the cooperation relationship between European universities and universities in the southern Mediterranean, the main lesson learned has to do with the distorted view that is often held of university activity in these regions. Far from what might be expected, it is the very nature of the collaborating institutions, i.e. their university status, which makes the dialogue fluid and enriching. In this type of relationship, we find that we share the same concerns about the future of young people in our respective societies, about how the labor market develops in different contexts and the opportunities it offers to young people. But there are also concerns about how to establish a productive dialogue between universities and business, as well as with governments for the benefit of regional and national development.

- Universities play an important role in social structuring in the countries participating in the project. This makes these institutions an interesting instrument for economic and social development that should be used more intensively in the development of policies of understanding and collaboration between the territories on either side of the Mediterranean.

- It would seem obvious that knowledge transfer would be unidirectional in this type of project, but this assumption should not be taken for granted. Professors and university staff are the most educated people in the countries receiving cooperation programs, and they are the ones who can best explain the status quo in their homeland, helping the more developed countries to better interpret the reality of their own regions.

7. Conclusions

The Euro-African Network of Excellence for Innovation and Entrepreneurship was conceived as a capacity building in the field of high education project and was committed from its first steps to the achievement of the proposed objectives, that is, to develop innovative mechanisms to promote university excellence in innovation and entrepreneurship and to increase university-business cooperation through the Mediterranean countries.

The key factors of collaborative success become more relevant if they are contextualized, and it is therefore important not to lose sight that INSTART has been developed in a region that has experienced and continues to experience major social and economic conflicts. The political rebellions that arose in the wake of the Arab Spring have allowed the project to develop in a climate favourable to collaboration and understanding among all participants and especially in a context in which promoting the participation of the civil population in the construction of the society they wish to be is important, especially if this is done for the benefit of the next generations, those who will build the future of the region in the remainder of the century.

To conclude, it is necessary to remember that although the success factors extracted cannot be generalized to any other event, this study does provide insight into how collaboration has been forged and what actions have been carried out to generate an entrepreneurial and innovative culture in regions of the southern Mediterranean arc, which can serve as a guide for other regions with similar objectives.

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4.4. The INDOEDUC4ALL project

The present case study is focused on the INDOEDUC4ALL project, acronym which stands for "Ensuring Access and Quality Education for Students with Disabilities in Indonesian Universities". The INDOEDUC4ALL project was funded by the Erasmus+ programme, and specifically by the Capacity Building in Higher Education Action (included in the Key Action 2).

This initiative took place in Indonesia from 15/10/2016 to 14/01/2020 and included the following local partners: Universitas Islam Negeri Sunan Kalijaga (UIN – SUKA), University of Indonesia (UI), Universitas Lambung Mangkurat (UNLAM), Universitas Negeri Surabaya (UNESA), Institut Agama Islam Negeri Surakarta (IAIN-SURAKARTA), Universitas Islam Negeri Syarif Hidayatullah (UINJKT), SasanaIntegrasi dan Advokasi Difabel (SIGAB). The coordinator of the project was the University of Alicante (UA), and the consortium included also two more EU partners: the Glasgow Caledonian University (GCU), from the United Kingdom, and the University of Piraeus Research Center (UPRC), from Greece.

In the following points, the authors have summarized the most relevant elements that have justified that the INDOEDUC4ALL project could have been considered by the European Commission (Erasmus+ programme) as a good practice in the field of inclusive education in the higher education sector.

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1. Background

Indonesia is one of the 153 countries to have ratified the United Nations Convention on the Rights of Persons with Disabilities and adopted through national legislation no. 19, 2011. The policy is further strengthened by the promulgation of the new disability bill in 2016, known as bill no 8, 2016. However, up until now, people with disabilities continue to experience significant structural and cultural barriers to participate in society, while their social, political and economic rights are denied. According to Helen Keller International (2010), less than 4% of 1.5 million children with disabilities have access to educational services in Indonesia. This is particularly true when it comes to accessing higher education (HE) in Indonesia, where the level of enrollment of people with disabilities is around 1% (RISKESDAS1, 2013). In the current situation where higher education is closely connected with the country's economic development, and where a university degree is essential for qualified employment, underrepresentation of people with disabilities in higher education leads to continued marginalization in economic and social

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[1] RISKESDAS stands for Indonesian Basic Health Research survey. See full reference at the end of the article.

life. At the same time, for a highly populated country like Indonesia with its complex social problems and challenges, the exclusion of people with disabilities is an expensive price to pay as "not only does exclusion create a significant economic burden for individuals and their families, but it also carries high costs to societies at large" (Banks & Polack, 2014). Indeed, HE is critical for achieving prosperous societies, social justice and cohesion. As the world embarks on the Sustainable Development Goals, there is an important opportunity to come together to further our understanding of what higher education means for students with disabilities and how quality programs can be implemented at scale in an effort to deliver on goal #4 target 4.3 by 2030, "ensuring equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university'' and 4.5 by 2030 "including persons with disabilities, indigenous peoples and children in vulnerable situations" (United Nations, 2015).

In 2012, the Indonesia Ministry of Education passed the Ministerial Decree (*permendikbud*) number 46, 2012 on the inclusion of people with disabilities in HE. The bill mandates universities to provide accessibility in all educational aspects. Two years after promulgation, the decree remained unknown by the majority of higher education communities, and consequently, persons with disabilities continued to experience barriers that hindered their participation.

The project was conceived through initial contact made by the University of Alicante (UA) to the State Islamic University (UIN) Sunan Kalijaga Yogyakarta. UIN Sunan Kalijaga is among the first universities in Indonesia to provide structural support for students with disabilities and has been active in promoting inclusive education in Indonesia's HE for the past ten years. Through this initial contact, five other Indonesian university partners were identified. A series of informal discussions were conducted between all the university partners during the proposal stage to decide the project's objective and activities. The primary framework of the discussion, as mentioned above, was the need to increase the participation of people with disabilities in higher education that take benefit of the existing regulations and policies in place.

All the universities' partners in various degrees and forms have been engaging with inclusive practices, although only two universities were undertaking a formal and structural step. Partner institutions were facing the challenge of opening up to students with disabilities without any support from the National Government in terms of capacity building activities or resources. From the 6 HEIs of the INDOEDUC4ALL project only 2 had some kind of Disabled Support Centre that had been created and was active due to the real motivation of its staff members. This was a very serious issue as it was estimated through research conducted by partner institutions that only 50 students have had access to the centers so far. Without a real strategy and without real investment, the universities were left alone to cope with the challenging human situation. Fortunately, some faculties had taken the lead to develop activities towards raising awareness and improving the situation of students with disabilities but this was done on a personal basis and only when faced with a severe issue of students with disabilities.

Alongside, according to a previous study made during the proposal phase of the project that was later confirmed by a thorough Need Analysis under Act.1.1, the needs and constraint of Indonesian universities to implement the Ministerial Decree were, in particular, no clear and structured approach for inclusive education, physical inaccessibility, beliefs and prejudices, inflexible teaching and learning methods including in curriculums and evaluations, problems with service delivery, poor coordination of services, inadequate staffing, and weak staff competencies, isolation of universities outside the needs of the community and society and inadequate funding. Besides that, there was a lack of several elements such as assistive technology, educational materials in alternative formats, data and evidence of successful experiences in the country, and the involvement of disabled students.

The modern inclusion as targeted by the proposed project addressed these barriers. The activities of the project were designed to help universities develop the capacity of its members, i.e. leaders, professors, and administrative staff, in addressing the educational needs of students with disabilities. The project also wanted to assist universities in developing a modern disability support unit equipped with assistive technologies that ensured the accessibility of the teaching and learning processes while including students with disabilities and empowering them.

The overall objective of the INDOEDUC4ALL project was to improve access, ensure learning conditions and develop employment opportunities for HEIs' students with disabilities in Indonesia via modern inclusion practices and networking. The specific objectives were, first, to create a modern inclusive framework through the creation/refreshment of Disabled Students Support Centers and long-term strategies for the access and retention of disabled students in the HE system. And second, to establish a national network to increase inter-institutional relations and sharing of best practices while responding to society's equity demand.

The project activities were all interlinked and had been arranged in a logical sequence, so that each activity produced an output that forms the basis for the next steps and activities. The project strongly supported and believed in the motto "Nothing About Us Without Us" used by disabled peoples' organizations throughout the years as part of the global movement to achieve equal opportunities, with the full inclusion of affected persons in the processes. The action invited disabled students to fully participate in the project at all its stages. The project was divided into different Work Packages (WP).

The first activities of the project were focused on a need analysis and the transfer of know-how, included in the WP1. The focus of the action was on overcoming the lack of information and generation of specific knowledge related to disabled students in Indonesian Higher Education Institutions (HEIs). Activity 1.1 carried out the "Methodological Development and Implementation" of the in-depth research methodology to assess the accessibility situation and practices within each partner institution and included a focus group exercise with disabled students to understand their specific needs and requirements. Activity 1.2. served to organize a high visit profile (Vice-Rector for Students Affairs or equivalent) and 2 academic and 2 administrative staff to UA and EU Disabled Students Support Centres to identify good practices and potential replication actions. After the visit and during the first year of the project the partners produced a Good Practice Guide for Disability Management Services in HEIs based on the results of the Methodological Analysis of Accessibility situation and the EU visits (complemented during each training in EU).

The Modernization and Strengthening of Human Capital was channelled via the WP2. EU partners provided a targeted training program in Activity 2.1 for staff related to the implementation of relevant services. The approach to the training was comprehensive and targeted the whole spectrum of administrative and academic staff dealing with disabled students. Additionally, the courses were available online and an info-service was foreseen to answer questions concerning inclusive education practices on a case-by-case basis, in particular those related to disabled students. The pedagogical methodology was participative and inclusive, highly focused on practicality and good practice. In Activity 2.2 the "train-the-trainers" approach is used to provide trainees with the ability to replicate the training activities within their institutions. Finally, during Activity 2.3 the project helped universities to practically implement and test the knowledge gained in previous activities. To ensure the quality of the workshop feedback from the trainees was collected, analysed, and evaluated.

Work Package 3 was focused on developing new or updated institutional support structures in this area. This Work Package was divided into 2 main sets of activities. Firstly, the creation of the Disabled

Students Support Office started with the formal procedure from the Indonesian universities in Activity 1.1 (to establish or refresh the centers), followed by the process of selecting and recruiting a person responsible for running the center on a daily basis when necessary, and finalizing in Activity 3.3, to design a 3-years strategic planning for the support centers. Secondly, creating a national network for the inclusion of disabled students in Higher Education. Networking activities commenced in the second year of the project when partners had acquired sufficient expertise through the legal establishment of the network. Activity 3.3 served to structure the platform to support national dialogue and best practices. Partners agreed upon the structure of the network; meanwhile, they also agreed on a definition of the network mission, vision, objectives, activities and general regulations as membership. The idea of a formalized network was chosen as a methodology as it provided a 'collective voice' for institutions to enter into dialogue with ministries and other political-level actors. Proposals and activities coming from an organized group of institutions had more impact and weight than individuals acting alone.

One Work Package of the project (WP4) was devoted to updating the equipment of the disabled students support services. The project aimed at the purchase (Activity 4.1) and installation (Activity 4.2) of the necessary Assistive Technology (AT) that was in and under the responsibility of the center. The Assistive Technology was used to improve the teaching-learning process and delivery for disabled students. During Activity 4.3, universities were trained on the use of AT. A handbook was created and accessible online.

Finally, WP5 was focused on developing a new external relations framework. The WP was focused on the opening of the university towards high schools and in the labor market. During the first activity (5.1) the support centers organized a volunteering service by training student volunteers. They visited high schools (Activity 5.2) and organized an information day to combat stereotypes against disability and raise awareness about the existence of students support structures in HEIs. Support centers carefully made a business selection procedure under Activity 5.3 to choose the best enterprise for cooperation. The selection was made under special criteria: corporate social responsibility and previous internship agreements. Indonesian universities and selected enterprises redefined the CSR to include an agreement on social responsibility strategy to incorporate the establishment of the Disabled Students Internships Programme.

2. Main achievements of the project

The INDOEDUC4ALL project helped universities to develop the capacity of its members, i. e. leaders, professors, and administrative staff, to address the educational needs of students with disabilities. Modern disability support centers have been created and equipped with assistive technologies, ensuring the accessibility of the teaching-learning processes while including students with disabilities in the process and empowering them. A network has been created to exchange good practices and speak in a common voice at a national level. Universities are opening to high schools and the business sector to widen access to HE and the labor market. The project increased the commitment to open access for students with disabilities for higher education, either by strengthening the center that has been established and providing special pathways or streams for the students as well as scholarships. The Centers of Disability play nowadays an active role in accommodating the university policy by providing access and support for students with disabilities at university. Moreover, with an improved university recognition regarding the role of Centers of Disability, the central government also has taken notice and brought the best practices of the centers to a national level to conceptualize the regulation for integrating students with special needs across Indonesian Higher Education Institutions (HEIs).

In other words, while the project may not have a direct impact on the policy at the national level, the output of the project provides a model or a blueprint useful for the implementation of the existing policies by ensuring the rights of people with disabilities in higher education stated in bill no 8, 2016 and its supporting regulation. Article 42 of the bill particularly mentioned that university or Higher Education Institutions (HEI) are required to facilitate the development of disability support offices. In 2020, a supporting policy was issued namely the Ministry of Educational Decree no 13, 2020 on reasonable accommodation in the educational setting. This decree further mandated educational institutions at all levels to provide accommodation in various aspects of learning from physical accessibility, curriculum, standard of learning and others. The decree also further emphasized that the disability support office/ unit was mandatory. In addition to this, since the project was approved in 2016, the national legislative changes have been in line with the project objectives as in October 2017 the Ministry of Research & Technology, through the Directorate of Learning & Students Affairs, signed a Decree on Special Educa-tion: Regulation of Minister of H.E. # 46, which then further revised in 2019. These policies' context, as it has been argued elsewhere, highlights the role and importance of the project.

Also, the INDOEDUC4ALL specific objectives remained unchanged and the consortium composed of 6 Indonesian HEIs, 3 EU HEIs and 1 Indonesian NGO, has worked on 1) the creation of a modern inclusive framework through the creation/improvement of Disability Support Units and long-term strategies for the access and retention of students with disabilities in the Indonesian Higher Education system; 2) the establishment of a National Network to increase inter-institutional relations and sharing of best practices while responding to society's equity demand. This goal was achieved by the development of KOPERTINA (Indonesian Consortium of Inclusive Higher Education). While the initial members of Kopertina were six university partners of INDOEDUC4ALL, the members are continually expanding since many universities in Indonesia are committed to meet the mandate of UU no. 8, 2016, and Ministerial Decree of 46, 2019 by providing support for students with disabilities.

The INDOEDU4ALL project contributed towards bringing a solution to such challenges by developing the capacities of the partner universities' staff and accompanying HEIs in the modernization of their Disability Support Units. When the project was launched from the 6 HEIs of the INDOEDUC4ALL project only 2 had some kind of Disabled Support Center that was created and was active. During the project, all the partners successfully created and ran their Disabled Support Centers. There are now more institutions in Indonesia, both private and public, that are aware of the importance of acknowledging people with special needs.

3. Outputs, outcomes and impact

INDOEDUC4ALL helped improve the inequality situation faced by disabled students by accomplishing the objectives through concrete, tangible outcomes and outputs:

a) Increased inter-institutional cooperation and sharing of good practices via the needs analysis and transfer of know-how: 1 good practice manual created, 2 site visits conducted, 6 accessibility centers refreshed or created, and 6 needs analysis reports.

b) Enhancement of managerial and administrative staff capacities in dealing with and implementing inclusive education practices: 8 comprehensive training modules delivered in 2 training sessions in UPRC&GCU to 60 trainees, 4 training modules for trainers' workshops to 50 administrative staff

working or directly involved in the support centers and 50 trainers that will envisage training for 420 trainees in Indonesia.

c) Creation of institutional support structures to enable access to HE and to foster the consolidation of a social integration culture within universities: 6 Support Centers, 6 strategic plans, and 6 assistive technology functioning. Development of an Indonesian network for the inclusion of students with disabilities in higher education: INDOEDUC4ALL Network setup and Workshop on BP implemented.

d) Assistive Technology carefully selected, quotation for the selection of the best cost & budget-related proposal, AT implemented and running, students daily use the AT.

e) Increased external relations cooperation to improve access and employment of disabled students. 25 High Schools Information Day organized, 70 high schools' participants each, in total 2100 high schools' students informed. 40 meetings with enterprises and inclusion of disability within social responsibility strategy and 8 internship-disabled students successfully in place.

f) Increase public awareness and understanding of inclusive education within Higher Education Institutions: project website, internal dissemination, external dissemination involving media, 2 open days in each institution with 1,100 participants.

In the post of the 2007 Convention on the Rights of Persons with Disabilities (CRPD), Indonesia has been demonstrating a serious effort to implement the convention. Indonesia ratified the CRPD in 2011, and then by 2016 Indonesia incorporated the CRPD into the national legal system through UU (bill) no.8, 2016, revising the previous bill of 1997. The ratification of CRPD and the new disability legislation has certainly given a stronger push for the government and Indonesian society to secure the rights of its citizens with disabilities in all aspects, including education. This can be seen for instance in the effort of the Ministry of Education (MOE) to widen the participation of persons with disabilities in higher education. Prior CRPD to the estimated number of PWDs enrolled in Indonesian universities was 0.1% due to both cultural and structural barriers. In 2017 the Ministry of Research and Higher Education passed a ministerial decree no. 46 on the inclusive higher education which mandates university and Higher Education Institutions (HEIs) to welcome students with disabilities and provide adequate support during their academic process by establishing a disability support office. In 2019, the decree was revised since higher education affairs were returned under the auspices of the Ministry of Education. However, the content and the number of the decree remain the same.

In response to the 46 Decree of 2017, many Higher Education Institutions had to experience difficulties at how to provide support for students with disabilities. This is where the INDOEDUC4ALL program gained its significance. Through the project, six universities in Indonesia receive both financial and technical support to develop their capacities to welcome students with disabilities and provide adequate support and reasonable adjustments to ensure their success at the university level. The partner universities (on the Indonesian side) of the INDOEDUC4ALL were carefully selected to represent various factors, *i.e,* public university (government-funded), and geographical distribution (Eastern and Western parts of Indonesia). However, all the universities were strong institutions with adequate resources and institutional capacity to support other universities in the region. Having said that, the project was very relevant in the current Indonesian educational policy that moves toward inclusion for people with disabilities, and it has a significant impact on widening the access and participation of persons with disabilities in higher education.

The INDOEDUC4ALL project achieved several results during the project life. The main outputs achieved,

having a short-term impact, are the needs analysis and transfer of know-how, the training program for administrative and academic staff dealing with inclusive education practices, the institutional support structures and assistive technology set up, the INDOEDUC4ALL network for the Inclusion of Disabled Students in Higher Education, the increased external relations cooperation that improved access and employment of disabled students, and the increased public awareness and understanding on inclusive education.

Some of the main outcomes (mid and long-term impact) of the project will come via the following deliverables: a good practice guide for disability management services in HEIs, training courses programs for the trainers, support centres and Assistive Technology, strategic plans and implementation, open days, INDO4EDUCALL regional networking, new external relation framework, charter on minimum standards and guidelines for integration and access to HE.

4. Success factors

The success of the project is a combination of various factors. First of all, the timing of the project. INDOEDUC4ALL went in line with the development of national legislation in favour of the full access of students with disabilities in Indonesia. Second, the motivation of the people involved. INDOEDUC4ALL direct target group were students with fewer opportunities, indeed, it is estimated that only 3% of the total disabled population has a university degree. INDOEDUC4ALL team worked with full enthusiasm and high professionalism to improve the chances of students with disabilities to enter and remain in the Indonesian higher education system.

Another success factor was the involvement of the target group and beneficiaries. They have been involved in the project since the drafting proposal for students with disabilities and the implementation of the activities has been done in consultation with them. The need analysis addressed particularly students with disabilities and the focus groups included 60 students with disabilities and their families, the open days, the visit to high schools and the internship program for students with disabilities. In addition to that, the involvement of the students with disabilities themselves is a paramount consideration in all stages of the INDOEDUC4ALL programs and activities.

The target group analysis and involvement has also been considered. The project defined a large range of target groups and involved them: students with special needs (main project target); universities and national top managers (national and institutional levels); administrative staff working at the students' support centres and beyond; teachers instructing students with special needs; high schools (previous steps in education); business sector providing internship opportunities to the main target; other students working in the volunteering initiative; other universities (national and regional level); students with disabilities from Indonesian Higher Education Institutions (HEIs); academic/administrative staff; higher education authorities; high schools representatives; students and business sectors enterprises; NGOs.

The involvement of the civil society was also an important success factor. Besides, the role of SIGAB has been of fundamental importance in raising the voice about the needs of the students with disability. SIGAB is an NGO dedicated to working for the improvement of the living conditions of people with disability in Indonesia and it has been present and has actively participated in all the site visits and main deliverables. SIGAB's role is to serve as a bridge from the project to the rest of society and in particular

to people with disabilities. Indeed, SIGAB involvement is not only aimed at ensuring the representation of people with disabilities in the project but also ensures that all the project activities and programs are effectively meeting the needs of people/students with disabilities.

INDOEDUC4ALL provided also some important innovative aspects. The establishment of a modern disability support office/centre in each university partner was an innovative step brought by INDO-EDUC4ALL. Although some universities, like UIN Sunan Kalijaga and UNESA, have established the cener before INDOEDUC4ALL, the modernization of the center: the structuration of the center, and the availability of assistive technology and training modules, are possible due to INDOEDUC4ALL. Another innovative product was the network and linkage. KOPERTINA is a platform to share the practice of inclusion in Indonesia higher education.

Finally, the INDOEDUC4ALL aimed to impact the labor market, as it successfully happened. The project worked on giving students with disabilities better opportunities to enter the Indonesian job market. More specifically the Work Package 5 entitled "New External Relations Framework" focused on the opening of the university towards the labor market. Indeed, the support centers carefully made a business selection procedure under Activity 5.3 to choose the best enterprise for cooperation. The selection was made under special criteria: Corporate Social Responsibility (CSR) and previous internship agreements. Indonesian universities and selected enterprises signed an agreement to incorporate the establishment of the Disabled Students Internships Program. Over 60 meetings with enterprises were conducted as an opportunity for future students to get into the internships program.

5. Sustainability

The consortium had worked very closely to achieve the sustainability of the project and to make sure that the results could be exploited. The consortium has taken the following actions to ensure its financial, institutional and political sustainability.

Regarding achieving financial sustainability, the need to finance follow-up activities was limited, as the most important tasks to set up that increased access to HE were achieved during the project lifetime. The university leader has committed to financially sustaining the support centers as it goes in line with the ministerial regulations to support students with disabilities. Once created, the centers continue to be opened and fulfill their mission to welcome and facilitate the learning process and integration within the university life. The network is supported by the partner from the consortium to date, the website is continually updated, and both the Ministry of Education and Religious Affairs verbalized their commitment towards the network during the final conference. Other universities are joining the network. As mentioned previously, partners have been working on widening the access to HE for students with disabilities since 2005, their commitment continues to lead the network to other Indonesian HEIs as INDOEDUC4ALL partners are either 1) the reference university in the term in reputation and size, or 2) the reference in term of experience with students with disabilities.

On the other hand, institutional sustainability was ensured through the development and adoption of strategic plans concerning disabled students' support structures as well as the commitment and continuous involvement of top management and administrative staff.

In parallel political sustainability was ensured as the project was in line with the political strategies of Indonesia. The project has promoted a continuous political dialogue and guidelines for disabled students'

integration into Indonesian HEIs. Here are some quotes from the partners:

"INDOEDUC4ALL enables the Center of Disability Services of UIN Sunan Kalijaga to provide stronger and modern support for our 74 students with various disabilities. The project also provides a platform for my universities to work collaboratively with other Higher Education Institutions (HEIs) to provide increased access and quality education for a student with disabilities in Indonesia" (UIN).

"The discourse about handling students with disabilities has begun to be felt and become a phenomenon that needs to be fought for. The sustainability of this project will continue, as the evidence is the university's budget for managing students with disabilities and establishing a centre that handles them" (UNLAM).

"Now practically, our university is friendlier for a student with a disability, such as providing the mobile facility for mobile disability students, friendlier infrastructure in the faculties, and friendly technology for student disability. There is more awareness at the national level regarding a wider opportunity for a student with a disability to enroll" (UI).

The exploitation of results is inherent in the project and assured via the creation of the network to speak in a common voice and to transfer the results of the project to governments and international organizations. The work of WP3 on Train the Trainers, WP4 on training on AT, and the WP5, External Relation Framework, have transferred the results to target groups and stakeholders from inside and outside the project consortium. Exploitation was assured via the relevance of the outputs to target groups, applicability in different contexts, and is in line with their development needs and strategies.

6. Lessons learned

Reflecting on the three years of experience on the project the consortium learned some significant lessons. The following three have been identified as the most important.

Decree-in time cooperation

As has been mentioned previously, the project was developed in perfect timing. The promulgation of Indonesia's new disability bill, UU no.8, 2016, set a policy atmosphere where the government and stakeholders of disability issues started developing various supporting policies in the context of implementing the Disability Bill. In particular reference to higher education, the bill mandates universities and other HE institutions to ensure the accessibility of participation and learning processes for students with disabilities. As such, at the very early stage of the project, we decided that the socialization of the project should be "framed" as an effort to implement the disability bill. Applying the strategy, the project enjoyed relatively easy acceptance from partners and wider stakeholders.

Quality of cooperation

From the beginning, the university partners within the project were carefully selected to represent varieties in terms of institutional strength, experiences in dealing with students with disabilities, quantity of the students with disabilities enrolled as well as the university's political will and support. In other words, at the beginning of the project, not all university partners shared equal institutional strength in terms of disability policy and services. Rather, each university partner has a particular strength to contribute to the project. European universities for instance enjoy more resources, technological advances,

more structured services and stronger systems and political support, while on the Indonesia part, the limited resources that most universities have, encouraged them to develop strategies to compensate for the lack of resources. The use of student volunteers for instance has been applied by UIN Sunan Kalijaga and UNESA to provide services for students with disabilities. The identification of strengths and weaknesses from each university resulted in the equality and quality of cooperation between the partners. Both European and Indonesian partners reflected in shared knowledge and best practices and meaningful dialogues. The opportunity to visit both European and Indonesian partner universities also provided all members with an understanding of how cultural, social, and political contexts influence or even shape the implementation of inclusive education.

Assistive Technology

Technology has been an important component in providing solutions for the lives of people with disabilities worldwide. It enhances accessibility in various domains: daily living, physical-environmental, and social services including health and education. The incorporation of technology, assistive technology, in the project is indeed the right strategy. However, drawing from the implementation of the project, some important points need to be highlighted. First, in the context of developing countries, the availability of assistive technology is limited. Most assistive technologies both hardware and software are produced in Europe or the US. Secondly, this leads to some technical challenges in purchasing the product and its accessibility. Some software such as speech-to-text (e.g., Dragonfly) is only available in English and other European languages, and none in Bahasa Indonesia. In other words, linguistically speaking, the software is not accessible for Indonesian. Moreover, purchasing imported hardware or software faced several technical challenges, particularly in meeting the administrative requirements of both Indonesian and European systems. Given these experiences, similar projects in the future need to consider the development of "local" assistive technologies as part of the program or activities. Some Indonesian disability organizations have been developing applications and assistive technologies, and therefore increasing the capacity of local stakeholders to develop assistive technologies is an important aspect of the education for students with disabilities.

Development of post project institutional collaboration

As has been explained earlier, to ensure the sustainability of the project, the university partners developed KOPERTINA, the Indonesian consortium for inclusive universities. The main objective of the consortium was to continue the partnership among university partners and serve as a support system in implementing inclusive education. While as an organization it is still in the forming process of trying to find the best way to work and serve its members, the consortium is maintaining the partnership and collaborative works of the partners and inviting others to join the inclusive movement. In the longer term, the consortium aims to voice the issue of inclusion in Indonesia HE and become a pressure group for policy development on the issue. KOPERTINA's website serves as a platform for its members to share information on their activities and best practices on disabilities and inclusive education.

To conclude, the consortium learned that the development of an organization, association, or institutionalized partnership, in any form, in the case of this project as a consortium, is very important to ensure the sustainability of the project. The consortium also means that the targeted changes will be a collective or even systemic transformation, instead of an individual one.

7. Conclusions

The issue of inclusive education in HEIs in the Indonesian context is under research. Equally, from a policy perspective, the policies on inclusive education, or any form of education services for individuals with disabilities, have been more focused on elementary and secondary education. It is only very recently, more precisely in the post-2019 Indonesian ratification of the Convention on the Right of Person with Disability and the promulgation of Indonesia's new disability Law, no. 16, 2016, that the attention of policy for people with disabilities in higher education started to be visible. INDOEDUC4ALL project came within this critical juncture, and this particular policy context has accelerated the acceptance of the project in Indonesian higher education.

The limited research and practice of inclusion of persons with disabilities in Indonesia higher education encourage INDOEDUC4ALL to deal with multiple elements of the issue, from baseline study, human resource development, capacity building of the institution, and assistive technology to transition program. While such wide focus is not necessarily to be applied in the future initiative, certain elements remain crucial to be on the spotlight. Two of them were public awareness campaigns and the enhancement of human capital. Nurul, the head of the UIN Jakarta support center states: "The training for different stakeholders of the university is another important aspect of the project that should be replicated because it opens opportunities for all of us to have a common understanding of the importance of providing access to student with special needs and develop necessary actions to ensure inclusive education takes place on our campus" (UIN Syarif Hidayatullah, Jakarta). In addition to that, related to institutional support structure, the development of micro or local policy, i.e. policy within a university partner, is another necessary element to work on to ensure the successful implementation of inclusive education. In other words, international and national legislation is important, however, it needs to be translated into the university structure by local policy.

"Nothing about us without us" has been an important principle in the field of disability and other minority groups. The involvement of persons with disabilities in any project related to disability is morally, politically, and technically crucial. The INDOEDUC4ALL project officially invited an organization of disability, SIGAB, as one of the partners. This organization was selected due to its works on disability and higher education. However, in various activities of the project, there were many other disability organizations involved and became our partners in specific activities, such as Kerjabilitas, Yakkum that support the project in terms of transition program and PERTUNI (Indonesian Blind Association) that work with us on assistive technologies and policy development.

Inclusive education is not going to happen without changing the paradigm and perspective of the stakeholders on disability, exclusion, and various aspects of education. Inclusion is as much about changing hearts as it is about technical and policy elements. It was only through a shifting perspective and paradigm of all involved actors that the commitment to work on an inclusive education project will be secured. The experiences drawing from the INDOEDUC4ALL project as well as from other inclusive education activities that the writer participated in showed that the commitment or "militancy", as some of us call it, will encourage the actors to focus on minimizing the existing barriers instead of creating further barriers with their attitude or lack of commitment.

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4.5. The ARROW project

The ARROW project – "Improvement of Research and Innovation Skills in Mongolian Universities"–, with an approved budget of 551,140 euros, aimed to contribute to the promotion and strengthening of scientific writing capacity building and results visibility in Mongolian universities belonging to the consortium. This consortium comprised four European (1 Portuguese, 1 Polish and 2 Spanish) and 11 Mongolian Higher Education Institutions (HEIs). ARROW provided Mongolian universities with adequate tools to increase the visibility and rates of scientific production in terms of better scientific manuscripts and patents. The innovative character of the present proposal was raised in the combination of different arrows to achieve the bullseye. ARROW 1: to know how to manage the "medium" where science grows (databases, plagiarism, patents); ARROW 2: to improve scientific skills (scientific English, scientific writing, statistics); and ARROW 3: solving problems workshop. Moreover, a novel structure was proposed, consisting of a platform that allowed senior researchers from both European and Mongolian universities to contact junior or inexperienced researchers from the partner and associated universities of Mongolia.

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1. Background

In recent years, Mongolia has paid considerable attention to reforming and modernizing its science and technology system, to train professionals at a level comparable to the most developed economies. Training, research and entrepreneurship were the activities that the most prestigious universities in the world used to develop high-level professionals. A proper combination of these three activities could generate a modern and successful research and development model in Mongolia. To do so, it was necessary to establish some research and development levels that would allow achieving the proposed goals, which were none other than reaching the international standards in education, research and development. These were important factors in building the capacity of Mongols to the international standards in education, research, innovation, industrial, business and financial fields. Mongolia's rapid economic growth was highly dependent on the mining operations of the country. Scientific development requires, in turn, the training and the implementation of capacities and skills for its correct development and communication. One of the most recognized ways of communicating and disseminating of scientific results was through scientific manuscripts or "papers". In this sense, at the time of the presentation of the ARROW project, the universities of Mongolia shared the same scenario: greater focus on teaching

than on research and publication. Therefore, the quality scientific production was low or very low, so the submission of scientific articles to journals of recognized prestige was very low.

According to Scimago Group (2007), from 1996 to 2014, all countries have produced around 35 million papers. The USA is the main contributor with 22% of the scientific production, China is the second one with 10% and only 20 countries have more than 1% of the global contribution. Spain is in the position number 10 with the 2.48% of the global scientific production. Mongolian partners display a very low scientific production. All research work, dissertations and papers published by Mongolian researchers are in Mongolian language. Much less than 1% of these papers are published in international journals. Due to the language barriers, Mongolian HEIs have limited opportunities to publish scientific research and participate in international conferences and workshops. The global scientific production in Mongolia is just 0.008%.

After the initial status analysis, the main conclusion is that the average of the articles is rejected because of the quality of "how results are presented" and not the quality of the performed research. The combination of these factors makes ARROW happen. The fact of using a common methodology for scientific publications (comparing parameters of quality and homogeneously interpreting scientific results) may create synergies between European and Mongolian science. This project will give a direct opportunity to Mongolian partner universities to pool their strengths and weaknesses and jointly acquire the skills needed for greater collaboration and multidisciplinary understanding through scientific production and publications.

Antecedents

The project proposal was born due to the combination of some factors. On the one hand, the ULP-GC had a strong team in international cooperation which was coordinating different international projects (e.g., KA2-ReVET and the KA2-INSTART among others) and had strong contact with some of the Mongolian partners included in ARROW through the Erasmus Mundus IMPAKT project. ULPGC had been exchanging students and staff with two Mongolian partners (Mongolian National University and University of Finance and Economics). Because of this, from the Mongolian universities, there was a high interest in participating in the ARROW project, so they actively participated in the design and application of the project.

The consortium

The ARROW project was implemented by a consortium of 4 European HEIs and 11 Mongolian HEIs (see Table 4.5.1). As far as European partners are concerned, the balance is granted by the participation of southern and northern European Universities, such as University of Porto (Portugal), University of Szczecin (Poland) and University of Las Palmas de Gran Canaria (Spain) together with Science and Technology Park Foundation (FPCT) (Spain). The experiences of the four universities are complementary and reinforce the plurality in the European consortium. Concerning the Mongolian partners, HEIs have been selected to set two criteria, background of relationship with European HEIs or other Asian HEIs and interest in the proposal. The Mongolian consortium counterpart involves 11 HEIs.

Table 4.5.1. **ARROW HEIs Partners**

Organizations *	Acronym	Country
Choi. Lubsangjab University of Language and Civilization	ULC	MONGOLIA
HANGAI University	HU	MONGOLIA
Mongolian National University of Education	MNUE	MONGOLIA
Mongolian National University of Medical Sciences	MNUMS	MONGOLIA
Mongolian University of Life Sciences	MULS	MONGOLIA
National University of Mongolia	NUM	MONGOLIA
New Mongol Institute of Technology	NMIT	MONGOLIA
Otgontenger University (associated partner)	OU	MONGOLIA
Scientific and Technological Park Foundation	FCPCT	SPAIN
Tsetsee Goun Management Institute	TGMI	MONGOLIA
Ulaanbaatar State University	USU	MONGOLIA
University of Finance and Economics	UFE	MONGOLIA
University of Las Palmas de Gran Canaria	ULPGC	SPAIN
University of Porto	UPORTO	PORTUGAL
University of Szczecin	US	POLAND
University of the Humanities	UH	MONGOLIA

*Listed by alphabetical order

Source: Own elaboration.

Publication status before ARROW

To give a general overview of the Mongolian research situation before the development of the ARROW project, we present the results of a bibliometric analysis based on international databases. To obtain the necessary records for the bibliometric analysis, a bibliographic reference advanced search was performed in the Web of Science (WOS) Core Collection and Scopus Database. For the advanced search "period" and "country" fields were specified to make the query of the specific features and terms. Concerning the year, the period selected was from 2014 to 2018 inclusive. In the same WOS and Scopus advanced search, the name referring to Mongolia was selected within the "country" field to

display all the publications published by Mongolian researchers. Mongolian institutions produced 2,105 documents included in the Web of Science database between 2014 and 2018 (see Table 4.5.2). The National University of Mongolia (NUM) and Mongolian National University of Medical Sciences (MNUMS) are two of the three first-positioned universities that produce the most scientific documents; these two universities are ARROW partners.

Table 4.5.2. **Authors' affiliations in documents with authors in Mongolian institutions (2014-2018) (Top 10)**

Institutions	Documents	% of 2,105
NATIONAL UNIVERSITY OF MONGOLIA*	495	23,515%
MONGOLIAN ACADEMY OF SCIENCES	478	27,708%
MONGOLIAN NATL UNIV MED SCI*	332	15,772%
RUSSIAN ACADEMY OF SCIENCES	228	10.831%
MONGOLIAN UNIV SCI TECHNOL	217	10,309%
JOINT INST. NUCLEAR RESEARCH RUSSIA	155	7,363%
MONGOLIAN UNIVERSITY OF LIFE SCIENCES*	134	6,366%
CHINESE ACADEMY OF SCIENCES	126	5,986%
HELMHOLTZ ASSOCIATION	83	3,943%
SEOUL NATIONAL UNIVERSITY SNU	79	3,753%
MINISTRY OF HEALTH MONGOLIA	72	3,420%

Note: Data of WOS from 2014/01/01 till 2018/12/31. * Mongolian institutions in ARROW project.
Source: Web of Science.

The next Mongolian university project partner by number of publications is the Mongolian University of Life Sciences (MULS) with 134 documents. Among the three partner institutions of the project, they produced 45% of the documents indexed in the WOS database in the 2014-2018 period. The remaining Mongolian members of ARROW individually produced less than 1.5% of the total production.

In Figure 4.5.1, the results of international research collaborations are presented. As it can be seen, collaborations in publications are made among Mongolian authors themselves. Secondly, there are collaborations with the United States, followed closely by Russia. Thirdly, collaborations with other Asian countries (Japan and China) stand out. In fourth place, there are collaborations with countries of the European Union, with Germany standing out, followed by England and Italy. Finally, publications with Australia appear in the tenth position.
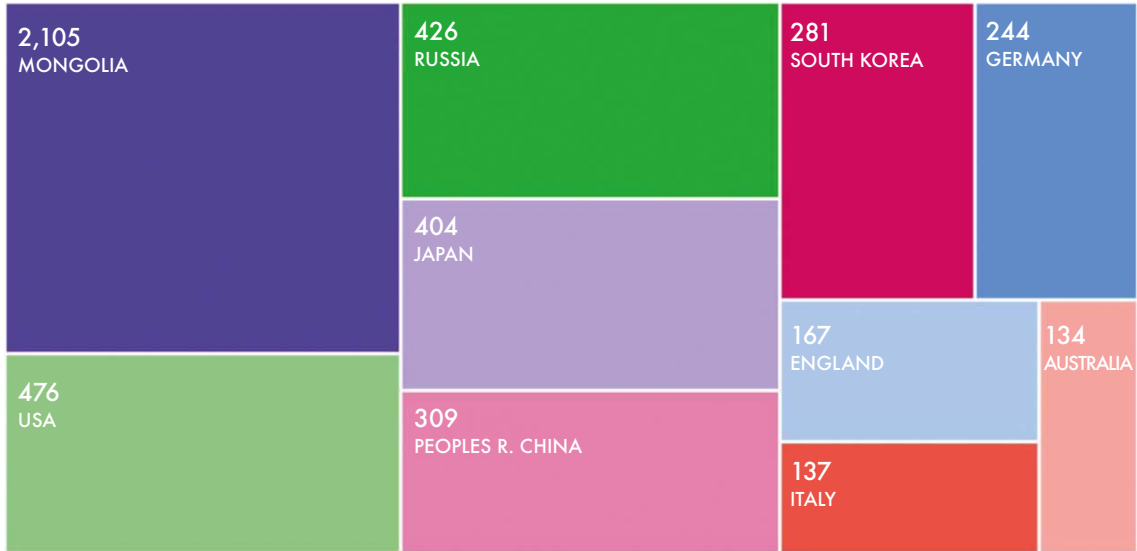
Figure 4.5.1. International collaborations (Top 10) in the production of Mongolia (2014-2018)
Source: Web of Science.

Then, a classification by field category was made of all publications in the Web of Science database from Mongolian centers. Figure 4.5.2 shows the first 10 publication field categories. As it can be seen, the field category with the highest number of publications is "Environmental Science", followed by the category "Geosciences Multidisciplinary" and thirdly, category "Ecology" and "Multidisciplinary Sciences".
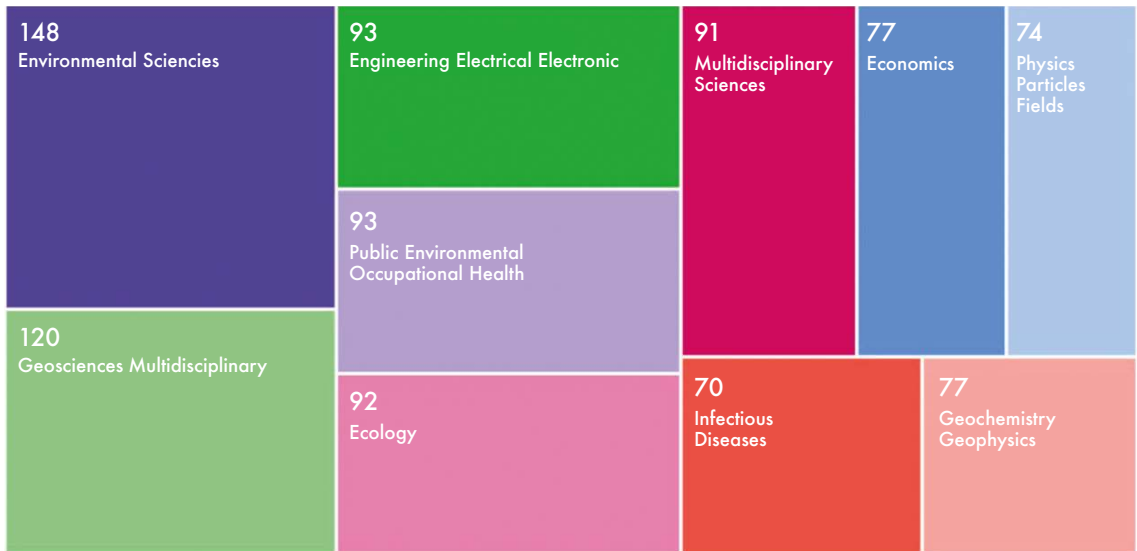
Figure 4.5.2. Field categories (Top 10) in the production of Mongolia (2014-2018)
Source: Web of Science.

Mongolia's scientific publications are concentrated in a few universities and are also carried out in research categories focused on the science category. Considering Mongolian publications, the results showed that the research documents are not made with European scientists, the co-authorship is mainly with Mongolian authors. All these reasons strengthen the great usefulness of the development of the ARROW project to strengthen scientific relations between Mongolian and European researchers.

As a complementary analysis, strengths and weaknesses analysis were carried out and responded to by the ARROW consortium partners. When looking at the aggregate weaknesses and strengths of Mongolian universities, their differences become less apparent. The following common findings can be considered when looking at the weaknesses. First, to increase the visibility of Mongolian researchers or to improve research collaboration in international projects, most Mongolian universities emphasized the need to join international research networks. Second, the low level of English proficiency for publishing scientific articles was identified by some universities as another weakness. Finally, another weakness identified in developing scientific understanding is the lack of international research materials, equipment and techniques.

Furthermore, the most notable strength of Mongolian universities was the motivation and willingness of academic staff to collaborate. The main resource for maximizing the objectives proposed by the ARROW project is the high motivation to improve their skills.

Project's goals

This ARROW project is a challenge to improve Mongolian research and innovation skills. As an important objective of this ARROW project, every partner aimed to encourage Mongolian universities to develop together the necessary skills for greater multidisciplinary collaboration and understanding, through research production and scientific publications. The long-term main objective proposed by ARROW is based on the ability to disseminate the research conducted by the Mongolian partners, so the high visibility of the research will contribute the Mongolia's development. Therefore, the ARROW project's main objective was to contribute to the promotion and strengthening of scientific writing skills and the visibility of the results in Mongolian universities belonging to the consortium. Data establishes that countries with higher standards of life are linked with good scientific production, due to progress based on knowledge and science which provides knowledge to society. The ARROW project tried to provide Mongolian universities integrated into the consortium with the proper tools to increase the visibility of scientific production in terms of better scientific research results, such as indexed papers and patents. Besides, ARROW implemented a mentor-scientist network, where prestigious scientists cooperated (and still do) altruistically to improve Mongolian researchers' results.

Activities

To achieve the project's goals, the following "ARROWS" were shot:

a) On-line course on scientific databases. Publishing a research paper in a journal or conference is an important activity within the academic community. It allows researchers/scholars to network with other scientists and to further refine their ideas and research. We can say that scientific journals are probably the most common place to publish the results of research. Finding the most suitable academic journal for a concrete topic and writing style will increase the chance of being published ("Know your audience and write accordingly"). The first step to reach this objective is to know how to use scientific databases (Web of Science, Scopus, Pubmed, etc.). This first arrow intended to give Mongolian partners a deep knowledge of the modern database for data search which is the starting

point of each publication. This course was taught by University of Szczecin with 15-16 staff enrolled per each of the 12 partner universities, and a total number of enrolled participants of 188 among students and staff.

b) On-site scientific English courses. Attention must be paid to how other research papers are written: the format, the type of articles (quantitative studies versus qualitative ones, primary research, review of existing papers), the writing style, the subject matter, and the vocabulary. Specific grammar for scientific use is a great tool to improve the quality of the manuscripts and consequently the acceptance rate of manuscripts. These courses provided Mongolian partners with the right tools for writing a good manuscript. The total number of participants enrolled was 165 (since such courses required an allocated budget, the associated partner OU could not benefit from this action).

c) On-line course on plagiarism and self-plagiarism. Nowadays the pressure on the scientist to publish is increasing plagiarism and self-plagiarism cases. To raise awareness among researchers about the importance of originality is the main objective of the present activity. This course was taught by FPCT with 15 staff enrolled per each of the 12 partner universities, total number of participants of 180 students and staff.

d) On-line workshop on writing skills and problem-solving work camp. This workshop gave the Mongolian scientists the necessary skills to write a good manuscript. The discussion over real cases (with the contribution of Mongolian scientists) helped to understand and interiorize the concepts. Sometimes journals asked authors to revise the paper and resubmit. At this point, many Mongolian authors surrender and never publish the results. Through this work camp, we pretend to transfer the "keep trying" mentality to Mongolian partners so they can learn how to solve these very common obstacles. In this regard, this workshop and work camp helped Mongolian partners to use all their skills as researchers and writers to create a superior paper. Even, if ultimately, they are rejected by the "target" journal they can continue to re-write the paper and submit it to another one. This course was taught by ULPGC. Three staff members per each of the 12 Mongolian partners attended.

e) On-line seminar on patents and university knowledge transfer. Nowadays, the protection of generated knowledge with commercial applications is mandatory. To understand how and when the scientist must perform that protection is essential for the country's development. FCPCT coordinated the patents seminar due to its wide experience in patents and technology transfer.

f) On-site applied statistics course. Experiment design and results interpretation through statistics is a core point in science. Sometimes too much work is devoted to an experiment with a wrong design, and the reviewers must reject the manuscript. The present course allowed the scientist to improve their knowledge of statistics applied to science. This course was taught by University of Porto and took place in Ulaanbaatar simultaneously to the intermediate meeting, the total number of participants enrolled was 65 students/staff.

g) On-site workshop on funding opportunities and proposal writing. This workshop was offered to present the landscape of scientific project funding. It was the opportunity to give information about Horizon Europe, Erasmus+ and other international programs. It was taught by University of Porto. Three staff members per each of the 12 Mongolian partners (total 36 Mongolian staff) plus 8 EU partners attended.

h) On-line workshop on Design Thinking in Education & Science, and On-line workshop on Dissemination of Project Results, titled "Sharing and making use of project results and actions". These workshops

were taught by University of Porto. Three staff members per each of the 12 Mongolian partners (total 36 Mongolian staff) plus 8 EU partners attended.

i) Creation of the mentor-scientist webpage. This platform was designed to be the future of the project. This is a virtual place where mentors (i.e. experienced researchers) and mentored (i.e. new researchers) scientists can meet and where mentored scientists can find someone experienced enough to help altruistically. The innovative character of ARROW consisted precisely of the combination of training and mentoring for the improvement of research skills and the publication of results in prestigious scientific media.

2. Main achievements of the project

The fact of involving so many different institutions was crucial for the creation of a very powerful network of cooperation. Before the project started, the 12 domestic Mongolian institutions did not collaborate very often, on the contrary, they perceived others as competitors. However, after the ARROW implementation, they started to cooperate, signed bilateral and multilateral agreements and, most importantly, they now consider themselves as partners, colleagues and friends who share and circulate knowledge, information and experience thus creating a transversal synergic effect, probably being the most relevant result of the project. Moreover, traditionally Mongolian HEIs tended to cooperate internationally with South Korea and the United States, EU possibilities for cooperation were not well established there yet. The ARROW project was also innovative in terms of the partnership. The project has reached new beneficiaries that may not have been reached otherwise and has made Europe popular among Mongolians and Mongolia among Europeans. Then again, Mongolia and Central Asia, which were still quite unpopular destinations for academic and scientific cooperation in the EU, have considerably increased their academic and scientific exchange.

Moreover, the ARROW project is in line with the national priorities and with the objectives of the main Mongolian HEIs to get better recognition in the international scientific community. ARROW provided a wide group of researchers, belonging to Mongolian Partner HEIs, with a set of theoretical and practical content aimed at improving research, publication, and intellectual property skills. As a result of this program, beneficiaries acquired not only technical skills related to using a scientific database, selection of the most appropriate journal where to publish or international regulations for patent registration, but they also received training and advice on soft skills necessary for successful publication of research results. In this sense, through several courses, workshops and personalized mentoring, ARROW beneficiaries acquired the right skills for appropriate communication with referees of quality journals, as well as for a "problem-solving" mentality at the time of publication and the establishment of productive relationships with partners and colleagues.

Finally, it should be noted that ARROW enabled the acquisition of different equipment to improve the research capabilities of the partners. Equipment was purchased just for partner countries and included ICT equipment, electronic books, antiplagiarism software subscriptions to licenses, online newspapers and scientific journals depending on the very specific necessities of each HEI. A quite big difference in necessities among partners was detected. According to the evaluation of needs implemented, some universities already had access to scientific databases and journals whilst others did not.

3. Outputs, outcomes and impact

The ARROW project generated high interest in the partner society and enabled the interaction of different actors and stakeholders as the international activities implemented in the project reached a wide audience and involved the private sector. ARROW's aims and scopes engaged local and regional stakeholders such as technical institutes, travel and intercultural agencies, linguistic agencies and academies, ICT suppliers, software providers, local and national media (national press and TVs disseminated the ARROW activities on several occasions), non-partner HEIs, academic foundations, student associations, cultural and folkloristic associations, among others.

The ARROW project successfully pursued its third specific objective by emphasizing the enhancement of problem-solving capacities through mentoring initiatives. A key contribution of the ARROW project was the establishment of a mentoring network that connected young Mongolian researchers with outstanding European mentors an predominantly established scientists, fostering a disinterested exchange of knowledge and expertise.

Mentoring stood as a cornerstone of the project, facilitated through the ARROW website's functionalities designed explicitly to serve as a platform for mentor-scientist interactions. The project deemed it imperative to actively seek and enlist senior researchers capable of providing altruistic mentorship. Following a meticulous recruitment phase, a total of 71 mentors pledged their commitment to guide and support inexperienced researchers. These European mentors hailed from diverse knowledge domains, ensuring comprehensive coverage across all areas essential to meet the requirements of the Mongolian partners. In the context of inexperienced researchers, the year 2020 witnessed the participation of 117 individuals within the mentor-scientist network, comprising 71 women and 46 men. This achievement notably fulfilled the objective of gender parity, marking a significant stride toward bolstering the capabilities and empowerment of women within the program.

It should be emphasized that the satisfaction indicator provided an excellent level in an overall summary of all training activities. All 329 certified participants rated all training activities above 4 out of 5. Among the most relevant ranking data of the group of certified participants, the following can be highlighted as follows. First, most of the participants (48.7%) were in the age group between 30 and 40 years old. Second, it should be noted that 62 % of the participants had master's degrees and 36 % had PhDs. In terms of the gender of the participants, the strong participation of female scientists was highlighted, with 74% of certified participants being women. Gender parity was always sought when selecting participants, focusing on one of ARROW's main objectives.

At a general level, the impact on the local society after the implementation of the project will be sustainable. The improvement of the academic capacities of Mongolian public higher institutions will make them more attractive for national students, thus preventing brain drain to other regions. Many Mongolians are still pursuing tertiary education opportunities both domestically and abroad, especially towards China, South Korea, the US, the Czech Republic, the UK, Canada, and Japan. The improvement of national economic conditions, professional opportunities, and higher education capacities, such as the ones created through the ARROW project, will not only incentivize their stay (or return) but also provide the local public and private sector with highly specialized staff/researchers.

Thanks to the acquired knowledge and skills, universities, enterprises, and other relevant stakeholders will be more effective and targeted in finding solutions for Mongolian society's development challenges. It is important to bear in mind that the impact on the visibility of Mongolian publications should be

assessed in a time horizon of 10 years, where it is possible to see what the effect has been on the new generations of Mongolian researchers. In any case, considering the period 2019-2023[2], an increase in the number of publications registered in the Web of Science can be seen, as for these five-year period, 3,379 scientific papers have been published. These papers were co-authored by Mongolian researchers. Although there are no major changes in the nationalities of the co-authors, it should be noted that India enters the top 10 rankings. Moreover, it enters strongly as publications with authors from India are on par with those from countries such as South Korea and Italy, which have been present since 2014. This may imply that given the increased visibility of Mongolian publications, research networks have been created in a new country (see Figure 4.5.3).
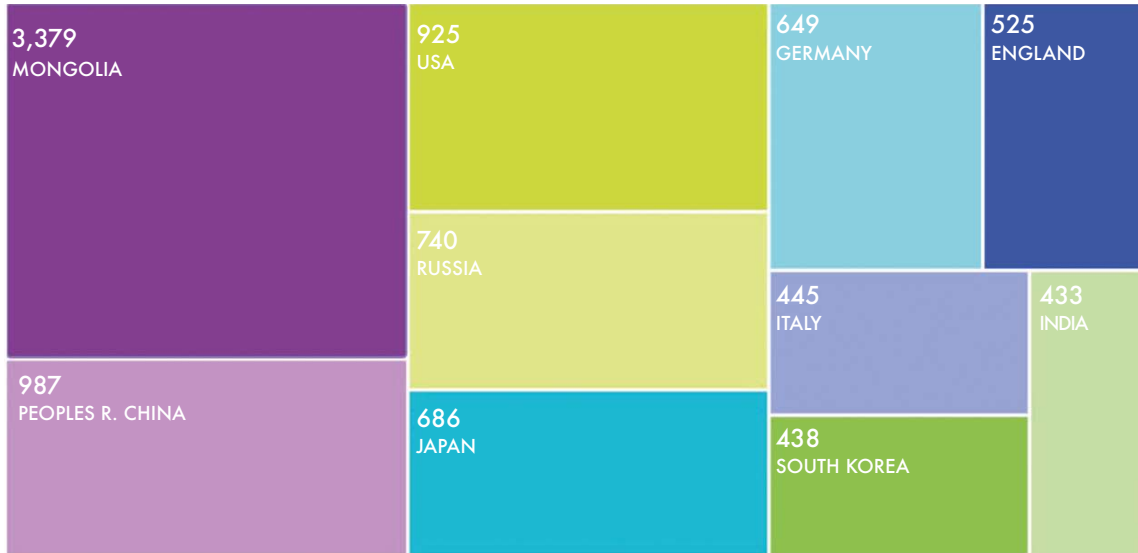
Figure 4.5.3. International collaborations (Top 10) in the produced publications in Mongolia along 2019-2023
Source: Web of Science.

If we consider the analysis of scientific research papers published in Mongolia between 2019 and 2023, we can see a change in the trend of publication fields compared to 2018 (see Figure 4.5.4). Certainly, the field of Environmental Sciences (326 papers) is still in first place, but it is closely followed by the fields of Physics Particle Fields (278 papers) and Astronomy Astrophysics (200 papers). These last two fields have increased their publications significantly, indicating that research in Mongolia has expanded into different fields, which implies a diversification of the scientific knowledge generated in Mongolia.

Throughout the ARROW project, the name of the country "Mongolia" has been recognized by search engines in scientific databases (i.e. Web of Science). When the activities of ARROW started, the name of the country appeared incorrectly in the databases of scientific journals as "Mongolian People's Republic", although this name had not existed since 1992. Thanks to the ARROW project, the name of Mongolia was correctly referred to and gained importance.

Among the unexpected results, the increased interest in Mongolia within the academic world should be highlighted. Not only have the publications of local researchers themselves increased, but also the rest

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[2] Period: from 01/01/2019 till 01/12/2023.
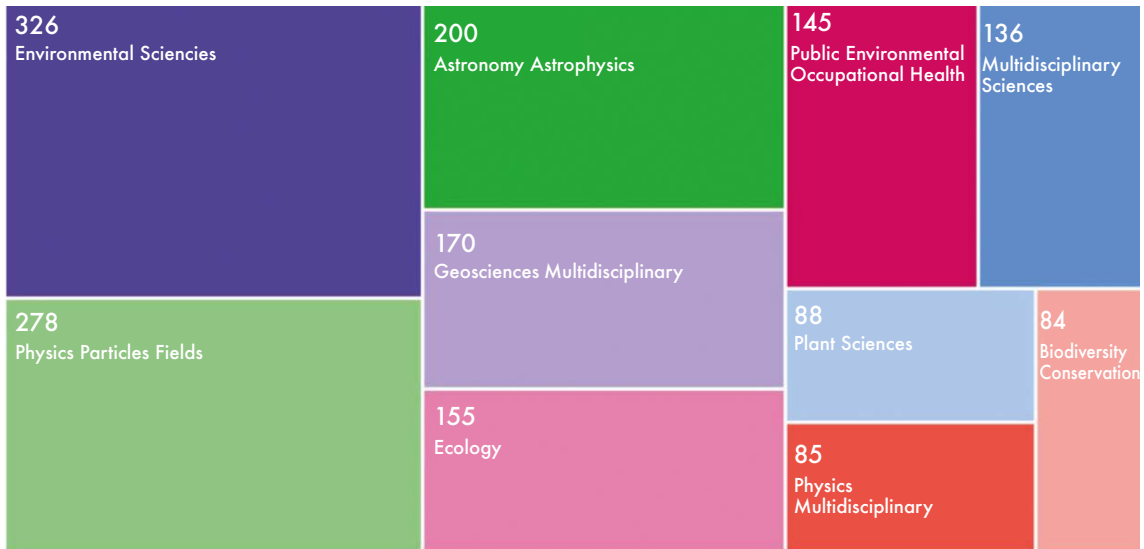
Figure 4.5.4. Field Categories (Top 10) in the produced publications in Mongolia along 2019-2023
Source: Web of Science.

of the researchers in Europe have considered Mongolia as a point of development for their research. This is supported by the fact that in the Web of Science database, European Union countries have begun to appear as authors of research with Mongolia. Specifically, focusing on the countries of the European institutions participating in ARROW, since 2018, a total of 391 publications from Spain (102 documents), Portugal (72 documents) and Poland (217 documents) have been published in Mongolia. This is an advance of Mongolia's presence and visibility in the scientific world. In the academic world, being an object of study has a very important impact on the generation of knowledge and the development of science.

Finally, and although it was not one of the actions planned in the project, efforts were joined to produce a book edited by the publication service of the ULPGC (Verano-Tacoronte et al., 2022) in electronic format in which the experiences and learnings of the universities that composed the consortium were compiled. This book served to reflect the experiences lived during the project and was an important deliverable that demonstrated that it was possible to work coordinately with a common goal among all the participating universities. Since the coordination of the project, the motivation of the participants in the correct elaboration of the materials and the dissemination of the manual among the various interest groups, both within the institutions of the consortium and in their social contexts, was evident.

4. Success factors

As indicated earlier, the ARROW project stands out for a series of innovative features: the combination of training in the different areas and basic tools of scientific research, the sharing of the results of the training and development processes, and, notably, the interaction between experienced researchers and novice researchers. As far as we know, no such approach has been done previously in this sector.

The close collaboration between European and Mongolian universities and, fundamentally, between the Mongolian universities, has facilitated the success of the project. Although all Mongolian partners were in Ulaan Baatar, they had not collaborated very often before the project. The project allowed them to make connections both on an institutional and personal level. Local universities, which usually competed, started working together towards a common goal creating a multiplier effect. The ARROW project has opened an entire spectrum of new partners and possibilities for Mongolia and the entire region.

The Dissemination and Exploitation Committee (DEC) of the ARROW project was responsible for ensuring the dissemination and communication strategy of the project and its activities and for reporting to the Steering Committee the implementation of the actions, surveys, measures of improvement, etc. The official project website[3] was developed and launched at the beginning of the project. The website was designed, hosted and maintained by ULPGC, and acted as the major information reference on the project activities and results. It contains general information on the project, its contents, goals and partners. It also worked as a tool to support the connections between senior and junior researchers through its mentor scientist platform (through an intranet field). The main documents on the project were published on the ARROW website (with more than 4.000 users in 3 years) during the projects lifetime and are available for free download.

The ARROW project was very active in social media channels, mainly Facebook, through a private group and a public page. The latter was an effective and efficient way to engage with a wider target audience interactively. By doing so, ARROW's activities and outcomes reached the public and especially academic audiences and stakeholders directly or indirectly related to the ARROW consortium. Also, EU partners, i.e. USZ, through their International Relations Facebook page, promoted and disseminated news regarding the ARROW meetings and other related activities. It is worth mentioning that all partners undertook hundreds of dissemination activities throughout the projects' lifetime such as info-days, events, course dissemination activities, participation in national and international congresses, interviews in press and national TV, news published on their institutional websites, certificate ceremonies where the Ministry of Education and local press was invited, etc.

Finally, the project had also a strong dissemination when EU and Mongolian partners recruited mentors and young researchers respectively for the mentorship program. In the EU, several teachers from different research groups were targeted, in some cases directly through their research centres. At the end of the project, ARROW received attention through a new initiative of dissemination about the mentorship program. This activity was important to continuously disseminate the existence of the project, in case other teachers and researchers intended to be also mentors for the mentorship program and to support young Mongolian researchers.

5. Sustainability

ARROW project's sustainability was focused on these pillars:

a) Mentor-scientist network. This platform will agglutinate the new scientists and give them opportunity to share experiences and learn about others. This network will give Mongolian students and scientists the chance to inquire their doubts to a reputed mentor who will help them with the manuscript pre-

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[3] http://arrow.ulpgc.es

sentation, suggestion of the more appropriate journal for submission, corrections, etc. The ARROW mentor-scientist network will be maintained, and partners will care of the follow-up also after the end of the project. New-incorporated scientists and mentors will continue networking and sharing opinions and experiences through the platform. ULPGC and EU partners are committed to the maintenance and updating of the ARROW platform after the financed period.

b) Agreements. Bilateral and multilateral agreements were signed to strengthen partners relationships. This remarks a clear intention to continue working together does exist. For example, individual mobility proposals KA1 (EU-Mongolia) have been submitted in different calls for applications. The project has tightened cooperation between 12 Mongolian HEIs and has had a remarkable impact on their coopera-tion. All Mongolian partners are located in Ulaan Baatar but haven't collaborated very often before the project. The project allowed them to make connections both on institutional and personal levels. Local universities, which usually compete with each other, have started working together towards a common goal creating a multiplier effect. The ARROW project has opened an entire spectrum of new partners and possibilities for Mongolia and the entire region. The academic staff of EU partners HEIs are very interested to continue cooperating with Mongolian researchers in different areas. Even though just a few EU academics contributed to the project by giving online and on-site courses, the other staff members from different institutes managed to benefit from these brand-new connections. For instance, PhD candidates and research staff from Mongolia were hosted in various units of the University of Szczecin in the frame of the PROM program, including areas of life sciences, economics, pedagogy and linguistics.

c) Local sustainability. The local network will be maintained, and Mongolian partners will continue meeting regularly. Periodical on-line meetings will also be organized by ULPGC to ensure the continuity of the consortium.

d) ARROW label. The project has created a unique label, where the activities will continue to take place after the project completion, under the same terminology as established during the project imple-mentation. For example, the participants in the mentoring network were encouraged to use the tag "ARROW" when they tagged their publications on social media, such as Researchgate or Linkedin. This was used to attract further attention and funding for the activities.

e) Common research and cooperation projects. As a result of ARROW, different research projects and research jobs, and doctoral theses are being developed. This is one of the main by-products of the project. Besides this, the intense work experience with the Mongolian partners has generated impor-tant work and trust relationships. These relationships have resulted in the submission of cooperation projects to the European Commission KA2 calls, such as between the ULPGC and the NMU. In this project, and given the learning acquired in the management of international cooperation projects, the university coordinating the project was the NMU. Unfortunately, this project was not accepted in the first call in which it was submitted. One of the reasons is that, although the project was well evaluated, Mongolia is no longer a priority country in the funding of the European Commission's cooperation projects. However, the submission of the project "Work-based learning for Higher Education System in Mongolia towards better employability of University Graduates" (MONGWBL) was successful, and whose coordinating university was Otgontenger University.

6. Lessons learnt

The rich and varied experience gained during the coordination of ARROW project tasks can be summarized in the areas explained below.

One of the main challenges and opportunities of cooperation projects is to ensure the active participation of the local partners in the design and implementation of the project's activities. Cooperation projects should not treat the partners as mere passive recipients, but rather as active contributors who can bring their ideas and adapt the initial plans of the project to their needs, both in the design phase and in the implementation phase. This is what the ARROW project did, by encouraging the presence of outstanding Mongolian researchers who acted as mentors for the less experienced researchers who were the core of the project. Moreover, autonomy was given to the local partners to design reinforcement actions of the different trainings imparted, which allowed increasing their impact on the potential audience of the project. This autonomy produced a high participation of the local partners in the different dissemination actions of the project results, which gave it a remarkable impact in Mongolia.

Multicultural management is another key aspect for the success of international cooperation projects, as it involves working with partners who have a wide range of backgrounds and interests. Therefore, multicultural management requires an attitude that recognizes and values diversity and seeks consensus and collaboration. The management of projects such as ARROW involves developing intercultural competencies that have also benefited the participating European universities. It should be highlighted that these variables and criteria were considered in the ARROW logo and slogan itself, which is why it did not opt for a stereotype, but rather combined scientific progress in the form of "papers" with the arrow and the bullseye. The image of Mongolia projected by the name, logo and slogan is itself innovative. At the same time, it respects certain traditional Mongolian cultural characteristics[4].

The importance of having clear quality assurance measures in international cooperation projects is evident since these measures make it possible to evaluate the fulfilment of objectives, results and expected impacts, as well as to identify and correct possible deficiencies or deviations that may affect the quality and effectiveness of the interventions. In addition, quality assurance measures contribute to improving transparency, accountability and trust between project partners and beneficiaries, as well as generating knowledge and learning that can be used in future initiatives. Having clear indicators, with compliance levels that are known to all, helps to ensure the successful implementation of cooperation projects.

Last, but not least, the management under COVID-19 restrictions and the obstacles in finalizing the project tested the skills of the consortium members. COVID-19 made it necessary to adapt or suspend many of the activities planned in the projects, such as face-to-face training or coordination meetings (e.g., final meeting), delivery of products, dissemination of results, impact evaluation or financial closure, etc. Faced with this situation, partners, especially those with coordination responsibilities, had to find creative and flexible solutions, such as the use of virtual platforms, rescheduling of timetables, reallocation of resources and extension of deadlines. It is worth noting that in Mongolia, the duration of the lockdown was much longer than that of the European partners involved in ARROW.

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[4] See logo and slogan in "About us": https://arrow.ulpgc.es/

7. Conclusions

As a conclusion to this project, we can take up again a repeated idea among Mongolian partners: They consistently highlighted the positive value they attributed to the ability to implement strategic changes within their institutions concerning research incentive policies. A significant proportion of Mongolian partners admitted that they had not previously understood the critical importance of being present in international editorial databases. Partners from Mongolian institutions expressed their intention to incorporate research dissemination into their strategic plans as a pivotal approach to fostering new interests among potential researchers. This acknowledgement highlights the project's role in reshaping institutional strategies towards a more research-centric and globally connected approach.

This strategic shift bears particular significance, especially for smaller Mongolian HEIs striving to attract research talent and to develop their doctoral candidates. The impending transformation in research incentive policies, prompted by the insights garnered from ARROW, is poised to significantly impact these smaller institutions. The necessity to appeal to research talent and cultivate their pool of doctoral candidates stands as a paramount challenge for smaller institutions. The forthcoming strategic changes, influenced by the ARROW project's revelations, offer a promising opportunity for these institutions to reshape their approaches.

This shift is poised to bridge the gap in research skills between larger and smaller institutions in Mongolia, creating an environment conducive to nurturing research excellence even in resource-constrained settings. The potential implications of this strategic alteration are extensive, promising to empower smaller institutions in their quest for research development and talent acquisition, thereby enriching the broader research.

ARROW project has provided European partners with an unprecedented opportunity to discover major research institutions whose advancements were previously concealed due to their lack of visibility in databases accessible to European institutions. As a result, avenues for establishing Erasmus+ exchanges or research licenses between participating European universities and Mongolian universities have emerged.

Despite the COVID-19 pandemic imposing strict travel restrictions on Mongolia, the ARROW scientific mentorship network facilitated the continuation of scientific collaborations through online channels. This mentorship network proved instrumental in sustaining virtual connections between the research communities of Mongolia and Europe, mitigating the challenges posed by travel restrictions and enabling ongoing scientific exchanges. The significance of this virtual connectivity established by ARROW cannot be overstated. It ensured the continuity of scientific collaborations and knowledge transfer between European and Mongolian institutions during a period of unprecedented global disruption. The project's ability to adapt and maintain this virtual platform underscored its resilience in fostering cross-continental scientific partnerships despite the challenging circumstances posed by the pandemic.

As coordinators of the ARROW project, the achieved impact stands as a testament to the successful outcomes attained. Throughout this cooperative initiative, a substantial enhancement in innovation and research capabilities has been witnessed, benefiting both Mongolian institutions and the coordinating university itself. The project has played a pivotal role in advancing research capacities within Mongolian institutions. Additionally, it has contributed significantly to bolstering the coordinating university's proficiency in managing allocated resources dedicated to research endeavours. The collaborative efforts invested in the ARROW project have been transformative, enriching the landscape of innovation and

fostering a culture of research excellence in the ULPGC. The acquired experiences have been invaluable, aiding in refining management competencies and skill sets, particularly concerning resource allocation for research initiatives.

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4.6. The SAGESSE project

The present case-study focuses on the SAGESSE project "Improving Governance in the higher education system in Tunisia", a capacity-building project co-funded by the European Union under the Erasmus+ programme, aimed to modernize the higher education system in Tunisia by strengthening its quality assurance system, governance mechanisms, and results-based funding. Led by UNIMED, it involved together all the 13 public Higher Education Institutions (HEIs) in Tunisia, the Ministry of Higher Education and Scientific Research in Tunisia, the Tunisian External Evaluation Agency and 5 EU partners: Paris 1 Panthéon-Sorbonne University from France, Barcelona University from Spain, University of Siena, Sapienza University of Rome, and CESIE, Italian Centre for Research and European Studies, Italy (sagesseproject.eu).

UNIMED –Mediterranean Universities Union– is a large university network made of 165 universities from 24 countries of both shores of the Mediterranean basin, founded in 1991 and based in Rome (Italy), aiming at improving the Euro-Mediterranean dimension of university cooperation through promotion of education, research, mobility between and among its university members with the purpose of a better social, economic, political and cultural integration in the Mediterranean region.

The specific objectives of the SAGESSE project were:

- The creation at the level of each university of an integrated system of evaluation and quality control.
- The definition of a good governance framework to promote a more innovative, efficient and autonomous financial management structure.
- The commitment of leadership at all levels of the organization and political spheres that will support the decentralization process of management by capitalizing on university expertise in quality assurance, and by promoting the adoption of strategic planning.

Recommendations have been prepared pursuant to experiences gained during the implementation of the project by addressing relevant national, regional and international interest groups and political authorities.

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1. Background

One of the key elements that has been the recent focus in higher education reform worldwide is university governance. This concept addresses how universities and higher education systems define their goals, implement them, manage their institutions, and monitor their achievements. The overall framework of the system and the interaction between institutions and the state are crucial in defining university governance (Barry et al., 2012). In this definition the concept of autonomy concerns the relationship between each Higher Education Institution (HEI) and the central authority. It gauges the extent to which HEIs can freely make decisions in the context of the rules and regulations that shape each higher education system (Estermann et al., 2011). Since 2000, universities in North Africa and Middle East countries have strengthened their educational, administrative, and financial requirements thanks to progressive decentralization launched by their governments.

Tunisia has been among the forerunners in the introduction and full implementation of the License-Master-Doctorate (LMD) system in higher education, together with the adoption of the European Credits Transfer System (ECTS) frameworks since 2008, to boost quality assurance (QA) procedures, through the establishment of a national agency —the National Evaluation, Quality Assurance and Accreditation Authority (NEQAA) in 2009 in charge of ensuring the quality of higher education and research and the compliance of the education system with internationally recognized standards. The Higher Education Law of 2008 introduced in Tunisia the concept of university autonomy and promoted it as the key capability of university management in developing and implementing institutional strategies. This law also allowed universities to switch their legal status from general "public institutions" to specific "public institutions of scientific and technological nature". This specific legal framework is similar to the French legislation which certainly allows universities to enjoy more administrative and financial flexibility and autonomy.

Tunisian universities are now adopting a standard LMD cycle structure (3+2+3 years), except for a few faculties self-governed by their own rules (for example, mostly in the field of medical education). The focus has been shifted to quality and competitiveness at the national and international levels. To promote continuous improvement in the quality of higher education and scientific research (in harmony with the socio-economic environment), as part of its institutional reform programme, the Tunisian government has emphasized the progressive empowerment of educational and research institutions and the enhancement of quality assurance in all its forms. The promotion of stronger QA using evaluation exercises, dissemination of their results, accreditation of courses, and the acknowledgment and recognition of the value of research represents the main feature of the higher education reform process in Tunisian higher education today. Furthermore, the Tunisian Ministry of Higher Education and Scientific Research has established a competitive fund —"Quality support programme"— through which HEIs and research centres can select, develop, and carry out projects that meet their own needs in the context of national priorities.

This change in status is part of a series of strategic actions undertaken to enable Tunisian universities to conform to international quality standards and to improve the management of universities towards better performances and increased profitability. The strategic plan for the reform of higher education and scientific research in Tunisia (2015-2025) adopted by the Council of Tunisian Universities, aimed to ensure autonomy, one of the measures needed to support the reform.

Within this framework, the SAGESSE project "Improving Governance in the Higher Education System", a capacity-building project, co-funded by the European Union under the Erasmus+ Programme, aimed

to modernize the higher education system in Tunisia by strengthening its quality assurance system, governance mechanisms, and results-based funding. Led by UNIMED, it gathered all the 13 public HEIs in Tunisia, the Ministry of Higher Education and Scientific Research in Tunisia, the Tunisian External Evaluation Agency and 5 EU partners: Paris 1 Panthéon-Sorbonne University from France, Barcelona University from Spain, University of Siena, Sapienza University of Rome, and CESIE, Italian Centre for Research and European Studies, Italy (sagesseproject.eu).

The comparison with the EU universities has highlighted the need to encourage the changes envisaged by the regulation and promoted by the recent laws through training on the field. The change also stems from inspiration drawn from the best European operational practices, facilitated by the implementation of the knowledge transfer process with partner universities. By promoting university autonomy mostly financially but also in terms of academic and human resources, the project aimed to improve graduates' employability and promote innovation and research.

The SAGESSE project has contributed to the Tunisian higher education system reform process by improving university governance and autonomy. The strategic plan underlying the Tunisian higher education and scientific reform (2015-2025) focuses on autonomy, considering it as a pivotal measure for its success. It also considers promoting good governance as one of its 5 main objectives for an academic, pedagogic, scientific, administrative and financial autonomy.

Tunisia, as well as other Middle East and North Africa (MENA) countries, are heavily investing in higher education infrastructure, by encouraging private higher education or by encouraging studying abroad and attracting international students. All are faced with the challenge of meeting the high expectations of their young population and are therefore confronted with difficult financial and policy decisions about human capital development. As stated by the Commission implementing decision of 14 September 2015 on the adoption of the 2016 annual work program for the implementation of "Erasmus+", the Union Programme for Education, Training, Youth and Sport, the Southern Mediterranean region is facing a changing landscape characterized by a deep economic crisis and high youth unemployment rates, lack of skills, important gaps between the skills and the labor market, low employability rates of graduates, a growing demand for high skilled profiles and a global competition for talent.

Taking into consideration this challenging environment, it is crucial to establish closer links between higher education and employability, between youth mobility and research and between the governance of higher education and employability, to create additional synergies, interaction, and complementarity between formal, informal and non-formal learning; to enhance the internationalization of education; to promote the establishment of more cross-sectoral partnerships; and to tighten links between higher education, governance, and the labor market.

Similarly, it is essential to focus more on improving the quality of education and lifelong learning systems. Although education has been a priority, with significant public and private investments over the decades, and despite the significant progress that has been achieved towards universal access, there has been a very low return on investment in terms of meaningful outcomes within the educational sphere.

The main project specific objectives were:

1. Creating an integrated system of quality control and evaluation. The aim was to implement new decision-making and management procedures by strengthening the skills and abilities of the academic and administrative staff.

2. Designing a new good governance framework in order to promote the realization of a higher education system that can put forward an innovative, efficient, and more autonomous financial management structure.

3. Acting on future policies to consolidate, improve, and develop new quality assurance mechanisms.

4. Fostering leadership commitment at all organizational levels and supporting political willingness to encourage the adoption of a strategic planning.

Recommendations were crafted by virtue of experiences gained during the implementation of the project by addressing relevant national, regional and international interest groups and political authorities.

2. Main achievements of the project

Universities, in Europe as well as in the Southern Mediterranean, such as in Tunisia, are called upon to contribute more actively to the competitiveness of the economy of their countries. To do so, universities need to innovate their graduates' education and skills or better employability. In this context, the need to restructure the higher education system and, in particular, university governance, is indeed a priority both at the institutional level of Tunisian universities, as well as at the national level for the different governing bodies, academic and administrative staff, managers, and society in general. These two priorities were highlighted during a needs' analysis conducted by the project coordinator, UNIMED, through a survey administered to the 13 public universities in Tunisia carried out to prepare the SAGESSE project before its proposal submission.

In the project's first phase the needs' analysis was updated through a comparative survey/benchmarking and self-assessment to produce a state-of-the-art and identify existing governance frameworks and good practices on quality assurance mechanisms in Tunisian universities (WP1). The updated analysis and benchmarking were developed by the coordinator of this work package (Paris1) with the collaboration of the University of La Manouba in Tunisia (UMA) and with the participation of all Tunisian partners who contributed to obtaining information and with the self-evaluation process. The result of the work developed in the WP1 was a comprehensive report aimed at answering the following question: "Where are we in terms of autonomy and governance of universities in Tunisia?" A triangulation approach was therefore used, combining individual interviews, group interviews, and direct observation, as well as documentary research and data collection. Between December 2017 and April 2018, the WP1 leaders conducted a work of collection, analysis, interpretation and synthesis in terms of legal texts governing higher education and scientific research, reports on governance and autonomy of universities, plans and reports produced by Tunisian universities, evaluation and self-evaluation benchmarks, scientific studies on higher education and research in Tunisia, and documents from national and international bodies. From March 2018, they embarked on fieldwork through interviews and discussion meetings with various stakeholders. In particular, a series of interviews were carried out in April 2018 at the Ministry of Higher Education and Scientific Research (International Relations Department, University Governance Unit, Results-based Funding Unit) together with the External Agency of Quality Assurance and Accreditation. Thanks to the individual interviews two surveys were developed and launched to all the partners in May 2018. The first general questionnaire was addressed to the university leaders (presidents and vice-presidents) of the Tunisian universities and aimed at drawing a comprehensive and updated picture of the Tunisian university system.

It was followed by a second more targeted questionnaire addressed to the Secretaries-General of Tunisian HEIs and universities where they perform their duties. It centred upon governance, autonomy, exercise of power, quality assurance, evaluation, decision-making, and was conducted from June to September 2018. A preliminary version of this report was presented and discussed during the first mid-term meeting of the SAGESSE project, held at the University of Paris 1 Panthéon-Sorbonne in July 2018. During this meeting, three focus groups were organized by bringing together Secretaries-General and administrative managers on the one side, and presidents and vice-presidents on the other side. The focus groups and discussions held in Paris aimed to further enrich the report that is characterized by a first part which suggests a first theoretical approach. It tackles the concepts and notions of "governance" and "autonomy" and encompasses all the processes put in place to ensure the various missions of the university. It brings a comparative overview of recent developments in the governance and autonomy of European universities, especially from Italy, France and Spain, the EU partners represented in the consortium. A second part is devoted to describing Tunisian higher education through charts and mapping of its governance bodies.

The third part embraced a more "practical" approach to the autonomy and governance of Tunisian universities and their developments over the 2008-2018 ten-year span. In particular, by introducing the 2008 Higher Education Law, it was focused on understanding how the following concepts were applied at the Tunisian context: university management, quality approach, evaluation, performance, accountability and information system. It aimed to identify a certain number of good practices and pilot experiences, as well as elements of dysfunction within the governance of the Tunisian university. The concluding chapter drew up a picture of the different facets of the autonomy of Tunisian universities in 2018. The report, even if dated 2018, still represents an important piece of knowledge to understand the higher education reform in the Tunisian universities and the fact that the SAGESSE project came at the right time, in the unique moment where both Ministry of Higher Education and Scientific Research and universities were working closely together to implement the reform of good governance, institutional autonomy, and to introduce a quality assurance system at institutional level.

The second phase of the project started by launching the capacity building action targeting university leaders, academic and administrative staff of the 13 Tunisian university partners to strengthen their capacities and competences on several complementary themes that were addressed by trainers and experts of European partners (WP2) under the coordination of the University of Siena and the University of Sousse. Quality assurance and strategic planning (for managers and academic staff) were the core of the initial one-week training hosted by the University of Siena. A total of 26 representatives among university leaders (vice-presidents and Secretaries General) of the 13 universities plus further representatives of the External Evaluation and Accreditation Agency and the Ministry, actively participated in the one-week training animated not only by the University of Siena but also by the other EU partners, the University of Barcelona, the University of Paris1 Panthéon Sorbonne and the CESIE, under the overall coordination of UNIMED. The training was followed by three local training workshops that were organized in Tunisia for the benefit of the university leaders and academic staff: an initial workshop on strategic planning and performance framework for the development of the institutional strategic plan was held in Tunis in March 2019, followed by a second workshop focused on budget planning for the strategic plan held in Monastir in June 2019 and a third one about monitoring the implementation of the strategic plan through internal control, that was held in Gabès, with the participation of 5 people from each Tunisian university. The training was then followed by three field visits at the European universities (Barcelona, Paris and Sapienza University in Rome) to exchange good practices and knowledge transfer

complete the coaching of the administrative and financial staff by providing training on ICT, financial and technical management and the review of management tools and programs (WP3, led by the University of Barcelona and the Virtual University of Tunis).

The capacity building of the Tunisian universities was finally completed by organizing the training of trainers at a local scale (one ToT in each Tunisian institution). The people who had been previously trained became trainers, transferring what they had learned to other colleagues of their university, with a view to building future leaders and administrators. In total, more than 50 among academic and administrative staff were trained in Europe, and about 450 people from all the 13 public Tunisian universities and 200 institutes affiliated to the universities received a ToT.

The 13 Tunisian universities were also equipped within the WP3 of the SAGESSE project with a platform (software Sphinx) that made it possible to disseminate, manage and process qualitative and quantitative surveys, as well as prepare reports and share them with decision-makers. The Tunisian partners participated in in-person and online training sessions on the use and better management of the Sphinx software in July 2020 and in December 2020. This software is a unique and common solution for all public universities.

Following the updated needs analysis and self-evaluation (WP1), the capacity building action (WP2), the development and purchase of the common software and improvement of the financial management of universities (WP3), the third phase of the project contributed to introducing a quality assurance system at institutional level and boosting the capacity of each university's quality committees to implement the quality assurance mechanisms (WP4). Under the lead of the University of El Manar and Sapienza University of Rome, the 13 universities developed a quality manual that was produced to describe the organization, activities and various responsibilities within the university, as well as the policy and the Quality Management System (QMS). Finally, a university manual for administrative and financial procedures was also defined to provide a formal framework for the execution of administrative operations and describe the administrative, financial and accounting management.

Finally, during the third and last year of the project, which coincided with the COVID-19 pandemic where travelling was not allowed, the Tunisian universities participated in two online workshops with the objective of making the Quality Committees more operational and to allow them to better coordinate common efforts in the implementation of quality assurance in the universities and share experiences and good practices on QA mechanism (WP5). The 13 universities under the guidance of the University of Monastir and the Ministry which led this last work package, were able to define the statute and mission of the Quality Committee and a work plan that would be implemented well beyond the project's end. Furthermore, two more webinars were organized for the benefit of presidents and vice-presidents in order to increase the autonomy of universities, strengthen good participatory governance and obtain better university performance: critical for decision-makers is to have at their disposal adequate dashboards to enhance coordination among themselves and to make monitoring more effective thanks to result and impact indicators.

Finally, a white paper was crafted by the whole consortium analysing some of the crucial issues tackled during the lifetime of the project (such as quality assurance, institutional autonomy, strategic planning and performance, social responsibility, etc.), and included key recommendations at institutional, national, regional and international levels. The white paper was presented during the final conference of the project held online in July 2021.

3. Outputs, results and impact

SAGESSE contributed to the Tunisian higher education system reform process by improving university governance and autonomy through the following outputs and results:

WP1: Preparation and research

- A state of the art, (in three languages French, Arabic and English), on governance, autonomy and quality assurance in higher education in Tunisia produced thanks to a comparative survey-benchmarking study and self-assessment.

- A roadmap on the model of good university governance that was developed, validated and approved by all 13 presidents.

WP2: Training of trainers for university staff

- 242 beneficiaries of academic and administrative staff from Tunisian universities strengthened their skills through 4 training courses for trainers (carried out at the University of Siena, in Tunis, Monastir and Gabès) on: strategic planning, quality assurance, performance planning for development of the strategic plan, budgetary planning and operational management and monitoring of the implementation of the strategic plan.

WP2 also produced the following outputs that were used by the Tunisian universities in their cascade training:

- Training handbook comprising video capsules, presentations and electronic material.

WP3: Modernization of the communication and information system for good financial and technical management

- Strengthening the skills of administrative staff thanks to 3 field visits to the Universities of Barcelona, Sapienza University of Rome and Paris1 on administrative and financial management and the information system in the context of autonomy.

- Complete transfer of staff skills: the Tunisian universities organized cascade training for their related staff for about 450 people from 13 universities and 200 institutes.

- The Tunisian universities have been equipped with a unique and common software developed to design, distribute, manage and process qualitative and quantitative surveys, prepare reports and share the results to help decision-making.

WP4: Quality assurance standards and definition of a quality manual in higher education

Three main deliverables available in French, Arabic and English have been produced in this WP:

- Methodological guidebook on Quality Assurance.

- Quality Manual on the organization, activities and different responsibilities within the university, as well as the policy and the Quality Management System.

- Manual of procedures on administrative, financial and accounting management.

WP5: Development of steering offices for quality committees

- In order to create synergies between SAGESSE and the projects financed by the World Bank and managed by the Tunisian Ministry of Higher Education, the focus of this WP5, contrary to original project plan, was to revitalize the Quality Committees within the HEIs and create a major networking between them. This resulted in the definition of a statute on the revitalization of these Quality Committees.

- 1 white paper with recommendations at institutional, national, regional and international levels, on quality assurance, financial autonomy, digitalization especially of administration, role of research and its governance, social responsibility, etc. was released and presented at the project closing conference.

Based on the above-mentioned actions, SAGESSE has certainly had an impact at the individual, institutional and national level.

At the individual level, the training provided helped to build capacity for the benefit of managers, academic and administrative staff and quality assurance managers of Tunisian universities. The cascade training carried out by the institutions themselves allowed the trained staff to in turn train the staff of their universities and to develop subsequent activities as well as launching initiatives for financing future activities.

At the institutional level, all the training carried out within the framework of WP2 and WP3 addressed priority themes for the university reform with regards to the strategic and budgetary planning, identification of priorities, strategic objectives and performance indicators, as well as monitoring the implementation of the action plan. All of this was put in place so that there was complementarity and synergy between the SAGESSE project and all the other initiatives at the Tunisian Ministry level, in particular with the PAQ-DGSU project [1] promoted and financed by the World Bank. In fact, the SAGESSE project enabled universities to submit their strategic orientation plans in December 2019.

Still at an institutional but also national level, the acquisition of the Sphinx software allowed the 13 universities to equip their observatories or e-administration units with a common solution allowing them to design, manage and process (quantitative and qualitative) online surveys and generate reports and dashboards facilitating decision-making. This common solution has continued to be used beyond the end of the project by Tunisian universities for other institutional surveys but also within the framework of other +CBHE projects (such as the DIRASA project)[2].

Another element of the project's success and impact at institutional and national levels was the work done about the revitalization of the quality committees within the framework of WP5 and the deliverables of WP4 on the quality manual and procedures' handbook. To this end, an action plan for the revitalization of quality committees was defined, shared and validated by local higher education institutions. Through

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[1] PAQ-DGSU funded by the World Bank in 2019, aimed at building and strengthening the management capacity to facilitate and accelerate the migration of public universities towards greater institutional autonomy, accountability and performance. It seeks also to improve internal quality assurance and finance tracer studies to monitor employment outcomes of future graduates.

[2] DIRASA (Définition d'un renouvellement de la gouvernance de la recherche en Tunisie) is a three-years EU funded Capacity Building for Higher Education project launched in Tunisia in February 2023: by bringing together all the 13 Tunisian public universities, the Tunisian Ministry of Higher Education (MESRS), the ANPR (National Agency for Research Promotion), the DIRASA project has the objective to contribute to the improvement of the university research governance in Tunisia by promoting dialogue and scientific cooperation between the actors of the Tunisian national research system. In particular, DIRASA aims to strengthen the capacities of strategic monitoring and scientific foresight process through the improvement of the skills of university staff, by enhancing the visibility of university research and by developing interactions between research and the socio-economic environment.

this plan, the universities undertook to put into practice the specific and operational objectives of these committees as well as their expected results.

In addition, the 13 Tunisian universities of SAGESSE committed to adopting the quality manuals and procedures guideline, as reference documents for quality management, policy implementation (internal and external quality assurance) and its procedures. Each quality committee in Tunisian universities will adopt, hopefully on the long term, these quality manual models and procedures to develop their own quality system and meet the specific needs of the university.

The External Agency for QA and accreditation and the Ministry supported and encouraged all the 13 Tunisian universities to use these handbooks and guides, to disseminate them and share with all the higher education institutes for their coherent and effective implementation.

4. Success factors

The SAGESSE project aligned with the country's national orientations within the higher education reform process in Tunisia to improve university governance and university autonomy.

That is why SAGESSE provided operational support to Tunisian universities, enhanced knowledge sharing through international best practices and accompanied the journey of modernization of the Tunisian governance system via a participatory approach. Crucial in this context was also restructuring the HE system. In particular, university governance was deemed a priority both at the institutional and national level of Tunisian universities by the different staff members, leaders, and the university community in general.

Therefore, the SAGESSE project proved to be very relevant in terms of development given the adequacy of its objectives in relation to the real problems, the needs and priorities of the various partners and its integration into national policies, in particular the Ministry of HE and of scientific research.

SAGESSE's intervention coincided with the start of the DGSU projects financed through the PROMESSE Programme[3]. This is why SAGESSE was framed in the national context aware of the importance of, and the need for, coordinating efforts in setting up a new higher education system in line with the recent reform process in Tunisia.

From a national perspective, the purchase of the equipment with the Sphinx software supported administrative staff to better process data, secure it, use it, etc. and certainly constituted an important achievement for the benefit of Tunisian universities.

SAGESSE created spin-off effects throughout its life thanks, for example, to the work of synergy and consultation with the Ministry and the already mentioned World Bank program, PROMESSE. It is in this context that the SAGESSE action of work packages 4 and 5 took place, in synergy with the Ministry as part of the higher education reform process.

Several members of the SAGESSE working group were also members of the PAQ-DGSU projects and this allowed a very productive exchange in terms of good practices, the transfer of skills on the key themes covered by SAGESSE and in general by the university reform in Tunisia. The training carried out as part

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[3] PROMESSE is a huge program funded by the World Bank to better improve graduates' employability through university modernization and good governance practices.

of WP2 also enabled academic and administrative staff to prepare and submit the strategic orientation plans of their university, as provided by the PAQ-DGSU project and therefore by the reform process. The participation of Tunisian universities either in SAGESSE or in PROMESSE was specular, allowing exchanges between the different teams and benefiting from the enhancement of skills. The topics of all SAGESSE training courses were complementary to the objectives of PROMESSE, on the one hand to avoid duplication, and on the other hand, to capitalize on the efforts and synergies between the two projects and therefore to benefit the entire Tunisian university community. Furthermore, all universities conducted integration surveys for their 2019 and 2020 graduates in 2021. In this same year, all universities conducted these surveys (for some of the institutions under supervision) via the Sphinx platform. The results of these surveys were published on the websites of most universities. The integration of training on Sphinx tools with the training targeting quality assurance practitioners guaranteed optimal use of the Sphinx equipment acquired in the SAGESSE project, the Sphinx project's continuity and a better response to the needs and challenges faced by universities in terms of data collection, processing and analysis. Stemming from the SAGESSE partnership and experience, another Capacity Building for Higher Education project was funded and launched in Tunisia in January 2023. By bringing together all the 13 Tunisian public universities again, the Tunisian Ministry of Higher Education, as was the case for SAGESSE, and another very important player, the ANPR (National Agency for Research Promotion), the DIRASA Project has the objective of contributing to the improvement of university research governance in Tunisia by promoting dialogue and scientific cooperation between the actors of the Tunisian national research system. In particular, DIRASA aims to strengthen the capacities of strategic monitoring and the scientific foresight process through the improvement of the skills of university staff, by enhancing the visibility of university research and by developing interactions between research and the socio-economic environment. Because of these objectives, DIRASA highlights the new technologies in higher education that are needed for the development of the higher education sector and for its links with society through the creation of a national level network where universities, research units, laboratories and research centres work together, applying the research products in the local context. Three are the main target groups of the project's actions: the leaders (rectors, vice-rectors, heads of institutions and departments, deans and vice-deans in charge of university research) of Tunisian universities; administrative and academic staff, as well as those in charge of research management and administration, who are responsible for the operational management of research; and finally, researchers and doctoral students, who will benefit from the training provided by the project. In addition to these target groups, there are also representatives of society in general (policy makers, other national and local institutions that are not consortium partners) who will actively participate in the cooperation workshop also envisaged by the project.

5. Sustainability

Drawing on their experience and the human and institutional relationships born within the framework of this project, all the partners have agreed to ensure the promotion and sustainability of the results of the SAGESSE project through the definition of a sustainability plan.

The plan, also published on the project website, aims to ratify the commitment of the Tunisian partners of the project in order to:

1. Maximize the impact of the SAGESSE project results at the institutional and national levels.

2. Continue to use the equipment purchased as part of the SAGESSE project to provide maximum benefit to the administrative and academic staff.

3. Ensure the implementation of quality manuals and procedures produced within the framework of the project.

4. Ensure the implementation of the action plan for the revitalization of quality committees within each university.

5. Plan a continuing training plan for dedicated staff.

The sustainability plan is a roadmap the partners have given themselves to pursue the changes initiated by SAGESSE, as well as to measure them. It defines the strategy and activities to be implemented to ensure an effective exploitation of the project's results.

One of the results of the project in terms of project sustainability is undoubtedly the creation of an unprecedented space for debate among the leaders of all 13 Tunisian universities which has contributed to the construction of a culture of debate within the higher education system in Tunisia. The Tunisian partner universities have therefore created a "SAGESSE working group" made up of the president, the vice president as well as each secretary general, as a place for reflection and exchange within the university on key questions of the project, i.e. on governance, quality assurance, university autonomy and financial management. The creation of this SAGESSE working group therefore has the aim to promote the dissemination of the culture of quality and the adoption of good governance models among Tunisian universities.

This working group in each Tunisian university institution has the objective of continuing the roadmap shared and validated by the presidents and, with the support and accompaniment of the Tunisian Ministry of Higher Education and Scientific Research, would help the 13 universities to answer the question "what type of autonomy for the future by 2025?" And above all, "does the roadmap help universities to design true autonomy and follow a strategy that meets their needs, objectives and expectations?".

In addition, the cascade training carried out by the institutions themselves has allowed the trained staff in turn to train the staff of their institutes and develop subsequent activities, as well as to launch initiatives for financing future activities.

The acquisition of Sphinx equipment provided each of the 13 universities with a license to design an unlimited number of questionnaires (for the purposes of quantitative and qualitative surveys among students or other stakeholders; for administrative requirements such as self-evaluation, satisfaction surveys, graduate follow-up surveys, surveys on employer needs, but also teaching and research). This common solution will continue to be exploited by Tunisian universities beyond the end of the project by equipping their observatories/information or e-administration units in the 13 universities. The team is currently using the software. In the DIRASA project, for example, the evaluation survey for monitoring the quality and assessment of the results and outcomes within the Quality Work package is administered through the Sphinx platform.

6. Lessons learned

In the current global-knowledge society, the concept of internationalization of higher education has itself become globalized, demanding further consideration of its impact on policy and practice as more countries and types of institutions around the world engage in the process (Jones & de Wit, 2014). The SAGESSE project represents a key milestone in the framework of the international cooperation for HEIs in Tunisia and for the project coordinator, UNIMED. It was a unique occasion for UNIMED to share with the members of its network new knowledge and good practices in terms of good governance by optimizing resource management and strengthening the autonomy of universities. On the one hand, North-South interaction allowed all the involved actors to have access to and share a trove of knowledge and experience, which can only increase the quality of results and the capacity to support and promote the governance system in Tunisia. On the other hand, not only a North-South cooperation was promoted and guaranteed, but more importantly South-South cooperation was strengthened: the fact of being a national project for all the public universities in Tunisia has been considered a strength and a great lesson learned. Participating universities had the unique opportunity and space of dialogue among themselves in the very first project of university cooperation, which for the first time put all of the universities together to compare and share common challenges and obstacles and find durable and feasible solutions together.

Another and third lesson learned from the SAGESSE project is linked to the participation of the Ministry of Higher Education and Scientific Research in Tunisia, which gave the project a structural dimension that made it possible to experience the way universities interact with the Ministry and vice versa, creating a privileged forum for dialogue and comparison. Furthermore, without the Ministry, and having based the project outcomes and results on their national strategy and reform, it would have been rare to see the impact of the project at institutional and national levels.

7. Conclusions

Internationalization is recognised as having an impact on the development and competitiveness of national and regional economies (Matei et al., 2015). In the current era of globalization, governments and HEIs worldwide are striving to improve global competitiveness both at the national and institutional levels. The challenge for higher education is twofold. First, university graduates must be equipped with the knowledge and skills needed to compete in increasingly globalized knowledge economies. Second, the growing relevance of international rankings means universities themselves must respond strategically to increased global competition regarding research, innovation, and international reputation (Marginson & Van der Wende, 2007). A common response to these challenges has been investment by governments and HEIs and in the internationalization processes, including the development of universities into global hubs for research and learning (Huang, 2007). Education in general, and higher education in particular, plays a central role in the modernization and development of countries in the Middle East and North Africa region (MENA). Since Higher Education Institutions (HEIs) are not separate from their political, social, cultural and economic environment, their governance is subject to different challenges that are beyond the scope of their control. There is a broad consensus around the central role of national governments in the internationalization of higher education across all world regions (Helms et al., 2015). It has become a strategic priority for governments because of the benefits expected to derive from it in

the economic, political, socio-cultural and academic spheres.

In the period after independence, universities in the North Africa and Middle East countries became the symbols of social mobility, national unity and economic development, playing their part in the larger efforts to consolidate power under a centralized state, strengthen the political legitimacy of the ruling regime and educating civil servants for an independent post-colonial national state (Buckner, 2022).

Finally, the Tunisian university is experiencing a "crisis of growth", which can be described as "sustainable" without any excess, for the following two reasons: On the one hand, the system by which the university was organized "has shown its limits" and cannot, therefore, be maintained as it is. On the other hand, the Tunisian university must face new challenges, other than those it has hitherto known such as fruitful autonomy, accreditation and high-level research impact (Haddad, 2018).

Tunisia as well as other Maghreb countries recognize the need for improving institutional autonomy and their governance system of higher education, as well as quality assurance mechanisms that have been aligned with the international trends in this domain. In and of itself, this is a positive development and should lead to progress in quality and enhancement over the next few years, improving the international competitivity of Maghreb universities and rendering them more attractive in international partnerships. The close association with European universities through European Commission programs (Erasmus+, Horizon Europe, Next Med) and international organizations (UNDP, World Bank, OECD) has facilitated the initial phases of the quality assurance process and good governance frameworks.

Quality assurance will no doubt impact governance through the fostering of transparency, efficiency and a more institutionalized approach. Such autonomy is in turn likely to alleviate the weight of HE spending in the region's national budgets, freeing up funds badly needed in other sectors (Ballatore et al., 2020).

We can conclude that among the various factors influencing the results of higher education systems and their performance, governance is a key determinant. A good governance structure and favourable regulatory conditions can promote innovative behavior among HEIs, enable the development of strong quality assurance systems, and facilitate the design of effective financing mechanisms, reinforcing institutional autonomy, while the opposite is not necessarily the case (Jaramillo, 2013).

It is therefore important to continue to support initiatives that go in the direction of strengthening the autonomy of universities. Shared governance can work when there is a spirit of information sharing, collaboration, and teamwork between the president, senior faculty leaders, and mid-management. In other words, it works when the silos come down and the institution becomes a unified learning community.

The above underlying criteria led to run a project like SAGESSE, which from its inception has tried to comply with these criteria and has involved as many as 13 partner Tunisian universities, the minister, the quality evaluation agency and important European university partners with robust experience on these issues. Tunisia has started its own autonomous university reform process, and this project was essentially able to provide concrete solutions to the many difficulties that every reform process entails.

Modern universities are linked to the economic and political environment in which they operate. Universities should play a fundamental role in terms of responsibility in their societies because they are directly involved in generating new knowledge and because they teach and form young people to become leaders, entrepreneurs, scientists, and professionals in all fields of knowledge. In some way, they are entrusted with opening the door to the society.

A well-performing higher education system is necessary for any country in the world to be competitive

today and this is particularly true for the Southern Mediterranean countries. Universities need to innovate to provide the kind of education that will enable their graduates to be competitive and contribute to the economic and social growth of their countries. And this is particularly true in a moment of great opportunities such as the one we are facing. Each crisis is, in a way, an opportunity. Innovative institutions must have governance systems that encourage all constituent groups to have a say in improving the institution and advancing its mission. Participation and accountability are one of the great challenges of the HE system in Southern Mediterranean countries because this implies a growing shift from hierarchical forms of organization to more heterogeneous ones in which network relations are based on conditions of trust, reciprocity, reputation, openness to learning and an inclusive and empowering disposition. It necessarily involves a more decentralized, open and consultative form of governing. Universities should have to constitute one of the key institutional supports for this process and in this framework, self-awareness is important for developing a reform process. However, there is another very important issue that should be considered. The revision of the Neighbourhood Policy of the European Commission has also led to rethink the principle of the More for More and has expressly set forth the actors of civil society partners to be involved in the reforms. Universities, and its leaders, should take the responsibility of this mission: to contribute, through the involvement of the academic community, to the definition of priorities and objectives to be promoted both inside the country and in relationship with partner institutions such as the European Commission and the same European universities, and to establish a growing dialogue on common priorities to overcome initial divisions.

In the MENA region, the urgency of taking on responsibility has been recently perceived more and more by all the actors, whether national or international. Universities could play an important role in this regard. We must support this urgency of autonomy and responsibility, for their future and, why not, maybe, for our future (Marchionne and Scalisi, 2020).

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4.7. The LATWORK project

In this case study, authors analyzed the key actions that have been undertaken within the LATWORK project: "Developing research and innovation capacities of Latin-American HEI for the analysis of informal labour markets".

The LATWORK project was selected for funding in the Erasmus+ programme "Capacity Building in Higher Education" Action - Key Action 2, in the call for proposals of the year 2018. The project was written to be carried out between January 2019 and January 2022. However, due to the pandemic, the project was granted a one-year extension to complete its implementation.

LATWORK project involved HEIs from, on the one hand, 3 Latin-American countries: Argentina (University of Buenos Aires; Universidad Nacional de Rosario & Universidad Nacional del Litoral), Brazil (Universidade Federal da Paraiba; Universidade Estadual de Campinas & Universidade Federal de Campina Grande), and Chile (Universidad Viña del Mar, University of San Sebastián & University of Magallanes). On the other hand, 3 European HEIs: University of Alicante, Universidade de Coimbra & The University of Aberdeen. The project's coordinator was Universidad Viña del Mar (UVM).

In this case study, authors paid particular attention to the projects pros, vantages and strengthening points when they are managed by partners located in non-EU countries associated to the program.

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1. Background

This text proposes a discussion to the opportunity to develop research capacities in the field of informal work based on a project funded by the Erasmus Plus program - Capacity Building in the field of Higher Education, which involves Iberian countries (Spain and Portugal) and three South American countries (Brazil, Argentina and Chile).

It is precisely on the basis of the North-South dialogue, and, above all, considering the historical relations between these European countries and Latin America, that it is important to analyze trends, contrasts and asymmetries in the different scales of analysis. They were expected to allow the partners diagnose the impacts that the structures consolidated in this project have in terms of the construction of academic dialogues and debates, as well as in the quantity, production and transmission of knowledge.

In the light of the recent transformations of international capitalism, the aim is to address, on the one hand, the phenomenon of informality/labor precariat itself, and, on the other hand, use a more prospective register, to diagnose some of the recent challenges of the modernization of industry based on scientific-technological innovation.

In this sense, we developed the hypothesis that closer cooperation between university research centres and labor market actors (public institutions, enterprises, trade unions, etc.) can contribute to reducing informality and instilling labor rights for the benefit of workers and social cohesion.

The transcontinental network developed within the scope of this project takes advantage of the inter-disciplinarity of the team, as well as the richness and plurality of experiences that such a large group of experts incorporates. This emerges as an interesting capital of knowledge to be valued through the results of the dissemination and production of social sciences in and for the academic community of these countries. Our analysis encompasses the sociological knowledge developed by the various research teams in the field of work, specifically regarding informality and technological innovation.

Moreover, the project aims to combine its analytical dimension with a more intervention-focused and therefore pragmatic one. The aim is to promote decent work, particularly in the Latin American countries under study, where, as is well known, the scourge of informality and the vulnerability of the working classes is a structuring feature that remains from the colonial heritage to early peripheral industrialisation. Thus, the spirit of the project study lies in the effort to understand the changes that are taking place in the field of labor relations at a time when global capitalism is at a crossroads in the face of the brutal impacts of the Covid-19 pandemic.

The need to identify and compare patterns of informality

The International Labour Organization yearly points out the endemic problem of informal economy and work in Latin America. Cacciamali (2023) highlights that according to an ILO publication (2018), 61.7% of workers in the world are informal. The majority are in agriculture in Africa where 86% of those employees are informal, followed by South Asia, 80%, and Latin America from 75% to 20%, depending on the country; the lowest proportion is in the United States, Canada and Western Europe with less than 20% of the total employed.

According to Abramo (2023), informal work is a phenomenon that exposes workers to severe vulnerability in terms of income, working conditions, access to labor rights and social protection. Structural heterogeneity has been analyzed by UNECLAC (United Nations Economic Commission for Latin America and the Caribbean) on the basis of various indicators that are considered complementary. The most important of these are the differences in productivity between sectors of activity and between productive strata, classified basically by the size of the companies (micro and small, medium and large) and the form of labor insertion. But it is also considered that within sectors and productive strata, there are workers with different degrees of productivity, basically associated with differences in their levels of education, training and experience in the workplace, (Ibid, 59-60).

In the same line of analysis, Guzmán (2023) argues that the heterogeneity and instability of macroeconomic figures in the countries have played a relevant role in slowing down the process of decreasing informality in the labour market, and there is an association between the maintenance of inequality and the growth of the informal sector.

This heterogeneity is also observed in the progression that each country has experienced with respect to the percentage of informal workers between 2018 and 2022, with differentiated patterns in the totals

of the three countries. However, we appreciate a common denominator in terms of the generalized rise in the no-agriculture sectors after the pandemic.

Following Guzmán's (2023) line of analysis referred to above, in part, this can be explained by the structural characteristics of the productive organization and labor markets in Latin America, which generate weaknesses in the creation of formal jobs, leading to an increase in unemployment and the emergence of informality.

Biles (2009) underlines that such heterogeneity can be also analyzed in terms of the complexity of the social relations that are mediating work transformations. The result of combining both variables can, according to the author, yield varied scenarios of informal employment relationships. On the one hand, scenarios where the formal and informal sectors are differentiated in opposition to each other. On the other hand, scenarios where firms may follow some of the rules of formal regulation combined with non-formal ones. And finally, scenarios where unregulated firms enter relatively formal relationships with workers, in which social benefits provided by law are provided.

Given the complexity of the problem described above, the challenges for public policy depend on integrating analytical approaches that give a holistic view of the causes and consequences of informal work.

The demand for more knowledge is not only based on the dynamics that produce and sustain the structures of labor informality but also on the well-known effects on people's daily lives that are observed as a consequence of the progression of precariousness and informality. In this sense, international organizations such as ILO, ECLAC, and UNESCO, through their increasing involvement in the problem of informal work, highlight the need to develop interdisciplinary approaches that recognize the academic significance of this complex issue.

The need to deepen knowledge of an extraordinarily complex reality

The increasing academic interest in the research of job conditions has been developed in parallel with the new, structural and deep labor market mismatches that are continually emerging at the global level.

In the case of Latin America, following a lengthy period of economic growth and falling unemployment that had taken place between 2005 and 2015, academic & political interest in labor issues has dramatically shifted to working conditions. But, more particularly, to the high degree of informality that characterizes the region's labor markets.

The literature review suggests that although informal employment in Latin America is a constant reality in every country of the continent, the observed shapes, depth and patterns depend on different characteristics underlying the deep and particular structures of the economic and social organization of each country.

From the application of this analysis in the classification of informality, we found varied patterns built on ad hoc combinations of informality percentages across sectors, genders and calendar years that describe multiple heterogeneous spaces of informality. In summary, these spaces of informality corroborate that their expression results in a clear differentiation of patterns that express the singularities of Argentina, Brazil and Chile, each one involving their complexity and consequences on people´s daily lives.

The focus of public policy and academic interests on the problem

Although the proportion of informal workers is now back to pre-pandemic levels, with more than 130 million people working in this situation, the employment impacts of the pandemic have demonstrated the enormous vulnerability of informal workers.

In this sense, several authors assume that one of the major challenges in reducing informal employment in Latin America is to facilitate the transition to formality of MSEs, which are the main generators of employment in the region. This is a complex challenge as informality is a multidimensional phenomenon associated with the highly heterogeneous features of MSEs realities. Informal economy constitutes a major obstacle for countries in the region to advance in their social and economic development, justifying the interest of some international policymakers in that issue, as well as the demand of deepen in knowledge of the internal and external logic that are involved in the generation and reproduction of informality in both dimensions, economy and work.

HEIs, particularly LATWORK LA partners, participate in many research programs & projects, led by statistical operators, policymaking institutions, regional networks, etc.

The current research context aimed for going forward in the analysis and understanding of informal jobs and the economy. It is motivated to provide measurements as well as operational definitions of the categories to classify and analyze informality. Thus, research activity is being used to supply statistical inputs to the policymakers in the field of decent vs. informal/atypical work.

2. Main achievements of the project

HEIs participate in most research projects and programs promoted by policymakers. This type of participation is often subordinated to the specific objectives agreed upon in the policymakers' agenda, which establishes *a priori* the type of knowledge to be created and transferred for decision-making. In other words, such studies are *ad doc* designed specifically to meet the needs of political agendas, and these needs are often focused on external institutional support, to the detriment of strictly internal scientific motivations.

Without undermining the timeliness and the fundamental role of the meeting point established between the different actors of the educational, productive and governance systems, the critical and unbiased nature of the original mission of the university institution should be recalled.

In this sense, at the beginning of the LATWORK project, a needs analysis was carried out in order to structure in a coherent way the correspondences between the objectives of the proposal and the singular logic that each partner and country follows when organizing scientific production in the field of informal work, where different combinations of heterogeneous actors take place.

As a result of that needs analysis, we identified multi-stakeholders isolated structures of scientific production in the field of informal work and economy among the Latin American countries. Such findings demonstrated the relevance of the topic for HEIs. The informal economy and informal work are treated academically and scientifically not only as a structural and regional issue, but as the main focus of a dynamic that organizes the economy, society, politics and, in general, the everyday life of all citizens. For this reason, all scientific areas strongly express their theoretical motivations to improve the disciplinary and interdisciplinary understanding of this topic.

However, the atomized level of these structures brought to light some weaknesses that were identified and defined as a target for the Erasmus Plus proposal.

Different national patterns of resources devoted to the research on informal work

In that regard, researches from partner institutions were asked about 10 different items measuring the availability of funding for:

- ITEM 1 = Informal work is a priority in the funding lines.
- ITEM 2 = Funding is available for research on the quantification of informal work with statistical representativeness.
- ITEM 3 = Funding is available for research on informal employment.
- ITEM 4 = Funding is available for projects to evaluate public policies on informality.
- ITEM 5 = Existing funding facilitates research on informality by Higher Education Institutions.
- ITEM 6 = The interests of public managers always favour funding for research on informality.
- ITEM 7 = Funding lines are available from non-governmental bodies or the private sector.
- ITEM 8 = Research on informal work is sustainable thanks to current funding lines.
- ITEM 9 = Researchers prioritize informal work over other topics.
- ITEM 10 = The university/institution has technical and technological resources for research on informal work.

Each item was measured on an ordinal scale covering the following range:

- 1 = Totally agree
- 2 = Agree
- 3 = Neither agree nor disagree
- 4 = Disagree
- 5 = Totally disagree

For the analysis, a hierarchical segmentation shown in Figure 4.7.1, was carried out to determine the items that contributed to capture the national patterns in terms of availability of funding and sustainability of research on informal work. The tree showed that two from ten items contributed to establish differences:

- ITEM 10 = The university/institution has technical and technological resources for research on informal work.
- ITEM 8 = Research on informal work is sustainable thanks to current funding lines.

The case of Chile, as shown in Node 1, is distinguished from Argentina and Brazil as their researchers mostly agree with the idea that their educational institutions are dealing properly with technical resources to successfully develop research in the line of informal work. Brazil, on the opposite side (Node 3), is the country where their researchers consider the lack of these resources in their institutions as an important barrier to successfully conducting their research. Meanwhile, Argentina's (Node 2) researches are placed in between others positions. Node 2 is split into two other areas where the current funding lines make a differenc. On the one hand, Brazil (Node 4), where researchers find that the current lines of support lines of support are likely to sustain research activity over time. And, on the other,

Country		
Node 0		
	%	n
Argentina	36,9 %	106
Brasil	35,6 %	102
Chile	27,5 %	79
TOTAL	100,0%	287

The university/institution has technical and technological resources for reseach on informal work

Adj. P-value	=	0,000
Chi Square	=	58,824
df	=	4

≤ Agree		
Node 1		
	%	n
Argentina	18,6%	11
Brasil	16,9 %	10
Chile	64,4 %	38
TOTAL	20,6%	59

(Agree, Disagree)		
Node 2		
	%	n
Argentina	46,2 %	80
Brasil	35,8 %	62
Chile	17,9 %	31
TOTAL	60,3%	173

>Disagree		
Node 3		
	%	n
Argentina	27,3 %	15
Brasil	54,5 %	30
Chile	18,2 %	10
TOTAL	19,2%	55

Research om informal work is sustainable thanks to current funding lines

Adj. P-value	=	0,001
Chi Square	=	15,645
df	=	2

≤ Agree		
Node 1		
	%	n
Argentina	36,0%	36
Brasil	48,0 %	48
Chile	16,0 %	16
TOTAL	34,8%	100

>Agree		
Node 2		
	%	n
Argentina	60,3 %	44
Brasil	19,2 %	14
Chile	20,5 %	38
TOTAL	25,4%	73

Figure 4.7.1. Classification tree

Source: Own elaboration, firstly published in Estanque et al. (2019).

in Argentina (Node 5), where the majority of respondents, more than 60%, consider that the current lines of support compromise the sustainability of research on informal work in the country.

Understanding the segmentation tree

Hierarchical segmentation analysis is an enormously powerful tool that is used in various fields to simultaneously introduce several explanatory factors on a variable whose categories we intend to predict.

The differentiating value of this technique is that it uses a series of algorithms, depending on the levels of measurement of the variables studied, which allows a hierarchy of factors to be established according to their segmentation capacity.

In addition, the algorithm is used to arrange the distribution in groups that are ordered according to the rate of growth of the frequency of a given category of the variable we want to predict. This allows us to create growth lines that incorporate all the factors considered in the model and which result is internally homogeneous and externally as heterogeneous as possible.

- Growth Line 1: (Node 0 → Node 1) Chilean researchers agree or totally agree with item *ITEM 10: The university/institution has technical and technological resources for research on informal work*. Node 1 is a terminal node, which means that the algorithm stops as any combination of categories of factors (ITEMS), and does not show significant differences among the population of researches considering Node 1 as a root node.

- Growth Line 2: (Node 0 → Node 2 →Node 4) represents researches who are in between agreement and disagreement (Node 2) with ITEM 10 (Brazilians and Argentinians), have differences when they are asked about *ITEM 8 Research on informal work is sustainable thanks to current funding lines*. In this case, a new division presents a growth of the tree into two branches where Brazilian and Argentinean researchers differ. In this growth line Brazilians researchers (Node 4) consider that current funding lines provide sustainability to research on informal work, and the Argentineans taking the opposite view.

- Growth Line 3: (Node 0 → Node 2 → Node 5) represents researches who are in between agreement and disagreement (Node 2) with ITEM 10 (Brazilians and Argentinians), have differences when they are asked about *ITEM 8 Research on informal work is sustainable thanks to current funding lines*. In this case, a new division presents the growth of the tree into two branches where Brazilian

and Argentinean researchers differ. In this growth line, Argentineans researchers (Node 5) consider that current funding lines do not provide sustainability for the research on informal work, taking the opposite view from Brazilians.

- Growth Line 4: (Node 0 → Node 3) represents a set of Brazilians researchers who strongly disagree with ITEM 10, considering that HEIs are not able to deal with technical resources to satisfy the needs of analysis in the field of informal work.

In the needs analysis, 9 batteries of items related to the research needs were analyzed, which were extracted from the qualitative analysis carried out through group dynamics. These group dynamics were carried out during the study visits that the Latin American researchers made to the European research centers. Based on this qualitative work, 9 dimensions of the needs assessment were identified, and their indicators were developed operationally. These dimensions and items were included in an online questionnaire devoted to collecting answers from the wider research regional network built on the researcher staff participating in the LATWORK project. A total of 300 answers were collected.

Since the measurement instrument included a large number of concepts, dimensions and indicators, these could be reduced in their dimensionality, and reliability could be determined, always with Cronbach's alpha values above 0.8, as well as homogeneity of variances with KMO above 0.8. The calculated factors provided invaluable information to characterize the singularities of each partner and country:

- Institutional support is higher perceived in Brazil compared with Argentina and Chile.

- A need for a research agenda oriented towards a wider scope on vulnerability can contribute as a framework that better captures the specific question of informal work. This position is more developed among Argentinean researchers than among those of other nationalities in the region.

- The gender perspective in the analysis of informal work is a need perceived more among Brazilian researchers and less among Chilean researchers, comparatively.

- Brazilian researchers are much more concerned than those of other nationals with the heterogeneity of criteria that determine the informal nature of work. Definitions of informal work vary from one country to another, for the main reason that different forms of work coexist in the region, depending on the logic of production and the legal contexts of labor relations.

- For Brazilian researchers, much more than for Argentinian researchers, the data generated from self-employment provides relevant information on the dynamics of informal work. In any case, in Brazil national statistical operators collect information on this type of worker, facilitating their analysis for university researchers. This is not the case in Argentina or Chile.

- Informal work has also been assessed in terms of how high a priority this topic is for researchers. Chilean researchers showed more interest than in the other countries, while the most sceptical researchers were located in Argentina.

- The uses of the current methodologies to capture the reality of informal workers do not have a satisfactory result for the Argentinian researchers. In the case of Brazil, the availability of national statistics operations provides more successful outputs in that regard.

- In the case of Chile, researchers identify a tendency towards the adoption of legal mechanisms that incorporate technological jobs within the range of decent jobs, contrary to what happens in Argentina and Brazil, where Brazilian researchers appreciate a greater interdisciplinary involvement in research results, compared to Argentina.

Complexity of the question

The effort to provide an information system on the informal economic sector in a context of informal work arises from the need to address the discussion and debate on informality as a problem closely articulated with the process of globalization and expansion of digital capitalism that is transforming the deep structures of the social system and the international division of labor. Therefore, the need for a greater abundance of theoretical elements and data sources that contribute to consolidating a holistic view of this phenomenon is progressively increasing, and only the creation of transnational and interdisciplinary research structures can guarantee its visibility. In the same line of the analysis, any reflection on the Latin American labor market will have to begin by situating the historical process of integration of these economies into the global capitalist economic system. If wage labor is essentially typical of industrial societies, it is necessary to take into account all the asymmetries and anachronisms intertwined with capitalist expansion over the last three centuries to understand the complexities inherent to a continent like South America. As we know, the transition from pre-industrial societies to the capitalist economy entailed the displacement of productive activities from the domestic sphere to the industrial space. This process was accompanied by a progressive readaptation of the division of tasks that overlapped with combinations, mixtures and demarcations both outside and within the productive context itself. Together with this division between work and non-work (leisure and "free time"), it has given rise to areas and sectors characterized by informality, especially in the poorest regions, where populations struggle first and foremost to escape from misery and deprivation.

Casuistry of informal work depending on the idiosyncratically factors

The analysis of qualitative and quantitative data has shown that there is a wide range of nuances in research praxis applicable to the meaning of informality, opening the scope of the study to different disciplines and theoretical inspirations. However, there is an important correlation of these nuances with the geographical context, the historical development of the economy and the role the country plays in the international division of labor.

- Argentina. In the case of Argentina, researchers highlight that the consolidation of informality in the labor market had a consensual starting line in the 1980s, becoming a structural phenomenon that has deepened in periods of crisis, as it functions as a "refuge" from unemployment. However, both self-employment and other types of atypical and informal forms of work in Argentina have been studied and known not necessarily as a labor reality stoically accepted by workers, i.e. as a result of economic crises, but sometimes as an opportunity to turn around a desired situation (Busso, 2010).

- Brazil. In the case of Brazilian researchers, the focus is on analysing the role of trade unions in the organization of informal and precarious workers, paying special attention to at least two critical issues. On the one hand, the background of the social organization of labor has historically shown poor structural development due to the systematic failure of the expansion of the welfare state to all social classes. On the other, the challenge of facing the globalizing dynamics of the international division of labor that pushes peripheral and semi-peripheral economies to extend the logic of informality is particularly worrying when it occurs in labor contexts of poorly organized workers, as in the case of Brazil (Véras de Oliveira, 2017).

- Chile. Finally, in the case of Chile, researchers focus on the study of informality as a meaning of precariousness itself. Blanco and Julián (2019) distinguish nine typologies of precariousness

in Chile, many of them scrupulously analyzed in terms of informality and its multidimensional characteristics that are identified as a target for advancing formalization. The analysis carried out within the LATWORK project has managed to determine how the specific approaches that can be found in the literature review correlate systematically with the perspective of researchers according to their country.

3. Outputs, outcomes and impact

The LATWORK project did not claim to be a direct solution to the weaknesses in informal work research identified in the diagnosis reached in the needs assessment. We refer here to both, the one carried out in the proposal drafting phase and the one undertaken at the beginning of the project.

Rather, it aims to create a structure or meeting point (outcome) from which researchers are better able to elevate the interdisciplinary debate to a regional and multidisciplinary level, covering the spaces of each country's singularities and at the same time improving the understanding of the underlying causes that distinguish Latin America's position in the globalized arithmetic of informality (impact).

This is a need identified by all the statistical operators and international organizations that were consulted in the drafting phase of the proposal and these needs were translated to the proposal by taking 3 pillars that were the basis for organizing the tasks and deliverables:

- First, there has been no previous attempt to cover the need to strengthen LA HEIs by creating regional networking and research structures on informal work.

- Second, the warnings of all international institutions involved in labor market policies, which now highlight the consequences of the large extent of informality in LA labor market countries, and the need to better understand it.

- Third, the result of the previous needs analysis, corroborated and expanded in the analysis carried out in the initial phase of the project implementation, in which it has been suggested:

    – The high level of interest in the topic among the research staff of Latin American universities.

    – The local structuring of scientific production, through national networks that cover singular aspects of informality. The cases of international coordination are centralized by organizations such as the ILO-FORLAC, from where analytical priorities are established to cover the lack of knowledge in the area of informal work.

    – Public policies have not provided a national or regional framework in which Higher Education Institutions (HEIs) have a leading role and organization to generate and transfer knowledge.

Outputs

Based on this analysis and the objectives set, LATWORK was successful in terms of the participation of researchers in the various activities programed:

- More than 600 researchers from various Latin American universities, not only from the partner universities, in all training activities.

- More than 300 researchers in the replication of the capacity-building training sessions.

- More than 300 researchers in regional and international conferences.

- More than 200 researchers active in local and regional networks.

Outcomes

The project outcomes are organized into two types of structures.

On the one hand, 9 research centers operate at the level of the HEI and in its immediate area of influence, mainly in terms of knowledge transfer and internal organization of research teams.

On the other hand, the RedLatt network, which operates as a regional coordination of the research centres, functions as a focus of attraction of both internal and external research initiatives, as well as a center of reorganization and transfer of knowledge generated by the research centres. The network's main mission is to favour the multiplier and replication effects of research on informal work in the region.

Impact

Nowadays, there are at least two mechanisms of information about labor markets issues. On the one hand, Statistical Operators (SO) provide official data, indicators and analysis at national, regional or international level. Some of the (SO) also count with scientific and academic staff to create knowledge within scientific standards. On the other hand, some analysis is available for the scientific community at HE as a result of non-regional or multidisciplinary upgraded projects carried out at incipient HEI research centers, where low quality data are exploited facing not overcoming difficulties.

On the basis of this diagnosis, LATWORK is a structure with the capacity to have an impact in providing an innovative approach based on the fulfilment of a wide range of requirements never before integrated at the same time:

- Multidisciplinary.

- Regional level.

- Networking.

- Transfer of outputs to policy makers.

- Transfer of output to training programs.

- Establishment of a research community specialized in informal labor market.

The overall objective of the LATWORK project is to develop LA HEI research structures and innovative methodologies to satisfy the scientific needs of creating knowledge in the field of informal jobs and the informal economy.

The specific objectives are:

- Mapping the current situation of the production of research outputs on employment and the informal economy in Latin American HEIs.

- Mapping production procedures and uses of research outputs in the internal and external context of HEIs. Measuring impact and potentials.

- Capacity building in research and innovation by drawing on the experience of EU HEIs in setting up research centers specialized in the field of informal work.

- Establishing high-performing HEI research centers to deliver results.

- Creating a platform to standardize and improve the applicability of research results at regional level.

- Creating a platform to ensure high impact transfer procedures.

- Creating a multidisciplinary research structure to ensure the best possible capture of the phenomena of informal work and the informal economy.

- Achieving greater efficiency of scientific procedures.

- Developing a culture of networking, facilitating the continuous and regular production of results in the field of informal work.

- Increasing the level of commitment of HEIs, researchers, graduate students and, more specifically, doctoral students, and in general of all internal and external stakeholders, by stimulating them to produce and regularly use the research results generated from the project and its future structures.

4. Success factors and lessons to learn

Over a year following the conclusion of funding from the European Commission, the project not only stands as a testament to successful collaboration but also continues to thrive through robust networking activities and the establishment of new structures, all rooted in the project's consolidations. This enduring success is particularly noteworthy when viewed through the lens of Latin America, where the projects strive to address and provide solutions to the region's pressing issues. Here, we delve into some key factors contributing to the sustainability of these initiatives.

Pre-relationship structure on the part of the partners

The foundation of the project's success lies in the collaborative efforts of partners, particularly the active involvement of universities in the region during the proposal drafting phase. Professors and researchers played a crucial role in articulating the unmet research needs within the university system, emphasizing the relevance of the chosen topic, and aligning these with the structures of interests and needs of internal and external stakeholders. Simultaneously, European partners exerted considerable effort to align regional needs with the opportunities presented by the Erasmus Plus program. This successful alignment can be attributed to the pre-existing structures of cooperation that were already in place between the partners in both regions. These early relationships facilitated a shared understanding and commitment to the project's goals, laying the groundwork for sustainable collaboration beyond the project's initial phases.

Regional leadership and management

A pivotal factor contributing to the project's success was the decision to entrust the leadership role to a university based in the Latin American region. This strategic choice significantly streamlined the overall management process, ensuring effective navigation of the diverse challenges inherent in joint, cross-national projects.

Managing a project across different countries and institutional contexts presents inherent complexities related to the distinct institutional logics governing each participant's institutional autonomy.

The leadership provided by a university within the region proved instrumental in bringing these differences, fostering a cohesive approach to project management. This regional leadership not only enhanced the understanding of local dynamics but also facilitated timely decision-making, critical for overcoming hurdles and sustaining momentum.

The importance of regional leadership makes evident that solutions to the challenges faced in Latin America can be best developed and implemented by those intimately familiar with the unique socio-economic and cultural nuances of the region. The success of the project, therefore, underscores the significance of empowering local institutions to take charge, ensuring that initiatives born out of collaborative projects can continue to address and alleviate the region's specific needs long after the initial project funding concludes.

The sustained success of this project exemplifies the potential impact of well-coordinated initiatives originating from Latin America. By fostering strong pre-existing relationships, aligning project goals with regional needs, and entrusting leadership to a local institution, this project serves as a model for effective and sustainable collaboration that directly addresses the challenges faced in the region.

5. Sustainability

The LATWORK project was successful in achieving all its objectives. The SARS-CoV-2 pandemic forced the partners to take exceptional measures in order not to compromise the objectives set out in the proposal.

Thus, the digital adaptation of some activities and deliverables of the proposal resulted in the creation of content and products not contemplated as objectives, such as specialized training on informal work, organized in 3 modules of 5 lessons each and attended by more than 1,500 participants from several countries, including extra-regional ones.

However, within the objectives expressly developed in the proposal, the regional partners succeeded, based on an arduous organization and agenda with a high number of meetings, to organize a structure of working groups which now serves as a reference for channelling the results of the research activity of the partners and new participants of the project, once its Erasmus Plus funding has ended.

The working groups were structured in various configurations about the topics, the number of groups, and the guarantees of interdisciplinarity and country representation. Thus, they went from 9 to 7 and finally to 4. Hereafter, we number the groups and their topics.

- GT-A: economic development, regulation, public policies and informality.
- GT-B: gender and labor, an indispensable approach in the study of informality and precariousness in Latin America.
- GT-C: new configurations of informality, social inequality and precariousness.
- GT-D: social economy, popular economy and collective organization of informal workers.

Today, within these structures, there is a high transfer of resources, with regular group and inter-group meetings, where experts in different disciplines are leading the group targets.

Another achievement that deserves to be considered is the visibility reached by international structures that act to organizing research results transfer activities, such as the ALAST network (Latin American

Association of Labour Studies), where a space has been expressly opened in its international congress to give a monographic space to the activities of the LATWORK project.

The project is a reference for the adhesion of new structures, or in any case, for the replicability of its form of organization in parallel structures that are currently also operating in the region, with a limited level of organization that acts as a barrier to the generation of impacts.

6. Lessons learned

In reflecting on the project's trajectory, several invaluable lessons have emerged, shedding light on the intricate dynamics of cross-continental collaborations, and pointing towards future directions for sustained success. The Erasmus Plus program has proven to be a timely catalyst for advancing the research capabilities of universities in the region. Its strategic focus on capacity building has not only empowered institutions but has also provided a structured framework for fostering research excellence. The inherent heterogeneity of participants in the program, encompassing diverse backgrounds, expertise, and cultural perspectives, has been instrumental in generating multifaceted solutions to the complex challenges faced in Latin America.

One crucial lesson learned is the importance of amplifying the voices of regional experts. Recognizing and valuing the wealth of knowledge and experience residing within the region, the project actively embraced the principle of letting the experts from the area take centre stage. By giving them maximum protagonism, the initiative ensured that the solutions developed were contextually relevant and sensitive to the specific needs of the local communities. This approach not only enriched the project outcomes but also fostered a sense of ownership and commitment among regional stakeholders, laying the groundwork for sustainable impact.

A key strategy that emerged from the project's success was the creation of networks that facilitate the active involvement of regional partners in European research endeavours stemming from capacity building initiatives. This forward-looking approach seeks to bridge the gap between continents, fostering ongoing collaboration beyond the immediate project timeline. By establishing these networks, the project not only contributes to the global research landscape, but also ensures that the expertise and perspectives of Latin American partners continue to shape and influence international research agendas. This interconnectedness has the potential to transform how research is conducted, ensuring a more inclusive and collaborative approach that transcends geographical boundaries.

The lessons learned from this project underscore the transformative power of collaborative initiatives and the need for sustained efforts in capacity building. The Erasmus Plus program, with its emphasis on fostering expertise and collaboration, has proven to be a catalyst for positive change. Moving forward, the focus should remain on amplifying regional voices, nurturing networks, and creating platforms that enable continuous participation of Latin American partners in global research initiatives. These lessons serve as a blueprint for future endeavours, guiding the way towards impactful, culturally sensitive, and sustainable collaborative projects that address the unique challenges faced in the region.

Globalization and neoliberalism have brought new paths for weaker economies occupying a peripheral or semi-peripheral position in the global system. The result has been, on the one hand, the limitation of the capacity to retain value added in the production chain and, on the other hand, the exponential increase in inequalities resulting from growing exploitation at low labor costs, even when the lower

strata of peripheral societies are supposed to have seen their position improved by reducing hunger and misery.

On the other hand, as it has been argued throughout this contribution, North-South relations can take different forms, depending on the different historical and socio-cultural characteristics of each of them. The relations of the two Iberian countries with the former colonies also involve their specificities, just as the processes of decolonization themselves were specific, even when referring to the case of the former South American colonies. Also, when it comes to the world system in the context of long historical cycles, the semi-peripheral condition has changed over the centuries, both for Portugal and Spain, always evolving according to a logic of dynamic asymmetries at different geographical scales. The positioning of the Iberian countries in Europe and, on the other hand, the positioning of Europe (including through them) on the international chessboard obeys this same logic of variable geometry. In this approach, we proceed to a reflexive and critical look centred on the asymmetries of power and, at the same time, on the forms of cooperation between the peripheries and the centre, or between the South and the North, both being —as Santos (2021) underlines— beyond geographical latitudes, since it is above all a question of imbalances and interdependencies of economic and political power. In this sense, we have questioned recent trends of change and segmentation in the labor sphere, trying to draw a parallel between their peripheral condition as southern European countries and their possibility of bilateral (or multilateral) cooperation with South American countries and their former colonizers. Precisely because we believe that in the interstices of the system, there is room to reverse —or at least mitigate— the harmful consequences of both colonialism and neoliberalism, the LATWORK project reveals potentials framed within this objective. The knowledge and experiences of academic and scientific cooperation with Latin American institutions, accumulated over decades by the research centres that make up this consortium —in which 12 Higher Education Institutions from both sides of the Atlantic participate—, constitute an important incentive to favor diagnoses, analyses and intervention projects with a critical sense and practical scope.

7. Conclusions

The challenges facing labor research are changing at the dizzying pace imposed by the technological transformations that underpin the expansion of the digital and globalized economy. New concepts of work emerge as the division of labor is transformed. The loss of the capacity to generate regulated and "decent" work (as defined by the ILO) as the main source of welfare state development is the central constraint. However, beyond the generation of structures primarily in the field of statistics and data production, other transnational movements are sufficiently organized and structured to ensure a break with localisms that tend to reinterpret the globalized problem of informal work as primarily a domestic issue.

Therefore, one of the most relevant sociological objectives is not only to explain the nature of this process, but also to redefine it so that it is identified as one of the main sources of sustenance and reproduction of expansive neoliberalism and, especially, of the international inequalities that have a direct impact on the local dimension. In the field of sociology, reflective currents tend to show that, concerning to local realities —in our case those characterized by the prevalence of informal economy and informal work —explanations arise from interaction with culture, from which it is possible to derive interpretative frameworks that allow us to break with the process of globalization as the cause of informality and precariousness.

Uncertainty and risk cannot be controlled by processes or dynamics that are beyond direct reach, such as technological development. Hence, sociology has been interested in questioning how actors end up stoically assuming informality as a consequence of the nature of the immediate environment and primary needs.

The current trends of technological innovation and rapid digitalization, whose devastating impact on job destruction has been pointed out, may, however, offer new means for reconversion of working conditions in Latin American countries. The fight against informal work is in line with the fight against vulnerabilities, poverty and exclusion. But for this effort to be successful, it is important to question, investigate and strengthen the role and dialogue between the state and public institutions —especially Higher Education Institutions (HEIs)— and economic agents (the business fabric of each region). This is a necessary condition for the struggle in favor of decent work and rights to be also a struggle for development and social justice in the countries of the South. The LATWORK project does not offer solutions, but rather, at the crossroads where Europe and Latin America find themselves today, it opens possibilities that can become assets at the disposal of the actors of future socio-economic changes.

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4.8. The MEANING project

This study case focused on the MEANING project. MEANING stands for Master Program in Industrial Engineering for El Salvador and Guatemala; it has a concentration in Computer Science, Robotics, and Telecommunications. The MEANING project is an international consortium co-financed by Erasmus+ Capacity Development from The European Union, within the KA2- Cooperation for innovation and the exchange of good practices.

This project went after the articulation between the industrial business sector and universities, through the creation of master programs which meet the needs of the professional market in the region while they comply with the European quality standards. This initiative took place in El Salvador and Guatemala from 10/15/2017 to 06/14/2021; it included the following regional partners: University of El Salvador (UES), Universidad Tecnológica de El Salvador (UTEC), University of San Carlos de Guatemala (USAC), Universidad Rafael Landívar de Guatemala (URL). Universidad Tecnológica de El Salvador (UTEC) oversaw the coordination of the project. It also included three partners from the EU: the University of Alicante (UA), Spain, the University of Maribor (UM), Slovenia, and the University of Collegue Cork (UCC), Ireland.

The main achievements of the project have been the installed capacities in specialized equipment, teacher training, accredited programs, and the strengthening of research for industry and professional practices that havestrengthened the link between universities and industry. The above has translated into an economic and social impact, which has generated greater employability and academic and business coordination.

The author has summarized the most relevant elements in the items below; these have provided a justification for the MEANING project to be taken into account by the European Commission (Erasmus+ program) as a good practice within the field of higher education.

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1. Background

Despite a long period of political instability and civil conflict, El Salvador and Guatemala have managed to reach moderate economic development, low inflation rates, and an increase in Foreign Direct Investment (Bashir and Luque, 2012). Both countries possess efficiency-powered economies that still have a long path to go across, nonetheless, they also have a high potential to improve their corresponding global competencies (Schwab, 2016). The main engine of their economic growth has been agriculture driven by the high prices of staple foods worldwide. However, despite the evolution in manufacturing and services during the past decades, in addition to the contributions related to economic growth,

agriculture in general (26.7% of gross domestic product, GDP) remains the sector with the highest GDP contribution (CEPAL, 2015).

One of the main goals of the politics in the Central American region has been the generation of jobs. More employment opportunities would help reduce the cyclical relationship between inequity, crime rates, and unemployment —mainly, employment for young people (OIT, 2020). To address these challenges and reach these goals, the partner countries will need to have an approach in their policies that offers multiple proposals to provide support to both producers and workers who are moving higher in the chain of value, and which can also improve their access to education, and quality education. Introducing diversification within the structure of manufacturing and services or improving the technological content and general knowledge on already existing activities such as agriculture could represent a solution to make them more productive.

Both partner countries, El Salvador and Guatemala, are at a disadvantage in terms of higher education and training; this translates into one of the largest obstacles to doing business (INEG, 2015). Despite the wide variety in the academic offers of the partner countries, in both technical and non-technical disciplines, their tertiary offer is low in contrast to the latter. The inquiries made to the industry in relation to the skills, knowledge, and competencies of those who have graduated from industrial engineering programs, at the undergraduate level in key areas, indicate a lack of enough practical knowledge and technological relevance. As a result, innovation does not exist at the national economic level in any of the partner countries. Therefore, by improving the offer at the tertiary technical education level, competitiveness could be improved considerably.

Robotics, Telecommunications, and Computer Science are found within the key areas that have been identified as strategic professions that provide contributions to the economic development of countries with emerging economies. In general, this type of industrial engineering is useful in the areas of manufacturing and other types of production activities, management, and quality control, to mention some areas. However, one of the main problems in professional training has been the lack of coordination and relevance given to the curricula and the needs of the business sector, including industry. In this context, those graduates lack the training to practice in real life.

In like manner, this project is relevant and can also become a tool to build relationships between industry and Higher Education Institutions (HEIs), thus promoting highly trained professionals with the necessary ad hoc skills and good practices, all of which satisfy the needs for the scientific and technological development of the partner countries and the Central American region. This aligns with the objectives and the strategies of the National Policy for Innovation, Science and Technology of the Republic of El Salvador, 2011, mainly with one of its objectives: "To support business innovation to increase its productivity and competitiveness," as well as to create a link among HEIs, technologic and productive innovation nuclei such as technological parks and research centers, and public-private businesses, which facilitate the development of research projects and innovative initiatives aimed to stimulate the national competitiveness and productive development.

In relation to the socioeconomic context of El Salvador, between the years 2012 and 2016, the annual rate growth of GDP was equal to 1.8%, which is considered low. Previously, the highest recorded growth took place in 2007, with a GDP of 3.8%. However, because of the global economic recession in 2008, the growth rates registered in 2009 become negative, being then transferred to the following years. In 2016, the registered increase by the annual GDP rate was 2.4%; this indicates that there was a recovery in the national economy. As a result of this recovery, the home income also grew, though

this was mainly represented by the remittances coming from abroad, as well as to the low inflation levels, an increase in employee productivity, and more dynamic commercial sectors (BCRS, 2018). It became clear from 2015 onwards that the manufacturing sector of the country represented a mere 17.8% of the GDP by 2017; it was in 2015 that the Banco Central de Reserva changed the national accounting system. Hence, El Salvador needs a highly positive increase, not only in generating jobs, but also in enhancing the emergence of an innovative industrial sector, and small and medium businesses (PYMES, given its Spanish acronym); these would help increment the potential for growth in the manufacturing sector and reduce the permanent multidimensional poverty that prevents the growth of the national economy.

The National Policy of Promotion, Diversification, and Productive Transformation, based on the Law for the Promotion of Business Production, constitutes the main government strategy with which to generate a structural change with the purpose of reducing multidimensional poverty and sustaining increasing development. This policy intended to establish a dialogue amongst academia, the industrial sector and the labor market in order to lay the foundations of a "high added value" economy (MES, 2014).   One of the most important central concepts of this policy, and which directly links it to the MEANING Project Master's Program in Industrial Engineering is the following: "To improve the regulation and strengthening of HEIs and research centers in their research activities aimed at innovation (MES, 2014).

Regarding Guatemala, the socioeconomic context has had little progress in human development, in relation to the 2015/2016 INDH. The latest statistics indicate that 70% of the population works without a formal contract, and without health insurance, while the income levels are below the minimum wage. Consequently, a large number of families live in a constant state of alimentary vulnerability due to the lack of land and the necessary resources required to be self-sufficient: nearly 80% of the indigenous population lives in poverty and there is a great gap between those who have access to higher education and those who do not. As a result, there has been little progress in the reduction of the poverty levels (PNUD, 2016). Nonetheless, between 2005 and 2006, the economic growth in Guatemala improved to an annual index of 2.3%. Since then, however, it has remained the same; it has been growing less than 0.3% per year until 2014.

Despite the lack of a sustained human development index, since the beginning of the XXI century, there has been, at least, moderate economic growth due to new wealth resources from the financial and industrial sectors. However, it is important to mention that these new engines for development have not been responsible for the generation of mass jobs. This has not impacted/influenced the current rise in the waves of people either, which are, in fact, very low. On the other hand, the significant role of the agricultural sector in the national economy has been losing relevance in the new millennium, as indicated by the low entries of the GDP (Banco de Guatemala, 2023). Even though the most recent economic model has generated positive improvements, there is also evidence of a higher concentration of wealth and over exploitation of natural resources by mining industries and mega-plantations. Local economies have also had a direct impact on their production and the marketing of products, telecommunications, the generation of power, the extraction of mineral resources, and the increasing use of water (CEPAL, 2019).

Given this, through the implementation of the MEANING project,[1] the Master's programs would contribute to the creation of employment opportunities. These new opportunities would, in turn, support positive

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[1] http://meaningproject.net/

economic growth through a considerable increase in innovation and competitiveness in the fields of Computer Science, Robotics and Telecommunications. Each of them is aimed to have a multiplying effect to increase the standard of living of the people in both countries, El Salvador and Guatemala, besides the articulation of efforts from the universities along with the needs of the national industry and a joint effort by the European partner countries and the European Union (EU).

In this context, there has been a real need between the HEIs of El Salvador and Guatemala —Universidad Tecnólogica de El Salvador, University of El Salvador, Universidad Rafael Landívar, and University of San Carlos— to train highly qualified professionals in Computer Science, Robotics and Telecommunications who will be ready to enter the work force, thus, ready to introduce the kind of employment opportunities that offer an added value, so critical to boost the growth of national economies. These are strategic professions that originate the progress of modern nations. At the same time, they serve production areas, management, quality management, and others that are industry related, where the raw material needs to be transformed into final products. The partner countries of El Salvador and Guatemala were the beneficiaries of the MEANING Project. On Central America's side, the 4 HEIs have a strong inter-est in the curricular development in the field of Industrial Engineering since all of them plan to make a meaningful contribution to increase work opportunities in both countries. Amongst the 4 institutions from the Central American countries, more than 50% of the Salvadoran and Guatemalan university spots were offered; these would be crucial in providing the workforce for the national industrial sector. UES and USAC are the national/public HEIs of El Salvador and Guatemala. UTEC is the largest private university in El Salvador, and the URL is not only the largest private university in Guatemala but also the oldest one the country has in the field.

Both partner countries, Asociación Salvadoreña de Industriales and Colegio de Ingenieros de Guatemala also participated in the project. Their capacity to actively contribute to the objectives of this project is not only founded on their practical experience in the target markets but also on their high number of industrial affiliations. The EU partners contribute their experience in industrial engineering, the implemen-tation of master's programs, and curriculum development as well as their experience in collaborating with the businesses and the representatives of governmental bodies in countries with emerging economies. The University of Maribor has experience in the interdisciplinary master's programs of engineering; the University College Cork, in electrical engineering, whereas the University of Alicante contributed its experience in Robotics, Telecommunications and Computer Science.

The three Higher Education Institutions (HEIs) that represent the European partners provide support to increase the capacities of the partner countries with their experience in the construction of capaci-ties, international initiatives, and curriculum development in topics related to Industrial Engineering. The support is provided via teacher training, competency-based curriculum development, access to technology for hybrid courses at the postgraduate level, and the large number of fields related to the successful implementation of a complex project within a limited budget and time frame. Given this, the MEANING Project has represented the possibility of generating a significant improvement in the quality of postgraduate professionals who can put innovation at the forefront of the three different areas in the chain of value of Industrial Engineering. The recent master's program that has been developed would help originate economic growth through a considerable increase in productiv-ity which can therefore have a multiplying effect in improving the life standard of the population in both partner countries.

The MEANING project was organized into 8 Work Packs.

Work pack 1. Needs Analysis

Visits to the 3 partner European universities were made: the University of Alicante, Spain, University College Cork, Ireland and the University of Maribor, Slovenia. Said visits allowed the teams from the 4 partner beneficiary universities, University of San Carlos, Guatemala, University of El Salvador, Universidad Rafael Landívar, Guatemala, and Universidad Tecnológica de El Salvador, to obtain a well-rounded view of the academic offer in industrial engineering in Spain, Slovenia and Ireland. They also allowed a view of the quality standards and the practices of higher education in the European Union, and the existing relation between academia and industry in those countries, as well as the job market. Also, the existing context between El Salvador and Guatemala was analyzed using a needs analysis study. Asociación Salvadoreña de Industriales and Colegio de Ingenieros de Guatemala supported the identification of participants in this study.   Consultation workshops with the participation of people in the academic and industrial sectors took place; this allowed it to learn from first-hand sources, the need for competency training. The information was consolidated in a competency matrix that was later used as the foundation for the curriculum design. Additionally, the Needs Analysis document was published under ISBN 978-99961-86-24-0; besides being an outcome of the project, this can be used as a reference document for other initiatives in curriculum design at the higher education level.[2]

Work Package 2. Training plan

The training for the 4 beneficiary universities in the project (UES, USAC, URL, and UTEC) provided the necessary knowledge for the elaboration of academic programs, particularly the master´s program already developed. These trainings were aimed at the faculty (professors, researchers, technicians, and guests from the industrial sector). The University of Alicante in Spain collaborated with hosting six webinars along with the materials in their Moodle platform. The main objective was to build capabilities based on the needs of the master´s program. The webinars that were developed were the following: 1. Learning outcomes; 2. The definition of the learning outcomes; 3. Curriculum design and program content; 4. The Definition of a course; 5. The use of online communication tools; 6. How to identify competencies and develop a competency matrix. The webinars and their materials were later migrated to each of the beneficiary universities' platforms as a resource and tool to be used by students and faculty members of the master's program in El Salvador and Guatemala; said webinars will be continually updated.

Work Package 3. The definition of the master´s curriculum

The study plan and its organization were developed by the 4 beneficiary universities with systematic and specialized advice from experts at the University of Maribor, Slovenia. The foundation of the competency matrix generated by the needs analysis called for reflection on the need to reorganize the curriculum. This process was conducted by the University of Maribor in Slovenia. It was agreed that the common courses in the curriculum of each master, according to their concentration, would be developed in 6 months, the area of specialization in 9 months, the internships in 6 months, and the end of master graduation project in 3 months. This led to a request for authorization from the project officer in Brussels to make this change. In like manner, the proposal to change the name of the master's was analyzed so as not to be in conflict with the regulations in Guatemala, thus opening

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[2] This can be downloaded from the following link:
http://www.url.edu.gt/mensajeria/2020/Documentos/AnalisisdeNecesidadesMeaning.pdf

the opportunity for students in other engineering fields to be able to register in it. Therefore, the change was requested and authorized under the name Master in Industrial Engineering for the Industry, with the three concentration areas to be offered by each of the beneficiary universities: Robotics, Computer Science and Telecommunications. The advisory and management provided by the experts from the University of Maribor included a high level of compromise and excellence, as the other European universities in their different roles. The contents and the structure of the different courses were developed following quality indicators and taking into consideration the foundation of the competency matrix as an important source for curriculum design.

It was no easy task to reconcile the different regulations of the institutions and the hosting countries in relation to the academic credits and periods; however, this was eventually achieved. The master's degree needed to have academic credits that would represent no less than those equivalent to 90 ECTS. Danijel Rebolj, an expert from the University of Maribor, oversaw this task, thus assigning a minimum of 60 ECTS, equivalent to 1,800 hours, which were then translated into academic credits according to the individual systems of El Salvador and Guatemala. This stage took a little longer than planned.

Finally, three master's programs with three concentrations were designed. To obtain institutional approval, they were presented/submitted as a program in compliance with the concentrations to be offered. For UTEC and URL, it would be the Master´s in Engineering for the Industry, with a concentration in Robotics; for UES and USAC, the Master Programs in Engineering for the Industry in their concentrations: Telecommunications and Computer Science.

In January 2020, the master's programs were reviewed under the scope of international quality indicators, guided by an external expert in quality accreditation. Besides, there was a workshop led by the University of Alicante, for the four beneficiary universities to review and get through any observations made to each study plan, which would then be submitted along with the pre-accreditation request for the authorization of the masters' programs before the ACSUG agency. Also in 2019, the national and international authorization processes began, according to each case. In relation to UTEC, the university submitted the Master Programs in Engineering with a concentration in Robotics to the Ministry of Education, Science and Technology, in October 2019; this was authorized on November 26, 2020. UES, USAC, and URL followed a different process since they had to undergo institutional authorizations, nonetheless, they went through different instances. Both master's programs at USAC were authorized in June 2020; the one at UES on February 17 and 18, 2021. Because of the pandemic and changes in the internal authorities, the URL was not authorized until March 4, 2021. Nowadays, all master's programs have been authorized to be offered. A dossier per each program was also structured, thanks to the advisory of one of the outsourced experts, to be able to submit the three programs to the international pre-accreditation with the Agency for Quality Assurance in the Galician University System, given its Spanish acronym. The application was submitted in March 2020. ACSUG'S last response is dated June 6, 2021.

The University of Maribor also advised and oriented the purchase of the equipment for the master´s program considering the capacities of each of the beneficiary institutions. The change in the list for the equipment was made to the OP in Brussels to conduct/make the ideal purchase according to the needs found in the competency matrix and the lab practices necessary for each master. To speed this process, the public universities requested the coordinators once again to intercede so that suppliers could be paid with no intermediaries in order to have speedier processes at their universities. The purchase was authorized, with good results, taking care of compliance with the regulations and the eligible funds. To date, all equipment has been installed at the beneficiary universities offering the master.

Work Package 4. Implementation of the master's program

This package was coordinated by Universidad Tecnológica de El Salvador. The master's programs were authorized at each university on different dates; therefore, the Marketing Plan and the launching ceremony were planned on different dates as well. In November 2020, after the quarantine due to the pandemic, a blended event was held to launch the master's programs; this was conducted by the general coordinator. The launching ceremony that presented the results of the MEANING project was therefore held in November 2020, via a blended event, in the city of San Salvador, at the Faculty of Master's and Graduate Studies from Universidad Tecnológica de El Salvador (UTEC), with only 24 attendees due to social distancing measures because of COVID-19. There was also participation from an online audience via ZOOM, Facebook live, the project's webpage, Twitter and other social media. Both the EU embassy in El Salvador and its partners contributed to its dissemination.

Work Package 5. Marketing plan

This work package was led by University of El Salvador. A marketing plan was conducted in each of the beneficiary universities, with 4 advertising campaigns in both the written and the digital press plus social media. Also, 8 open houses took place, following different formats, days, breakfasts, and conferences whether online or face-to-face. Open days and the campaigns were mostly conducted online due to the COVID-19 pandemic and its crisis, on different dates, based on the authorization dates of the different master's programs in each university. During open days, experts in each of the concentrations were invited, which included guests from the partner European universities, guests from other institutions, and national guests. In addition, a variety of promotional materials were designed and printed, which included shirts, USB sticks, mousepads, and rocket books, among others, with the logos of the European Commission and Meaning.

A total of 383 attendees were interested in the master's programs. Around 108 people registered in three universities. In the case of the URL, despite the campaign and the open days, it was not possible to get the minimum amount for registration. Therefore, as explained in package 4, there was a request to not begin the master until January 2022. Considering that this happened during the time of the COVID-19 pandemic, which generated economic problems and unemployment, it can be said that the number of students registered was positive.

Work package 6. Dissemination

The dissemination package was coordinated by the URL. The UES, UTEC, and URL participated in the dissemination activities developed within the project. Taking into account the impact that was expected from the project and its results, both in El Salvador and Guatemala a webpage[3] and social media pages such as Twitter[4] and Facebook[5] were created. These tools had periodic publications about the project activities, advances on its implementation as well as its events and activities such as study visits, training, regular team meetings, launching ceremonies, open houses, international conferences, and workshops given, among others.

Among the different materials that were designed, the following can be mentioned: banners for the

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[3] http://www.meaning-project.net/

[4] https://twitter.com/project_meaning

[5] https://www.facebook.com/project.meaning/?ref=br_tf&epa=SEARCH_BOX

project's website, news and activities, social media posts, ID templates, diploma templates, PowerPoint templates, roll-up banners, brochures, videos, and advertising spots[6] A total of 2,014 promotional materials were made for the 4 HEIs.

Work Package 7. Monitoring and internal quality control

USAC was in charge of leading this WP. The partner universities of El Salvador, Guatemala, and Europe executed the guidelines of the quality plan to ensure the high quality of the activities, supplies and project results during its lifecycle. Regular reports, work plans, and monitoring reports on the internal and external quality of the activities and the implementation of the project were submitted. All reports and surveys have been uploaded to the project's Dropbox.

Work Package 8. Project management

This package was led by UTEC; it was comprised of administrative, technical, and financial management. The work plan and its corresponding activities had a follow-up along with the resources that had been assigned to the project. This included the following: roles, supervision of the progress of the different stages of the project, budget implementation, participation, and a record of the organizing meetings, both face-to-face and online. An effective communication plan was also used. There was constant and fluent communication through all means including e-mails, telephone calls, and a WhatsApp group. Beginning in March 2020, the communication plan was adapted to the new reality generated by the impact of COVID-19 since this had an impact on the execution timeline for the project activities.

Nevertheless, there was active democratic participation amongst all the partner universities and there was constant communication even during the pandemic. Regular meetings took place, both online and face-to-face. The training included three study visits, two meetings in Guatemala, and one final meeting in El Salvador, besides 34 online meetings. Those involved were monitored and motivated to comply with the tasks assigned to them; follow-up was given to all activities that had gone through a delay due to political changes and re-assignations of authority officials, strikes at public universities, and the suspension of face-to-face activities in the countries given the COVID-19 pandemic. The project official in Brussels was always notified about the events, and authorization was requested when necessary. It was deemed necessary to request an extension, and this was authorized thus granting 8 additional months to be able to complete the activities and comply with the products of the project.

2. Main achievements of the project

Since the main goal of the project was to promote the modernization of the higher education sector and to improve the employment capacity of students in engineering for industry programs in El Salvador and Guatemala, the following achievements were identified.

Design and implementation of the accredited specialized professional training programs

The *curriculum design for three innovative Master Programs in Engineering for Industry*, one in each specialization: Telecommunications, Robotics, and Computer Science. A relevant contribution of this project has been the innovative curriculum design and the training of highly qualified professionals to the benefit

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[6]   Available on YouTube channel: https://www.youtube.com/channel/UCcZVNDKA2LDmlxo_yde5o1w

of the productive development of El Salvador and Guatemala. In this regard, the work teams defined the MEANING master's program in line with international standards under the principles of Bologna, for 24 months for its three specializations. They share a common area for 6 months, a specialization of 9 months, a professional practicum that lasts 6 months and a graduation work for 3 months.

The curriculum design ensures the training of highly qualified professionals in response to the demands of the productive sector in the field of industrial engineering. The beneficiary partner universities of the project decided to undergo an international pre-accreditation process[7] through the Agency for Quality Assurance in the Galician University System.[8] In September 2021, the individual projects with the analysis and recommendations of the corresponding MEANING project were received. These were then sent to the deans and the team in each university.

The evaluation criteria for each of the 6 master's programs were based on the Support Guide for the validation of official university diplomas (Undergraduate and Master) designed by with the evaluation protocol for the validation of official diplomas prepared by the *Spanish Network of University Quality Agencies* (REACU, given its Spanish acronym), respecting the guidelines and criteria that ensure the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG).

These master's programs were implemented in the 4 beneficiary partner universities. Specifically, Master´s in Engineering for the Industry with a Concentration in Telecommunications, Master´s in Engineering for the Industry with a Concentration in Robotics, and Master´s in Engineering for the Industry with a Concentration in Computer Science.

In both public universities, UES and USAC, the concentrations in Computer Science[9] and Telecommunications[10] were implemented; and at USAC, they have been called International Programs. The links to the program at UES are listed below.[11]

At the private universities, URL, and UTEC, the master´s with a concentration in Robotics was implemented.[12]

The first cohort has already finished, with a total of 100 graduates.[13]

Capacity building

The needs analysis led by the University of Alicante in Spain, with the contribution of all other partners, resulted in an important outcome: the competency matrix. This is considered a relevant achievement since it constitutes a tool for curriculum design. It was used in the design of the master, and the par-

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[7]   http://www.acsug.es/en/internacional/meaning

[8]   http://www.acsug.es/

[9]   https://postgrado.ingenieria.usac.edu.gt/proyecto-meaning/ciencias-de-la-computacion/

[10]   https://postgrado.ingenieria.usac.edu.gt/proyecto-meaning/telecomunicaciones/

[11]   https://www.posgradosfiaues.com/maestrias; https://www.posgradosfiaues.com/maestria-ipiecc and https://www.posgradosfiaues.com/maestria-ipiet

[12]   The links to the program are the following:
https://principal.url.edu.gt/posgrados/empresa-e-industria/maestria-en-ingenieria-para-la-industria-con-especializacion-en-robotica/ and https://www.utec.edu.sv/maestrias/maestria/maestria-en-ingenieria-para-la-industria-robotica

[13]   https://principal.url.edu.gt/posgrados/empresa-e-industria/maestria-en-ingenieria-para-la-industria-con-especializacion-en-robotica/

ticipating scholars made this methodology their own to apply it in other programs as well. Besides the publication in the technical report format, printed copies were also distributed amongst all partners and special guests; others were distributed in libraries. The technical report included its ISBN and was then incorporated into the different libraries to be searched by the entire academic body.[14]

The development of abilities in the faculty and staff, and the leaders to respond to the educational needs in specialized training and curriculum design. A variety of courses were taught. These included seminars with experts in curriculum design, novel methodologies, accreditation processes, and quality indicators in both general programs and engineering programs. Additionally, the courses were uploaded to the virtual platforms in each university for their update and tenability.

Modernization of technological centers and equipment acquisition. Although the beneficiary universities already had their own technological facilities, they lacked them in the training areas. Therefore, the cooperation through this project allowed for the establishment of specialized laboratories in the fields to be offered. For instance, UES and USAC in Computer Science and Telecommunications; URL and UTEC, in Robotics.

University-industry articulation

Curriculum design including professional practice and projects as a contribution to the innovation of industry and business. The master includes the innovation of an international design under the standards of European quality, as well as internships during a semester with agreements between the institution and the industry or commerce, to be able to apply the acquired knowledge. The graduation work-thesis project consists of a project to be implemented in the industrial or business sector, thus combining efforts in the articulation of the efforts made by academia and supporting innovation in the production process. All this is under the outline of formal agreements amongst the involved parties.

Since the beginning of the project, an intensive dialogue mechanism was established within the industrial sector through the Asociación Salvadoreña de Industriales and the Colegio de Ingenieros de Guatemala, who made contributions for a clearer and better definition of the competencies to be developed in the master; in doing so, consultation workshops were held. Their results were presented in the "Needs Analysis for the development and implementation of curriculum within the framework of ERASMUS+ Project MEANING," in English and Spanish, which was prepared by the University of Alicante in November of 2018. This document includes a competency matrix.

At present, there is an agreement letter between Asociación Salvadoreña de Industriales and the universities UTEC and UES in El Salvador. Its main objective is for the students in this master's program to make their internships in affiliated businesses. Also, the URL has the collaboration of Cámara de la Industria de Guatemala (Guatemala Chamber of Commerce); USAC will subscribe to a memorandum of understanding with the CIG.

3. Outputs, outcomes and impact

Project deliverables included a needs analysis study, a competency matrix, three Master Programs in Engineering for Industry, each in its three accredited specialties (Robotics, Telecommunications, and

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[14] https://bit.ly/48UL0M8

Computer Sciences), specialized laboratories, specialized professors, and digital platforms with virtual courses. See details below:

- A competency matrix as a curricular academic tool. This is a result of the needs analysis which was also published as a source of specialized bibliographical consultation and a model of competence matrix in related areas.[15]

- Three Master Programs in Engineering for the Industry, in their three concentrations: Robotics, Telecommunications, and Computer Science.

- The development of building capacity in the form of 4 specialized laboratories in Telecommunications, Robotics, and Computer Science, at the beneficiary universities.

- Well-trained faculty, specialized in curriculum design and quality accreditation.

- A platform with specialized training courses for faculty members, and as support to the students in the master's program. The expert European universities migrated six webinars to the platforms of the beneficiary universities that implemented the master's programs. A total of 80 faculty members were trained.

Outcomes and impact

The industrial development has seen a substantial impact by means of:

- The modernization of the regional industry with the optimization of their production process. The curriculum includes innovative aspects to be considered in the optimization of the local production processes, which complement each other in the articulation of theory and practice through professional practice at the advanced level in the master's programs.

- A boost in research for the industry. The professional practice was designed following a theory-practice model which implies that the master students will conduct projects applied to the industry, where they will be able to innovate and apply their knowledge to businesses in this area.

Professionalism and employability by means of:

- The specialization in specific areas of industrial application, such as Robotics, Telecommunications, and Computer Science.

- Zero accreditation programs with the Agency for Quality Assurance in the Galician University System (ACSUG, for its acronym in Galician).[16]

- Professional practice in the industrial sector for 6 months after which a final thesis work boosting innovation in industry will be prepared. An important result was that 100 students in the master's program carried out professional internships in industry and business.

- Provision of equipment for the specialized laboratories in all four beneficiary universities.

- Availability of highly qualified professionals at the regional level.

The international conference was held in September/October 2019. Its objectives were reached, and 50 participants attended, including experts, managers/faculty, other HEIs, and authorities from the

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[15] The serial document can be consulted at https://bit.ly/48UL0M8

[16] http://www.acsug.es

private and public sectors.[17] The master's programs product of the MEANING project were perceived as a tool for cultural change, within the local/regional HEIs, in terms of academic offers.

The MEANING project had an important impact on the faculties where it was implemented since it strengthened the institutional capacity building at the postgraduate level, given the specialized equipment and software donated within the framework of the project. Now, the students have the necessary instruments for their practices. This becomes a differentiating element for the professionalization and employability of the future graduates, in each of their fields.

4. Success factors

The success of the project is a combination of a variety of factors, such as academic, social, and economic impact and articulation of university-industry efforts that align the results with the needs and projection in terms of innovation and technological development at the country level.

Regarding academic impact, the competencies in curricular design were strengthened and innovated in the academic sector. This was achieved under international quality indicators based on the needs analysis that produced the competency matrix which became a tool for curriculum design that can be updated. In the case of social and economic impact, having faculty that has been trained following international quality indicators who make their internships in the industrial and business sector, has undoubtedly had an economic and social impact, given the contribution they are making to the economic activities of El Salvador and Guatemala. In this particular case, graduates increase their employment opportunities, meet their needs, empower people in reducing social differences, and contribute to the improvement of society under specific circumstances that affect people's well-being, thus generating new employment.

The results of this project respond precisely to the recently created National Policy for Higher Education (2021)[18]. This policy raises some important axis, such quality in higher education, access, equity and efficiency, and professional development as key factors, and a priority in higher education. It establishes a structural context that considers there is little appreciation and value given to education and academia. Another element addressed by this policy is the lack of adequately trained faculty, the little recognition of scientific research, and the academic efforts made. Also, the low offer and demand for academic services and a disengagement of the higher education system with the productive sectors in the country. The MEANING Project is in line with the efforts made to overcome said weaknesses, and it has been well recognized by the authorities of the Ministry of Education, Science and Technology of the Republic of El Salvador.

In regard to the innovation policy for higher education in El Salvador (2011), its objective is to encourage and coordinate technological and scientific research to contribute to sustainable development and social well-being. The innovation policy is the connection between policies in terms of research and technological development and policies in the industrial field. It intends to create a favorable framework to take its ideas to the market. This policy aligns with the results of the project since the students enrolled in the master's programs will develop projects based on market and business needs.

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[17] https://noticiasibo.com/2019/10/16/universidades-de-guatemala-y-el-salvador-contaran-con-un-master-internacional-en-ingeniera/

[18] http://informativo.mined.gob.sv:8090/DNP/GPE/Gerencia-de-Planificacion-Estrategica/Planificacion-Estrategica/Politica-Nacional-de-Educacion-Superior.pdf

5. Sustainability

In El Salvador, different actions were carried out and coordinated by all the partners for the sustainability of the project, which included a strategic alliance with the industrial sector (ASI), for which a Memorandum of Understanding was signed between the ASI, UES, and UTEC, which will allow us to continue with joint improvement efforts and also the professional practices of master's students.

The following actions were carried out:

- Alliances with the industrial and business sector in Guatemala.

- Academic cooperation, mobility, and validation of academic credits thanks to the alliance with the partners in this project.

- The structuring of the MEANING Network.[19]

The Cooperation Agreement for the strengthening of the network of master's programs in industrial engineering for El Salvador and Guatemala went into effect in February 2021, assigned by the presidents of the partner universities in El Salvador: UTEC and UES, and in Guatemala, URL and USAC.[20] The objective of this agreement has been to join efforts to continue strengthening the MEANING Network, through cooperation among the member universities. This allows for academic exchange, research, culture, the organization of educational encounters, seminars, workshops, short-term courses, academic exchange roundtables and the development of research projects in Robotics, Telecommunications, and Computer Science that are of mutual interest. The MEANING Network was launched at the beginning of 2022.

The use of results through the master's programs has allowed for political, institutional, and financial sustainability since these are officially accredited masters; they additionally offer inclusive annual scholarship fees. Also, they promote equal access for both men and women in these innovative masters that did not exist before this project. The Moodle platform is in full function in the beneficiary universities, adding to their institutional capacity. There are six webinars prepared by European HEIs. This is an innovative technological tool that encourages and develops the capacity for creation in faculty members. The training in competencies and the internships in the master will contribute to the industrial development of the business and industrial sectors of Guatemala and El Salvador.

The dissemination through the website and social media has been an important tool for society and target groups to get to know this project, with the cooperation of the EU and the transfer of knowledge from European universities. They have also been able to do a follow-up in its development and expected outcomes. Internal and external quality have been monitored in this project as well. Internal quality has been supervised by USAC by monitoring the activities that had been submitted and the meetings that had been held; the external quality control was continually monitored and kept in constant communication with the project coordination. Besides all this, an assessment was conducted in the middle and at the end of the project.

The financial, technical, and administrative coordination meetings were held regularly for even during the quarantine there was communication via videoconferences with partners from Europe as well as with the ones in the region.

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[19] http://redmeaning.com/

[20] http://redmeaning.com/acerca_de/

6. Lessons learned

The Consortium learned some crucial lessons that reflect the three years of experience gained in this project. From the beginning, the cooperation amongst partners, the work teams and the commitment shown by everyone, was notorious. There must be a special recognition to all European partners, who were constantly providing guidance and sharing good practices and knowledge in line with the project. This was also the result of the amount in which the partner universities felt identified with their institutional strength, the experience in international projects, in addition to the goodwill and the political support of the university as well as the support from the Ministry of Education and/or the governing body of education. Throughout the project, it was possible to witness the best practices and meaningful dialogues that led this project to achieve the final results.

In the beginning, neither of the beneficiary universities of El Salvador and Guatemala offered a master's degree with a concentration in Robotics, Computer Science, and Telecommunications. Nonetheless, each institution had its particular strengths to contribute to the objectives of the project. European universities, for instance, have more resources, technological advances, better-structured services, and a stronger system. Having the opportunity to visit the European and Central American partner universities also allowed all members to understand how the cultural, social, and political context has an influence and how it shapes the implementation of new models at the master's degree level.

A key relevant factor in all work packages was represented by the guidance and assistance provided. In the WP1, the needs analysis, the University of Alicante was a successful leader. All partners participated generating a positive outcome which became the foundation of the curriculum design. Students, scholars, the industrial and business sectors, non-governmental organizations, and professional associations from both countries were consulted. This came to provide an essential experience in the construction of a contribution based on the real needs of the sectors involved.

In relation to the necessary assistance and advisory in terms of technology, the University of Maribor successfully provided it, thus showing their commitment to the project. In like manner, the teacher training, the curriculum design, and the international quality indicators were led by the University College Cork in Ireland, and the University of Alicante, which also demonstrated an evident level of excellence and commitment.

The marketing plan was adapted to the new reality posed by the COVID-19 pandemic, where mass events were banned. Therefore, it took place in diverse online and hybrid modes. It was possible to reach the target groups, and there was effective registration in three of the partner universities.

The experience acquired through the joint participation with universities from the European Union has been highly valuable, given the innovative designs, the transversal application of international quality in the design and innovation process, plus the strengthening of competencies. As part of the practices to be conducted in the master, the alliance with industrial and academic organizations related to technology is a key factor for the students in these master's programs.

The proactive and committed attitude allowed for effective monitoring, the integration of people from different areas in the HEIs and the creation of a multidisciplinary team was a positive outcome as well. The MEANING Network has continued with the Post Project Institutional Collaboration developmental phase; also, future joint projects are being planned, to extend these masters' programs to other countries.

7. Conclusions

The Master Programs in Engineering for the Industry with a concentration in Robotics, Computer Science, and Telecommunications implemented in its first edition at 4 MEANING project beneficiary universities in 2021, represents a novel postgraduate studies proposal that answers to the productive and social context in the Central American region.

The construction process of the Master Programs in Engineering for the Industry strengthened the ties among universities and businesses. This can be evidenced through the implementation of joint activities such as workshops, focal groups, meetings, etc., and the activation of inter-institutional agreements with the business associations with recognized experience in El Salvador and Guatemala, such as Asociación Salvadoreña de Industriales, Colegio de Ingenieros de Guatemala and Cámara de la Industria de Guatemala.

ACSUG pre-accredited 6 master's programs, 2 for USAC and UES, 1 for URL, and 1 for UTEC, since it gives individual accreditation to each university. This guarantees compliance with international criteria at the national and international level as well as the levels of employability in the industrial sector.

The MEANING Network started implementing in 2023 a series of actions oriented to the improvement of quality in postgraduate studies through cooperation among its members. The MEANING project has left a capacity building in the universities, for example, the know-how of the project's technical and administrative management, the experience in the curriculum definition under international standards, the articulation between industry and academia, the faculty qualification in the specialization areas of the master's programs and other tangible resources like technological laboratories for Robotics, Computer Science and Telecommunications.

Training for the teams in the HEIs of El Salvador and Guatemala was obtained. The training addressed the design of learning outcomes and competency-based learning. This strengthened the methodology for the development of programs for their faculties towards stronger quality levels.

The intercultural challenges were overcome, and both experience and learning were meaningful. The added value of the chosen European universities for each field was excellent and the good practices will be applied to future academic programs. Therefore, the results from MEANING are perceived as a tool to change culture in terms of the academic offer of the local HEIs.

The MEANING Network was structured with USAC, URL, UES, and UTEC as members, via a multilateral agreement. A webpage was created to continue with dissemination of the program. This will allow us to carry on with the joint efforts that give sustainability to the master's, to search for new alliances and strengthen the existing ones, to have faculty exchange, and to look for scholarship programs for STEM majors in Central America. In general, the MEANING project at the universities of El Salvador and Guatemala has had an impact on the capacities being developed. These include a specialized faculty training, an innovative curriculum design articulated with the business sector, a national connection, and a strengthened international connection.

As a conclusion, the consortium learned that the development of an organization, association, or institutionalized partnership, in any of its ways, and the case of this project as a consortium, is very important to ensure the sustainability of the project. The consortium also means that the specific changes will include a collective transformation or even a systematic one, which has benefitted two countries through the international cooperation of the European Union.

The European Commission, on its part, considered the results of the MEANING project and its impact as good practice.[21]

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[21] https://bit.ly/3UTYzFP

4.9. The HONDURAN BIOTECH project

The cornerstone of this training case is the creation of the Biotechnology Laboratory at the National Autonomous University of Honduras (UNAH), through donations of equipment and materials from University College Cork (UCC). From there, UCC itself carried out the training of the UNAH staff in charge of the Lab, where UCC and UNAH were partners, funded by the Erasmus+ Programme, specifically by the International Credit Mobility (E+ICM) action (included in Key Action 1).

The training activities took place in Cork, Ireland and Tegucigalpa, Honduras, between 2015 and 2019. The academic mobility aimed at fostering bio-innovation in UNAH, providing UNAH staff and students with training on synthetic biology research approaches, current technologies, and methods. For European researchers, it aimed at providing them with global context and first-hand experience of issues that could be solved with synthetic biology. Coupling experience and knowledge with problem identification is key for driving innovation. This experience was aimed to translate into innovation, global citizenship, and internationalisation for both institutions, as well as the development and delivery of a replicable capacity-building course.

In this case study, the authors have summarised the most relevant elements of the process of setting up the laboratory and training through academic mobility. This project is an example of good practice in the field of development cooperation between Europe and Central America.

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1. Background

UCC's global engagement prioritises cooperation with Latin America and the Caribbean (LAC) Region and focuses on working together towards the United Nations Sustainable Development Goals (SDGs), building on, and contributing to UCC's global potential in sustainability. UCC aims to support bi-regional (EU–LAC) cooperation and build key partnerships for academic and research and societal engagement for global citizenship and internationalisation at home. UCC strategy seeks to positively contribute to economic, social, and environmental challenges in the region.

The E+ICM for capacity building in biotechnology in Honduras is a good example of this mission in action. Modern biotechnology and synthetic biology have the potential to address a wide range of world challenges. One could make the case that developing nations have the most to gain from this potential, considering the multitude and gravity of issues faced at local level. Ireland, as a frontrunner in biotech-

nology, can offer capacity building in this field to international partners. UCC is an active member of the Synthetic Biology (SynBio) community, through its SynBio Centre, SynBio Hub and its host, IndieBio (the world's first SynBio business accelerator programme). Furthermore, strong links have developed between UNAH and UCC in recent years through previous EU-funded programmes, including an Erasmus Mundus focused on Academic Mobility for Inclusive Development of Latin America (AMIDILA). UNAH received a donation of more than €200,000 worth of lab equipment from UCC labs and a 2016 UCC team worked with UNAH scientists for their research project on an international SynBio competition called iGEM.

Contemporary biotechnology and synthetic biology, often referred to as SynBio, can decrease technical obstacles by introducing affordable enabling technologies and lowering the skill level required to increase the accessibility and affordability of biological engineering (Flores and Tangney, 2020). Furthermore, SynBio tools prove to be well-suited for educating individuals with limited technical skills, as demonstrated by their application in schools and exemplified by the noteworthy efforts showcased in projects like iGEM (Flores and Tangney, 2017). These features enable hands-on education in molecular biology that is well-suited for resource-constrained environments, including low-income countries. In such settings, the potential of SynBio could provide solutions to a broad spectrum of problems rooted in biology, fostering innovation, and contributing to economic growth. It could be argued that these countries stand to benefit most from the potential offered by SynBio since their populations' wellbeing is very linked to the quality of their natural environment. For example, lower-income nations often depend more heavily on their natural resources compared to industrialised nations. Additionally, innovations emerging from this field could present fresh opportunities for their economies and contribute to climate action, paving the way for a more sustainable future.

Making SynBio globally accessible is also key for achieving our UNSDGs for global health (Douglas and Stemerding, 2013), as well as a sustainable future. Despite this potential and the advantages that facilitate its adoption, SynBio is still confined to middle-and high-income countries (Hollis, 2013, and Koelmel et al., 2016). This can be partially attributed to the absence of infrastructure and a basic level of relevant education in practical molecular biology experimentation, encompassing concepts, workflows, designs, and techniques necessary to engage in SynBio activities or comprehend its potential (Flores and Tangney, 2017). As suggested for other research fields (Harris, E., 1996), we hypothesised that providing a minimum infrastructure, relevant education, and capacity building in basic skills to potential practitioners and key stakeholders could facilitate the adoption of SynBio in Honduras, which, in turn, could enable them to ultimately harness its potential benefits.

Honduras is one of the most impoverished and perilous nations in Latin America. It is the most heavily burdened by the impacts of climate change, which has prompted a significant recent exodus of its population (GEOGLAM, 2019). Thousands of its residents are undertaking treacherous journeys northward in pursuit of better opportunities, seeking refuge from violence, and escaping social instability within the country (Meyer, 2019). Like many other low-income nations, the field of molecular biology research in Honduras is still in its early stages, primarily focusing on essential disease monitoring (Harris, 2004). Despite its limited scope, this research activity has played a vital role in establishing laboratories and disseminating fundamental techniques, acting as a foundation upon which to introduce and develop new research areas.

Considering the potential offered by SynBio and the current circumstances in Honduras, the UCC team, composed of internationalisation officers and SynBio researchers from UCC Ireland, envisaged the implementation of SynBio in Honduras. This collaborative effort involves our partners at UNAH, the nation's sole public and research-oriented university. To achieve this, we first helped to strengthen

their infrastructure capacity by supplying relevant laboratory equipment and research consumables enabling the continuation of research for a period of 1-2 years. Subsequently, we developed and implemented a training program that featured bi-directional mobility of researchers and technicians from UNAH —the Receiving University (RU), to the research laboratories at UCC— the Teaching University (TU), spanning a two-year timeframe. Additionally, we proposed a SynBio-focussed teaching programme as an ideal practical training platform for molecular biology, biochemistry, microbiology, genetics, and biotechnology.

This chapter aims to share our experience with this capacity-building project resulting from the creation of the biotechnology laboratory, where we share learnings on the realities of biotech practical education in Honduras and Central America, faced with challenging scenarios. We discovered that many of our original expectations, based on our European research and lab experiences, were erroneous, and that to achieve a strategy suitable for the implementation of biotech 'in-the-field', the involvement of locals was paramount at the earliest design stages. In addition, we share the experiences that shaped our approach for designing and testing a sustainable lab training strategy and outline factors that should be considered when pursuing similar projects in other low-income 'developing' or challenging local contexts.

2. Main achievements of the project

The main achievements of this project focused on cooperation activities for capacity building in biotechnology education for development between Ireland and Honduras were i) building global citizenship and enriching internationalisation at home activities into research practices in synthetic biology in both Honduras and Ireland; ii) providing UCC researchers first-hand experience of novel research problems in-situ in Honduras, current limitations and probable solutions that can accelerate research in developing countries globally; iii) launching a functional Biotechnology Laboratory at UNAH, equipping staff with the necessary resources to explore and harness research potential within this field; iv) capacity building through training sessions for both UNAH staff and students, focusing on advanced synthetic biology laboratory techniques and innovative research approaches. Enhancing the skill set of individuals and strengthening the institution's research capabilities; and v) encouraging international and local research or entrepreneurship partnerships for climate action and a more sustainable future.

The development of skills was evident, as highlighted by some of the participants, such as Jafeth Gutierrez, biology student at UNAH Honduras, who said: "My internship in Ireland was an extraordinary experience. Although I was initially afraid of being away from home in an unfamiliar place, facing new challenges allowed me to learn, grow personally and academically". Or Yolani Padilla, lab technician at UNAH Honduras, who pointed out: "It was my first time travelling abroad and one of the best life experiences yet, personally, and professionally, adapting to new country, climate, and culture. I strengthened my research skills and learned new techniques. On return to Honduras, replicating this learning with others to spark innovate research in Honduras has been very gratifying". Or Ciaran Devoy, research assistant at CancerResearch@UCC, Ireland, who said:

> The trip to Honduras was eye-opening for all of us not from there. I had travelled a fair bit in less developed countries but had never seen so many guns out in the open in all my life. Honduras is occupied by the United States, with several US military bases established in the country. The U.S. sanctioned government at the time was utterly corrupt, so much so

that the local populace was constantly rioting, but only on the college campus because, for some strange reason, that was the only place the army would not set foot. They would, however, fire tear gas canisters into the university, which I experienced on the third day of our trip. Whilst giving a practical to the local students, several attack helicopters flew over the lab we were in, depositing army personnel to the edge of the campus who proceeded to fire tear gas at anyone within range. Delivering the course was enjoyable mainly because the students were so enthusiastic about learning. It was an intense course, and we probably tried to cover too much, as it was the first time, 8 am to 8 or 9 pm every day for five days. The development of skills was evident, as highlighted by some of the project participants: it was a great experience really hard work, but worth it.

3. Outputs, outcomes and impact

The training activities took place in Cork, Ireland and Tegucigalpa, Honduras, between 2015 and 2019 (see Figure 4.9.1). The academic mobility aimed at fostering bio-innovation in UNAH, providing UNAH staff and students with training on synthetic biology research approaches, current technologies, and methods. For European researchers, it aimed at providing them with global context and first-hand experience of issues that could be solved with synthetic biology. Coupling experience and knowledge with problem identification is key for driving innovation. This experience was aimed to translate into
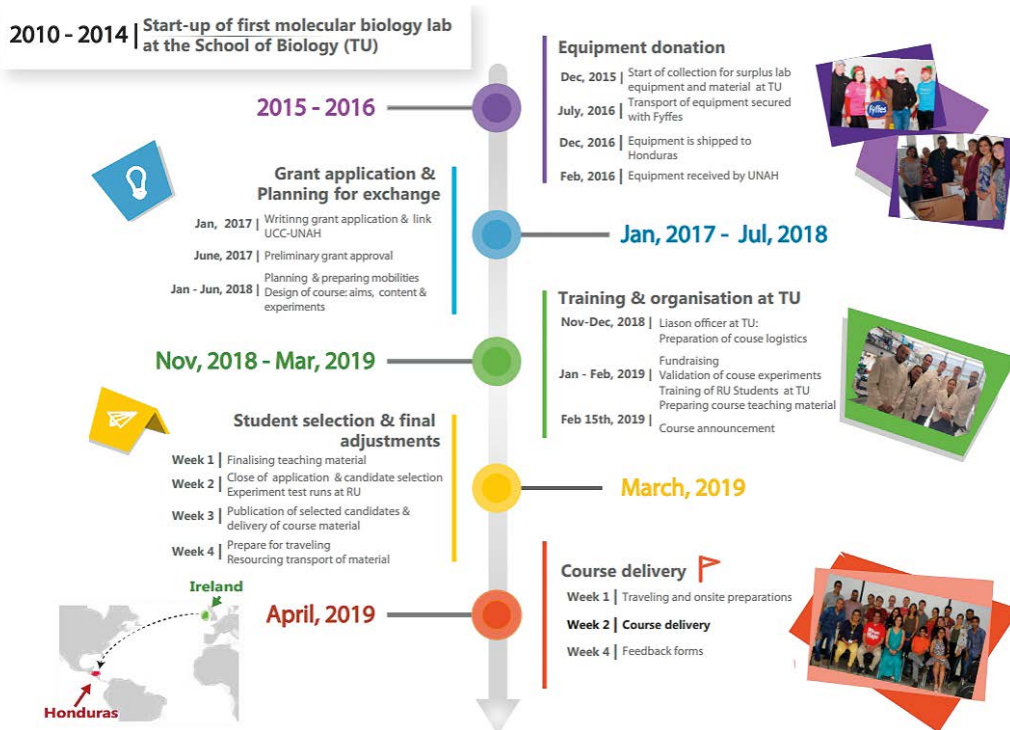

Figure 4.9.1. Timeline
Source: Own elaboration, firstly published in Flores and Tangney, 2020.

innovation, global citizenship, and internationalisation for both institutions, as well as a development and delivery of a replicable capacity-building course.

Prior to this project, a first initial molecular biology lab was set up in the UNAH School of Biology. A UCC team member and co-author, Yensi, who is Honduran and a graduate of UNAH, co-founded this lab with her undergraduate theses' supervisors, Iris Massiel Rodriguez, MSc (School of Biology, UNAH) and Jorge Carrasco, PhD (School of Microbiology, UNAH). Together, they secured the lab start-up funding and drove the set-up activities of a research-based lab, capable of performing basic molecular biology assays. This existing infrastructure and space provided us with a solid foundation to expand and enhance its capabilities to a practical synthetic biology research and teaching lab.

We initially sourced surplus molecular biology lab equipment (centrifuges, gel racks, incubators, fluorometer), material (pipettes, volumetric instruments, racks) and consumables (petri dishes, flasks, tubes) from the TU labs over the course of one year. We realised that the costs of transport of 3 pallets (with the equipment) from Ireland to Honduras were financially prohibitive, so we sought a creative no-cost solution by seeking support from Fyffes plc, an Irish company that ships tropical fruit products from Central America to Ireland, with empty ships returning. Fyffes kindly donated the transport and took on the logistics required to deliver the equipment to the UNAH Tegucigalpa campus. The logistics proved complicated and lengthy in the reality of the politically delicate state Honduras and took over a year to travel from UCC to UNAH through Costa Rica.

The project was developed in various phases: Providing foundational infrastructure; Phase 1 (P1) resource sourcing and planning; Phase 2 (P2) UNAH (RU) researcher training at UCC (TU); and Phase 3 (P3) design and delivery of a 60-hour course in Tegucigalpa campus UNAH (RU).

This capacity-building project began with a collection of surplus equipment from labs at UCC for a recently started UNAH molecular biology lab. After this, (P1) a grant for building the UNAH lab's human capital was submitted by the UCC team, involving (P2) an exchange programme that included (P3) a short practical course. This course was designed and tested at the TU over a period of 6 months, involving design input from, and training of, RU researchers (2 staff and 2 undergraduates). This platform permitted the creation of course content appropriate to the target audience and RU settings. The project concluded with a week-long (60 h), fit for purpose course that successfully engaged 16 participants.

Phase 1 – Resourcing a human capacity-building project

Despite the physical lab facilities being delivered to UNAH, researchers at the RU did not pursue any activity using the equipment. We learned that the mere presence of enabling equipment was insufficient to foster new research in this lab. Simple considerations, such as the electrical plug adapters needed from Ireland to Honduras, were missing, and the presence of new and unfamiliar equipment was daunting for local UNAH staff, who were reluctant to take on installation without the expertise.

Hence, we realised that appropriate education on key concepts on experimental design and workflow was needed. To supply this, we sought to train researchers at UNAH in the fundamentals of SynBio. With this idea, we applied for an EU Erasmus Plus International Credit Mobility (E+ICM) grant and were successfully awarded €22,000.

Initially, we planned to use this mobility funding to start and mentor an iGEM team at UNAH in Honduras, given UCC's successful experience with iGEM in recent years. However, following consultation with colleagues at UNAH, we realised that groundwork was needed before this could happen. In addition, we had planned to train UNAH teachers & postgraduate student researchers in UCC labs. However, in

the process, we learned that the initially proposed training would not be translatable to the reality of UNAH, as postgraduate student researchers in this area did not exist, but final year undergraduates who were eager to pursue opportunities. Also, the training of a few UNAH teaching, and research staff alone would not achieve the critical mass needed to share knowledge acquired, due to language barriers, UNAH researcher turnover, and budgetary constraints. Furthermore, during this period, Honduras underwent a political crisis that drove the closure of UNAH for months, hindering the progress of this project for 8 months.

Following these understandings and foreseeing further political crises due to the country's socio-political instability, we aimed to design a strategy where the UCC team would provide seed teaching & learning in UNAH, in a manner that would become replicable and sustainable locally. The resulting designed scheme involved short-duration two-way researcher mobilities with a final aim of delivering a short and intensive hands-on course that would train 16 students initially and would fit the criteria we defined together. After discussion we decided together to widen access to teaching staff from regional and rural centres and to Honduran government officials working in relevant biodiversity and health departments.

The design and execution of the project was performed in parallel. Significant interaction between the teams at UCC and UNAH was required to achieve this. The early definition of the roles for each institution and the creation of organisational actors was vital for organisation, planning and facilitating the flow of collaboration between both institutions.

Phase 2 - Training of UNAH personnel at UCC labs

UNAH staff researchers were selected by the designated UNAH project manager and UNAH undergraduate student researchers were selected following an application procedure involving applying with a motivation letter and then an interview. This ensured a minimum knowledge of English and basic lab techniques. Training for each group was provided and each participant was offered a relevant role in the design and testing of the training course. The incorporation of these researchers as active developers of the project enhanced their engagement. Their involvement was key for troubleshooting unexpected obstacles and tailoring the course content, materials and experiments to settings and situations often overseen by UCC researchers. In addition, UNAH researchers prepared all the biological material and validated the experiments to be performed at UNAH before the start of the course.

Phase 3 – Design and delivery of a course in Tegucigalpa campus UNAH

A synthetic biology course was delivered to 16 participants, who included UNAH students, lecturers, researchers and officials from the Honduran health and biodiversity government offices. The participants received a week-long (5 days) of 10–11 scheduled hours. The course was taught around four major topics through intensive hands-on experience in lab techniques, bioinformatics, and lectures on the principles of each topic, including creativity thinking, scientific project design and planning, and innovation, as outlined in Figure 4.9.2. Each topic was assigned to a UCC researcher, who prepared the teaching material and was responsible for designing and validating the experiments, training UNAH researchers on the topic and experiments, listing all materials and reagents required and delivering the course topic (concept, lab techniques and experiments). Students were also trained in ethical considerations and responsible research approaches.

The course was designed around four critical SynBio subjects: 1) DNA parts, 2) DNA assemblies, 3) Protein design and expression, and 4) Interpretation & analysis of results. The approach for the course was: 1) Review key concepts of the subjects, 2) Introduce bioinformatic tools in a practical approach,
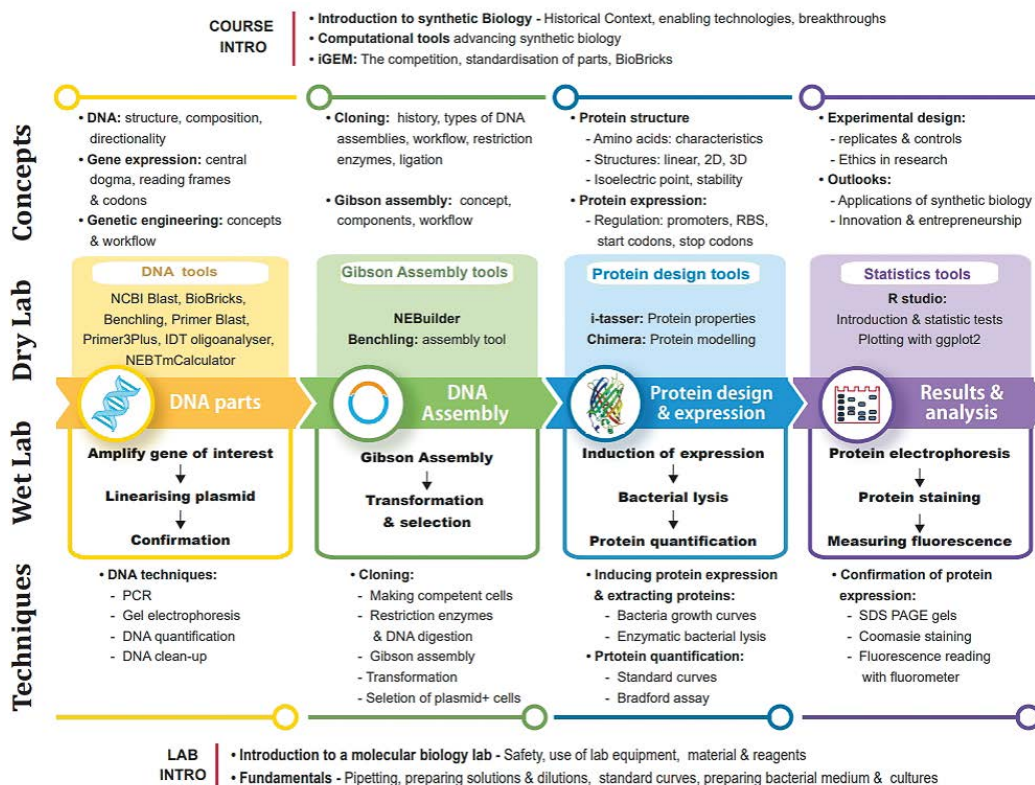
Figure 4.9.2. Course outline
Source: Own elaboration, firstly published in Flores and Tangney, 2020.

3) Introduce lab techniques – principles, procedures, and critical elements, 4) Perform experiments in the lab. All contents were covered in five intensive days.

The student group composition was key to the current and future success of the course. Candidates were selected via an application form. The course was delivered on UNAH main campus in the country's capital city of Tegucigalpa, but the 16 participants included 4 teaching staff from UNAH regional centres in other parts of the country, 4 UNAH health science researchers, 2 Honduran government officials and 6 undergraduate students with a solid SynBio research proposal.

Participants were divided into 4 groups. For each group, a student more experienced in lab techniques was assigned as a group leader and the student with the best English proficiency was the language support for the group. An instructor (member of the UCC teaching team) was assigned to each group. UNAH researchers who had previously received training at UCC served as lab support or substitutes for lab instructors and oversaw experimental setup, providing each group with the material needed and demonstrating basic lab techniques, as it can be seen in Figure 4.10.3.

The aim of qualifying students as future teachers so they could replicate the learning was central to the design of this strategy. We focused on empowering their conceptualisation, creativity, and independent thinking. The overall group dynamic supported this by including informal peer-to-peer interactions

that increased the confidence of students. We reinforced this by encouraging their active participation in experimental design, troubleshooting, and adapting protocols to UNAH settings. This proved to be essential for the success of experiments. On several occasions, without their input, experiments could not have proceeded. The team made a point of participating in recreational activities organised by students after lab hours, which was also key for developing their trust (see Figure 4.9.3).
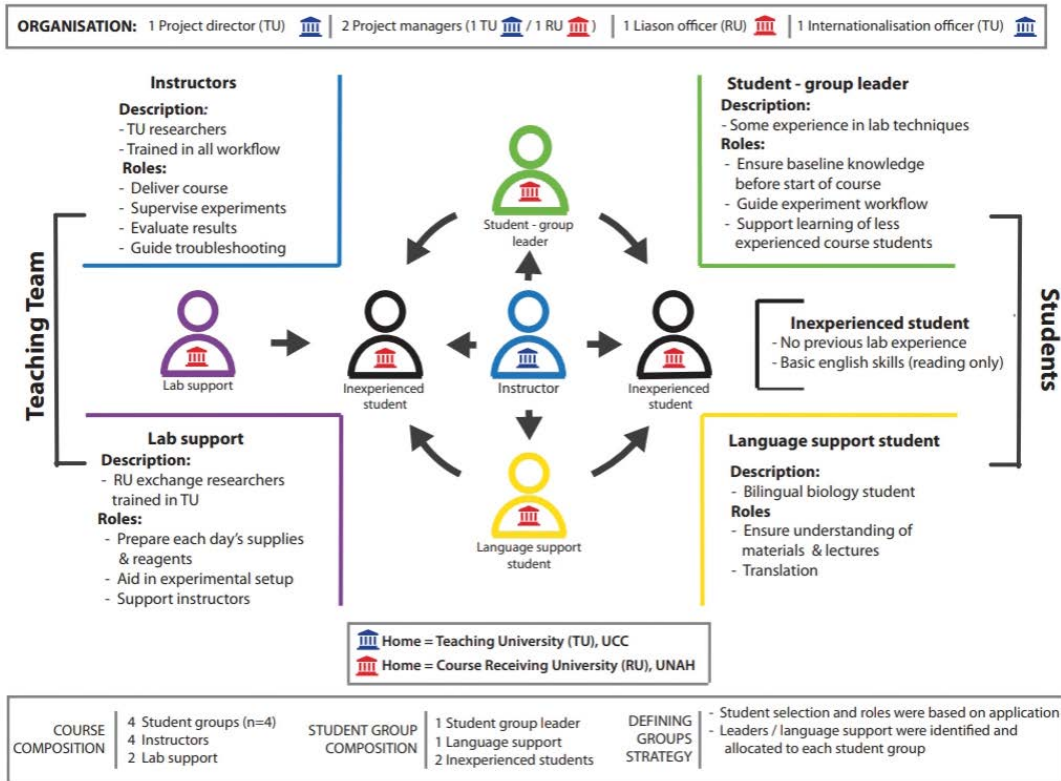
Figure 4.9.3. Group dynamics

Source: Own elaboration, firstly published in Flores and Tangney, 2020.

Sixteen students were divided into 4 groups (n=4). The grouping system aimed at having in each group: (1) a student who served as language support for their team; (2) a student appointed as a student leader; (3) 2 students with no previous lab experience and not proficient in English. An instructor (member of the UCC teaching team) was assigned to each group. UNAH researchers who received training at UCC served as lab support. Beyond teaching, the success of this project was also determined by supportive roles such as project director, project manager and liaison officer. These roles were essential for reaching milestones and maintaining the timeline, as they allowed for regular communication and troubleshooting.

4. Success factors

Twenty participants, including UNAH staff, students, and local Honduran government agency officials from a variety of relevant disciplines and locations throughout the country, have been introduced to SynBio research and successfully received 60 hours of training accredited by UNAH's School of Biology. These participants are now leading innovative SynBio projects aimed at fostering research, innovation and/or protecting biodiversity.

A sustainable training programme was designed and developed as a train the trainers' replicable course to pass on the skills acquired, where confidence instilled in students encourages them to become teachers, and the course material prepared for them can be reutilised as many times as needed. The course's success is perhaps best measured by the interest and engagement of participants, who then planned to deliver this course annually from March 2020.

In terms of curricula enrichment, reagents and material sourced for the course activities will also provide participants with the same for the delivery of future planned courses. Furthermore, the course dynamics enabled the participants in the group that are UNAH teachers (25%) to request all blueprint material, such as class exercises, to incorporate elements of the course into the teaching curricula of the modules taught by them. The teachers trained at UNAH usually have up to 200 undergraduate students from different careers, per semester. These students will now also learn about the principles and tools of SynBio.

Capacity building carried out for UNAH includes infrastructure, trained human resources, biological material and the creation of reagents, means that Honduras now has an operational SynBio lab.

Key success factors include unlocking the potential of the UNAH's infrastructural capital and the creation of human and working capital. In relation to the latter, the course has enabled participants to realise research ideas that they themselves proposed during the application process and then refined during the course. Unexpectedly, the UNAH research students who trained at UCC as part of this project have since been appointed as managers of the staff laboratory, where they are disseminating knowledge to incoming students and researchers and enriching current research projects by incorporating their acquired knowledge.

Stakeholder engagement of local Honduran biotechnology regulatory agencies and government healthcare officials was also a key success of the course, where the application of knowledge provided can impact how this technology is introduced to Honduras. Government officials who participated gained a better understanding of this research field, which will help them to draft ethical guidelines and regulate innovation in this field.

An Irish based research team, Global Citizenship and Internationalization at Home, gained first hand insights to realities in a developing country with many obstacles and had the opportunity to apply their skills to new and more challenging scenarios. Honduran based researchers and technicians had the opportunity to travel and receive training in and from a leading European biotechnology lab and team. Internationalisation at home was experienced in both UCC and UNAH through hosting and working with colleagues from Ireland and Honduras in each other's cities and campuses. Press coverage of the project in both countries also provided internationalisation at home for the wider communities both institutions serve and hopefully will inspire further cooperation between European and Central American partners in various interdisciplinary areas to address climate action and the future sustainability of our shared planet.

5. Lessons learned

Regarding the recognition of obstacles, as academics of European research intensive institutions, we tend to overlook or take for granted the capital required for pursuing research. Everything is in place for research to function in European countries, and this project deepened our realisation of this reality. It was only when faced by obstacles that range from absurd to amusing that we learned to appreciate the problems endured by researchers in low-income countries, who, despite all the obstacles they encounter, are resilient and enthusiastic to pursue research.

Experts in the field have recommended capacity-building activities such as the project described here (university education, equipment donation, and training) to bring SynBio's impact to developed countries. The first-hand experience and exposure to new realities, obstacles, and challenges that biological research and biodiversity face in Central America, is invaluable to enrich staff and students in European institutions, both professionally and in their global awareness.

Among the obstacles we encountered that we suggest requiring reflection to help others pursuing similar activities in Central American countries like Honduras include political scenarios and lab supplies. Political up-rest can directly affect plans as UNAH suffered from strikes and tear-gas riots during our project. Plans were delayed and our course took place despite unrest on campus. Availability and prices of lab supplies are unreliable and when available, can cost three times higher than those offered in European countries, translating to even higher costs in terms of available funds to create and deliver a training programme where students become teachers, we must consider the realities that shape students' prior education.

Absence of PhD programmes in science offered in Honduras is another reality to consider. Only recently, two Masters of Science (MSc) degree programmes were introduced. Unsurprisingly, most academics only hold MSc degrees, and as a result, have limited laboratory expertise. Curricula at undergraduate level does not include lab training, and therefore the comprehension of even basic concepts we take for granted, such as standard curves, can be unfamiliar concepts. Academic science degree programmes are often based only on theoretical learning where students memorise concepts and rarely have the opportunity to put them into practice. Pursuing research activity is poorly incentivised for academics and often not considered as an academic activity. There is no national budget for research. In contrast, Ireland, a European country with a population size half that of Honduras, graduates hundreds of biology PhDs per annum.

Considering flexibility and creativity, as these realities came to light, they continuously shaped the design and execution of the project. Despite planning and preparing, not all obstacles were predicted. The successful completion of the lab workflow was a result of a co-curated approach, involving students and teachers. Solutions or alternatives for obstacles presented along the way were incorporated in experiments. Contributions by local staff and students to the course design were essential for tailoring final protocols that worked in-situ. For instance, the lack of shaking incubators at UNAH was solved by realising that a heating system is not required, as average temperatures are 30°C or above, together with students designing and implementing a rotating schedule for manually shaking bacterial cultures.

Since the course, the local engineering school has built simple but effective low-cost shakers, following design input from course graduates. Other simple steps, often taken for granted by EU team members, such as lab equipment needed for measuring bacterial growth, were overlooked in preparing the course (no spectrometer was available at UNAH). Here students from the UNAH Microbiology School offered a

solution of using a creative alternative such as visual turbidity standards that are readily available at UNAH. Similar experiences also enriched our own creativity at UCC going forward, and some scientific solutions for enabling lab work in low-income countries are now being investigated by our group.

6. Sustainability

Overall, we were able to produce a course tailored for low-income countries that was validated by end-users 'in the field'. The approach is designed to transform students into teachers, making a self-perpetuating course, where knowledge transfer is in the hands of locals. This is translatable to other education centres in the region, where we expect it to benefit many more students and researchers. The course curriculum, timetables, participant breakdown tables and other details can be made available to assist in future deliveries of this course or the creation of similar initiatives.

The laboratory equipment donated is now up and running and serves new generations of both UNAH and wider community in Honduras to use biotechnology for projects addresses climate change and sustainability. Honduran research students that received training are now employed as staff lab managers, where they are disseminating knowledge to incoming students and researchers and enriching current research projects by incorporating their acquired skillset.

In addition, we strived to sparking new generations' curiosity and inspiring them to answer their own research questions, promoting the start of research activities in the field. Delivering a 'traditional' teaching course would not have been of value, only teaching locals how to teach/develop such a course will yield rewards.

7. Conclusions

Biotechnology education for research provides invaluable skills and potential for development in Honduras and the greater LAC region, to address innovative projects to improve food security, blue economy, reforestation, and climate action, among others. Building global citizenship through internationalisation at home activities is key to successful international cooperation. The E+ICM project fosters bi-regional (EU – LAC) cooperation and is an ideal seed fund to build key partnerships for academic and research cooperation and societal engagement to work towards the UN SDGs and a more equitable and sustainable future for all.

The Irish team gained unique training experience both at home in the UCC lab and by delivering an intensive 5-day course in a new country and environment and through another language. The Honduran team gained first-hand experience and skills in a leading European biotechnology scenario, and successfully applied these skills on their return, with one participant, Yolani, gaining employment in the new functional lab as a result. The 20 beneficiaries of the intensive on-site course in UNAH have gained unique skills and are now replicating them in UNAH.

We hope this initiative and our experience during this project leads the way for many projects alike. We also hope to inspire more cooperation between Central American and European partners to work together towards a more sustainable and just future.

ACKNOWLEDGEMENTS

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4.10. The IMPALA project

The present case study is focused on the IMPALA project, an acronym which stands for "Strengthening Impact of Latin American universities". The project was funded by the Erasmus+ KA2 (Cooperation for innovation and the exchange of good practices – Capacity building in the field of higher education) for an action with multiple beneficiaries. The program was carried out between 15/11/2018 and 14/11/2020. The Project Grant Agreement was signed on November 15, 2018. Due to the COVID-19 pandemic, a modification to the program's duration and end date was approved and the program's duration was extended to 48 months, until November 14, 2022. The local partners were: 6 Colombian universities or institutions (Asociación Colombiana de Facultades de Administración (ASCOLFA)), University of Antioquía (UdeA), Universidad Católica de Colombia (UCatolica), University ofl Valle (UniValle), University of la Sabana (Unisabana) and Pontificia Universidad Javeriana (PUJ)); 5 Cuban universities or institutions (Ministerio de Educación Superior de Cuba (MES), Universidad Agraria de la Habana "Fructuoso Rodríguez Pérez" (UNAH), Universidad Central "Marta Abreu" de Las Villas (UCLV), University of Camagüey "Ignacio Agramonte Loynaz" (UC), and University of Holguín "Oscar Lucero Moya" (UH)); and finally 2 Panamanians Universities (Universidad Especializada de las Américas (UDELAS) and University of Panamá (UP)).   The coordinator of the project was the European Foundation Management Development (EFMD AISBL) from Belgium, and the consortium included also five more EU partners: Universidade Nova de Lisboa (UNL) and Universidad do Porto (UP) from Portugal, Universitat Politècnica de Valencia (UPV) and Universitat Ramon Lllull (URL) from Spain, and finally Università Cattolioca del Sacro Cuore (UCSC) from Italy.

In the following points, the author has summarized the most relevant elements that have justified that the IMPALA project could have been considered by the European Commission (Erasmus+ Programme) as a good practice in the field of assessment of universities' impact on society and how it contributed to improve the quality and increase the relevance of higher education sector.

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1. Background

Historically, universities have primarily concentrated on their traditional roles of knowledge creation through research and knowledge dissemination through teaching. The UNESCO World Declaration on Higher Education (HE) for the XXI century (1998) introduced a third dimension, emphasizing the importance of universities providing services to the community for the relevance of HE. However, establishing this third pillar poses a challenge for universities, as it requires the involvement of diverse stakeholders and resources, and many struggle to meet the needs of their surroundings. This difficulty in fully integrating

with regional development has been noted by M. Geoghehan-Quinn and J. Hahn, EU Commissioner for Research, Innovation & Science, and Regional Policies, respectively.

The 2017 Communication from the Commission on a renewed EU agenda for HE highlights the necessity for enhanced collaboration between higher education, research, and business, the breakdown of barriers between higher education and society, and the integration of local, regional, and societal issues into curricula. To achieve this, Higher Education Institutions (HEIs) must comprehend and apply the concept of impact, encompassing not only the number of graduates but also the tangible and intangible benefits a university brings to its local environment.

In Europe, HEIs have developed methodologies to understand and assess impact as a crucial component of quality. However, in Cuba, Colombia, and Panama, the situation is less advanced. A needs analysis conducted in these countries emphasizes the potential of considering the impact to addressing national problems:

- In Colombia, a 2016 survey by the Asociación Colombiana de Universidades (ASCUN) estimated that 10% of society already benefits from university-led initiatives to improve quality of life. HEIs are seen as instrumental in the peace-building process and addressing regional needs.

- In Cuba, updating the socio-economic model and developing the non-state economy is a priority, with the Ministry of Higher Education (MES) emphasizing the strengthening of links between academia, industry, and entrepreneurship.

- In Panama, improving overall HEI quality, increasing the relevance and inclusivity of education, and reaching indigenous populations in remote areas are top priorities.

In all three countries, HEIs play a crucial role in addressing these challenges by expanding their services to the community. The project aims to support them by providing methodologies and tools for impact recognition and improvement, incorporating impact into quality assurance frameworks, and fostering a change in working culture.

The project consortium proposes customizing impact assessment methodologies to each national context, drawing on European expertise, and integrating them into the broader framework of quality assurance in HEIs. The approach involves a learning-by-doing strategy at all levels, guiding regulatory bodies, assisting top management in measuring and enhancing institutional impact, and training faculty and specialized staff. By raising awareness, encouraging the adoption of methodologies, and showcasing the benefits of considering impact at all stages of HEI activities, the project aims to help LATAM universities become "engaged universities," strategically positioned to deliver social contributions and evolve into influential organizations within their broader ecosystems.

The concept of developing a Quality Assurance (QA) system with a focus on impact stems from insights gained through two EU-funded capacity-building projects in the LATAM area, namely FORGEC[1] and FORINT[2]. These projects involved on-site quality assessments and international reviews of university

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[1] The FORGEC program (Strengthening Managerial Capabilities in Cuban entities) was a 42-month program that was funded by a grant from the European Commission, through the 2009 Annual Action Programme for Non-State Actors and Local Authorities in Development. The program was approved in 2013 and carried out between 2014 and 2016.

[2] The FORINT program (Strengthening Internationalisation between European and Latin American Universities) was a 36-month program that was funded by a grant from the European Commission, through the Erasmus+ KA2 (Cooperation for innovation ant the exchange of good practices – Capacity building in the field of Higher Education). The program was approved in 2016 and carried out between 2016 and 2019.

strategies, revealing a need to prioritize regionalization and establish strong connections with the local environment. The identified priorities underscored the necessity for guidelines and application support. Building on this, Colombian institutions, closely aligned with the needs of Cuba and Panama, joined the initiative, providing a valuable regional perspective. Over one year, a comprehensive analysis was undertaken involving the ministries and HEIs of the three countries. This analysis utilized project meetings and online communication to assess needs, consider national contexts, ensure institutional engagement, and formulate tailored solutions. The concept and choice of partners were further refined through consultations with EU delegations. The project involves a collaboration of partners, consisting of six from the EU and thirteen from LATAM, selected based on their complementarity, expertise, and interest in the project. Importantly, these partners have a history of cooperation, whether in academic, research, or project-related capacities, both within the EU and LATAM or spanning across this region.

The consortium, comprised of 19 partners, exhibits diversity and balance with representation from 5 HEIs in Colombia, 4 in Cuba, 2 in Panama, 1 ministry, 1 regulatory body, 1 global network, and 5 EU HEIs. This assembly brings together a mix of generalist and technical universities, business schools and private and state institutions, with both regional and national scopes. The composition of the consortium is designed to reflect the sizes of LATAM countries and includes some of the top EU donor members dedicated to educational improvement in the region, such as Spain, Belgium, Portugal, and Italy. LATAM HEI partners were recognized as among the best in their region, maintaining close links among themselves and with EU partners through various EU projects or partnerships. While Colombian universities are new to the group, they already have partnerships in Cuba and Panama and collaborate with EU partners. The involvement of ministries and regulatory bodies of HE ensures unrestricted cooperation with the universities. European members are HEIs with a long-term history of cooperation in LATAM.

Benefits and contributions to the project were clearly outlined from the outset. Ministries and regulatory bodies received support to update their QA systems to consider the social and economic role of universities. LATAM HEIs, each with distinct priorities, share common needs and expectations, such as action-oriented guidelines, supportive top management, and engaged faculty and managers involved in impactful projects with local environments. EU HEIs contributed by sharing their expertise and increasing their presence in the three countries.

The main objective of the IMPALA program was to elevate the quality of universities by crafting and implementing a quality framework, tools, and methodology centred on impact assessment. This framework complements the existing quality assurance systems, which were traditionally focused on the quality of teaching and research. Additionally, the program aimed to equip HEIs with the capabilities to apply this quality framework to their specific circumstances, promoting a shift toward a culture driven by impact assessment. Ultimately, this transition enhanced the quality and relevance of the services offered by HEIs to their communities.

Under this overarching goal, the program seeks to develop and implement a quality framework, along with tools and methodology based on impact assessment, which complements the current quality assessment mechanisms, provides HEIs with the skills to apply this quality framework to their unique situations and enhance the quality and relevance of services offered to the community as an integral part of the university's mission. The project revolves several key pillars/phases that constitute its primary focus: establishing and validating a new evaluation tool known as the "Impact Assessment Framework (IAF)"; enabling the evaluation and improvement of all facets of university operations, with a specific emphasis on the services provided to the community, often referred to as the "third mission"; training of senior managers to measure impact and carry out institutional assessments and training for

faculties and specialized staff to develop high-impact activities and projects for the local community; and finally publishing a book titled *Best Practices in Impact Assessment in HEIs* and a case study book called *Creating Impact in HEIs*. The different work packages (WP) of the project include the activities that were followed to achieve the objective of the project. Each WP was co-led by LATAM partners as part of the learning process fostered ownership and ensured the international essence of the project. Partners worked in Spanish and were familiar with EU project norms. Project activities were distributed fairly among the three partner countries, and decision-making and conflict-resolution processes ensured equality among partners. They had a clear understanding of the concrete changes the project could bring to their respective situations, and customization and in-situ application stimulated the adoption of results. Due to the COVID-19 pandemic, the project activities were globally affected. Consequently, most program activities were reassessed and rescheduled.

In the first phase of the project, WP1 (preparation) followed a logical sequence: training (fundamentals of Impact QA, measurement tools) —complemented by a real-life observation— grants the participants a complete theoretical and practical understanding of Impact QA and its application. Once it was achieved, the Impact Assessment Framework was developed and customized to national contexts. Activity 1.1 trained participants representatives on HEI impact and its contribution to quality, while in Activity 1.2 the participants were introduced to the measurement tools for the concepts defined during the precedent training. "Activity 1.3. Site visit in Europe" provided a real-life illustration of impact assessment in European HEIs. After the training period, Activity 1.4 took place, as well as a workshop to develop the IAF and customization to the national contexts (Activity 1.5). A new activity was added to the project: "Activity 1.6. Meeting of the 'grupo motor'". This group was created ad-hoc to progress in the writing of the IAF.

In the second phase of the project, we found 3 different WP related to the development of the project: WP2 (focused on capacitating top managers and faculty), WP3 (focused on the impact assessment in the 11 LATAM HEIs) and WP4 (focused on the implementation, developing impactful activities and projects). WP2 included the following actions: Activity 2.1 focused on training the ministry/regulatory bodies and HEI top managers on the practical application of IAF, and Activity 2.2 trained the faculty members on the practical application of IAF at the university level. "Activity 2.3. Redaction on-line", by the faculty and specialist staff focused on the provisional guidelines for the application of the IAF in activities/project implementation. Activity 2.4 enabled all the partner institutions to replicate in his institutions the presentation of the IAF. WP3 activities were the realization of 11 institutional impact assessment reports for one year (Activity 3.1) under the supervision of EFMD and with support and guidance from the mentors (Activity 3.2). "Activity 3.3. A study tour in Europe" should allow participants to observe how impact is measured in UCSC and UPV and how it is integrated into the QA systems and strategic planning. Because of the COVID-19 pandemic, the study tour finally took place in Bogotá (2022) with the presence of all the mentors and the Unisabana and PUJ, where both universities showed how they were proceeding with the impact measure in their own institutions. Finally, through Activity 3.4 the participants presented and shared the assessments findings in their institutions and with the attendance of the ministry/regulatory body that maintained an overview of the process and later disseminated the results at the national level. WP4 was implemented in parallel with WP3, allowing crossing fertilization.

The activities/projects developed during this WP allowed the HEIs to put in practice the IAF and evaluate and increase the university's impact on local communities while sustaining their quality and relevance. Activity 4.1. involved selection of the pilot activities/projects to be implemented and measure their

impact. The implementation was supervised by the mentors (Activity 4.2) and followed the AIF. Activity 4.3 (mid-term project clinic and progress evaluation) allowed the participants to meet their mentors and supervised their work and through Activity 4.4 (site-visit and workshop) the participants were provided with examples of similar projects and were able to exchange similar experiences. The last activity of this WP was Activity 4.5, the final impact evaluation and reporting. With this activity the participants shared the learning process and best practices to the HEIs top managers and relevant staff. This transfer of knowledge allowed the top managers to reflect on the steps to be taken in their own institutions to improve the impact measurement of their third mission projects.

In the third phase, we found WP5 (exploitation). This WP organized the transfer of the project's results after its completion and provided the main target groups with tools and information to carry on with and expand their impact-related activities. It synthetizes, updates and puts into perspective the main outputs of the WP1 (IAF and customization), WP2 (projects/activities provisional guidelines), WP3 (HEI impact assessments) and WP4 (activities/projects in the HEIs). The concrete activities were defined in the definition of the exploitation plan (5.1) that built on the first concrete results of the dissemination strategy (WP7). Reference material was produced and published allowing other institutions to replicate the process: the final IAF description and 3 national supplements (5.2.), the guidelines "How to maximize the impact of activities/projects targeted at local communities" (5.3), the book *Best practices in impact assessment in HEIs (5.4) and finally the case studies book, Creating impact in HEIs.*

2. Main achievements of the project

The IMPALA project assisted in addressing the demands of Latin American HEIs, aligning their institutional strategy to justify the diversity of the third mission activities strengthening their contribution and relationship with teaching and research, and, more broadly, enhancing their impact and quality. Regulatory bodies in various countries recognized the third mission of the university (traditionally known as "University Extension" in LATAM) as an integral part of the institution's mission and contribution. Consequently, regulatory bodies also began incorporating third mission activities into accreditation procedures, encouraging universities to review and assess their outcomes in this field.

Through the project, significant challenges faced by universities were identified, including the lack of reliable and accurate data on third mission-related activities, the difficulty in capturing both the diversity and volatility of activities, and the need for in-depth analysis to guide the evolution of the third mission in institutions. This involves connecting it with teaching and research, avoiding redundancies, and ensuring the relevance, quality, and impact of activities.

To achieve the IAF, the basic tool for measuring impact in the IMPALA project, it was necessary to define first the meaning of third mission and its impact within the IMPALA project. Arriving at a consensus among all the HEIs in Latin America on how the term third mission was understood by them was challenging, primarily due to varying interpretations of university extension across the three Latin American countries in the consortium. For all HEIs in the project, the third mission was considered a cross-cutting and strategic dimension integral to the institutional mission, rather than an add-on to teaching or research. The third mission of universities encompasses a broad spectrum of activities, ranging from continuous education programs or service provision to cultural events. Terminology also varied across institutions (the term "university extension" is also used to refer to the third mission). The IMPALA project identified six different types of third mission activities related to three different axes: formative

(continuous education), social services (cultural initiatives, community actions and continuous education) and finally research (innovation management and advisory/consulting service).

Defining impact in relation to third mission activities was also challenging as the concept of impact has unquestionably been complicated. According to Scholz and Simister (2017), there is not a universally accepted definition of impact evaluation, as the concept varies in interpretation among individuals. Some prioritize assessing changes —outcomes or impact— rather than concentrating solely on activities and processes. The meaning of impact evaluation differs depending on how the impact is defined. OECD (2022, p. 16) defines impacts as "the extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects". According to Peersman et al. (2015), an impact evaluation provides information about the impacts produced by an intervention. Roche (2000), cited in Bartlett (2016), stresses that IE requires context-dependent judgements of what change is considered significant. In the IMPALA project, the impact of university third mission actions was understood, according to Hunter et al. (2022), as "a significant change in essential aspects of life, primarily for individuals and communities, but also for organizations and territories. Specific university programs and projects, extending beyond pure and applied teaching and research, intentionally contribute alongside other stakeholders, creating favourable conditions with a medium and long-term perspective. These conditions are capable of facilitating a sustained improvement in the situation" based on the conception of the third mission of HEIs developed by the Irish National Strategy for Higher Education 2030, which can be adapted to the Latin American context.

The main achievement of the project was to develop and provide the HEIs with an IAF that describes the methodology (definition and dimensions of impact) and establishes the tools (indicators, collection plan and analysis methods) to measure the impact of their activities regarding the third mission activities of their institutions. In the initial phase of the project, HEIs grappled with a fundamental challenge: the absence of a clear definition for activities falling under the umbrella of university extension. This lack of clarity prompted the adoption of the IAF, a tool that not only provided a solid foundation for categorizing a diverse range of activities but also proved its internal and external validity through successful application across all participating institutions.

A crucial aspect that emerged during the process was the need for a meticulous approach to selecting activities related to continuous education. Partners advocated for a stringent criterion, recommending a focus on non-degree courses to ensure that participants, could obtain alternative certificates. This strategic shift underscored the nuanced considerations required in aligning the evaluation process with the evolving landscape of educational offerings.

The data collection process served as a foundation for a comprehensive analysis within each Higher Education Institution (HEI). This analysis was conducted based on two critical criteria: the relevance of activities to the institution's mission and their evolution, whether at an institutional or individual level. The gathered information proved valuable for various components of institutions, including those directly involved in extension activities, communication and quality departments, as well as top-level management.

Following the meticulous data collection and subsequent analysis, the conclusions derived from this process laid the groundwork for the development of a strategic plan for university extension activities. Like any strategic planning decision, the objective of this document was to define goals for the future years, identify priorities, and allocate necessary resources. This strategic plan served as a roadmap, outlining the necessary steps, and their sequence, identifying responsible individuals, and establishing a system for monitoring and reporting.

The implementation of a pilot process across the 11 universities validated the structure of the IAF defined in the earlier stages of the project. This validation demonstrated the IAF's versatility, proving its applicability across national contexts. The proposed methodology also showcased its utility and suitability, featuring a straightforward structure divided into three logical and easily implementable steps.

This rigorous process proved instrumental for institutions at various levels: the formulated strategic plan has served to analyze, modify, or initiate third mission actions under a unified framework and parameters. This unified approach provided a clear vision of the societal impact of those actions, establishing a repository encompassing all university activities with comprehensive information regarding each initiative. —ranging from its objective to the number of participants and/or beneficiaries. Additionally, it was pivotal in the restructuring of the third mission within universities, whether through the creation of a dedicated unit exclusively focused on it or through the modification of pre-existing structures, centralizing all activities into new departments. Ultimately, this process contributed to the enhancement of the quality standards within the institutions themselves.

3. Outputs, outcomes and impact

IMPALA's main objective of elevating the quality of HE by cultivating a culture centred on impact within the HEIs and enhancing their adaptability to the surrounding environment was accomplished by the following outputs and outcomes:

– Design and implementation of a quality referential (IAF) to measure impact of the activities related to the third mission project and activities. Around 104 experts were trained on HEI impact, impact measurement, impact contribution and its integration on the HEI QA. One site visit conducted, IAF was developed including three national customization supplements (they allowed a contextualization of the IAF to national environments and a better understanding of the idiosyncrasies of each country), 11 institutional assessment reports and 11 mentoring reports were done as well.

– Provide the HEIs with the capacity to apply this quality referential to their situation. Around 48 senior managers (deans, rectors' representatives, administrators, and representatives of the ministry/regulatory body) were trained to measure impact and realize an institutional assessment. One site visit was developed.

– Improve quality and relevance of the services to the community as part of the university mission. Two workshops where 44 faculties and specialist staff were trained to develop high impact activities/projects for the local community. More than 500 faculties and specialist staff are indirectly trained on the topic via 11 internal replication seminars. One project clinic (30 trainees), two site visits (48 participants) and one study tour (24 trainees) were executed.

– Transfer of knowledge. Publication of reference material allowing other institutions to replicate the process (the guidelines "How to maximize the impact of activities/projects targeted at local communities" (500 hard copies), the book *Best practices in impact assessment in HEIs* (100 hard copies plus digital version) and the case studies book *Creating impact in HEIs* (300 hard copies plus digital version). Participation of representatives of the IMPALA project in international, national and regional conferences (European Association for International Education (Helsinki,

September 2019); IAM Conference (Colombia, December 2019); Universidad 2020 (Cuba, February 2020); II Encuentro Latinoamericano de Gestión Social "Gestión Social, Democracia y Participación", RELAGS (on-line 2021), II Congreso de Extensión Social Universitaria «el territorio como fundamento de la extensión» (on-line, 2022); Conferencia Regional proyecto IMPALA (Panamá, 2022); Congreso Internacional de las Ciencias Agropecuarias (Cuba, October 2022).

The impact of the IMPALA project could be differentiated into two different stages:

a) Short-term impact. The regional and local communities benefited from the concrete results of the pilot projects and tightened their links with HEIs more receptive to their needs.

b) Long-term impact. Cultural changes that had started in the HEIs thanks to the awareness of impact importance by all key staff categories, increasing the support from senior management, multifunctional teams (faculty and specialists) jointly working on projects and activities, to the realization of the concrete benefits.

Joint participation in activities tightens regional cooperation and new actions have begun to take place among some universities in different countries. Impact assessment and services to the community could become a compulsory/recommended part of the national QA systems.

4. Success factors

Impact, assessment, third mission and QA systems are very different concepts but when we talk about HEIs in LATAM we can appreciate the interrelation between them. The assessment of impact, particularly in the context of the third mission in LATAM, is becoming increasingly important and integrated into quality assurance processes to ensure the relevance and effectiveness of higher education in the region.

Based on this statement, we can observe that despite the heterogeneity of Latin American HE systems, the lack of an 'impact culture' was consistent in the targeted countries: Colombia, Cuba, and Panama. For this reason, and despite their differences, all HEIs converged on the need to find a solution that could fit into their educational and QA systems. The development of the IAF can be considered the key to its success. As mentioned earlier, the IAF is a practical guide for the evaluation process closely linked to the third mission activities of HEIs. The IAF is also fully compatible and can be integrated into the most common university planning systems. The inclusion of national supplements in the IAF was a success, making the document customizable to the specific needs of each country.

The interaction between partners and local authorities also yielded very positive results. Communities began to see universities and their actions as much closer to them, genuinely concerned about their needs. HEIs, in turn, approached authorities who viewed universities as links between them and the communities. Therefore, HEIs also took on the role of 'mediators' between both.

Another success factor of the project was the coordinator's capacity and the level of involvement of all partners in solving issues related to project execution. The IMPALA project was implemented during the outbreak of COVID-19, which had already impacted project activities. Despite the challenges, such as rescheduling activities, introducing online meetings, cancelling or, postponing some pilot projects due to travel restrictions, and finding new pilot projects, the project was executed successfully.

5. Sustainability

IMPALA is a joint project. Thus, sustainability was achieved through a multifaceted approach, with a specific emphasis on three key aspects: development of the ownership of the project, sustainability at the institutional level and finally involving relevant stakeholders in the execution of the project.

About developing ownership, it was successfully cultivated across all participating universities. Noteworthy contributors to this accomplishment included institutional assessment reports and mentoring activities. All the universities integrated the impact evaluation system into their research and development projects. Thus, sustainability and institutional recognition for contributions to organizational knowledge, quality management, and community impact are ensured.

Sustainability at the institutional level was accomplished in different stages according to the level of involvement of the institutions in applying internally the new methodologies learned and developed throughout the project. After the presentation of the new impact assessment to authorities, integrating the assessment tool into standard institutional procedures, and institutionalizing project methodologies involved widespread dissemination and engagement at different organizational levels. The universities that followed that process and decided to integrate them into their common procedures achieved a high level of sustainability.

Involving relevant stakeholders varied across institutions and the three higher education ecosystems. There was a significant involvement in Colombia, proper involvement in Cuba, and less involvement in Panama. The grade of involvement could also be related to the type of strategies that were employed to involve the different groups of stakeholders (such as professors, researchers, students, local communities, and governmental entities).

The financial sustainability of the project is also an important fact to consider. HEIs have now included assessments in their regular evaluation budget. With evidence of their positive impact and contribution to the environment, through the results of their project and activities of the third mission, HEIs are now in a good position to obtain external funding —national, regional, and local— for implementing new initiatives. Impact evaluation, therefore, becomes an investment for HEIs, which can lead to more diversified and substantial funding opportunities.

The exploitation of the project is assured through the various publications produced throughout the project (available online) that will also serve as guides for other HEIs to follow and inspire new projects and activities for the local communities.

6. Lessons learned

The IMPALA project has established the basis for measuring the impact of the third mission of thirteen HEIs, thus raising the quality of the HEIs. The type of lessons learned can be diverse, as well as their classification (at the individual, institutional, or national level). For the purpose of this case, we will only focus on three positive and different aspects that represents each of these three levels.

Individual level: Adaptability of people and institutions

Throughout the project, we witnessed the adaptability of individuals and institutions to adverse situations (COVID-19, different time slots or problems with telematic connections). Without the commitment

of representatives from all HEIs, both European and Latin American, it would have been impossible to conclude this project successfully and sustainably.

Institutional level: Collaborative partnership

According to the DFID, 2010, the principles of good capacity building project are: conceive capacity building as a process; strengthen existing processes; ensuring full local ownership; role of external expertise (mentoring and joint processes); a different way of working (implication of the organization and the team); skills and resources (they need to be in place); group development and partnership and collaboration. In the IMPALA case we can see how all these aspects were taken into consideration. The joint work among all partners clearly contributed to achieving the program's objectives. The collaborative partnership, including the concept of "learning-by-doing" and co-leadership of the WP between LATAM and European HEIs, ensured that decisions were discussed and agreed upon by all partners. The creation of the "grupo motor" composed of both representatives of European and Latin American institutions of the project in order to progress properly in the project execution already denoted from the beginning the involvement of all parties in it. According to Hunter and Busquets (2022), the mentors involved in the project viewed themselves primarily as "peers," with no hierarchy established or distinctions made based on their previous experience. Instead, they cultivated an inclusive learning environment where each person's knowledge contributed to and enhanced others. This increased the sense of ownership among LATAM HEIs. This sense of ownership, viewing everything learned and developed during the project as their own, contributes to its sustainability over time. During the project's execution, we observed some HEIs already applying the IAF or modifying their internal structures to provide concrete responses to the needs of their communities. The idea of common ownership of the project has also had an impact on the strength of the relationships between the LATAM HEIs, leading to the implementation of joint initiatives between some of the HEIs from different countries.

National level: Role of the ministries and regulatory bodies

The importance of including ministries and regulatory bodies in projects cannot be overstated. Executing a project may be simple or difficult, but in some concrete context or cases, the results are not transferred correctly to governmental institutions (regional or national level). Including these entities in projects ensures that from the project's inception, everyone involved is aware of the positions of all actors, understanding the objectives pursued by each, and whether the actions or results obtained in the project can address everyone's needs. This improves the efficiency and time management of actions and results. The inclusion of ministries and regulatory bodies also assures the long-term improvement of the quality systems of the different educational systems of the consortium's member countries regarding the measurement of the third mission impact of HEIs. Therefore, one of the objectives set by the Commission on the renewed EU agenda for higher education is covered by the presence of these institutions and the policies and actions that can subsequently be applied not only at the local level but also at the regional or national level.

To summarize, we could say that the involvement of all the partners of a consortium from the beginning and being capable of transmitting the ownership of the project are essential for its success and sustainability and can also be the starting point for new actions, either among universities within the same country or among universities from different regions or countries. In this concrete case, and after three years of the conclusion of the project, the relationship between some of the partners has evolved to new initiatives.

7. Conclusions

In recent years, quality assurance in LATAM HEIs has been a topic addressed from different perspectives. The IMPALA project promotes this QA through the third mission axe of the HEIs. Being able to measure the impact of the third mission actions carried out by HEIs through an easy-to-use tool created especially for this purpose, leads institutions to move towards a culture of impact (sometimes non-existent before) and to improve the overall quality of the institution.

Third mission is an organized process that has the involvement of the university community. According to Hunter et al. (2022), it involves organizing services, products, and processes to enhance value creation for external parties. Nowadays, the dissemination of knowledge to encourage comprehension and application serves as a fundamental aspect of innovation in societies where this occurs. We can find various ways to approach this, with perspectives ranging from social, entrepreneurial, to innovative and these perspectives in many cases are interrelated between them. The strategic agenda of academic institutions concerning their impact on structure, internal organizations, and relational mechanisms utilized by the university to meet its mission objectives should be redefined to achieve success. Some theoretical and methodological gaps were identified during the IMPALA project implementation. Filling those gaps serve as a starting point for improving the management of this process and increasing the impact of the institution in the transformation of the national, territorial and local context.

As a result, institutions will not only improve their quality, but also gain a better understanding of how to respond to the needs of their environment and how to undertake innovative activities with greater impact. The role of the HEIs and the communities must be well defined from the beginning. The HEIs should support with their projects to solve real problems of the communities and society, but it is the communities themselves who should identify them. Regional and local communities benefit from concrete actions and projects and strengthen their ties with HEIs.

Thanks to the IMPALA project, it has been possible to develop different tools to measure the impact of the third mission actions carried out in thirteen HEIs in three different countries, with different social and economic characteristics. With the creation of the IAF methodology, as well as the publications the project has generated, not only the consortium's HEIs had benefited from it, but other LATAM HEIs can also do it in the future by taking advantage of this approach: improving their QA by measuring the impact of their third mission activities. It is not a simple or quick task, but it is the starting point for other HEIs to be able to identify and measure all the actions that can be considered third mission actions and the impact they really have on society, as well as to be the foundation for strategic change in their own institutions.

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4.11. The FORINT project

The present case study analyses the Erasmus+ project "FORINT – Fortalecimiento de la internacio-nalización entre las universidades europeas y latinoamericanas" (Strengthening Internationalisation between Europe and Latin America Universities), funded by the Erasmus+ Capacity-Building for Higher Education action. EFMD coordinated the project from 2016 to 2019. The consortium gathered:

Seven partners from Cuba:
- University of Camagüey
- Central University of Las Villas
- University of Havana
- University of Holguín
- Agrarian University of Havana
- University of Oriente
- Ministry of Higher Education of the Republic of Cuba

Two partners from Panama:
- University of Panama
- Specialised University of Americas

Six partners from Europe:
- EFMD
- Ghent University (Belgium)
- Università Cattolica del Sacro Cuore (Italy)
- University of Alicante (Spain)
- Ramon Llull University – ESADE (Spain)
- University Nova of Lisboa (Portugal)

FORINT focused on internationalization of higher education in Cuba and Panama. Five years after its completion, it remains an example of a successful Erasmus+ CBHE project with sustainable results and an increased cooperation between European and Latin American institutions.

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1. Background

For the European Union (EU), internationalization is at the core of its Erasmus+ program as it encourages collaboration from partners around the world (Jongsma, 2016). However, this concept is larger if we review the specialized literature, which defines internationalization as "the intentional process of integrating an international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff and to make a meaningful contribution to society" (Wit and Hunter, 2015). This definition englobes the mobility of students and university staff (academic and administrative) and all the activities that expose them to an international environment. It applies to all university stakeholders and the departments they belong to. Consequently, it includes various aspects such as international research, internationalization of the curriculum, internationalization of the student's life and international quality assurance. This definition still evolves to match the evolutions of society and higher education, such as globalization and internationalization for society.

Public authorities and literature agree on the benefits of internationalization. The definition of de Wit and Hunter specifically expressed its role in the quality of higher education. The economic aspect of internationalization is twofold. For the EU, the internationalization of higher education prepares the workforce for the new regional market economies (Walkenhorst, 2008). For Higher Education Institutions (HEIs), internationalization can also represent an additional source of income from national tuition fees or public financial support. This is particularly needed in the context of reduced public funds, economic slowdown and increased competition among higher education providers. International students' targeted activities, such as winter/summer schools and study-abroad programs with specific tuition fees, are frequently organized in international HEIs to support the institution's annual budget.

Internationalization is also a public policy that brings people and cultures together, ultimately encouraging the alignment of individual ideas, avoiding nationalism and political tensions. People who benefit from international mobility schemes are immersed in a different environment, discovering its culture and values and eventually adopting them. When they return to their institution, they can become promoters of their host HEI and country. For example, this soft power of higher education is demonstrated with emergent economies investing in higher education to influence diplomatic and international opinions (Knight, 2022).

These characteristics of internationalization reflect the diversity of higher education in terms of status, speciality, structure and hierarchy, experience, culture, resources and, ultimately, beneficiaries. Each institution should clearly understand its context and know the available resources, strengths, and opportunities to design a development strategy. This recommendation is essential for internationalization, considering that there is no one-fit-all model: what has been working in a specific HEI could have different results in another institution. Understanding and analyzing the context and culture of an HEI is essential to design and launch an internationalization activity that will benefit its stakeholders and society.

The European Union strongly supports the development of higher education in Latin America. From 1994 to 2013, the ALFA (Latin America Academic Training) program encouraged cooperation between the two regions through mobilities and capacity-building projects. Launched in 2014, the Erasmus+ Capacity-Building for Higher Education (CBHE) program continues and extends this cooperation. Aware of the importance of internationalization for Latin America and the new opportunities with the Erasmus+ CBHE program, the Cuban Ministry of Higher Education (MES) and EFMD agreed to build and submit a project focusing on internationalization.

Between 2007 and 2016, EFMD worked closely with the MES in the framework of the EU-funded project "FORGEC" to strengthen the managerial capacities of Cuban entities. The project facilitated the participation of the Ministry and executives of Cuban HEIs in international conferences on the latest developments in higher education and international quality assurance schemes. From the start, EFMD and the MES reflected the importance of the diversity of higher education the FORINT project proposal. Two countries from Latin America had to be involved to apply for CBHE. The MES reviewed the existing regional cooperation and identified Panama as in a similar situation to Cuba. Both Latin American countries presented common features such as well-established partnerships with Spanish universities, a quasi-absence of mobility with other EU countries and the dominance of the Spanish language in all HEIs' communication tools, including those for international partners (websites, program brochures and news). Six Cuban universities and two Panamanian HEIs were selected and invited to join this initiative. In Europe, EFMD approached institutions with experience in Latin America, internationalization and capacity-building projects. The final version of the consortium included HEIs from all over the country in Cuba, HEIs with regional campuses in Panama, HEIs located in the capital city, HEIs in the region, technical universities, public and private institutions, historical and recently created institutions, and an international not-for-profit association specialized in international accreditation.

During the preparation of the proposal, the eight Latin American HEIs were asked to identify the situation and their needs. While the International Relations Offices (IROs) recognized the benefits internationalization could bring to their institution, they confessed that a coordinated strategy to support the development of the institution was missing at both institutional and national levels. FORINT was prepared in a particular context in Latin America. Diplomatic relations between the United States of America (USA) and Cuba were restored in 2015, which opened the door to a new political and economic dialogue. This led to a growing interest from higher education professionals and from the MES to engage in international cooperation, bringing new opportunities for HEI development, funding and international prestige. The situation in Panama was different: while the cooperation with the USA institutions was already well established, it needed to be developed with European ones.

The diversity of internationalization strategies also lies in their adaptation to the local context. In the ALFA program, previous projects intended to introduce a course credit system compatible with the European Credit Transfer System (ECTS) in its higher education system and align university degrees with the European quality assurance standards. FORINT was designed to differ from this perspective. It presented the experience of Belgium, Italy, Portugal and Spain as one of the various examples of internationalization strategies and activities that could eventually inspire the Latin American partners. When the EU higher education was introduced, it was restricted to presenting a model, its organization and its consequences for the HEIs. This explains the various topics and activities presented in the next parts.

Partners prepared the project FORINT (Fortalecimiento de la internacionalización entre las universidades europeas y latinoamericanas) to strengthen the internationalization capacities of Cuban and Panamanian HEIs. As stated in its objectives, it aimed to create the conditions inside the participating institutions for developing a long-term strategy for internationalization and to create the capacities for internationalization adoption at the national level, on the long term. The proposal was submitted in February 2016 and ultimately approved for funding in August of the same year. FORINT came to life in January 2017.

2. Main achievements of the project

The ground start of FORINT was the situation and needs analysis seminar led by UCSC, who presented a methodology composed of the following points:

1. The situation questionnaire on the current financial support for internationalization, the policies and opportunities for teaching staff and the activities and services for students.

2. The discussion of the results in a face-to-face meeting to find synergies between the universities on the challenges and opportunities for development.

3. The situation and needs analysis of the institution, including the stakeholders and beneficiaries of the internationalization activities. UCSC shared a template of the report to be used by the partners for inspiration. Support from the EU partners was provided through advice and mentoring visits to exchange information on the report completion and the information to be provided.

4. The identification of the major trends for internationalization in the selected institutions.

5. The discussion of the results in a round table hosted by the MES.

This preparation phase lasted eight months, which is short considering the 3-year duration of the project. This intense, step-by-step method proved to be useful for the project:

– All Latin American partners started working on this method simultaneously. They had to face similar challenges to complete the reports with accurate information within a limited time. The first face-to-face meetings of the project triggered cooperation between the participants to discuss the process, the report and its next steps. It encouraged contacts between partners who could discuss openly with foreign partners.

– Despite the previous cooperation between EU and Latin American partners, Cuban and Panamanian HEIs were involved under the same conditions. All the results were shared and discussed openly during the two round tables. The EU mentors carried out the same tasks for all partners without preferential treatment. This fostered confidence between partners and paved the ground for a common dialogue with all simultaneously.

The development phase lasted 18 months. The objective was to train a critical mass of university managers, executives and support staff and improve their awareness of internationalization topics. It consisted of seven training seminars, attended on average by 30 participants, held every second month in Europe, Cuba and Panama. The participants were selected using the situation and needs analysis reports from the preparation phase. In each event, two EU experts covered a specific aspect of internationalization, such as international quality assurance schemes, international research or internationalization of the curriculum. To illustrate the knowledge from the seminars, they used practical examples from their institutions, the challenges they faced, and the solutions they applied. Seminars were delivered in Spanish to facilitate active participation and encourage the assimilation of the knowledge.

Group discussion was encouraged from the start. Four representatives of each Latin American university and two representatives of the MES attended each seminar. They were split into groups of 5 to 6 participants from different institutions. They reflected upon the situation, compared it with examples from their experience, and exchanged ideas with the partners. The project coordinator held a wrap-up session at the end of the seminar, summarizing the points discussed and the next steps for the project.

Two study tours took place in Europe to further complete the learnings from the seminars with real-life examples.

The economic and regulations of the EU's financial contribution did not allow more than four people to attend a training session. To balance this, Latin American partners held two knowledge-transfer events attended by 60 people in each institution at the end of each training cycle to share the results of the seminars, inform them about the project, and present the next steps for the university. It built awareness about internationalization among a critical mass of participants within the university. It also turned the participants into ambassadors of FORINT, who shared their learnings and views on how internationalization could benefit the institution, facilitating its adoption by a wider number of stakeholders. It allowed the project to be mentioned in the institution regularly, engaging people in its development and progress. In total, the project has built awareness about internationalization among 500 people in the eight universities and the MES.

The training cycles allowed the partners to reach a consensus on the role of the International Relations Office (IRO) for the university's development:

– The IRO should be at a center-point of the university's organigram to support its overall development strategy.

– It should define the best-adapted activities according to the institution's profile, mobilize all university departments to organize them, coordinate their execution with the available resources, and ensure consistency to aim for the greatest result possible.

– It relies on a trained staff who can apprehend the specificities of internationalization, implement a long-term strategy, monitor its execution and possibly readjust some aspects.

The design and implementation of the strategic plan and the roadmap for internationalization took place in the last phase of the project, which lasted ten months. The strategy defines the five-year objectives, allocates resources and identifies the activity plan for faculty and administrative staff. The roadmap supports this plan with key performance indicators and timing to monitor the implementation of the activities. As it had been done in the preparation phase, Latin American partners used a template provided by the EU partners for inspiration to develop their document. Regular exchanges were organized between Latin American partners and European experts to share ideas and suggestions. The Latin American partners took control of the writing process to ensure the relevance of the strategic plan and the roadmap to their priorities before presenting them to their university's academic board.

The training cycles and knowledge-transfer events emphasized the importance of these two documents for the institution's development; this facilitated their defence and adoption by the board. The continuous participation of the MES in all training seminars and its supervision of the elaboration of these documents proved to be crucial. As a public authority, the Ministry supported FORINT and its results and encouraged its replication by other institutions which were not part of the consortium. In 2019, all eight academic partners validated their plans, engaging in a new internationalization strategy. This formal process paved the way for the sustainability of the project's results.

As a conclusion not originally forecasted in the proposal, Latin American partners volunteered to elaborate on a case-study book compiling the experience of each partner and their ideas for internationalization. In 2019, *Internacionalización en Cuba y Panamá. – Experiencias del Proyecto FORINT* (*Internationalisation in Cuba and Panama – Experience from the project FORINT*) was published and presented during the final conference. The book showcases the achievements of the project in Latin American institutions and how

internationalization will remain at the core of the university's strategy. It also intended to trigger interest from other HEIs interested in internationalization activities. Readers could take inspiration from any activity organized in the partner institution, look at what has been achieved, and learn how they could continue implementing it. As a mostly Spanish-language-dominated region, the book is in Spanish only to facilitate its dissemination among other universities. It is available online on the project website and the Erasmus+ result platform.

3. Outputs, outcomes, and impact

The definitions of output, outcome, and impact can be confusing. The word "impact" has been used extensively as the consequence of an activity. For example, newspapers refer to the ecological impact of taking a flight to attend a meeting or the social impact of a funding scheme. The guide of the Erasmus+ program refers to "the expected impact (short- and long-term)" at individual, institutional and systemic levels that could be assessed with "clearly defined measures and indicators to monitor progress" (European Commission, 2023). The Erasmus+ agency in the Netherlands has a different approach, clearly illustrating the distinction between these terms (Figure 4.11.1).
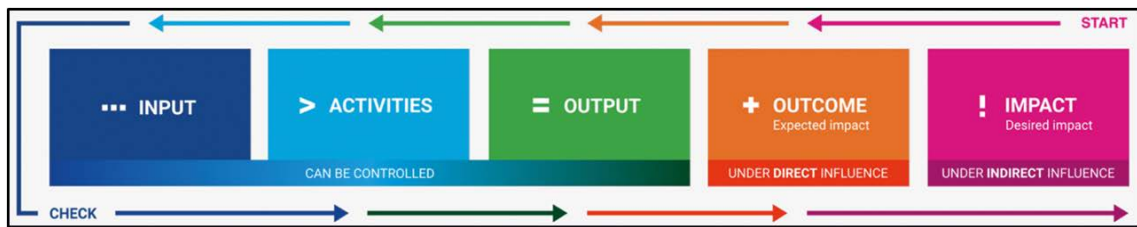
Figure 4.11.1. Erasmus+ impact chain
Source: Erasmus+ Dutch National Agency.

Outputs are results that can be controlled immediately by the project manager; any external authority, such as a donor organization, can easily monitor them. Publishing a report, completing a training cycle, or attending an event can produce immediate results that are easily quantifiable. Outcomes are the consequence of these results. They are a "behavioural change with the stakeholders of the project" (Impact tool Mobility | Erasmus+, 2023),[1] better named as an effect. They become visible in the short term, immediately or rapidly after the event. For example, an outcome is introducing a new working method after participating in a training seminar. The impact on its end is "a wider socio-economic change", indirectly caused by the project and coming in the long term. Following the previous example, the impact is manifested by an improved quality of the university, gained thanks to introducing a new working method after participating in a training seminar.

It is important to use this logic when evaluating the impact of a CBHE project. With these definitions, the forecasted impact of FORINT was the improvement of the academic quality and competitiveness of public universities in Cuba and Panama through the development of internationalization capacities and

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1 Available at https://www.erasmusplus.nl/en/impacttool-mobility

concrete collaborations with EU HEIs. To be achieved, it required to:

- Create the conditions inside the participating institutions for developing and implementing a strategy for internationalization.

- Facilitate the inclusion of the Cuban and Panamanian HEIs in regional and international networks and strengthen their collaboration.

Each Work Package had specific indicators to monitor outputs and outcomes, all referenced in the logical framework. They can be summarized with:

- The integration of the international dimension in teaching, research, management and services of Cuban and Panamanian universities.

- The presence of functioning operational, international contact points with adequate technological devices and trained staff.

- The definition and validation of the strategic plan and the roadmap.

- The confirmation and promotion of these plans by the supervisory public authorities.

- The increased presence of the HEIs in regional and international networks and events and the number and diversity of international cooperation activities

The University of Alicante was in charge of quality assurance of the project. It monitored these outputs and outcomes and conducted an external evaluation to confirm the pertinence of the reports. The presentation of FORINT's achievements in the previous part and the positive appreciation by the EACEA demonstrate that partners delivered what they promised to do and that the project reached its forecasted results and effects. Partners confirmed that more international collaboration activities have been developed thanks to the methodology and knowledge acquired during FORINT. Five years after its conclusion, internationalization remains important to Latin American institutions, thanks to a better-trained staff who can take advantage of the knowledge and the acquired opportunities. The validation of the roadmap and the strategic plan supported the development of the institution. Latin American partners report a better competitiveness of their institution and an increased presence in regional and international networks.

The impact is more balanced in terms of academic quality. While it is certain that internationalization contributes to strengthening the institution's quality, partners have not reported new international accreditation obtained thanks to FORINT. The Cuban and Panamanian national accreditation schemes have not been modified to include explicit references to internationalization. Due to budgetary constraints, the two accreditation agencies did not participate in the project; therefore, it is difficult to put the responsibility to FORINT.

4. Success factors

FORINT is an example of a successful Erasmus+ capacity-building project on internationalization executed in Latin America. It has been featured in this case-study publication due to its positive evaluation by the Erasmus+ agency and its sustainable results that remain valid five years after its completion. It continues to be recognized among partners as a good example of a cooperation project that fostered a stronger collaboration between European and Latin American partners. The contextual information

provided before is important to identify its success factors. Others emerge from the review of its design and its results.

Focusing on one topic only

The objective of FORINT was clear from the early start: support the internationalization process of Cuban and Panamanian universities. The most salient aspects of internationalization were discussed extensively during and after the seminars and study tours. This was particularly appreciated during the knowledge-transfer events when everyone easily remembered the topic, objective, and results. A large category of stakeholders, regardless of their previous experience or position within the institution, discovered what internationalization consisted of and got familiar immediately with the results of the training sessions.

Designing an immediate problem-solving project

The limitation to a maximum of three years is important as the conditions of implementation can evolve. The contextual information from before is essential to understand why the project offered immediate answers to the internationalization challenges faced by the partners. The political momentum changed with the 2018 presidential elections in the USA, which led to new restrictions on mobility between the USA and Cuba, causing a situation different from the one experienced by the HEIs in 2016.

The three-year rule forces all partners to complete all activities of the proposal in time to respect the rules of the Erasmus+ agency. This requires regular face-to-face meetings, encouraging people to contact and get to know each other better, and fostering collaboration between institutions. A project with a fixed duration and a regular set of activities has a better chance of success as partners do not have time to get tired of the topic and remain committed to its execution and completion.

It obliges to focus only on the problems identified in the proposal. Given the resources and timing of the project, FORINT did not explore other aspects of higher education (digitalization, sustainable development, or inclusion) as they were not considered in the proposal. The training seminars aimed to present experiences from the European HEIs to inspire the participants regarding new resources, new visibility, or new working methods. The knowledge-transfer events allowed a critical mass of people within the institution to be informed, which led to a change in the working practices. All participants paid attention to the content and the activities as they provided a solution for the problems they were facing.

Limiting the consortium

FORINT only involved two Latin American countries in a similar situation. During the execution of the project, HEIs from Nicaragua and Costa Rica manifested their interest in the project and its activities. However, these partners have not been included in the consortium. While preparing the proposal, partners identified similar challenges and expectations regarding internationalization, which led to the selection of the Cuban and Panamanian HEIs. Including a third country in a different situation during the project could have jeopardized this mutual situation.

Other HEIs from Cuba manifested their interest in joining the project, but partners kept the consortium to the selected six universities. As explained before, partners started simultaneously, encouraging them to trust each other from the first activity and work together to find a common solution. Adding another institution during the project would have necessitated an important catch-up from the newcomers. It would have also changed the balance between national partners.

Relying on local partners for its implementation

FORINT relied on a local coordinator in each institution. This person was the contact point for EFMD and was responsible for all the planning, organization, and delivery of the project's activities. The nine local coordinators attended all project activities, including the training seminars, organized the knowledge-transfer events and coordinated the design and validation of the strategic plan and the roadmap. They interacted regularly with all the faculty and departments of the university to select the participants for the events and facilitate the dissemination of the knowledge afterwards. This triggered their identification as "Mr." or "Mrs." FORINT within the institution, the person of contact who knows everything about the project and its content.

Cuban regulations impose that foreign-funded projects are countersigned by one local university. This institution is responsible vis-à-vis the national authorities for the finances and visa processes. The Agrarian University of Havana took the lead in this task. The Director of the IRO (who later became the vice-rector for internationalization) coordinated the project in her institution and the country simultaneously, allowing her to monitor the project closely, review its progress, plan the next steps and ultimately take ownership of it. She acted as the counterpart of EFMD and monitored the project's implementation in Cuba. As a regional partner, she was in close contact with the Panamanian partners and coordinated the execution of the tasks in Latin America. This was of great help during the entire course of the project, as she could easily and quickly identify and invite the project's participants and international students who benefited from the project. This proved particularly important when the EU Erasmus+ project officer decided to visit Cuba for a monitoring visit.

Getting the support of the Ministry

FORINT was supported by the Ministry of Higher Education in Cuba, which closely monitored the results in all Cuban HEIs. It allowed them to reach a consensus on the internationalization terminology and its activities, which proved important when discussing the perspective for national higher education. The MES publicly represented the project in all national, regional, and international congresses as a public authority that validated the results and encouraged its replication in Cuba. This public endorsement is important compared to the limited results in Panama. Panamanian public authorities (Ministry of Education, Council of Rectors, and Accreditation Body) did not join the project. When the two HEIs shared information on the project and its results, it was done outside the project scope. This limited the multiplying effect of the project in Panama.

Thinking about the future

FORINT has allowed all participants to understand the concepts of internationalization and how they benefit the institution. The validation of the strategic plan and the roadmap ensured that the FORINT results would remain once the project was over. Networking was facilitated to promote international cooperation between HEIs, and partners took the opportunity of the project to strengthen existing cooperation and explore new ones.

The European Union's financial support is helpful for the institutions to pursue their development and organize many activities with minimum co-funding. In this respect, the fact that the EU provides a grant, not a loan, is significant, as local partners can engage in new activities without fearing political interference. It led to an increasing interest from the partner institutions in the EU funds and the continuation of the partnership in another CBHE project. It also motivated partners to develop new activities funded by other EU-funded programs, such as Horizon Europe, focusing on research activities.

This is particularly important in the difficult economic situation Latin America faces and the limited funds for international cooperation.

5. Sustainability

The Erasmus+ program guide evaluates sustainability by identifying the "appropriate measures and resources to ensure that the results and benefits can be sustained beyond the project lifetime" (European Commission, 2023). Following this approach, the sustainability of FORINT was demonstrated with the strategic plans and the roadmaps, with the support of the MES, the publication of the book to continue promoting internationalization in the two countries and Latin America, and the submission of another CBHE project involving almost all FORINT partners, showing that the partnership was to remain active even after the end of the project. FORINT was the first step in pursuing internationalization activities and continuing the cooperation between the two regions.

FORINT still strongly influences all project partners. It has been a turning point for EFMD as former coordinator, but also in the partner institutions who still refer to "la familia FORINT". It includes anyone who participated in the activities as well as anyone whose contribution made this project successful: participants in the training seminars, administrative staff who supported the elaboration of the strategic plan and even people who were involved at one stage of the project but left the institution.

The world has changed since the end of the project in 2019. The political change in the USA initiated in 2018 has severely limited collaboration between US and Cuban entities, including the short-term mobility for winter/summer schools. Cuba also entered an economic recession that forced all HEIs to reconsider the pertinence of some mobility activities. The COVID-19 pandemic has limited international mobility with any foreign country, including from the same region. Internationalization at home topics explored during FORINT became all the more pertinent as they require limited resources for implementation. However, the necessary conditions (access to digital infrastructure or online cooperation with international partners) depend on external factors outside the scope of the project. They could not be guaranteed at the emergency time, nor with the current financial constraints.

All partners valued the knowledge and practices from FORINT, but it only covered the most salient aspects of internationalization. Further support is required to continue building capacities on its latest development and sustain the changes initiated. Digital education, sustainable development and inclusion can be one focus of a new internationalization project in the region, and partners have already discussed submitting a new project on this topic. However, the Erasmus+ call for proposals limits the possibility of former FORINT partners applying for a project on internationalization. The partners' declared intention to continue working on internationalization constitutes a good example of the project's sustainability.

6. Lessons learned

Due to the capacity-building approach of these calls, it is important to have clearly defined CBHE projects. Due to the strong competition in the EU calls for proposals, partners tend to build up complex projects that catch up with all trends and priorities of higher education, for example, designing a project on internationalization complying with the EU priority of green deal, inclusion, and digital education.

The hidden objective is to maximize the chances of pleasing the evaluator and the EU and, consequently, maximize the chances of being granted the project. However, complex projects tend to take more work to implement. Simple and problem-based projects are more appropriate for CBHE projects, while more research and theoretical projects can be granted from other programs such as Horizon Europe.

It is essential to count on local coordinators who can translate the project's objectives and activities to their institution. They should be involved in all project stages, including conception and reporting. They should clearly identify the institution's needs, define the project's expectations, and design the activities to reach the largest impact. They should take charge of the financial and narrative reporting duties, respecting all the local and EU regulations. This share of responsibility facilitates the ownership of the project, progress, and results by all partners, which paves the way for the sustainability of its results.

Local coordinators should have the necessary responsibilities within the institution to lead the project, identify the key participants for the seminars and engage the institution in a new development strategy. They should not be limited to administrative or executive duties but rather be able to understand each activity's benefits for the institution. They should echo the results within the university to ensure that a critical mass is aware of and trained on the project, which will lead to reaching the impact.

Knowledge-transfer events should be regularly organized at all project stages and as soon as the first result is published. This type of event often appears at the last part of the project, together with the final conference, and consists of a simple presentation of the results without engaging in a proper discussion with the participants. Organizing them earlier allows them to report the feedback of all HEI's stakeholders and possibly adapt the training seminars to specific aspects.

A lesson learned from FORINT deals with the sustainability of any capacity-building project. The EU extensively insists that the exploitation of the results and the sustainability plan should be conceived early, preferably before the mid-term of the project. It should include all measures to ensure that the results remain, even without funds from the EU. This basic advice is often disregarded by project managers whose actions focus on the reporting duties and the validation of the project by the funding authorities. Organizing mid-term meetings of all coordinators focusing exclusively on how the results can be exploited can encourage the project's sustainability.

These lessons learned were applied by the project partners in other CBHE projects. If they cannot guarantee the overall success of the project, they can contribute to its sustainability and effects in the long term.

7. Conclusion

The FORINT project gathered seven Cuban, two Panamanian, and six European institutions to consolidate the internationalization capacities of Latin American institutions. It successfully trained and built awareness of internationalization to a critical mass of university actors, professors, managers, and administrative staff. Their involvement in designing and validating the strategic plan for internationalization and its roadmap was essential to introduce a cultural change in their institution, with new working methods that remain in force today, even after the project's conclusion.

The FORINT project has completed its objectives and reached its target results. However, this case study is not about counting a fairy tale about a project and romancing its success. Like any other

Erasmus+ CBHE project, it has faced setbacks and challenging times at institutional and management levels to implement the activities, review their content and ensure the active participation of all actors. Internationalization of higher education affects various stakeholders and covers specific activities; this requires careful and constant attention from managers to be fully comprehended to benefit the whole institution. Many aspects have interfered at all project stages, from the design and the execution to its conclusion, that have paved the way to encourage its long-term effects. FORINT has achieved these results thanks to the partners' hard work, interest, and personal and professional commitment.

FORINT dealt exclusively with internationalization topics in two Latin American countries. It did not aim to induce a systemic change in the organization of higher education in the two countries. All the activities have been designed to respond only to the needs of the participating institutions, leaving some reflections on the future of higher education to other projects. It came at the right moment, with a favourable alignment of political, economic, and cultural consensus between all stakeholders. Five years after its completion, FORINT is still remembered by the project partners, demonstrating the sustainability of the project.

Europe and Latin America have had a long cooperation in higher education, and FORINT has brought its stone to strengthen it. The support of the European Union, with the Erasmus+ program, was essential to achieve it. While the results of this FORINT project are important for the partners, further support is needed to ensure that it remains active and in line with the newest trends in higher education.

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4.12. The LASIN and SEASIN projects

The present case study is focused on two projects: the Latin American Social Innovation Network (LASIN) and the Southeast Asian Social Innovation Network (SEASIN). The two projects have formed one single case study since they both shared similar objectives, though in very different geographical contexts. Both SEASIN and LASIN were funded by the Erasmus+ programme, and specifically by the Capacity Building in Higher Education Action (included in the Key Action 2). They were both coordinated by Glasgow Caledonian University (GCU). LASIN counted on an additional 12 partners: from Chile, Universidad Tecnológico Federico Santa María (UTFSM) and University of Desarrollo (UD); from Colombia, Fundación Universitaria Area Andina (FUAA) and University of Antioquia (ANT), as well as a non-university partner, Whitney International University System (WHIT); from Panama, University ofl Istmo (ISTMO) and Universidad Santa María la Antigua (USMA); from Brazil, Universidade Federal do Estado do Rio de Janeiro (UNIRIO) and Universidade Federal do Rio de Janeiro (UFRJ); and from Europe, the University of Alicante (UA) in Spain, and the Westfaelische Wilhelms-Universitaet Muenster (UM) in Germany as well as a UK non-university partner, Social Innovation Exchange (SIX). SEASIN counted on 14 additional partners including several non-university partners: from Myanmar, Cooperative University of Thanlyin (TCU) and Yangon University of Economics (YU); in Thailand, Kasetsart University (KU) and Thammasat University (TU) as well as a non-university partner, Ashoka Foundation; from Cambodia, National University of Management (NUM) and Royal University of Phnom Penh (RUPP), as well as a non-university partner, Mith Samlanh Friends (MSF); from Malaysia, Universiti Teknologi Mara (UiTM) and Sunway University (SUN), as well as a non-university partner, Scope Group, whose name subsequently changed to Mission and Co. (MC); and from Europe, the University of Alicante (UA) in Spain and the University of Aveiro in Portugal (AV), as well as a UK non-university partner Social Innovation Exchange (SIX).

Below, we describe how both projects were deemed to reflect good practice in the field of inclusive education, in the higher education sector by the European Commission.

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1. Background

Both LASIN and SEASIN projects were predicated on the notion that universities had an important role to play in supporting social innovation. According to the OECD (n.d.), "social innovation refers to the design and implementation of new solutions that imply conceptual, process, product, or organisational change, which ultimately aim to improve the welfare and wellbeing of individuals and communities.

" By about 2010 the concept of social innovation had begun to gain traction as a policy tool to find new ways to solve social problems and by 2015, the European Union had begun to support it proactively through its various funding programmes. However, at the time, social innovation was not recognised as part of universities' third mission. In this sense, both projects aimed to develop a strategy to allow universities to develop new paradigms and tools for targeted knowledge exchange between stakeholders from all societal sectors and contribute to socioeconomic development through social innovation.

The SEASIN project directly responded to the societal challenges of Southeast Asian society by harnessing the knowledge of universities to directly contribute, not only to increasing socioeconomic growth but also to improving social cohesion and equity, through social innovation. This need was echoed at the ASEAN Forum on Social Entrepreneurship (Singapore, October 30, 2014)[1] where over 80 policymakers and representatives of non-profit organisations from ASEAN Member States discussed the role of social entrepreneurship and shared good practices and views on developing social innovation. It also extended work already carried out by the Economic Commission for Latin America and the Caribbean (ECLAC) whose Social Development Division had produced "experiences in Social Innovation in Latin America and the Caribbean" with the support of W.K. Kellogg Foundation from 2004 to 2010 (ECLAC, n. d.).

The four partner countries involved had very different profiles in terms of their innovation capacity: Malaysia's vision was to become a high-income nation with an economy that was inclusive and sustainable, but its global ranking remained modest at the time when the project was conceived (21st out of 142 surveyed countries); Thailand had been developing its universities and research institutes for many years, but with inappropriate structures and mechanisms and knowledge and understanding of innovation processes, as well as skills in the nurturing of innovation, that required intensive training and development; Cambodia and Myanmar lagged well behind Thailand and Malaysia and desperately need to augment the importance of the role played by research in economic development and to promote the role of researchers and innovators in the overall development of the sector. At the time, Myanmar was enjoying a transition towards democracy and was evolving at a rapid pace. Its prime goal was to help a legitimate, civilian government foster social and economic development —respecting human rights— and to rebuild relations with the international community (since then, of course, the country has suffered a reversal after the coup in 2021).

All four countries continued to face significant challenges in terms of social cohesion.

The OECD's Innovation for Development (2012) observed that while the countries' priorities differed, "a source of rising concern for many has been the recognition that the growth process is insufficiently inclusive. Beyond well-known differences across countries, within-country inequalities in living conditions, income and capabilities exist across regions, economic activities and social groups but also within each of these groups." Inequalities are often much greater in developing and emerging economies as the gap between the most advantaged and the most disadvantaged becomes wider and those at the bottom of the distribution face more extreme living conditions than those in developed economies.

This was also true in Latin America. As stated by Morazán et al. (2012) in the European Parliament's report "A New European Union Development Cooperation Policy with Latin America", "any development strategy in Latin America needs to seek to attack huge existing inequalities and above all reverse the

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[1] https://cil.nus.edu.sg/wp-content/uploads/2019/05/2014-Chairmans-Statement-of-the-25th-ASEAN-Summit-1.docx

power inequalities that impede Latin American people from fully exercising their rights as citizens."[2] Despite its economic growth, Latin America remained the most unequal region in the world: the richest 20% accounted for 57.1% of all income, while the poorest 20% received scarcely 2.9% of the wealth; for households in the top ten of the income range, average per capita income was approximately 17 times greater than that of the poorest 40% of households. Importantly, this had not improved as countries developed (for example, in Chile, Colombia and Brazil, the richest 10% equated to between 35 and 40% of total income). Likewise, Social Watch had observed that in Panama, the 'healthy growth trend contrasts sharply with a social panorama of poverty, unequal income distribution and gender inequity" (Moreno Rojas, 2012). Inequality was not limited to income, it is also related to ethnicity, gender, access to the means of production, health and education, power, voting and protection, amongst other things. Persistent disparities in social conditions —in turn leading to unrest in Brazil's favelas and continuing violence in Colombia— revealed the need to actively utilize radical social policies for economic benefits to reach excluded sectors of the population. A 2011 ECLAC report ("Innovating, Gaining Market Share and Fostering Social Inclusion: Success Stories in SME Development") observed that "social innovation is to social development what technological innovation is to productive development. They complement each other, improving both productivity and the quality of life" (Bárcena et al., 2011). In a later report, ECLAC specifically refers to the need to incorporate social innovation within the development process: "Those responsible for formulating and implementing public policies should become involved with [social innovation], facilitate their realization and learn from the contribution they make" (Cecchini, et al., 2021).[3]

At their core, SEASIN and LASIN were based on the establishment of a 'social innovation support unit' (SISU) to contribute to sustainable and inclusive socio-economic growth within the target regions through intercultural curricular and extracurricular activities, supporting social innovation as a means to promote social cohesion, equity, proper geographical balance and diversity.

In both projects, to prepare the groundwork, an initial questionnaire was carried out to contextualise the concept of social innovation and ensure that partners and associates had a common understanding of the main themes of the action. Based on these preliminary results, another more exhaustive survey was designed which was distributed by the partner universities throughout Latin America, combining quantitative and qualitative measures. The questionnaire results were synthesised into a report that defined needs and existing practices among partners and throughout the Latin American and Southeast Asian regions. A further report was produced at the end of the project taking into account the direct and indirect benefits to the regions involved using the same metrics as the original survey.

These analyses were complemented by benchmarking reviews that consisted of a short report and presentation describing i) ten examples of social innovation supported by HEIs from around the world and ii) twenty social innovations/enterprises that had involved HEI support in the development of their projects. Using this as a defining framework, seventy case studies of social innovation projects were identified in each region and ten of these were subsequently monitored throughout the projects, defining key indicators for social responsibility, effectiveness and sustainability as well as their relationship and interaction with the HEI sector to determine the effectiveness of the knowledge transfer process and added social value.

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[2] https://core. ac.uk/download/ pdf/19557075.pdf

[3] https://repositorio.cepal.org/bitstream/handle/11362/47387/1/S2100315_en.pdf

Based on the activities described above, a generic SISU blueprint was defined, outlining the instruments and processes that could be implemented to raise awareness within the university community, fostering social innovation as an integral part of institutions' activities in knowledge transfer. All SISUs were designed to offer an incubation facility with hot-desking space and other facilities for students. More specifically, the SISUs aimed to widen the scope of regular knowledge transfer activities, develop new social enterprises and projects, identify new funding opportunities, including microcredit resources, and generate collaborations between university academics and social programmes to lend academic credibility. They were also tasked with defining new innovation models (foundations, cooperatives, not-for-profit companies, etc.), standardised measurements of social responsibility and the measurement procedures to assess both the social and economic impact of social innovation initiatives. The SISUs were also designed to take advantage of the international aspects of the project and lead a regional approach to international collaboration based on social innovation within universities.

The pilot SISUs were then monitored and evaluated every six months with a target to support a minimum of 15 projects engaging with a minimum of 60 individuals through a variety of activities including workshops, seminars, contests etc. These included a series of 'Social Innovation Studios' (entitled 'Impact Connect' in Southeast Asia). A key element of the Studio was to select participants from various disciplines and backgrounds —academics, students, professionals, government representatives, etc.— seeking to break down the boundaries between them. The participants were split into groups, each focussing on a particular societal challenge/problem. Three groups from each of the SIS were offered the chance to travel to Europe (one country for each winning project), where they had the opportunity to visit social innovators, EU support bodies and socially innovative institutions, and received peer-to-peer mentoring, pitched their ideas to possible partners and gained an international perspective.

It was very important for both SEASIN and LASIN to establish a strong international network for social innovation in HEIs that extended beyond the partners and their own countries. A model MOU (Memorandum of Understanding) was devised to frame the relationships between the universities and partners within their immediate localities. Each partner was also tasked with incorporating other universities from their own and neighbouring countries into the network. The networks were consolidated through a SISU Network Conferences held in the penultimate and last year of the project.

An important component of the two projects was to explore the potential for a postgraduate programme (a master in the case of LASIN, and a PhD for SEASIN) that could be developed so that the institutions could also offer a more formal approach to social innovation teaching and learning. The programme was intended for stakeholders and multipliers of social innovation, professionals and managers of social enterprises or organisations related to the social economy, consultants, researchers, government representatives and graduate students interested in the sector for their future careers.

Obviously, another major aspect of the project was its promotion and long-term impact. A dissemination strategy defined and identified the key stakeholders at a local, national, regional and global level. It also included the design of materials such as a logo, template for a virtual newsletter and PowerPoint presentation, leaflet, posters and other promotional resources. In the final year of the project, a sustainability plan was also produced, proposing how the various activities developed as part of the project could be continued in sustainably. Where appropriate alternative income streams were identified, including public-private funding, internal and external investment and in-kind resources. Specifically, the plan addressed the continuation of the SISUs in the long term and the sustainability of the Latin American and Southeast Asian Networks as a whole, as well as the embedding of the academic programmes.

A website was obviously integral to the implementation of the project. It included a closed space for project partners and associated partners and an open space for all stakeholders and external interested parties. All completed results of the project needed to be freely accessible through the website, as well as the latest social networking tools and techniques including blogs, Facebook, Twitter, etc., striving to generate a virtual community from the outset and linking up to virtual platforms of other related projects. Another space on the websites was specifically dedicated to the dissemination of opportunities and calls related to social innovation in respective regions. By the end of the project, a book (available in both paper and electronic formats) was produced including all the results of the SISUs and the projects as a whole, with descriptions of all the case studies and projects supported by the SISUs as well as articles written by experts and stakeholders related to social innovation.

It was important to maintain the quality of the various outputs of the project and to this end, an Advisory and Evaluation Committee was established governed by Terms of Reference which defined the commitment and input expected of members. A Contingency Plan was also drawn up and continually reviewed and updated by both the Advisory and Evaluation Committee and the overall project Management Committee throughout the two projects. The plan was designed to reflect the evaluation criteria and monitoring indicators as described in the Logical Framework, featured in the original project proposal. The responsibilities of the partners themselves were governed by a Partnership Agreement which formalised both the interaction between work package leaders and their delivery of outputs, as well as the schedule for payments and any IP or liability issues that arose during the two projects. Consortium meetings were also held every six months with additional virtual meetings held for particular aspects regarding the delivery and strategy elements as and when necessary.

2. Main achievements of the project

LASIN and SEASIN both shared similar objectives: to contribute to sustainable and inclusive socio-economic growth in their respective regions through intercultural curricular and extracurricular activities for supporting social innovation as a means to promote social cohesion, equity, proper geographical balance and diversity. They aimed to do this by lending added value to the participant universities' transferable skills and knowledge through engagement with the social economy. They also set out to benchmark the social innovation potential of universities in their respective regions through the exchange of knowledge and experience with European institutions. As a result, they also aimed to create synergies between Erasmus+ and other regional and international programmes that would further support social innovation in the region.

Through the activities described above, the projects proposed a step-change in the way universities approached social innovation, and without a doubt, a major challenge — and ultimately, the achievement— of both projects was to develop a common understanding among partners of what social innovation is and how it might be relevant to their institutions. The very nature of the proposition presented to senior management required a commitment at an institutional level and one that would not really be effective if it was adopted by a single department or faculty, or indeed, by universities working within the same country. This is because social innovation, even today, is a contested and nuanced term. Many universities consider it to be the exclusive domain of social sciences rather than an approach that needs to be taken by all disciplines.

In all partner universities, the SISU was established, evaluated and monitored. At least 15 projects were developed at each SISU, which ranged from student initiatives for creating a social enterprise to strategic

partnerships with the university and external organisations. The following are just some examples of the initiatives implemented as a result of the projects:

- Brazil

  - Theatre in the Communities (UNIRIO SISU). The Outreach Programme uses theatrical techniques to train young people living in one of the largest favelas complexes in the city of Rio de Janeiro, Brazil —the Maré Complex.

  - Universidade Das Quebradas (UFRJ SISU). The University of Quebradas (UQ) was created in 2010 to promote the exchange and absorption of university knowledge with the cultural and artistic production manifested on the outskirts of the city of Rio de Janeiro.

- Chile

  - Balloon Latam (UD SISU). Balloon is a social enterprise that promotes the strengthening of communities and their development through programmes of connection and creation of shared value between local entrepreneurs, agents of change, Higher Education Institutions (HEIs) and organizations from the public and private sectors. It provides tools for the development of people and communities, seeking solutions to local challenges, keeping in mind the possibilities of reality, historicity, culture, geography and productive development specific to the locality.

  - Take A Hand (UTFSM SISU). This case focuses on empowering people and communities through innovation, social inclusion, health care and the elderly. Innovation can be seen in the development of new products and services but also in its business model, through new forms of production, distribution and relationship.

- Colombia

  - Music Schools' Network of Medellin (ANT SISU). The Music Schools' Network of Medellin is a Mayor's Office programme created by Municipal Agreements in 1998 to generate and strengthen coexistence processes and citizen culture by training girls, boys, and young people through the enjoyment and learning of music. The Faculty of Arts of the University of Antioquia now operates the network, which is part of the artistic and cultural training of the Culture Secretariat of Medellin.

  - Park Of Life (ANT SISU). Park of Life was proposed by the University of Antioquia in alliance with the Mayor's Office of Medellín, opening a space to citizens for the promotion of health, quality of life and human development, looking for the appropriation of rights and guarantees by vulnerable populations.

  - Asakaa, The Greeting of Areandina (FUAA SISU). Areandina has helped to generate greater inclusion, working with vulnerable ethnic communities that have been forcedly displaced from the lands by ongoing violence and forced to move to other cities. Asakaa's activities are designed to preserve their heritage practices, promoting their economic, social and environmental sustainability through productive tools.

- Panama

  - School Farm Casiciaco Maria Haren (USMA SISU). Granja Escuela Casiciaco Maria Haren Alde is a farm located in Llano de las Minas in the Province of Herrera in Panama. The project was established on three basic pillars: more efficient and diversified production, training the

producer and the future professional, and consistent marketing of the product obtained. They aim to keep the quality from the line of organic agriculture and sustainable livestock, as viable alternatives in tune with the world's demand.

– Youths United for Dialogue (ISTMO SISU). The YOUTHS UNITED FOR THE DIALOGUE (YUD) is a student organization for young people in constant search of all kinds of solutions through dialogue. It promotes the formation of debate groups, in different public and private institutions (high schools and universities), organizes national and international forums for debate, lectures and university-level speaking competitions, teaches argumentative and dialogic techniques, as well as many related activities with the use and promotion of dialogue and freedom of speech.

– Art with a Cause (ISTMO SISU). It is a social inclusion project, which seeks to support children and young people living in difficult access or highly socially vulnerable areas who have little or no contact with art. Art contributes to forming the child's personality, enhances their talents and favours social interaction.

• Malaysia

– The Good Tavern Social Market (MARI SISU). The Good Tavern is more than a marketplace. It is a platform where you can discover and connect with social enterprises that are driving for social change. Every product, ranging from food, fashion, to lifestyle goods, is curated with care and love to ensure the best of economic quality while creating positive impacts on the lives of beneficiaries and well-being of the planet.

– Human Library Malaysia (SUN SISU). The Human Library is a global movement designed to build a positive framework for conversations that can challenge stereotypes and prejudices through dialogue. It is a place where real people representing stigmas and prejudices in society become Human Books that are available to be loaned, just as you would loan books in any library. The Human Library is a mobile space set up for dialogue and interaction. It challenges prejudice by facilitating a conversation between two people: Books and Readers.

• Myanmar

– Recycle Myanmar (TCU). Established by Pon Nya, Recycle Myanmar's aim is to raise aware-ness of waste management in the community level. Parallel to waste management, as the initiative was being implemented, it was found that communities across Myanmar also face severe problems with the violation of child rights. Apart from their regular goal of driving Myanmar towards a rubbish-free country, Recycle Myanmar raises funds using processing recyclables into final products and caring for street children and children who have dropped out from school.

– Career Enhancement Program for Social Enterprises /Entrepreneurs by Myanmar Business Executives Association (YUE). This social enterprise aims to promote the development of voca-tional education with a proven Swiss model (Swissness) whilst taking into consideration local, cultural realities as well as supporting dual training (integration of theory and practice) which has been neglected in the past 50 years. It also develops independent and future-oriented thinking after decades of indoctrination by authoritarianism in Myanmar. This leads to the establishment of a civil society (inter alia about ethnic and minority issues) in the sense of "empowerment" of democratic structures and supporting innovation, quality, efficiency and personal initiative.

- Cambodia

  - Color Silk Enterprise Cambodia (NUM SISU). Vanntha Ngorn was born into a weaver family herself and was passionate in reviving the ancient silk weaving tradition in Cambodia while empowering women, especially in isolated areas through economic development. The enterprise offers silk weave training to women in remote communities and provides fashionable and tailored wearables made with ancient techniques to customers from around the world. Color Silk today works with 500 women and is moving forward to scale the business.

  - Tree Alliance (RUPP SISU). To achieve their objective "Saving lives, building culture", Tree Alliance work as an intermediary between children on the streets with their families, future employers and customers. They equip street children with the skills they need for employment in the hospitality industry and the individual social support necessary to ensure that students can graduate successfully and not go back to the streets again, while customers at Tree restaurants get quality local foods and good services.

- Thailand

  - Local Alike, a Travel Social Enterprise (KU SISU). The social enterprise Local Alike aims to empower local communities through sustainable tourism. Their model is to work with local communities to design and develop 'authentic, responsible community-based tourism' products for the global market. Part of the objective of the project is to set-up an Impact Model Fund from where a percentage of the revenue is set aside for the development of the community.

  - GLab (TU SISU). GLab partners with social entrepreneurs and key supporting players to build the capacity of social enterprises and co-create social innovation. They also provide workshops suitable for social enterprises and high impact (social purpose) organisations at various stages, ranging from incubation to scaling and growing stage. Private companies, social enterprises, government, public organisations, and NGOs, as well as students and people who are interested in social enterprises all benefit from GLab.

On a letter addressed to Mark Majewsky, signed by Tristan Ace as Global Lead of Partnerships and Development, the British Council reported on the success of the SEASIN initiative, commenting that "the SEASIN project … has strengthened the fledgling social innovation eco-system within universities in Southeast Asia. It has done this by offering new approaches and models to developing organisations and initiatives (including social enterprises) that are addressing social needs that are currently unmet by either the public or private sector." Meanwhile, a letter from the European Commission (specifically from the Education, Audiovisual and Culture Executive Agency - EACEA) to EU Ambassadors in Panama, Colombia, Chile and Brazil, highlighted the 'remarkable results achieved' and underlined that "thanks to the contribution made by the project, Social innovation issues are now at the top of the Partner Countries' public agenda and public policies and there is an increased number of local private and public funds aimed at promoting social innovation and financing social innovation ventures."

3. Outputs, outcomes and impact

As with all European projects, in both LASIN and SEASIN, there were several deliverables that needed to be fulfilled, as defined in the original proposal, while the more long-term outcomes and impact were

more difficult to measure within the lifetime of the project. However, in hindsight, both projects achieved and even surpassed their ambitious targets.

Preparation phase

In both projects, a preliminary diagnosis was carried out, consisting of a preliminary questionnaire and consolidated report, to contextualise the project and help define its activities. More exhaustive surveys were implemented for external stakeholders through the website and face to face during the second half of the project. A report on the state

of the art of SI was produced for both participating regions. The projects also selected ten cases of HEI SI support (two for each partner university) from a wider pool of social innovations/enterprises identified and monitored throughout the project. The LASIN report concluded:

1. There was an important agreement between the partners in understanding social innovation as generating new ideas for generating welfare from interactions for collaboration and capacity building.

2. Partners reported various activities and projects of social innovation (n = 129) distributed in the following dimensions: curriculum (n = 32), organisational (n = 19), R & D + I (n = 24), concerning the environment (n = 28) and internationalisation (n = 25). Only one of the organisations reported no activities in any dimension.

3. The diversity of new experiences reported by partners allowed visible, significant potential for benchmarking strategies within the network, due to the relevant number of skills developed in different fields of social innovation. There were experiences ranging from teaching to implementation of specific programmes of social entrepreneurship or experience conducting international projects.

4. Not all of the regulatory environments of the partners provided provisions related directly to innovation and social innovation. Sometimes the normal activities emphasised specific problems associated with innovation and entrepreneurship.

5. In terms of engagement, there was more collaboration with public administration (45.5%), compared to enterprises (30.3%) and civil society (24.2%). National alliances dominated (42%), followed by local (36.2%) and international networks (21.7%).

Based on its findings, SEASIN made six recommendations for strengthening social innovation in Southeast Asia:

1. To focus on capacity building for social innovators;

2. To provide access to funding and raise awareness about existing funds available;

3. To provide governmental support and lessen bureaucratic processes for social innovation projects;

4. To provide platforms to bridge silos and to coordinate the work of social innovators to eliminate duplication in projects, with an emphasis on physical interactions and being inclusive to actors outside the social innovation sector;

5. To establish a regional network for social innovators;

6. To focus on the social aspect of social innovation and not technology.

Development

The generic model of SISU (Social Innovation Support Unit) and pilot units were established at partner institutions. The evaluation visits were carried out with all partners in attendance and in conjunction with the Social Innovation Studios and Impact Connect workshops. The Social Innovation Studios are workshops designed to provide a solid understanding of social innovation, share best practices, and connect participants to a local and global network. Promoted through calls for proposals within the two regions, they were aimed at those in the university environment including students, faculty, and administrators, but were open to anyone else in the community, recognising the cross-sector nature of social innovation and the benefits of diversity. They also helped to showcase the best practices and processes in social innovation, both locally and internationally. The interactive studios examined the four stages of the social innovation cycle starting with a general introduction, finding prompts & inspiration, developing proposals & ideas and planning for prototyping & pilots. They were mostly focused on the early stages of the innovation process and helped to build the foundation for a solid understanding of the process and practice of social innovation. Twelve participants from each region were allowed to travel to Europe (four winning participants going to each EU partner institution), where they visited social innovators and EU support bodies and received peer-to-peer mentoring, pitching their ideas to possible partners and gaining an international perspective. To complement the extracurricular activities of the SISU activities a postgraduate programme was developed with each region, to develop a common understanding of the promotion, design, development and management of innovative initiatives within a social, caring economy. The project used experience from other programmes (such as at GCU), examining specific best practices and synergies in existing programmes such as the activities of the Centre for Social Innovation at Stanford, the DESIS network, the Skoll business school as well as the body of research that has been developed from the Social Frontiers conferences and Horizon 2020 projects. As a result, a master's programme was developed as part of LASIN and subsequently delivered by the University of Salamanca whilst UAV developed a doctoral programme as part of SEASIN.

Dissemination and exploitation

A MOU between the partner universities and major stakeholders was signed as part of the SISU evaluation visits which ensured continued cooperation at a local level. Within LASIN, over 65 universities within Latin America joined the network, whilst in Southeast Asia a total of 230 organisations attended the conferences and events organised as part of the project. To ensure that there was a permanent and accessible record of the project results, both projects compiled a joint publication between the partner institutions and associates whose structure was as follows:

- A report on the comprehensive diagnostic of the regional context.
- A summary of the monitoring of the case studies identified.
- A generic model of SISU and a report on the results of the implementation of the SISUs and the SISU Network itself.
- The design of the postgraduate programmes in social innovation
- A selection of articles written by experts and stakeholders related to social innovation

The website that was maintained from early in the project was largely used to disseminate the framework and results of the project but also to contextualise it according to the sub-regional variations in terms of social needs and existing social innovation. It was designed to grow and solidify the community.

4. Success factors

One of the key success factors was the design of the consortium. In each case, two HEIs were selected from each country and in SEASIN the universities were also supported by a local non-HEI partner. The work packages were distributed evenly among partners but also, most importantly, there were two partners in charge of each one so that if one partner was less experienced or lagged for other reasons, the other partner could take up the slack, which mitigated poor delivery of outputs. In addition, the establishment of an external Advisory and Evaluation Board comprising specially invited experts, governed by terms of reference. In addition, an external evaluator was contracted to report on the project results and evaluation by each partner. Furthermore, from the outset, external stakeholders were identified and involved in the conceptualisation and establishment of the SISU.

One of the great challenges of the projects, as noted above, was the fact that social innovation is still an unfamiliar term for some institutions. Key to the projects' success was the relationship between the coordinator and all the partners. A level of trust needed to be established but also commitment and passion from partners about what they were delivering. There needed to be representation from the senior management within the university but also more junior staff members who could ensure that the outputs were successfully delivered. Although it has become more commonly exploited since the pandemic, the management of these projects even then depended significantly on the use of online communication resources such as Zoom and regular meetings were held with partners throughout their implementation.

5. Sustainability

Integral to the success of both projects, a joint event (in conjunction also with the Common Good First Project) was held in the heart of Brussels. The event is nothing if not ambitious: to envisage, propose and, subsequently, to establish a worldwide network that would be explored and demonstrate how universities can support social innovation more effectively. This aspiration evolved through the experience of the three projects. The programme of the event was specially designed to be dynamic and interactive including a number of specific actions:

- To showcase the activities and results of the three projects —offering participants first-hand experiences of partners from South Africa, Malaysia, Thailand, Myanmar, Cambodia, Chile, Colombia, Panama and Brazil.

- An opportunity was also given for similar projects from other parts of the world to showcase their own experiences.

- Representatives from the Commission spoke about the opportunities offered by programmes such as Erasmus+ to build on the initiatives and there was a brokerage session where participants were given the chance to forge links with each other and sow the seeds for future collaboration.

- The event culminated in a focused session that specifically defined what a world network for university–social innovation interaction might look like, how it would be managed and be effective and sustainable.

The event spawned further initiatives —including Social Innovation through Knowledge Exchange (SIKE[4]) which applied the same conceptual approach within Europe. This has led to the establishment of SISUs supporting 75 new social innovation projects in Scotland, Germany, Spain, Portugal and Croatia. A joint platform was also developed[5], which allowed partners from all over the world to exchange best practices, incubate ideas and forge new alliances. The platform has now over 500 members from 40 different countries. Further projects followed a similar model developing a SISU in different institutions and regions:

- SILKEN (Social Innovation Linkages through Knowledge Exchange) was implemented in HEIs in Hong Kong, Indonesia, the Philippines, Malaysia, Vietnam and Korea. The project was delivered entirely online over three months, during COVID-19.

- SILKEN-VIETNAM was a follow up project (still ongoing) with six Vietnamese HEIs.

- Similar projects have also been delivered in Sri Lanka, Ethiopia and Sub Sharan Africa.

- SEVERE (Social Enterprise through Virtual Environments and Remote Entrepreneurship) was conceived as a project that would engage with students directly and develop transnational teams for developing and delivering social innovation projects using online tools. A total of 60 students from Scotland, Italy, Portugal, Spain, France and Ireland took part on the programme.

- The European Social Fund+ recently invited nationally endorsed organisations to be nominated as Social Innovation Competence Centres. As a result of the GCU's experience, it was selected to oversee social innovation practice within the UK.

6. Lessons learned

As described above, the projects were very much dependent on the positive relationships developed among consortium partners. However, it was also essential that all partners contributed sufficient time and expertise to developing the project. With such a large consortium there was a real need to create working groups coalesced around the work packages. Both projects were tremendously ambitious and depended on institutional commitment and there is inevitably a question about the challenges of culture change in the context of changing governance and national priorities. Fortunately, the interest in social innovation has grown within HEIs across the world, especially in terms of its relationship to the UN Sustainable Development Goals and the greater emphasis now placed on impact within research. Given the significant scale of the funding, it is inevitable that the administrative burden of such projects is also significant, and especially challenging, considering the geographical distance between partners and the different internal management systems. We took a relatively flexible management approach which meant that the administrative burden upon us as coordinators needed to be particularly rigorous.

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[4] https://sike-eu.org/

[5] https://theglocal.network/company/sike

7. Conclusions

All these projects sought to demonstrate the potential of universities to use their knowledge by developing new paradigms and tools for targeted exchange between actors from all societal sectors. At the same time, they demonstrated how universities can learn from other organisations with more experience in supporting social innovation. The projects forged alliances between universities and stakeholders across the social innovation ecosystem including businesses, local government, civil society organisations and community groups to develop a new concept for knowledge exchange, informed by a needs analysis and monitoring of local social innovations. By combining the different experiences of universities and non-HEI practitioners, a blueprint for a social innovation support unit has been developed, which can be adapted by other institutions wishing to join the networks and emulate the experience of LASIN and SEASIN partners, creating a physical space to bring together different stakeholders in order to support social innovation processes.

The units offer training, policy-briefings and online tools as part of a suite of incubation and knowledge exchange services applying specialist research, equipment, outreach programmes and existing business support tailor-made to the needs of social innovators, whether they be students, academics or external stakeholders. A series of strategic recommendations and case studies, as well as online tools and teaching materials, have been produced to help other HEIs wishing to create similar units for driving social innovation through knowledge exchange. The rationale behind all the projects is that to successfully support social innovation, it is not enough to rely on traditional methods and processes for knowledge exchange. A university needs to establish a specialised unit that is specifically geared towards the needs of social innovators. The approach argues that universities should systematically support social innovation beyond ad hoc initiatives and sporadic activism. A unit is the next step towards institutionalisation of social innovation through universities. Moreover, the explicit notion of this form of knowledge exchange places universities as conscious actors within the social innovation ecosystem: they proactively assume the task of facilitating the exchange, flow and co-creation of knowledge.

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4.13. The MIMIR ANDINO project

The present case study is focused on the MIMIR ANDINO project, an acronym that stands for "Modernization of the Institutional Management of Research and Innovation in the Andean Region of Latin America". The MIMIR ANDINO project was funded by the Erasmus+ programme, and specifically by the Capacity Building in Higher Education Action. This project was carried out from November 2018 to November 2022. The coordinator of the project was the Colombian Association of Universities (ASCUN) with the support as co-coordinator of the Global Observatory for (OBREAL GLOBAL).

The result of this project, in which 20 universities, government entities, agencies and associations from Spain, Italy, Sweden, Colombia, Chile and Peru participated, was an Institutional Management Model for Research and Innovation in Higher Education Institutions in America Latina that proposes management that integrates four components: Strategic, Execution, Relational and Administrative with reflections and suggestions to be considered, adapted or applied, when considered appropriate, within the framework of the autonomy of the institution, to improve its management of R&D&I. Likewise, the model included general recommendations and clues for its monitoring and implementation. Other results are a document with pilot experiences of the Andean MIMIR Model during the pandemic caused by COVID-19, an open-access digital platform for self-assessment of the institutional management of research and innovation of HEIs, initiatives to influence public policies and other secondary benefits. All this collaborative work allowed the continuity of the project in the new network called "RIM NETWORK - RESEARCH & INNOVATION MANAGEMENT - Development of capabilities in the management of R&I based on its modernization and networking".

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1. Background

In recent decades, there has been a considerable increase in the products of research and innovation being generated in the world; even with significant gaps between countries on different continents, it is possible to notice, in almost all of them, the increase in publications, patents and other types of scientific production. This has also led to a greater number of challenges, for the scientific community in general, and for the institutions in charge of supporting their communities from the very birth of an idea to its publication or application in a specific field.

What has been done in many countries and institutions is to offer incentives for scientific production, monetary, symbolic, or otherwise, and this has had favourable results. However, a greater production, added to the increase in the use of technologies, the need to identify various sources of funding, and the constant request to report results in various information systems for control, promotion or placement in rankings, has led to an overload in the tasks related to the management of research in universities and, with it, there has been a need for management models that allow institutions to holistically and structurally welcome the different elements, processes, relationships and activities that allow and promote research and innovation in the university environment and higher education in general.

For several years now, different entities have been sensitive to the need to constitute themselves as facilitators for the formation of consortia that allow institutional and national improvements on different fronts. Thanks to this, efforts have been led and supported to address common challenges through international cooperation. One of these challenges is the improvement of the management of research and innovation, which in turn makes it possible to establish the necessary conditions for the scientific and academic contribution of universities to translate into a significant contribution to the environments with which they interact, as well as to global problems that have already acquired a sign of urgency. As a precursor to this project, a MIMIR was previously developed in the Southern Neighborhood Countries, from 2015 to 2018, as part of a cooperation process between Arab and European universities[1].

This is how the project "Modernization of Institutional Management for Innovation and Research in the Andean Region of Latin America – MIMIR ANDINO" was born, co-financed by the European Union within the framework of the Erasmus+ projects for Capacity Building in Higher Education (CBHE). This project was approved in the 2018 call and had four years of execution until 2022; it included a one-year extension due to the consequences experienced after the emergence of the COVID-19 pandemic.

The consortium was made of 20 partners with different influences on the management of research and innovation from Colombia, Chile, Peru, Italy, Sweden and Spain, as follows:

- Universities: Universidad Pedagógica y Tecnológica de Colombia, Universidad Antonio Nariño and University of Caldas (Colombia), University of Antofagasta, University of Aysén and University of Bío-Bío (Chile), University of Piura and Universidad Agraria La Molina and Universidad Toribio Rodríguez de Mendoza de Amazonas (Peru), University of Extremadura (Spain), Universitat Degli Studi di Roma "La Sapienza" (Italy), and Kungliga Tekniska Hoegskolan (Sweden).

- Government entities of education and science, technology & innovation: Ministry of Education of Chile, Ministry of Education and National Council of Science, and Technology and Technological Innovation (CONCYTEC of Peru, for its acronym in Spanish).

- University associations: Colombian Association of Universities (ASCUN, for its acronym in Spanish), Council of Rectors of Chilean Universities (CRUCH, for its acronym in Spanish), Colombian Association of Medical Schools (ASCOFAME, for its acronym in Spanish) and Observatory of European Union Relations Latin America (OBREAL GLOBAL, for its acronym in Spanish).

- Quality agencies: National Agency for Quality Assessment and Accreditation (ANECA, for its acronym in Spanish).

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[1] https://ascun.org.co/que-hacemos/proyectos-liderados-por-ascun/ascun-en-proyectos-erasmus-mimir-andino/

2. Main achievements of the project

Among the different activities and actions carried out to build the results of the project, the main product of the project and on which all the work of the consortium was focused, was the creation of one Model of the Institutional Management of Research and Innovation in Higher Education Institutions in Latin America (Bernal, Granados & Pallares Coords, 2022),

This Model is aimed at Higher Education Institutions (HEIs) in Latin America and seeks to serve as a guide and orientation for those who participate in this management from different levels in the HEIs (rectories, chancellors, vice-chancellors, directors, chiefs, teachers, researchers, support professionals, assistants and others). The Model includes a series of principles suggested as a basis and permanent reference in management, the grouping of processes, activities and elements of this management into four components (strategic, execution, relational and administrative), a proposal for the formation of internal systems for the evaluation of research and innovation consistent with institutional objectives and general recommendations for their implementation.

The principles of the model are Autonomy, Quality, Ethics, Bioethics and Scientific Integrity, Flexibility, Comprehensiveness, Relevance and Viability. There have been some unfortunate cases where research and innovation management are carried out without principles or in contravention of some of the universities' principals. For this reason, the MIMIR ANDINO model encourages the recovery or consolidation (as the case may be) of principled management. These are suggested at the beginning, but of course, each institution will have the possibility to add or adjust according to its characteristics.

The model also describes and makes suggestions to strengthen the activities and processes of R&D&I management in four components. The first component is *strategic*; it includes aspects of institutional policy, capacities, instances and some central issues, in which it is very important to make decisions as an institution, such as the evaluation of R&D&I, the transfer of knowledge, the relationship with public policies, internal and external communication, and the formulation of roadmaps that allow the strategy to become a reality. The second component is *execution*, in which there are processes or activities to be carried out for the development and promotion of R&D&I, scientific dissemination, technology transfer and entrepreneurship. The third component is *relational*, where some bets are proposed to strengthen communication between the mission functions of the university (training or teaching, research and extension or social projection), as well as between the institution and other external actors. The fourth component is *administrative* and covers aspects related to resources, infrastructures, legal assistance, and includes a proposal for an *internal system of ethics and scientific comprehensiveness*, which implies a step beyond the existence of ethics committees to address specific cases, that links different units and levels committed to the principles that are essential for R&D&I required in Latin America and worldwide.

In addition to the four components, this model proposes the creation of an *institutional system for the evaluation of R&D&I in coherence with organizational objectives*. To continue strengthening university autonomy, it is suggested to carry out internal analyses on the indicators currently used by HEIs to measure their R&D&I. EPrimarly, it seeks to promote changes towards the responsible measurement of research and innovation, in such a way that these are relevant and coherent with the institutional characteristics and objectives, as well as the global, national and local challenges we face today.

Finally, the MIMIR ANDINO Model includes some recommendations for its effective application and monitoring of the management itself and its impacts on the institution and the contexts with which it relates.

The MIMIR ANDINO model had two official versions. In the first version, all Latin American universities carried out pilots that were focused on specific subcomponents. The decision on which subcomponents should be prioritized in the pilots depended on internal self-evaluations guided by an instrument built by ASCUN (see Figure 4.13.1)[2].

Origin of the pilot: reasons to choose a component

(Re) Learning
From the interactions in the Mimir Project, work areas for the University are (re)learned.

Diagnostic self-assessment
Application of the Self-Diagnosis instrument, which emerges from the same project

Partner support
Accompaniment of European partners to identify the components that require action

Strategic alignment
Relationship with institutional strategic agendas (development plans, accreditation, ministries, etc.)

Figure 4.13.1. Reasons to choose a component to prioritize in the pilots of the first version of the MIMIR ANDINO Model
Source: ASCUN, 2022.

These pilots had to be carried out during the health crisis caused in 2020 by COVID-19. As a result, ASCUN generated strategies to accompany the piloting process, from socialization meetings to virtual immersion experiences, in which the European partners shared their good practices, and the Latin American partners shared their experiences during the development of the first stage of the project. In addition, a support plan was structured from the European partners to the Latin American partners during the execution of the pilot through work sessions and recommendations according to the characteristics of each institution.

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[2] The complete document with the pilot experiences of the first version of the MIMIR ANDINO Research and Innovation Management Model in Chile, Colombia and Peru can be consulted at https://drive.google.com/drive/folders/1s_dDs-YXKKozmUb29mC8nIavIhmLveu5

As a result of the pilots, some key aspects of the Model improved spaces for interaction between universities were also created and agreements were generated for the development of joint strategies for the future. The pilots also allowed for changes in institutional policies, improvement of infrastructures and a greater relationship within the universities and with other actors that would allow the continuity of the processes initiated.

Thus, the MIMIR ANDINO Model proved, from its piloting phase, to be a catalyst for the modernization of research and innovation management. Although the HEIs had identified the need and intended to improve their management skills, piloting the Model allowed them to configure a path and the operational impetus to carry them out. The implementation of the pilot also served to overcome some institutional barriers, as it provided sufficient information to motivate institutions to develop improvement and transformation actions.

3. Outputs, outcomes and impacts

According to the partial surveys and the final survey that evaluated the project in general, the partners agreed that the collaborative construction of a research and innovation management model with a comprehensive vision, based on real experiences and the systematic development of pilots, allowed them to know how other institutions operate and to identify what aspects needed to be mobilized in their institutions to build capacities in the management of the research (specifically related to policies, programs, practices, and human capacities).

Likewise, specific benefits were evidenced in the partners. New policies were established at two universities. Specifically, within the framework of the project, it was possible to approve the Institutional Policy for Research, Innovation, Creation and Entrepreneurship of a university and the Regulations for the Creation of Research, Innovation and Technological Development Groups in another university. There was also an effect on the very organization of the institutions. One of them created its Social Appropriation of Knowledge Unit, to promote horizontal dialogues with communities around the generation of new knowledge, and in another case, it linked new professionals to strengthen processes such as technology transfer and project formulation and management.

All partner universities experienced improvements in their technological infrastructure. In six of these, institutional software was created or adjusted for the management of research, science and technology at the university, which allowed them greater control of the research projects (including from the ideation of the project itself, the presentation to calls, administrative and financial management, among others). In one university, the R+D+I Management Platform for Research Institutes was implemented, and, in another case, it is mentioned how these developments even made it possible to streamline the processes for quality assurance, following the requirements of government entities, such as the Ministry of National Education. In a cross-sectional manner, time savings were evidenced when submitting reports.

One of the member universities of the consortium located in Aysén, Chile, within the framework of the MIMIR ANDINO project, set itself the objective of positioning Patagonia as a place to study water, glacier activity, space and climate change. It is a new university that has built its research strategy by taking advantage of the resources offered in this project.

One of the universities reported that, thanks to the strategic component selected for the pilot, the institution adjusted its 10-year strengthening Plan; for another university, based on what was indicated in

the relational component, Intersectoral Roundtables were set up and progress was made in the Diagnosis of Regional Needs. Also, as a result of the pilot in this component, another university designed its own scientific communication strategy.

The MIMIR ANDINO project also allowed the establishment of international relations that even now, a year after the end of the project, endure with permanent contacts. In particular, it was possible to form a network of researchers and design joint proposals for competitive funds among the Peruvian universities participating in the project. Likewise, a cooperation link between universities was obtained, which will facilitate concrete actions such as, for example, the review of research proposals through peers.

Although they were not proposed from the beginning of the project, additional results and products were achieved that have been beneficial for the institutions and for the region. In particular, the following results can be highlighted.

Open access digital platform for self-assessment of institutional research and innovation management

The need to carry out a self-assessment of how research and innovation management was being developed in the partner universities, led to the construction of a tool that was improved during the development of the project and that today is an open digital platform for all Higher Education Institutions (HEIs) interested in carrying out institutional self-diagnoses of their research and innovation management[3]. Through this, HEIs will be able to take it as a reference for a more effective use of the Model and will be able to compare self-evaluations carried out at different times (since it keeps the files of each exercise developed).

Influencing public policy

Possibilities were opened up in each of the countries involved to create or modify public policies, especially those related to the generation of transversal conditions for the modernization of R&D&I management in universities, how R&D&I is being evaluated at the national level and in the region, the instruments required to advance the purposes of Open Science, the need to improve institutional and national information systems, and the recognition and professionalization of research and innovation management. In the case of Peru, given that its Ministry of Education and Concytec were partners, progress was made in a project for the articulation and interoperability of national and institutional information systems, in guidelines for calls that recognized the role of research and innovation managers and in a program for the promotion of networking among Peruvian universities.

Student engagement

Although the actions of the project were especially aimed at the people in charge of the management of research and innovation at their different levels and areas within the universities, the participation of students in the training meetings or discussions was also included.

Students from 59 different programs belonging to 10 faculties at the undergraduate and graduate levels also participated in a perception survey as guests at the project presentations. The inclusion of students presented a new dimension to the project that needs to be promoted, and that is the need to involve the different levels of universities in the principles, actions and results of research and innovation carried out in higher education.

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[3] https://mimirandino.org/plataforma/

MIMIR ANDINO Coffee Shops

To strengthen institutional capacities through conversations between university managers and research experts from Latin American and European countries, the so-called *MIMIR ANDINO Cafés* (MIMIR ANDINO Coffee Shops) were created. Initially, the following topics were addressed: specialization in research and public investment; impact, accountability, and community; communicating research; university and public opinion; scientific recognition and incentives for the researcher's career; management and information systems for the institutional development of research in universities; patent policies and technology transfer. These spaces made it possible to link a wide audience to address current neuralgic debates on the management of research and innovation and are presented as a good initiative to continue international conversations that allow institutions to know the state of the discussion and the complexity of critical elements to advance in their management.

Erasmus+ CBHE Project Coordination Group for Latin America and the Caribbean

Given the ASCUN's experience in this coordination, in 2021 the Erasmus+ CBHE Project Coordination Group for Latin America and the Caribbean was created, in which 15 coordinators from the region are currently participating (from 19 projects approved between 2015 and 2019, to which new coordinations of the projects approved between 2020 and 2023 will be added). This workspace has made it possible to support the management of Erasmus+ projects from the experience and knowledge among the coordinators themselves and has as well contributed and enhanced the participation of more coordination from the region. This is a pioneering initiative, promoted from Colombia by University of La Sabana and ASCUN.

National and regional impacts

In national and regional terms, achievements and impacts are also identified, such as:

– Raising awareness among Latin American universities about the importance of building capacity and improving institutional management to optimize the research and innovation carried out by their communities, as well as their results and contributions.

– Promotion of networking between the countries and institutions involved, for the dissemination of project results and to expand its impacts in other places and in the future.

– Regional reflection and national advances for the configuration or strengthening of Current Research Information Systems (CRIS).

– Open access dialogue spaces for the discussion of conceptual references and real experiences in the management of research and innovation.

– Recognition of the possibilities that are generated in the joint work between universities with important gaps, for example, when thinking about the possible management both in institutions with reduced resources and work teams, without prior knowledge of the Erasmus+ CBHE projects, and in universities with greater experience, resources and complexities, supporting each other.

– Capacity building in HEIs who, after this experience, have proposed themselves as coordinators of Erasmus+ CBHE projects.

– A self-assessment tool and the publication of a flexible model, which can be applied by HEIs in the region.

– Multiplier workshops through which Latin American institutions carried out knowledge management, transferring what they learned to more people in their HEIs and beyond.

– Improving links between the European research area and the Latin American and Caribbean higher education area.

4. Success factors

To generate products relevant to diverse realities, it is necessary to guarantee diversity among the partners that make up a project. In the case of MIMIR ANDINO, the nine universities in Latin America are evidence of the diversity of this region in higher education, given their important differences in date and justification of creation, size, location, maturity and other characteristics of their own. From hundred-year-old universities to the case of a university with less than 10 years of existence that is expected to have its first class of students in the course of the project, and multi-campus universities with a presence in different territories and others with a single campus or with greater territorial concentration, and having important gaps, such as those that can also be identified between the six countries. This diversity allowed the results of the project (including a management model, collaborative networking, training and various tools for capacity building) to be sufficiently flexible, so that they can be used in different contexts and remain useful for the people in charge of this work in the different HEIs in Latin America (see Figure 4.13.2).

In addition, it is known that research and innovation are more relevant and timelier if they are developed in ecosystems in which different actors interact. In this sense, since MIMIR ANDINO is a project accompanied by ministries of education and government entities that lead education, science, technology and innovation in the Latin American countries involved, as well as by the contribution of university associations, this allowed to expand its reach and sustainability. Likewise, the participation of ANECA and OBREAL Global has made it possible to include this transversal and global perspective to accentuate the need to keep international cooperation alive in this way.

With different contexts, budgets, infrastructures and results...

Funding: e.g. Percentage of GDP in R+D of one partner = 0.12% - of another partner = 3.37%

Size and maturity of their ecosystems: e.g. number of researchers per million inhabitants of one partner = 88 – of another partner = 7593

Results in R+D+i: Publications, patents, training of human talent, impact, entrepreneurship, etc...

Development of physical and technological infrastructures

Historical and current situations: socio-economic, political, problematics, opportunities

But with common interests...

• Increasing international cooperation
• Improving the relationship between training, research, innovation and entrepreneurship
• Strengthening the role of universities in R+I ecosystems
• Bridging regional gaps
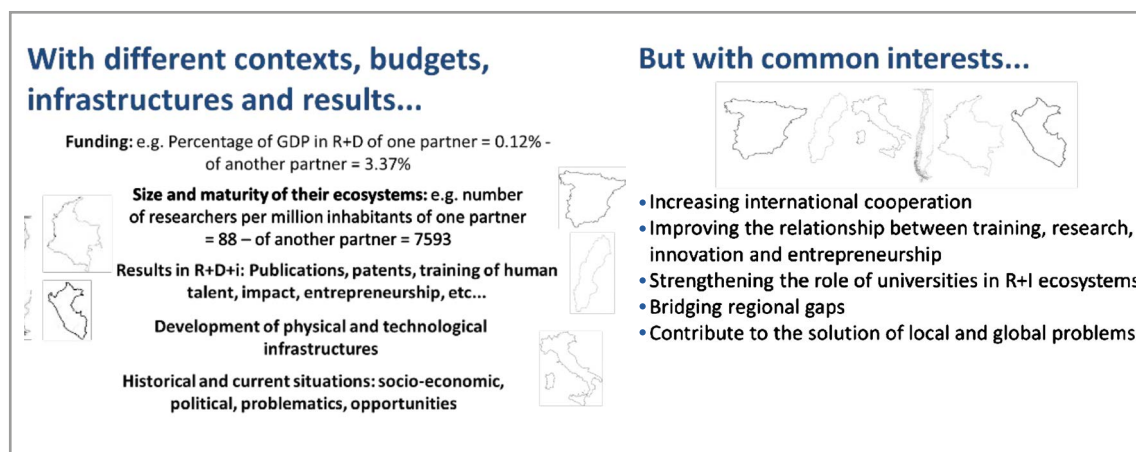• Contribute to the solution of local and global problems

Figure 4.13.2. Diversity, gaps and coincidences between countries of the partners of the MIMIR ANDINO project
Source: ASCUN, 2022.

The MIMIR ANDINO consortium was also made up of academic and research staff, as well as managerial and administrative staff, which made it possible to diversify participation and have a greater number of beneficiaries with specific and different profiles and knowledge. The recognition of this diversity allowed the partners to actively participate in the tasks and responsibilities assigned to them from their particularities, even allowing them to maintain commitment despite personnel changes and internal situations within the institutions.

From Peru, the participation of CONCYTEC and the Ministry of National Education (specifically the General Directorate of Higher University Education (DIGESU, for its acronym in Spanish)) was important, both in the project management team (PMT), as well as in the generation of initiatives for the regulation and public policy, the construction of the model, the development of the dissemination plan and the performance of a training visit on information and communication technologies (ICT) and management of research platforms.

In Chile, CRUCH contributed to the compilation of information for the national characterization report and to the organization of a visit that linked other actors, such as the Corporation for the Promotion of Production (CORFO), the National Commission of Science and Technology (CONICYT), ProChile, the Regional Government of Bío-Bío and the Regional Government of Ñuble.

On the other hand, the European partners accompanied the implementation process of the pilots. From the coordination, it was suggested to group the universities according to a component that they chose to develop, which allowed each European university to work with three Latin American universities. This accompaniment made it possible to: generate institutional regulations referring to research groups; serve as references for the configuration of journals; show good practices in strategic planning; support information and decision-making on information systems and in the incorporation of scientometric strategies; define mechanisms to strengthen the relationship between the international relations units of the universities and their researchers and research centres; analyze the definition and effects of the type of incentives that can be offered to researchers; improve the integral processes of knowledge generation, of patent surveillance processes and inventions development, as well as for knowledge transfer (evaluation and negotiation), high-value entrepreneurship and the establishment of key indicators.

Thanks also to the favourable coordination of the project carried out by the Colombian Association of Universities (ASCUN), important decisions were made and establish permanent channels of communication, between partners and with external stakeholders. Thus, collaborative work allowed institutions with extensive experience to support others that had never participated in this type of project.

It was also possible to convene other highly important actors, despite not being formal partners, as was the case of the Ministry of Science, Technology and Innovation of Colombia, which contributed to the opening meeting (KOM) held in Bogotá, as well as an Advisory Committee of the Mimir Andino Project. It was made up of experts from the public and private universities associated with ASCUN, which contributed to the mapping of the national research panorama and the development of the MIMIR ANDINO model. Likewise, ASCUN opened different spaces for other universities in the region (beyond the participants as partners of the consortium) to learn about and enrich the project through a National Communication Table of Progress and Results of the Project, as well as in the Mimir Andino Coffee Shops, which supported the training and dissemination process during the implementation of the pilots.

It was even possible to collaborate with other Erasmus+ projects, such as I2Latam (Strengthening Research and Innovation in Young Universities for Regional Development in Latin America), with whom

joint actions were established during the pandemic, including a series of webinars called "I2Latam – Mimir Andino Dialogues: Trends and good practices in the management of research and innovation in Europe and Latin America".

The most important thing, however, in addition to the actions carried out, is that the MIMIR ANDINO project started from diversity and this ecosystem perspective, but with a vision directed towards sustainability, as it sought to strengthen the capacities of partner institutions and the union of efforts of HEIs with government entities, associations of universities and quality agencies, could contribute to the sustainable development of the countries involved and the regions of Europe and Latin America.

This, based on mutual knowledge, with the elaboration of the state of the art of research and innovation management by each country and by each institution, made it possible to identify the strengths and needs in terms of policies, resources, programs and strategic actors involved, as well as to prioritize the factors that would allow a greater impact of the research and innovation that was being developed.

In addition, with the formulation of the MIMIR ANDINO model and with the implementation of the pilots, the role of research and innovation was strengthened, which is locally oriented and addresses the socioeconomic and cultural aspects of specific regions, without ignoring the global problems and common challenges between countries. Even the fact that the partners were not the best-ranked research universities in international rankings but had missions with a greater commitment to regional development, contributed to this objective.

First Latin American association to coordinate an Erasmus+ project for capacity building in the field of higher education: ASCUN

The Colombian Association of Universities (ASCUN) has contributed to the internationalization of higher education in Colombia in various ways, one of them is through its active participation in international projects. ASCUN is a non-governmental organization, with 67 years of existence, which brings together 90% of the public and private universities in Colombia, from all regions of the country, and currently presides over Latin American and Caribbean Higher Education Space (ENLACES, for its acronym in Spanish). Initially, its main task was to facilitate contact between Colombian universities and other universities from different countries that sought to work on a common project. However, recently, ASCUN has been participating as a partner in the projects, offering approaches with government entities, or with university associations or councils of rectors from other countries and extending the opportunities for dissemination of results, as well as the number of institutions that could benefit indirectly from the projects[4].

Experience shows that university associations such as ASCUN can strengthen, through their role, research and innovation ecosystems by enhancing networking and the benefits of project results and generating a greater impact at local, national and regional levels. The capacity of these types of liaison bodies to coordinate spaces for dialogue, share knowledge, promote collaboration and support dissemination, helps to strengthen and prolong the positive impacts of these projects in the field of higher education.

Furthermore, the coordination of this project from ASCUN has allowed more Latin American universities, as well as other actors from the research, development and innovation (R&D&I) ecosystems, to get

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[4] Projects such as RIESAL, CAMINOS, ACE, CLIMAR, DigiUGov and Equam-La (https://ascun.org.co/ascun-en-proyectos-erasmus/).

involved since the beginning of the project, also in the presentation of its progress and its sustainability, in addition to the universities that participated directly as partners.

Thanks to this experience, ASCUN has also strengthened its capacity to generate support of this type for the directors of Higher Education Institutions (HEIs), and also to articulate efforts to obtain useful and relevant tools that allow us to face the global challenges we are experiencing.

In the evaluation of the MIMIR ANDINO project by the European Executive Agency for Education and Culture (EACEA), it obtained a rating of "very good", between 75 and 100 points. The highest rating given to this type of project, considering its quality and execution. Among the comments received in the evaluation, it is highlighted that the project achieved most of the objectives and made a relevant contribution to the Erasmus+ program of the CBHE. It is recognized that the results obtained are relevant to the policy environment and the priorities of the partner institutions and that the quality of the outputs and activities of the projects was very good, as demonstrated by its main achievements.

It was also evident that the project was managed very well, with an adequate distribution of tasks among the partners and that the consortium has established a solid cooperation between them, combining the capacities and experience of the participants from the European Union with the specific needs of the Latin American countries, in this case, of the Andean region. The dissemination that took place reached the relevant target group through appropriate communication channels. It is mentioned that the project website is very well structured and regularly updated with relevant documents and information related to activities and results. Thus, the evaluation concluded that the impact of the project is evident, and its sustainability seems assured, in addition to the fact that it can be considered an example of good practice.

5. Sustainability

The management of research and innovation continues to be a challenge for HEIs. The MIMIR ANDINO project generated and strengthened capacities in partner institutions in Colombia, Peru and Chile and improved links between them and institutions in Spain, Italy and Sweden. However, the work must continue for all that remains to be done, understanding university management as a pivot that will allow a better contribution from higher education to societies, humanity and the planet, which urgently need the implementation of collective and cooperative work to transform our problems and build the futures we want for our regions.

For this reason, various mechanisms for the international dissemination of the results and lessons learned through the MIMIR ANDINO project have continued to be developed, such as the International Meeting for the Modernization of Research and Innovation Management in Latin America, which took place in Barranquilla, Colombia, in 2022.

Thanks to the initiative of one of the participants of MIMIR ANDINO, a new project was generated called "RIM NETWORK – RESEARCH & INNOVATION MANAGEMENT – Development of capacities in R+I management based on its modernization and networking". In this new project, in addition to the institutions that were partners of MIMIR ANDINO from Colombia, Chile, Peru and Spain, institutions from Mexico, Paraguay and the Dominican Republic joined the project. Three more years of work are planned to update the MIMIR ANDINO model, continue advancing in pilots in HEIs, identifying topics and central references in this management and continuing to strengthen networking.

Finally, from the Colombian Association of Universities (ASCUN), we thank the co-financing of the European Union, without which this work would not have been possible; to Obreal Global, for its permanent and invaluable support, and to all the people and institutions that have participated to date with total dedication and commitment. Of course, we are keeping open the invitation for all those interested in improving and modernizing the management of research and innovation, through international cooperation, to join this initiative, through the erasmus@ascun.org.co mail.

6. Lessons learned

The MIMIR ANDINO project, offered for four years the experiences of joint work for the search for common interests, the accompaniment and development of growth to HEIs with research and innovation management processes with different degrees of maturity, and located both in central and peripheral regions of their countries. This highlighted the importance of international cooperation and collaboration at all levels. The reciprocal collegiality between Latin Americans and Europeans allowed each party to contribute from their strengths and recognition as peers, but also to get to know each other much better within each institution, given the possibilities of self-evaluation and openness to new knowledge for the management of research and innovation, as well as the need to have the input resources for the correct execution of the project.

Progress was made towards strengthening the management of research and innovation, the value and importance of having a model for it, as well as the recognition of the need for modernization within the institutions, provoking even in the government entities and agencies that are related to the subject of the project, a greater relevance of permanently updating policies, given the changing demands and interests of the sector as well as the challenges faced by HEIs in these times.

Regarding coordination, the project allowed the Association to establish solid institutional and professional capacities to continue developing this type of initiative, as well as to serve as a bridge of liaison and support to different strategic stakeholders. The need to be flexible, to also modernize internal structures and capacities, has been a valuable learning experience for future projects, as well as knowing how to take advantage of resources and ideas to complement and articulate with other initiatives that are being led for the articulated work between HEIs and between these and external sectors.

7. Conclusions

The Model of Institutional Management of Research and Innovation in Higher Education Institutions of Latin America MIMIR ANDINO, built from the international cooperation between 20 partner institutions from six countries in Europe and Latin America, was very important for all those involved as complementary resources and different strengths in terms of research were leveraged innovation and resources. International collaboration made it possible to build from their differences in a complementary way, maximizing the potential of both regions.

In addition, collaboration between countries with different cultural, economic and social contexts promoted a diversity of perspectives and approaches in the management of research and innovation,

which led to the identification of more creative initiatives and solutions for the model that could be adapted to the specific needs of each region.

Thanks to the resources obtained, universities were able to access advanced infrastructure and technology that would otherwise have been inaccessible, which fostered effective changes in institutions.

Friendships and opportunities for the exchange of knowledge, experiences and best practices in research and innovation contributed to capacity building in both regions, as well as to the creation of long-term collaborative networks. Additionally, all stakeholders could address local and global challenges that require collaborative solutions.

The final challenge is to keep this process alive, which requires the countries and institutions involved to maintain a continuous commitment to the project, allocating financial, human and technical resources for its development. It is also important to think about governance structures that include coordination, decision-making and monitoring mechanisms, and to encourage the participation of new actors, both nationally and internationally, to maintain the relevance and diversity of perspectives of the project.

At ASCUN we have continued to disseminate the results and good practices of the project both in Colombia and in international meetings and we are looking for ways to update the Andean MIMIR model to respond to contextual changes.

Of course, one of the doubts that arises is how to ensure continuity in the financing of the project over time, which could take place through new sources of financing, diversification of resources and development of long-term financial sustainability strategies.

Fortunately, it was possible to establish the continuity of the project through the creation of a network in Cyted, the "RIM NETWORK - RESEARCH & INNOVATION MANAGEMENT - Development of capacities in R+I management from its modernization and networking", which currently involves six countries in Latin America and Spain, that is, in addition to the continuity of the countries that participated in MIMIR ANDINO (Colombia, Peru and Chile), three more countries in the region (Mexico, Paraguay and the Dominican Republic) joined this initiative, which will seek to continue improving institutional capacities in research and innovation management (R&I) within the Ibero-American space, as a means to dynamize and catalyze these activities and promote innovative, inclusive and sustainable development of the different territories of this region.

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4.14. The TOURIST project

The present case study is focused on the TOURIST project, acronym that stands for "Competence centres for the development of sustainable tourism and innovative financial management strategies to increase the positive impact of local tourism in Thailand and Vietnam". The TOURIST project was funded by the Erasmus+ programme, and specifically by the Capacity Building in Higher Education Action (included in the Key Action 2).

The project has been implemented between October 2017 until April 2021 and consisted of partners from 2 South-East Asian and 3 European countries. Most important within the TOURIST project, was the diversity of partners. Within the consortium Higher Education Institutions (HEIs) but also partners from the field of tourism were majorly contributing.

Details of the partners can be found below:

For Vietnam: Hue University (HUE), University of Social Sciences and Humanities Ho Chi Minh City (USSH-HCMC), University of Social Sciences and Humanities Hanoi (USSH-Hanoi) whereas being HUE the national coordinator for Vietnam.

For Thailand: Kasetsart University (KU), Prince of Songkla University (PSU), Payap University (PU), Burapha University (BU) and The Thailand Community Based Tourism Institute as a non-university partner whereas KU being the national coordinator for Thailand.

For the European Union: FH JOANNEUM (FHJ), Austria, as the coordinator, and University of Alicante (UA), Spain, as well Haaga-Helia University of Applied Sciences (HHA), Finland.

The following elaboration of the TOURIST project proved that it has been a success at all participating universities and given the impact made on regional but also national level, the European Commission (Erasmus+ programme) should consider the project as good practice in the field of higher education.

Claudia Linditsch & Anita Macek, FH JOANNEUM, Austria

1. Background

The tourism industry in the 21st century is undergoing a significant transformation due to various factors. Firstly, the rise of the middle class in developing countries, driven by economic growth, has led to a surge in the number of people traveling. Secondly, in developed countries, there has been

a shift in societal priorities, with people placing high importance on holidays and travel as part of personal education and development. This shift has increased the demand for greater quality and variety in tourism experiences.

United Nations Secretary-General Ban Ki-Moon acknowledged these developments on World Tourism Day in 2015, emphasizing the potential of tourism for sustainable development. Tourism has become a powerful force, providing livelihood opportunities, reducing poverty, and fostering inclusive development. The concept of "sustainable tourism development" gained global recognition after the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro.

Sustainable tourism is defined as tourism that considers its current and future economic, social, and environmental impacts while addressing the needs of visitors, the industry, the environment, and host communities, according to the United Nations Environment Programme and World Tourism Organization.

The UN has played a pivotal role in promoting sustainable tourism, with initiatives like Agenda 21, which advocates for social equity, economic prosperity, and environmental responsibility. Various organizations, including the World Travel and Tourism Council, have also recognized the importance of sustainability in tourism and committed to making it an environmentally responsible industry.

In Europe, sustainable tourism is widely supported and implemented through initiatives like the European Commission's Agenda for Sustainable and Competitive European Tourism, the European Tourism Indicators System (ETIS), and the EU Ecolabel and EMAS. These initiatives aim to increase awareness and promote sustainable practices within the tourism industry.

Thailand, for example, stands out as one of the most visited countries in Southeast Asia. In 2015, Thailand recorded a staggering 29.68 million international arrivals, and the trend continues to show continuous growth. The tourism sector is not just a significant contributor to Thailand's GDP; it is a cornerstone, contributing a substantial 19.3% to the country's economic output in 2015, as reported by the World Travel and Tourism Council (WTTC). This remarkable influx of tourists has not only boosted Thailand's economic prosperity but has also generated numerous employment opportunities, aligning with the United Nations' sustainable development goals (Thailand Tourism Authority, 2021).

Vietnam, another rising star in the world of tourism, has witnessed a remarkable transformation in its industry. Since the year 2000, international arrivals in Vietnam have quadrupled, reaching nearly 8 million in 2015. The tourism sector now represents a substantial 4.8% of Vietnam's GDP, and there is a substantial untapped potential. Projections indicate that Vietnam could expect to welcome 20 million international tourists annually from 2020 onwards, further cementing the industry's importance in the country's economy. This surge in tourism has brought economic benefits to Vietnam, fostering job creation and enhancing overall prosperity.

In both Thailand and Vietnam, the tourism industry serves as a vital source of income and economic growth. However, there is a pressing need to balance this growth with environmental conservation and the preservation of cultural heritage. Initiatives to promote sustainable tourism in these countries are essential to safeguard their attractiveness as tourist destinations while ensuring the long-term well-being of their communities and ecosystems (Gozzoli, 2018).

Overall, these developments underscore the importance of sustainable tourism not only for the economic growth of these countries but also for the preservation of their natural and cultural treasures. It is crucial to implement initiatives that promote sustainability in these countries to ensure that the economic gains do not come at the expense of environmental degradation or cultural erosion.

The TOURIST project (FH JOANNEUM, 2017) was initiated with the support of the Austria Mundus fund, which was awarded to FH JOANNEUM, the coordinator of the project. Recognizing the importance of fostering collaboration between academic institutions in the field of tourism, the project coordinators strategically selected high-ranking tourism faculties in Thailand and Vietnam to serve as key partners in the project's development.

The initial contact for the project was made with Kasetsart University (KU) in Thailand and Hue University (HU) in Vietnam. These universities, renowned for their expertise in tourism education, played a pivotal role in the project's inception. Upon their recommendation, additional top-ranking faculties from both countries were identified to join the project consortium.

These selected faculties, known for their excellence in tourism education, brought a wealth of expertise to the project. They had previously engaged in limited collaboration but saw the TOURIST project as an opportunity to strengthen ties and cooperation in the pursuit of sustainable and responsible tourism practices in Southeast Asia and with partners in Europe.

The project's primary objective was to leverage existing regulations and policies in the tourism sector, ensuring that tourism development in both Thailand and Vietnam aligns with principles of sustainability and responsible tourism, as well as to offer educational opportunities to strengthen the principles mentioned previously. By uniting these top-ranking faculties and additional partners who shared a common commitment to advancing sustainable tourism practices, the TOURIST project aimed to create a collaborative framework that supports sustainable tourism practices. None of the participating partners had competence centers for sustainable tourism installed at that time but saw the necessity to change the tourism perspective to ensure long-term benefits for all relevant stakeholders. Generally, the concepts of sustainable tourism and sustainability in the tourism industry are already known around the globe. In the European Union, the first innovators took over the topic and further developed strategies for application, as well as the creation of further growth through sustainability in tourism. Still, Southeast Asia developing tourism to become a major contributor to the GDP, and the focus lies primarily on achieving growth and wealth through this economic sector. The concept of sustainability in tourism was also at that time known but given the peak, the benefits for major stakeholders created through tourism and the development speed of the tourism industry, only minor attention has been paid to sustainability.

The TOURIST project unfolded as a meticulously orchestrated sequence of activities, each building upon the other in a logical progression. Rooted in its mission to foster sustainability in the tourism industry, the project embraced a core principle: "Uniting Tourism, Sustaining Tomorrow." This guiding ethos underscored the project's commitment to inclusivity and collaboration with a wide array of stakeholders across Thailand, Vietnam, and Europe. At every stage of its development, the project ensured the active participation of stakeholders representing various dimensions of the tourism sector. This multifaceted engagement strategy allowed for a comprehensive and balanced exploration of perspectives from all major players in the industry.

To structure its efforts effectively, the TOURIST project was divided into distinct Work Packages (WPs). These WPs served as the cornerstone of the project's organized approach to sustainability in tourism. Each WP was carefully designed to address specific aspects of the industry, and the sequential arrangement of these packages ensured a logical and comprehensive progression in the project's development. By involving stakeholders from different sectors and regions, the project aimed to create a holistic and robust framework for sustainable tourism practices that would benefit not only the industry but also the local communities and the environment.

The initial phase of the project commenced with a strong emphasis on conducting a comprehensive "Needs Analysis" and assessing the "Status-quo" of sustainable tourism efforts and good practices across Thailand, Vietnam, and Europe. Within this context, Activity 1.1 was dedicated to thoroughly examining the existing sustainable tourism initiatives, practices, and challenges in each of these regions, offering a clear view of the current state of affairs.

Activity 1.2 involved the creation of a "GAP Report" highlighting the disparities between the sustainable tourism agendas of the European Union and the tourism industries in Thailand and Vietnam. This report elucidated the differences in their approaches to sustainable tourism, shedding light on areas for potential improvement and alignment. Activity 1.3 culminated in a "Comparative Report" that not only provided guidelines for comparison but also offered insightful recommendations for harmonizing sustainable tourism efforts across the regions. Additionally, Activity 1.4 entailed a study visit to Austria, where project participants had the opportunity to witness and learn from "Good Practice Examples" in the field of sustainable tourism. This visit served as an invaluable source of inspiration and knowledge for the project's future endeavors.

Within the TOURIST project, Work Package 2, known as "Capacity Building – Training for Trainers," had a core mission of fostering knowledge exchange and capacity enhancement among representatives of Higher Education Institutions (HEIs). This initiative aimed to facilitate a collaborative relationship between European and Southeast Asian partners.

The execution of WP2 encompassed several pivotal steps. In Step 2.1, significant attention was dedicated to the development of comprehensive training plans and materials. These resources were meticulously curated to empower participants with the requisite knowledge and tools for the effective dissemination of expertise in sustainable tourism practices. Under Step 2.2, the project played a pivotal role in Human Capacity Building Training. These training sessions were designed to impart participants with a profound understanding of sustainable tourism and the practical skills necessary to become proficient trainers. The approach prioritized hands-on learning, ensuring participants acquired practical insights and good practices. Moving to Step 2.3, the project facilitated internal workshops hosted by the participants' home HEIs. These workshops served as a critical vehicle for the dissemination of knowledge and the promotion of sustainable tourism practices at a regional level. They offered a platform for the practical implementation and testing of the knowledge acquired in earlier activities. To maintain the workshops' quality, feedback from trainees was systematically gathered, analyzed, and evaluated, contributing to the continuous refinement and diffusion of knowledge.

Work Package 3 within the TOURIST project, known as the "Technical Instalment of the Competence Centers for Sustainable Tourism in Thailand and Vietnam," marked a pivotal phase and the initial step toward establishing these essential centers. This major WP was strategically divided into three key activities: Activity 3.1 focused on conducting a comprehensive assessment of the "Technical Needs" of each partner involved in the project. This evaluation encompassed both hardware and software requirements, ensuring that the forthcoming competence center's would be optimally equipped to serve their intended purpose. Activity 3.2 entailed the "Purchase and Installation" phase, including the meticulous evaluation of offers in alignment with a predefined framework. This step was critical in acquiring the necessary equipment and ensuring that it was properly set up, preparing the centers for their subsequent use. Finally, in Activity 3.3, a "Roll-out Test" was conducted to rigorously check the functionality of the equipment before the centers' official opening ceremony. This comprehensive test phase was vital to guarantee that all technical aspects were in working order, ensuring a seamless launch of the competence centers dedicated to sustainable tourism in Thailand and Vietnam.

Within the TOURIST Project, Work Package 4 held a pivotal role, serving as the linchpin for the operational success of the competence centers and guiding the overall project's content areas. This WP comprised a series of essential activities, each geared toward ensuring the competence of centers' effectiveness and seamless operation:

1. Official Integration of Competence Centers: Activity 4.1 involved the formal integration of the competence centers into the university structure. This step was vital in establishing the competence centers as integral components of the academic framework.

2. Operation, Business, Marketing, and Sustainability Planning: In Activity 4.2, a comprehensive plan was developed, encompassing operations, business strategies, marketing efforts, and sustainability measures. This planning phase also included defining the liaisons between the European and Southeast Asian partners, fostering collaboration and shared objectives.

3. Competence Center Operations: Activity 4.3 focused on the day-to-day operations of the competence centers. By harnessing the combined efforts of 2 academic staff and 5 students per competence center (in total, involving 14 academic staff and 35 students), these centers were primed to offer essential services. The primary focus of the competence centers was to guide companies operating in the tourism industry, tourism associations, and governmental bodies. This guidance extended to ideas and projects on sustainable tourism, enriching stakeholders with a deeper understanding of sustainable tourism practices and insights into alternative financing methods to facilitate project implementation with additional funding possibilities.

Additionally, an integral facet of the project involved students from each competence center, with groups of 5 students having the opportunity to embark on "mini" placements to other competence centers in partner countries. For instance, Vietnamese students could visit a competence center in Thailand, and vice versa. These knowledge exchange sessions, spanning 3 days, facilitated interactions among colleagues from different competence centers and offered exposure to diverse operational models. Work Package leaders monitored this process, and the placements were organized collaboratively among the partners to ensure a well-coordinated and enriching experience for the students.

Work Package 5 was the concluding phase of the TOURIST project, playing a pivotal role in content development. It was focused on establishing an international network devoted to sustainable tourism and innovative financial management strategies. This network had a dual purpose: facilitating worldwide discourse on these crucial subjects and enhancing awareness of their significance. Within WP5, several key activities took place: in the first activity, training sessions were conducted to share expertise on sustainable tourism and financial strategies with non-partner universities and external stakeholders.

The network organized international conferences, hosting events in both Thailand and Vietnam. These conferences served as platforms for experts and stakeholders to engage in discussions, share insights, and promote collaboration in the field of sustainable tourism.

Another critical aspect of Activity 5.3 was the creation of a joint publication. This publication showcased the project's most significant results and highlighted best practice examples in sustainable tourism and innovative financial management strategies. It served as a valuable resource for disseminating knowledge and promoting the adoption of successful approaches in these areas. These initiatives within Work Package 5 aimed to foster international cooperation, promote knowledge exchange and advance the fields of sustainable tourism and innovative financial management within the tourism sector (FH JOANNEUM, 2017).

2. Main achievements of the project

The TOURIST project has successfully established technically equipped sustainable tourism centers (competence centers) at all participating HEIs in Thailand and Vietnam —in total 7 competence centers. These centers have become hubs for collaboration and knowledge exchange among students, lecturers, and university staff. Furthermore, they have facilitated a shift in perspective regarding sustainable tourism practices among external partners, including local communities, tourism associations, and international representatives from the hospitality industry. Nowadays, the competence centers of the TOURIST project are still building the basis for collaboration among the major stakeholders of tourism to ensure a shift in perspective from exploitive tourism to a sustainable perspective (FH JOANNEUM, 2017).

These centers continue to actively demonstrate their excellence in the field of sustainable tourism, contributing to an enhanced reputation for the universities involved. This recognition is not only a result of their internal impact but is also attributable to the network created among HEIs, the tourism sector, and beyond. The TOURIST project has played a pivotal role in establishing these connections and fostering a culture of excellence in sustainable tourism across the region.

Although not directly shaping national policies, the TOURIST project emerged as a pivotal model for implementing and refining existing initiatives aimed at fostering sustainable tourism in Thailand and Vietnam. The project's tangible outcomes provided a practical roadmap for sustainable tourism practices, seamlessly aligning with the objectives outlined in pertinent national regulations by the Tourism Authority of Thailand and the Ministry of Culture, Sports and Tourism as well as the Vietnam National Administration of Tourism.

Already from 2017 onwards, the Tourism Authority of Thailand has taken a leading role in nationwide efforts to foster sustainable measures in the tourism industry. Wildlife has been preserved, tourists have been banned from overcrowded and suffering bio-diversity environments and education campaigns were launched to ensure that locals act as ambassadors for a more sustainable approach in the tourism industry. Just to name two of these initiatives "Travel Thailand in Style, Reduce Plastic Waste" or "CSR & SET in the Local - Life and Learn".

In Vietnam, standards and initiatives for sustainable tourism were not as extensive as in Thailand at that same time, though tourism numbers were constantly increasing due to the Law of Tourism amended in 2017. Also, the national authorities as well as the Vietnam National Administration of Tourism started to engage in this topic, at the same time as focusing on growth and generating income.

Having in mind these two different pre-requisites and also perspectives on tourism and sustainable tourism, TOURIST maintained unwavering objectives throughout its course. The project consortium, composed of diverse stakeholders, collaborated to forge a contemporary framework for sustainable tourism practices. The establishment of sustainable tourism competence centers and the development of a comprehensive EU good practice catalog showcased TOURIST's commitment to fostering initiatives that nurtured inter-institutional relations and promoted the sharing of best practices within the sustainable tourism sector.

In conclusion, the TOURIST project significantly shaped the sustainable tourism landscape in Thailand and Vietnam by providing a practical model for responsible tourism practices. Its outcomes resonated with and enriched existing national initiatives, contributing substantially to the realization of sustainable tourism practices in both countries (FH JOANNEUM, 2017).

3. Outputs, outcomes and impact

TOURIST has supported both countries in upgrading skills on the topic of sustainable tourism with the support of the following tangible outcomes and outputs (FH JOANNEUM, 2017):

a) Facilitating enhanced collaboration among institutions and the exchange of successful approaches through needs analysis and knowledge transfer was a key focus of the TOURIST project. Specifically tailored to the TOURIST project, the initiative compiled one robust good practice catalog highlighting sustainable tourism initiatives within the European Union. This effort extends to conducting 7 needs analyses for project partners in Thailand and Vietnam to identify their sustainable tourism training needs, accompanied by a collective GAP analysis to pinpoint training gaps. Additionally, a study visit to Austria has been scheduled to further enrich the project's understanding and insights and to get an insight into sustainable tourism efforts from a European perspective.

b) The TOURIST project placed a strong emphasis on interactive and engaging education for both educational staff and students. With a focus on creating dynamic learning experiences, the project organized 4 train-the-trainer events and facilitated 16 multiplier training sessions conducted by partners in Thailand and Vietnam. These initiatives have successfully reached over 250 stakeholders, including lecturers, students, and members of the tourism community of both Thailand and Vietnam. The project was dedicated to promoting lively and participatory educational practices, aligning with its commitment to advancing interactive and engaging education within the context of sustainable tourism and innovative teaching and learning practices.

c) Achieving a significant milestone by establishing seven competence centers on sustainable tourism across HEIs in Thailand and Vietnam. This noteworthy accomplishment serves as a testament to the project's commitment to advancing knowledge and expertise in sustainable tourism practices. Through these competence centers, the TOURIST project has provided vital support to more than 100 organizations, associations, and communities, offering valuable consultations on sustainable tourism practices in Thailand and Vietnam. This comprehensive outreach underscores the project's dedication to fostering a widespread understanding of sustainable tourism, contributing to the development of a more responsible and environmentally conscious tourism industry in the region.

d) Successfully cultivating a global community committed to sustainable tourism through the establishment of one international online network. This initiative, which took place in the past, created a digital space that seamlessly connected academics and practitioners to exchange knowledge and insights. Operating on an intuitive online platform, the network served as a dynamic hub for international collaboration at both academic and practical levels. By transcending geographical constraints, the project effectively facilitated the exchange of expertise and ideas, fostering a virtual ecosystem that remains a testament to the project's commitment to sustainable tourism on a global scale.

e) Heightening awareness of sustainable tourism and its profound impact on national tourism industries. To achieve this, the project implemented a multifaceted approach, establishing a dynamic online presence through a dedicated website and active social media profiles. Complementing the digital strategy, offline dissemination efforts employed eye-catching banners, posters, and leaflets to reach diverse audiences. The project's commitment to knowledge-sharing extended to international conferences, where its representation facilitated widespread dissemination. Notably, the TOURIST project went above and beyond by organizing two international conferences in Thailand and Vietnam, strategically designed to elevate awareness, particularly given the high dependence of these nations

on tourism. Through these comprehensive initiatives, the project not only enriched the discourse on sustainable tourism but also succeeded in fostering a deeper understanding of its implications within the national tourism landscapes of Thailand and Vietnam.

f) In addition to its tangible accomplishments, the TOURIST project has played a pivotal role in bolstering institutional support for sustainable tourism. This collaborative endeavor has not only established seven competence centers in HEIs across Thailand and Vietnam but has also catalyzed a broader shift in perspective. Many project partners, venturing into European Union projects for the first time, have witnessed firsthand the transformative benefits of internationally funded collaboration. The TOURIST project has not merely initiated positive change on the ground but has also become a catalyst for fostering a greater sense of global cooperation and understanding. Through this shared journey, the project has sown the seeds of enduring partnerships, leading to the initiation of at least 10 learning and teaching agreements among partner institutions in the European Union, Thailand, and Vietnam. This aspect reflects the project's commitment to not only advancing sustainable tourism but also promoting knowledge exchange and collaborative education practices on an international scale.

In response to the growing importance of sustainable tourism, both Thailand and Vietnam have enacted pivotal policies to foster responsible and eco-friendly practices within their respective tourism industries. In Thailand, the government has implemented initiatives such as the Sustainable Tourism Promotion Policy, which focuses on environmental conservation, community engagement, and cultural preservation. This policy encourages tourism businesses to adopt sustainable practices, including waste reduction, energy efficiency, and community-based tourism initiatives (GSTC, 2018).

Similarly, Vietnam has demonstrated a commitment to sustainable tourism through policies like the Green Growth Strategy in Tourism and the National Action Plan on Sustainable Tourism Development. These strategic frameworks emphasize responsible tourism practices, biodiversity conservation, and community involvement. The policies in Vietnam aim to guide businesses and stakeholders in the tourism sector toward sustainable development, ensuring a harmonious balance between economic growth and environmental conservation.

The TOURIST project seamlessly aligned with and complemented these national policies, actively contributing to their objectives. The project, by addressing cultural and structural barriers hindering sustainable tourism practices, fostered awareness and understanding among stakeholders. In collaboration with these policies, TOURIST played a crucial role in advancing the goals of sustainable tourism in both Thailand and Vietnam. It catalyzed positive change, enhancing the overall sustainability of the industry and contributing to the realization of national objectives in tourism development. The enduring impact of the TOURIST project remains evident in its pivotal role in shaping a more sustainable and responsible tourism landscape in both Thailand and Vietnam.

The TOURIST project made a substantial impact with its short-term outputs, demonstrating a steadfast commitment to sustainable tourism. In the initial phase, the project conducted comprehensive needs and GAP analyses, resulting in the creation of an EU good practice catalog that not only informed immediate decisions but also set the stage for sustained best practices in sustainable tourism. The development and successful implementation of a tailored training program for academic staff, along with engaging multiplier events that included students, effectively heightened awareness and facilitated knowledge transfer within the sector. Simultaneously, the project played a pivotal role in fostering increased international collaboration among HEIs, both within and beyond the project consortium, building a reputation that extended beyond geographical boundaries.

Looking at enduring impacts, the TOURIST project's establishment of seven sustainable tourism competence centers has become a beacon of ongoing technical expertise, continuing to provide vital support years after completion. The creation of a global network connecting academics and practitioners ensured sustained collaboration and advocacy for sustainable tourism principles on an international scale. This strategic initiative not only catalyzed institutional integration but also enhanced the reputation of participating institutions, positioning them as leaders in academic and sustainable tourism circles. This enhanced reputation, in turn, paved the way for sustained involvement in international EU-funded projects, underscoring the legacy and influence of the TOURIST project in shaping the future of sustainable tourism (FH JOANNEUM, 2017).

4. Success factors

The TOURIST project's success can be attributed to a combination of critical factors that were pivotal in advancing its objectives and fostering sustainable tourism practices in Thailand, Vietnam, and Europe. These success factors revolve around strategic planning, motivated stakeholders, comprehensive engagement, innovative approaches, and a focus on driving positive change in the tourism industry.

Strategic Alignment: the TOURIST project was strategically aligned with the prevailing trends in sustainable tourism, acknowledging the importance of timely intervention. It recognized the need to address the evolving landscape of the tourism sector in Thailand, Vietnam, and Europe, and sought to harness these trends to its advantage.

Dedicated Project Team: the project team exhibited exceptional commitment and enthusiasm in the pursuit of sustainable tourism practices. Their professionalism and unwavering dedication were instrumental in driving the project forward and ensuring its successful implementation.

Comprehensive Stakeholder Engagement: TOURIST actively engaged a diverse set of stakeholders, including higher education representatives, academic and administrative staff, students, and business sector enterprises. This comprehensive approach enriched the project's reach and impact, fostering a collaborative environment.

Collaboration with Civil Society: collaborations with civil society organizations played a crucial role in amplifying the project's influence. These organizations served as bridges, connecting the project to a broader society, and ensuring that project activities were aligned with the needs and expectations of stakeholders.

Innovative Solutions: the TOURIST project introduced innovative elements that were critical to its success. The establishment of competence centers for sustainable tourism was a forward-looking approach, enhancing support structures and streamlining the project's objectives.

Positive Impact on the Tourism Industry: the project's focus on making a positive impact on the tourism industry was evident. The competence centers offered counselling and guidance to companies, tourism associations, and governmental bodies. This support extended to the development of sustainable tourism practices and the exploration of alternative financing methods, enriching stakeholders with a deeper understanding of sustainable tourism practices and offering insights into potential funding possibilities.

In summary, the TOURIST project's success is underpinned by strategic alignment with industry trends, a dedicated and motivated team, comprehensive stakeholder engagement, innovative solutions, and a clear focus on making a positive impact on the sustainable tourism industry. These factors collectively

contributed to the project's achievements in advancing sustainable tourism practices in Thailand, Vietnam, and Europe (FH JOANNEUM, 2017).

5. Sustainability

The success and sustainability of the TOURIST project were underpinned by a comprehensive approach, meticulously designed to ensure long-term impact and effective utilization of its results. Sustainability measures were devised with a focus on financial, institutional, and political aspects, bolstering the project's potential for lasting success (FH JOANNEUM, 2017).

Financial sustainability

The TOURIST project strategically prioritized financial sustainability by comprehensively planning sustainable tourism centers. These plans were developed in the form of robust business models, assuring a solid foundation for their financial viability. The centers' sustainability was further bolstered by the commitment of university leadership in Thailand and Vietnam, who have unequivocally affirmed their intent to maintain the centers for a minimum of five years following the project's conclusion. This extended commitment not only enhances the financial sustainability of the centers but also reinforces their institutional sustainability.

Institutional sustainability

Institutional sustainability was a core element of the TOURIST project. It was guaranteed through meticulous planning, the adoption of strategic business models for sustainable tourism centers, and the unwavering support of top-level university management. The affirmation from university leadership in Thailand and Vietnam to continue operating the centers for at least five years post-project completion is a testament to the commitment to maintaining the centers as integral components of their institutional framework. This commitment ensures that the centers will continue to thrive within the HEIs, upholding their mission and objectives.

Political sustainability

The TOURIST project was thoughtfully aligned with the political strategies of Thailand, Vietnam, and the European Union. It ensured political sustainability by fostering continuous political dialogue and offering essential guidelines for the promotion of sustainable tourism practices.

Exploitation of results

The TOURIST project embedded the exploitation of results within its core objectives. This was achieved through the creation of a dynamic network that provided a unified platform for disseminating project outcomes and advocating for sustainable tourism practices. The results were transferred to governments and international organizations, further amplifying their impact.

The WPs of the TOURIST project, including the train-the-trainers, training on sustainable tourism practices, and the External Relation Framework, played a pivotal role in disseminating project results to target groups and stakeholders, both within and outside the consortium. The outputs of the project were meticulously designed to align with the development needs and strategies of the relevant stakeholders, ensuring their applicability in diverse contexts.

In summary, the TOURIST project's sustainability and exploitation of results were meticulously planned and executed, ensuring the long-term financial and institutional sustainability of the sustainable tourism centers. The commitment of university leadership to support these centers for an extended period reinforces their institutional foundation and furthers the project's objectives.

6. Lessons learned

The TOURIST project, a comprehensive endeavor spanning Thailand, Vietnam, and Europe, provides a wealth of lessons that extend beyond immediate outputs. These lessons, rooted in strategic collaboration and a commitment to positive change, offer valuable insights for the advancement of sustainable tourism practices globally.

Strategic collaboration and knowledge transfer

One paramount lesson from the TOURIST project is the critical importance of strategic collaboration and knowledge transfer. By fostering enhanced collaboration among institutions, the project not only facilitated the exchange of successful approaches but also recognized the significance of timely intervention. The compilation of a robust good practice catalog exemplifies the project's commitment to staying aligned with prevailing trends in sustainable tourism.

Interactive education and stakeholder engagement

Central to the project's success was its dedication to interactive education and stakeholder engagement. Through train-the-trainer events and multiplier training sessions, the project created dynamic learning experiences. This not only disseminated knowledge but also actively engaged stakeholders, including educators, students, and industry members. The lesson here is clear: promoting participatory educational practices is instrumental in advancing sustainable tourism understanding.

Institutional capacity building

The establishment of seven competence centers emerged as a crucial strategy, offering a lesson in institutional capacity building. These centers, rather than being short-term endeavors, have become enduring sources of support. The lesson extends beyond immediate impacts, emphasizing the importance of investing in knowledge and expertise for the long-term sustainability of the tourism industry.

Global community building

The creation of an international online network stands as a testament to the lesson of transcending geographical constraints. By seamlessly connecting academics and practitioners, the project fostered a virtual ecosystem that continues to advocate for sustainable tourism principles globally. The innovative approach not only contributed to the project's success but also laid the groundwork for sustained collaboration and advocacy.

Awareness and dissemination strategies

The TOURIST project recognized the multifaceted nature of awareness building. Through a dynamic online presence, offline dissemination efforts, and the organization of international conferences, the project successfully heightened awareness of sustainable tourism. The lesson here is that comprehensive

strategies, both online and offline, are essential for fostering a deeper understanding of sustainable tourism implications.

Institutional shift and global cooperation

Beyond tangible accomplishments, the TOURIST project played a pivotal role in fostering a broader shift in perspective. The lesson is clear: positive change initiated on the ground can become a catalyst for greater global cooperation. The enduring partnerships and learning agreements among institutions in the European Union, Thailand, and Vietnam reflect the project's commitment to promoting knowledge exchange and collaborative education practices on an international scale.

Alignment with national policies

The collaborative alignment with national policies, such as the Sustainable Tourism Promotion Policy and the Green Growth Strategy in Tourism, became a significant lesson. By complementing and collaborating with these policies, the project positioned itself as a catalyst for positive change within the broader strategic context of the participating nations.

Short-term outputs vs. enduring impacts

The TOURIST project emphasized the importance of laying a foundation for enduring impacts. Comprehensive initial analyses and tailored training programs were not merely short-term endeavors but strategic investments that laid the groundwork for sustained best practices. The lesson here is that immediate outputs should be viewed as building blocks for enduring positive change.

Reputation building and sustainability

The TOURIST project demonstrated that building a positive reputation goes hand in hand with sustainability. By becoming synonymous with advancements in sustainable tourism, the project enhanced the sustainability of its impacts. The lesson extends beyond immediate achievements, emphasizing the importance of reputation in shaping the trajectory of sustainable initiatives.

Balancing economic growth and environmental conservation

An overarching lesson from the TOURIST project is the importance of balancing economic growth and environmental conservation. By aligning with policies that emphasize responsible tourism practices, the project contributed to harmonizing economic growth with environmental preservation. The lesson here is that sustainability is not just an environmental consideration but a delicate balance that involves economic and cultural dimensions.

The lessons learned from the TOURIST project extend far beyond the project's duration. They emphasize the importance of strategic collaboration, interactive education, institutional capacity building, global community building, and alignment with national policies. These lessons provide a robust foundation for future endeavors in advancing sustainable tourism practices globally, showcasing the TOURIST project as a beacon of transformative potential in the tourism industry.

7. Conclusions

The TOURIST project has played a pivotal role in reshaping the sustainable tourism landscape in Thailand and Vietnam through its knowledge sharing and caring approach. Operating at a crucial juncture where sustainable tourism gained heightened attention, TOURIST strategically accelerated and enriched the discourse in Southeast Asia. The project's emphasis on knowledge sharing fostered a deeper understanding of responsible tourism practices, transcending mere policy implementation.

A notable strength of TOURIST lies in its comprehensive approach, encompassing various elements crucial for the advancement of sustainable tourism. From needs analyses to the establishment of sustainable tourism competence centers, TOURIST actively contributed to shaping a holistic framework for the tourism sector. The project's impact extended beyond policies, touching on human resource development, public awareness campaigns, and the enhancement of institutional support structures.

At its core, TOURIST stood as a beacon of knowledge, creating a network of ambassadors dedicated to promoting sustainable practices. This approach aligned seamlessly with the principle of "knowledge sharing and caring," emphasizing the importance of disseminating information and nurturing a sense of responsibility among communities.

In conclusion, the TOURIST project, with its knowledge sharing/caring approach, leaves behind a lasting legacy in the transformed sustainable tourism landscape of Thailand and Vietnam. The project's success lies not just in policy implementation but in the empowerment of individuals to champion sustainable practices, setting a precedent for future initiatives, and fostering a culture of responsible tourism in Southeast Asia.

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STRATEGIES AND TOOLS FOR INCREASING THE IMPACT OF HIGHER EDUCATION IN DEVELOPING COUNTRIES THROUGH CAPACITY BUILDING PROJECTS

Contents

5.1. Empowering higher education: effective strategies for capacity building in developing regions

This chapter explores effective strategies for capacity building in Higher Education Institutions (HEIs) in developing countries. It emphasizes the critical role of institutional leadership and strategic partnerships in driving sustainable development within the higher education sector. The chapter highlights mechanisms such as inter-institutional and intersectoral collaborations, joint construction of knowledge products, and strategic impact measurement. By leveraging these strategies, HEIs can enhance their capacity to address socio-economic challenges, promote innovation, and contribute to the Sustainable Development Goals (SDGs). The insights provided offer valuable guidance for future capacity building initiatives, emphasizing the importance of sustainability and contextual relevance.

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1. Introduction

Higher Education Capacity Building (HECB) is a vital component in enhancing the quality, accessibility, and relevance of Higher Education Institutions (HEIs) in developing countries. The focus of this chapter is to explore and analyze the various strategies and tools that have proven effective in fostering capacity building in these regions.

The global landscape of higher education is continuously evolving, driven by the increasing need for institutions to adapt to complex socio-economic challenges, technological advancements, and the pursuit of the Sustainable Development Goals (SDGs). Effective capacity building in higher education is essential to equip institutions with the skills, knowledge, and resources necessary to address these challenges. This chapter examines the methodologies and approaches that have been successfully implemented to enhance the capabilities of HEIs, thereby enabling them to contribute significantly to their communities and countries.

2. Institutional leadership and strategic partnerships

The role of institutional leadership is paramount in the success of capacity *building* initiatives. Effective leadership can drive the strategic vision of HEIs, fostering an environment conducive to innovation and sustainable development. Leadership development programs are crucial, as they empower current and future leaders with the skills needed to manage complex projects and navigate the unique challenges faced by HEIs in developing countries.

Drawing on our experience and literature, including insights from Hunter and Sparnon's work, we note that many current leaders in higher education have not received formal training for institutional leadership, often struggling to see the value or relevance of such initiatives. This gap leaves institutions poorly equipped to manage large and complex capacity building projects effectively.

Strategic partnerships and networks, particularly those with a South-South-North dimension, have been instrumental in advancing capacity building efforts. These partnerships facilitate the exchange of knowledge, best practices, and resources, thereby enhancing the impact of capacity building projects. By leveraging the strengths of multiple institutions and stakeholders, these collaborations promote holistic and sustainable development within the higher education sector.

3. Mechanisms for effective capacity building

Several mechanisms have been identified as effective in enhancing the impact of capacity building projects. These include inter-institutional and intersectoral collaborations, which bridge the gap between academia and social and economic sectors. Collaborative efforts with key actors ensure that capacity building initiatives are aligned with the needs of the broader community, promoting ownership and sustainability of the outcomes.

The work by Marisela Bonilla highlights the importance of such collaborations in Latin America and the Caribbean, where HEIs face significant budget restrictions and governance challenges. By engaging in projects that enhance capacity building through alliances with various sectors, HEIs can generate indicators for ex-post evaluations that measure impact effectively.

The joint construction and transfer of knowledge products are also crucial for continuous improvement. Projects that effectively transfer knowledge to various stakeholders facilitate the identification of new research avenues and practical applications, thereby enhancing the relevance and impact of capacity building efforts.

4. Measuring impact and sustainability

One of the significant challenges in capacity building is the measurement of impact. Effective impact assessment requires a strategic approach that incorporates both qualitative and quantitative indicators. The integration of structural capacity building measures into strategic partnerships ensures that the outcomes are sustainable and aligned with long-term development goals.

Elizabeth Colucci argues for the importance of structural capacity building at the level of HEIs and systems, suggesting that multi-lateral associations and networks with a South-South-North dimensionality can nurture capacity building projects and undertake more meaningful impact assessment over time.

By focusing on building the project management capacities of HEIs, donors can ensure that institutions are better equipped to lead future initiatives independently. This approach not only enhances the immediate impact of capacity building projects but also ensures their sustainability and scalability. The experience of Hunter and Sparnon underscores the criticality of effective institutional leadership in managing these projects and ensuring their long-term success.

5. Conclusion

The strategies and tools discussed in this chapter highlight the importance of a comprehensive and collaborative approach to capacity building in higher education. By empowering institutional leadership, fostering strategic partnerships, and implementing effective mechanisms for knowledge transfer and impact measurement, HEIs in developing countries can significantly enhance their contributions to sustainable development. The lessons learned from these initiatives provide valuable insights for future capacity building efforts, underscoring the need for contextually relevant and sustainable interventions.

5.2. Coalitions of the willing: institutional leadership development for effective capacity building in higher education

This chapter argues that successful capacity building projects in higher education are largely contingent on effective institutional leadership. It explores the challenges of institutional leadership and considers why institutional leadership development programmes throughout the sector globally are relatively few and offer only limited opportunities to institutional leaders.

Drawing on our experience working with institutions in a variety of locations and contexts, we note that many current leaders in higher education have not received any formal training for institutional leadership, and in some cases struggle to see the value or relevance of institutional leadership development initiatives. This often leaves individual leaders, and their institutions, poorly equipped to manage large and complex capacity building projects effectively.

Looking forward, we suggest that donors should consider the quality of current institutional leadership in potential partners and offer appropriate institutional leadership development as a precursor to investing in Higher Education Capacity Building (HECB). Key to this assessment should be the potential of the current leadership to form what are termed coalitions of the willing – teams, comprising members from both within the institution and beyond, that are willing to draw on both their own expertise and that of practitioners across the sector, locally, regionally and internationally, to develop and implement appropriate solutions to the issues at hand. It concludes that by nature, leadership development should expand to include individuals currently in middle management positions in higher education, and those about to take on leadership responsibilities, to maximise the impact of the outcomes of capacity building projects to contribute to institutional innovation, resilience and sustainability.

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1. Introduction: The need for effective institutional leadership in capacity building projects in higher education

The reasons that capacity building projects in higher education succeed or fail are relatively unexplored. However, perhaps one of the most useful studies to date is by Ika and Donnelly (2017) which suggests that outcomes are largely dependent on issues around *structure* (i.e. the specific context in which the project is delivered), the *institution* (the resources of the institution to support and deliver the project), and *managerial* (the capacity of the institution's leadership to manage effectively the resources of the institution and project towards project delivery).

Our experience is that of these, effective management is not only the most critical, but that without the capacity to manage institutional and project resources effectively, structural or institutional constraints become insurmountable. Faced with this challenge of institutional management, we note that donors tend to resort either to penalties —the threatened or actual withdrawal of funding if results are not delivered; incentives —usually promises of additional funding or resources to deliver agreed project objectives; or the use of external experts or consultants, either to take over the leadership of the project, or to develop quickly the capacity of the existing partner to do so (and thus ensuring another cycle). None of these responses are entirely satisfactory as they do not address the underlying problems, within the relatively short-term timescales in which capacity building projects are delivered.

Given the criticality of effective institutional leadership in the delivery of capacity building projects in higher education, and the limitations of either enhancing existing leadership or providing an external substitute, it could be argued that the effectiveness of institutional leadership should be evaluated and, if appropriate, enhanced as a necessary pre-condition of capacity building projects. In this context, this paper considers the nature of institutional leadership development in higher education globally, then, drawing on the authors' experience, discusses the specific structural and institutional issues commonly encountered by their leaders. Further, it discusses what might be the key elements of an effective leadership development programme, and other factors that might affect its success.

2. Current opportunities for professional leadership development in higher education

A notable characteristic of higher education globally is that for a sector which provides key training and development to those who go on to work in a multitude of different positions and environments, the training and development opportunities available to those who hold its senior management positions are remarkably limited in availability, inadequate in scope, and insufficiently utilised. Rumbley et al. (2018) draw on two studies conducted by the Centre for International Higher Education (CIHE) at Boston College, United States of America, on behalf of the German Academic Exchange Service (DAAD), the German Rectors' Conference (HRK), and the International Association of Universities for the World Bank, to map the global landscape of higher education management and leadership training programmes. Its findings are that those in higher education leadership generally lack appropriate training, and their only option is to learn 'on the job'. Their key findings include (Rumbley et al., 2018):

- Given the increasing pressures placed on higher education systems to achieve excellence, grow and diversify, leaders need to develop an appropriate knowledge base and skill set, through appropriate professional development.

- There is global shortfall in professional development to build leadership and management capacity in higher education.

- Existing provision comprises principally short, small-scale programmes, "operating without clear evidence of mid- or long-term impact." (p. 5).

- These programmes, when available, "are predominantly on offer in the world's wealthier countries, or are delivered (or otherwise made possible) by providers, funders and/or partners who largely hail from the Global North" (p. 5).

This position is supported by Dopson et al. (2018) who state that:

> Universities globally are facing novel challenges, as they become larger, more complex and multi-functional organisations. […] These long-term developments raise questions about the ability of Higher Education senior leaders to respond to increased institutional complexity. (p. 218)

The consequences of this inadequate approach to leadership development are considered by Morris and Laipple (2015, as cited in Dopson et al., 2018) who note that it can lead to "leader ineffectiveness and burn out" (p. 223).

The challenge of delivering successful Higher Education Capacity Building (HECB) projects therefore should be placed in this context. Leadership capacity across the sector is relatively weak, and professional development opportunities are few, inadequate and not necessarily suited to the specific contexts of emerging economy and low-income countries.

3. Our experience in capacity building and leadership development in higher education

Since 2004, the authors have been consultants in higher education management and strategic planning. In this capacity, we have worked with recent, and more established, academic institutions in Europe, Africa, Latin America and the Middle East; advised institutions in eastern European countries in transition, and associations of institutions in Latin America; served on and led quality assurance visits; and acted as advisors to, and members of, quality assurance agencies, governing bodies and international advisory boards. Other longer-term activities include serving as the Chief Academic Officer in an organisation offering online higher education programmes to refugees in cities and camps around the world, as well as developing and delivering an international blended delivery PhD programme for higher education practitioners.

Our first contact with institutions and organisations has often been at moments of crisis or at least, transition, or desire for change. Usually the causes have been financial, but they have also included a need to adapt to a changing external environment such as political, economic, and/or demographic circumstances. Sometimes, institutions have needed to develop and implement a new strategic direction; in other instances; they have required advice on how to rationalise structures and systems or review

and rethink their academic activities to enable strategic objectives to be met. It has almost always been necessary to work closely with institutional senior academic and administrative managers, and governance bodies to help them better understand the operation of their institutions and the key role of institutional leadership.

Our responses to supporting these institutions have taken several forms. In most cases, we have sought to work with senior managers and governance bodies to help them understand the nature of their institutions. This has often focussed on identifying the key governance, executive and operational elements of the institution and clarifying the roles and responsibilities of each. A priority has often been to identify the fundamental objectives of the institution in vision, mission, and values statements, and to decant them into specific objectives presented through a consolidated strategic plan. With these objectives clearly identified, the next phase has been to look at the detailed business processes, timetables and operations of the institution to ensure that these objectives are explicitly pursued by the appropriate people, at the appropriate time, based on appropriate information, and that subsequent decisions are communicated effectively and in a timely manner. Working still more closely, we have often considered the detailed operation of several institutional functions —for example, academic programme review, strategies for research and external engagement, student support services, and finance, as well policies and procedures for marketing, human resource management, and quality assurance amongst others.

These interventions have been characterised by a consistent philosophical approach. We have written about this in detail elsewhere (Hunter and Sparnon, 2021), but its key elements are that:

- The fundamental objectives of all institutions are set by their governance bodies in vision, mission, and values statements, decanted into specific objectives through institutional strategic plans.

- The diversity of governance bodies is reflected in a similar diversity of Higher Education Institutions (HEIs) —for example, some institutions are regional or technical; others are focused on the liberal arts or are faith-based or are sponsored by a significant local employer, publicly or privately funded, and so on.

- Despite their diversity, all institutions pursue their objectives primarily through academic activities —teaching and learning, research and external engagement (also referred to, among other terms, as Third Mission or Social Responsibility). Diversity is principally manifested in the balance between these activities —for example, some institutions consider themselves to be first and foremost teaching institutions; others focus more on research —and in the range of academic configurations —technical institutions focus on technical subjects, religious institutions focus more on theology, etc.

- Regardless of the nature of institutions, their support and resource management activities must be directly related to the support of academic activities and should not be regarded as separate functions.

Collectively, these characteristics reflect our belief that:

- To be successful, all institutions should be managed holistically, and all their activities, irrespective of the specialist skills needed to perform them effectively, should be considered and managed to deliver overarching institutional objectives.

- Change is possible in *any* institution regardless of nature, size, or status, through the *appropriate* application of generic concepts, knowledge and skills. However, these cannot be imposed arbi-

trarily by external bodies or individuals, particularly without the active participation and advocacy of the institutional management team.

Our efforts therefore have often been focused as much on enlisting the commitment and participation of institutional leaders and governors as on analysing the institutional situation, creating solutions, and developing knowledge and skills amongst colleagues to deliver the project objectives and produce long-term change.

Reflecting on these interventions over the period, it is clear that results have been mixed. In some instances, institutions have been able to identify or amend their strategic objectives and to revise and refine their management structures to deliver them effectively. In others, institutional approaches to budget management, staff recruitment, development and retention, and student support services have been successfully renewed. In still others, research, and teaching and learning programmes, marketing strategies, internationalisation plans, and student information management systems have been productively redeveloped and implemented. However, these successes have been balanced with instances in which, despite the investment of considerable time, resources and energy, substantial or sustainable changes in policies, practices or outcomes have proved elusive. In the context of our discussion of capacity building initiatives in higher education leadership, and the limitations of the authors notwithstanding, it is worth considering why.

3.1. The lack of prior, relevant experience and training

A notable characteristic of many institutional leaders, senior managers and governors is that very few have appropriate prior experience of higher education leadership at any level. While many are successful teachers or researchers, and therefore are familiar with academia, we argue that institutional leadership requires an additional skill set and knowledge base with which they are largely unfamiliar. Similarly, while some leaders have held relatively senior positions in other organisations —businesses, schools, or public bodies— these experiences, at best, have only partially prepared them for higher education leadership and management.

The results are several. First, many institutional leaders lack basic management skills such as time management, project management, meeting management and conduct, staff management and personal development, business process analysis, as well as written and/or verbal communication skills. As such, they are often unable to articulate the strategic objectives of their institution, or to direct their own activities, and/or those of their colleagues towards their delivery.

Second, leaders often fail to grasp the totality of their institutions. At the conceptual level, this can be a lack of understanding of the distinct roles played by governance bodies, executive management committees and academic leaders, the roles of different units and bodies, and how they interact to perform the different functions of a higher education institution. Equally, institutional leaders are often unfamiliar with specific institutional functions, such as academic programme management, quality assurance procedures, human resource management, and critical functions such as annual budget development, setting and monitoring.

Third, institutional leaders often struggle to think and act strategically in the medium to long term and become overly engaged in detailed work with which they might be more familiar, but which has limited scope and impact. For example, those with an academic background often focus on the detail of academic programmes, sometimes right down to the course and lesson level, but struggle to relate aca-

demic content to marketing, recruitment and retention activities, or to connect them to wider institutional strategic objectives. Areas that fall outside of academic programme management, such as finance, staff recruitment and development, and support services for staff and students, tend to receive less attention, or are delegated with minimal supervision.

3.2. The challenges of learning 'on the job'

We are often assured that, once in post, leaders will acquire the appropriate knowledge and skills. However, though these can be acquired over time, a number of factors make it a significant challenge. First, operational concerns impose on limited time. In such circumstances, the temptation is often to undertake what can be delivered immediately and easily, rather than what can be achieved over time with greater difficulty.

Second, significant personal and professional development takes conscious effort and is contingent on a mind-set that both understands the need for it and is willing to undertake the necessary remedial work. In our experience, this is relatively rare. Those appointed to institutional leadership positions are often successful in other fields. The news that this has not equipped them for their new positions is rarely welcome, and at times, openly rejected. Instead, the preference is to focus on what is known and/or understood, and/or to continue to operate existing systems and procedures in the hope that the necessary knowledge and skills can be accrued over time. This issue is compounded by the isolation that many leaders feel, particularly those who are more capable. The absence of mentors and peers, both within their own institutions and in wider organisations and associations, is often keenly felt.

Third, and this is of particular relevance to institutions engaged in capacity building endeavours, many of the institutions with which we work are resource poor, sometimes extremely so. Institutions in places affected by conflict for example can lack adequate teaching space, rooms, floors, roofs, desks, texts and writing materials. Others are forced to concentrate on the adequate provision of utilities, heat, power, and light. Not least, the students themselves often require considerable support. For example, one institution struggled to ensure that its female students continued their studies, as parents preferred to see them make advantageous marriages rather than complete their education. Another institution never knew if the students would make it through strict border checkpoints every day. In such circumstances, it is understandable that institutional leaders find little time to think strategically about academic programme development, staff recruitment and retention, the institutional financial strategy, or longer-term developmental plans for their campus. Instead, the focus is on the next hour, the next class, the next day.

3.3. Recognising the value of higher education leadership development

The relative inexperience of, and unfamiliarity with, institutional leadership concepts amongst many leaders prior to their appointment, combined with the urgencies of their current positions, mean that many institutional leaders do not comprehend, still less accept, the importance of leadership development for either themselves or their colleagues. Two factors are critical in this respect. First, there is a presumption that experience in other fields can compensate for an absence of knowledge and experience in higher education leadership.

Perhaps even more critical, the diversity of Higher Education Institutions (HEIs) globally, and the unique circumstances of many, mean that their leaders are often sceptical that the ideas and concepts of higher education leadership, developed and implemented in different institutions and circumstances, can be applied effectively in theirs. A commonly expressed concern is that the unique nature of the institution, country, history and/or culture, precludes understanding, and the provision of effective insight, and/or appropriate guidance and assistance. Every institution, perhaps rightly, considers itself unique, but, in our view, not in every respect. Despite their diversity, HEIs share many common characteristics, and they, and their leaders, have much to learn from each other.

4. Effective design elements of current institutional leadership development programmes

If effective institutional leadership is a key element in the successful delivery of capacity building projects in higher education, current leadership capacity is relatively weak, and available leadership development opportunities are few, undervalued and underutilised, what might we learn from existing leadership development programmes as we consider what might be offered in future?

It is evident these programmes should prepare institutional leadership to manage the capacity building projects successfully —both in the short- and long term. Ika and Donnelly (2017) insist on the need to understand 'success conditions' —what happens before the project begins and what happens during the project— rather than 'success factors'. In terms of leadership, they highlight, among others, the importance of building the capacity of the beneficiaries to "to lead, manage, delegate and motivate staff effectively" (p. 53). Another key condition is "multiple committed project champions, all playing a unique role in the success of the project" (p. 56), that through their teamwork build collaborative spirit and trust, especially in times of tension or difficulty. They highlight the important role that effective communication mechanisms play to achieve this. They also refer to the condition of alignment, understood as the compatibility or fit of the project to the environment that matches both personal and organisational interests.

> When project staff, experts, and beneficiaries are faced with competing work priorities, this mutual interest, understanding or compatibility amongst a multitude of key stakeholders, can help provide momentum and contextual for a target project objective. (Ika & Donnelly, 2017, p. 57)

Alignment motivates the team to develop the ability to deal with challenges and find innovative solutions and links to another success condition of adaptation.

> More specifically, project adaptability appeared to be linked to the ability of the project staff to motivate and empower teams, facilitate relationships. Provide guidance, solve problems, be resourceful and act quickly. It was less about physical resources and more about providing the right mix of structure, flexibility and learning while doing. (Ika & Donnelly, 2017, p. 58)

Ika and Donnelly (2017) identify multi-stakeholder commitment, collaboration, alignment and adaptation as fundamental initial and emergent conditions for success in capacity building projects, and they

point to leadership ability and project managements skills as two key contributors to the development of these conditions. In designing such a leadership development programme, we might start by evaluating existing higher education leadership development opportunities to identify elements that contribute to their success or failure.

4.1. Implications for future programme design in leadership development

Dopson et al. (2018) draw on a wide range of literature to identify implications for programme design in leadership development. These include the following:

- It is important to give attention to distinct leadership needs at different levels of seniority (Turnbull & Edwards, 2005, as cited in Dopson et al., 2018).

- It is critical to prepare incoming leaders in advance of taking up new roles or becoming involved in projects (Wolverton et al., 2005, as cited in Dopson et al., 2018).

- It is likely that in a broader leadership group, some individuals will hold both academic and administrative responsibilities. Issues around 'hybrid roles' —in which leaders have academic and/or administrative functions, in addition to those related to institutional management— are considered by Rowley and Sherman (2003, as cited in Dopson et al., 2018). This includes both those who accept such positions consciously and voluntarily —'willing hybrids'— as well as those who acquire them over-time— 'incidental hybrids' (McGivern et al., 2015, as cited in Dopson et al., 2018).

- Regardless of their role, academic staff need to retain their self-identity as academics (Spendlove, 2007, as cited in Dopson et al., 2018).

- Training and development in higher education leadership should be "based on principles of 'just in time and just for me'" (Scott et al., 2010, as cited in Dopson et al., 2018 p. 223).

- Mentoring should be included as a key design component (Tolar, 2012, as cited in Dopson et al., 2018).

In all instances, Dopson et al. (2018) argue that the nature of the leadership tasks, skills, behaviours and values needed are driven by the core purpose of the institution, which vary in different contexts around the world.

These findings suggest that future leadership development initiatives must be aware of the relationship, indeed the tension, between the developmental needs of individuals, and the longer-term objectives of their institutions and societies. Not all skills developed by the individual will be deployed immediately, and in some instances not at all, even though they will have developed greater knowledge and understanding of how others in the institution operate.

The priority therefore is not only to enable individuals to respond to current issues —'just in time, and just for me'— but also to develop a suite of skills that can be utilised when necessary, and in a timely and appropriate manner, for both the institution and the wider environment.

This tension is exacerbated in the context of higher education leadership. Of the three levels at which capacity building initiatives operate, often only one —the individual— can be directly influenced by

donors and participants. Factors such as the internal operations and priorities of the institution are beyond their reach, and indeed sometimes run counter to the objectives of donors. The ability of donors and individuals to affect the wider environment and society is even more limited, especially within the short-term horizons in which many of these projects operate.

The implications for the design of future leadership development initiatives therefore are that they should develop individuals to be effective both in their current roles, and in future institutional positions; encourage institution-level thinking and avoid the development of 'silo' mentalities, in a manner which is consistent with their institutional objectives; and consider both the short- and medium-term needs of individuals and their current institutions, and the longer-term needs of their societal environments.

The model of faculty development set out by O'Connell et al. (2022), demonstrates many of these characteristics. It recognises for example, that many academics may wish to see change in their institutions (and beyond), but do not know how to initiate it. As a consequence, it is important that any leadership development programme should include tools that can be directly applied to implement change. Other characteristics include a combination of scaffolded synchronous sessions combined with asynchronous practice and discussion, and a recognition that effective and sustainable change is most likely to come from incremental rather than wholesale change, in which small changes are considered both within the context of a mutually supportive learning environment as well as being evaluated, adjusted and revised, by the institution's management team. Through this approach, substantial changes can be made over time, developing and spreading confidence along the way.

4.2. Succession planning

Bunescu et al. (2003), not only stresses the importance of equipping leaders to steer institutional transformation, but also the need to create a pipeline of leaders who will refine and sustain this transformation throughout the entire institution moving forward. The key characteristics of leadership development programmes for them include the development of concrete learning outcomes, a combination of theory practice and evaluation, the mapping of participant profiles and expectations at the initial stage and subsequent programme adjustment, recognising the different levels of leadership that participants will encounter throughout their careers (personal, team, strategic) and the development and application of different skill sets at each.

4.3. Local advocacy, application, responsibility and accountability

To these observations we would add one of our own. Regardless of the specific higher education leadership skills and knowledge developed through these programmes, the responsibility for their application, endorsement and advocacy must remain with institutional leadership. Our experience is that projects that are imposed from outside the institution, or those which are adopted solely to secure external funding or to obtain access to equipment, facilities or infrastructure, without the active engagement and advocacy of the institution's leadership, are unlikely to succeed in meeting the project objectives or in achieving any longer-term outcomes.

5. An approach to future institutional leadership development programmes: *Coalitions of the willing*

In the context of our discussions around Higher Education Capacity Building (HECB) projects, the current state of leadership development in higher education globally, the characteristics of successful leadership development programmes, and the authors' hands-on experience of supporting institutional leaders, what might be the key considerations moving forward?

The first is that donors should consider the current level of institutional leadership in potential partners, and, if appropriate, offer institutional leadership development as a precursor to investing in Higher Education Capacity Building projects. Key to this assessment is the extent to which the current institutional leadership accepts the need for leadership development and is willing both to engage with it actively and, critically, to implement its learning outcomes appropriately.

To ensure the effectiveness of leadership development initiatives, two factors are fundamental. First, donors must acknowledge that leadership development does not take place in a vacuum, and consequently build on the previous experience of those in post, and the structures and systems that have been developed and implemented previously. The challenge then is to *enhance* existing structures in a manner that is *appropriate* to the circumstances of the institution in question. Attempts to build new structures, without reference to what is in already in place, are likely to lack credibility and ultimately to be classified as inappropriate and rejected.

It follows naturally, therefore, that responsibility for the appropriate application of leadership skills and knowledge of capacity building projects must remain with institutional leadership. As such, the objectives of both donors and partner institutions should be compatible from the outset.

The reverse is also true. Institutions engaged in capacity building projects must understand the importance of effective higher education leadership in their delivery. This means that institutional leaders must not only engage fully with leadership development initiatives, but also recognise that higher education leadership requires a unique skill set and knowledge-base that must be actively acquired, developed and maintained —not least so that they can apply, appropriately and effectively, good practice developed throughout the sector in their own institutions. Compliance with leadership development initiatives, merely to gain access to larger capacity building resources, is insufficient.

Given this need for active understanding, cooperation and partnership to deliver mutually agreed objectives, we might refer to this approach as 'coalitions of the willing'. In our experience, such coalitions facilitate leadership development activities that draw on many of the elements of good practice described above and can contribute to the successful delivery of capacity building projects. For example, their focus is on the individual, in the hope, and expectation, that individuals will be able to effect change in their institutions as they become more senior, and that their institutions in turn, as they become more successful, will affect the societies which they serve. This is to recognise that the most willing participants in such coalitions may be those currently in junior and middle management positions in higher education institutions (HEIs). The objective should be to ensure that they are equipped to lead effectively by the time they reach more senior positions.

Coalitions would enable participants to draw on the skills and knowledge of all members, including those within the institution, across a range of management positions, types and levels, and those in
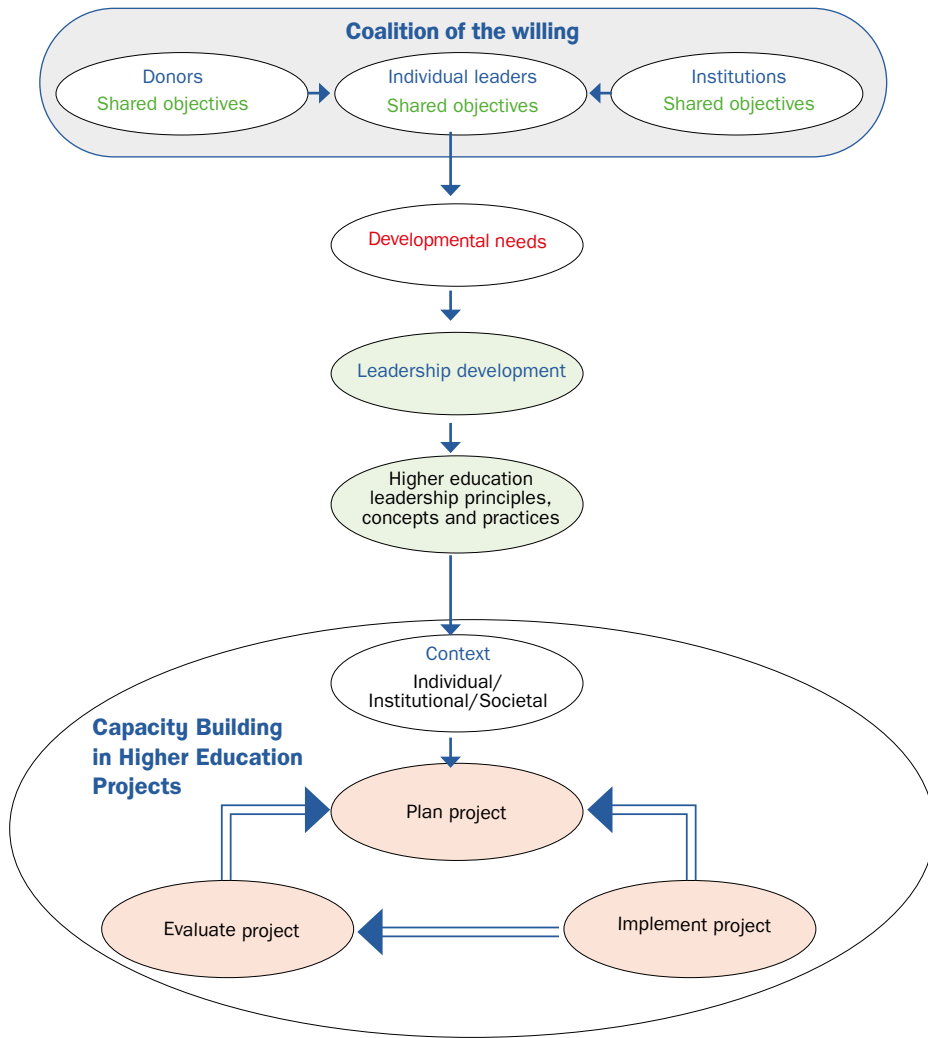
Figure 5.2.1. Coalitions of the willing: An approach to capacity building initiatives in higher education

other institutions and organisations, to identify generic/core skills, which might be applied to all institutions regardless of context. These might include for example basic concepts around the different types of management commonly found within HEIs —governance, executive, and operational— and their effective operation and interaction. More specific knowledge and skills, such as the development and implementation of marketing or estate management strategies and policies, can be developed within this larger framework of generic skills.

Coalitions would therefore seek to take generic higher education leadership principles and consider how they might be applied effectively and appropriately within the context at hand. This would have the effect of extending the commonly accepted cycle of management decision making and quality assurance as depicted in Figure 5.2.1. Coalitions might include multiple institutions located in different regions, to facilitate sharing best practice as well as mentoring and mutual support networks.

Last, but not least, a coalition-based approach to capacity development in higher education which rec-

ognises the importance of institutional leadership would ensure that responsibility to apply institutional leadership concepts appropriately to ensure effective capacity development would remain with existing, local, leadership, have greater credibility, and foster a stronger likelihood of success.

6. Conclusions

This paper is intended to start a conversation which recognises that effective institutional leadership is a condition of successful capacity building in higher education projects. It acknowledges that current leadership development programmes globally are not well placed to meet it.

Redressing this will take not only time and resources, but also a change in attitude amongst donors, institutions and individuals. To develop and deliver successful leadership development programmes with the attributes we have discussed, it will be necessary not only to recognise the value of higher education skills and knowledge that have been developed across the sector, over time, but also that it is the responsibility of institutional management to apply them appropriately in their specific context. This requires clear expectations, motivation and engagement from all partners at the outset.

For donors, it means that they should be satisfied that effective leadership is in place before committing to capacity building projects, and be prepared to build leadership capacity in the longer term if necessary; for institutions, it is to see leadership development not as an activity that must be undertaken solely to gain access to external funding, but rather to recognise that higher education leadership concepts developed in other contexts, not only have value in theirs, but also that it is their responsibility to apply them appropriately; for individuals it is to think not only about the immediate future, but of longer term, strategic, needs, of both themselves, and their institutions. All of these require cooperation, collaboration, and indeed coalition. None of them can be achieved without the active, willing engagement of everyone concerned.

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5.3. Some insights to evaluate the role of universities in development cooperation: a comparative analysis

In the international development cooperation, Higher Education Institutions (HEIs) in aid recipient countries play a crucial, yet often underestimated, role. Universities, as centers of knowledge generation and dissemination, have the potential to significantly influence the effectiveness of cooperation projects (Salmi, 2005). However, the relationship between the specific characteristics of university systems and their contribution to aid effectiveness remains underexplored.

This chapter addresses that gap, focusing on a phenomenon observed in several developing countries: asymmetric university systems. In these contexts, a large public university dominates the educational landscape, concentrating most of the students, academics, budgetary resources, and political influence, while a constellation of smaller, mostly private institutions revolves around it. The study explores how such structures impact a country's ability to absorb and effectively apply international aid.

To answer these questions, the chapter begins with a review of literature on aid effectiveness, the role of knowledge in development, and the function of universities. This review sets the theoretical framework and highlights the lack of research on the relationship between university structures and development aid effectiveness.

The methodology used is qualitative, based on a questionnaire directed at experts from five aid recipient countries with university systems dominated by a large public institution. This approach provides valuable insights into how the asymmetric structure of university systems influences knowledge generation and dissemination relevant to development cooperation.

The findings examine the experts' perceptions of how these structures affect the implementation and effectiveness of international cooperation projects. The chapter concludes by synthesizing the main insights and proposing future research directions, contributing to the body of knowledge on aid effectiveness while offering practical insights for educational policymakers and cooperation agencies.

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1. Introduction

In the complex landscape of international development cooperation, higher education institutions in aid recipient countries play a crucial, yet often underestimated role. Universities, as centers of knowledge generation and dissemination, have the potential to significantly influence the effectiveness of development cooperation projects and programs (Salmi, 2005). However, the relationship between the specific characteristics of university systems and their contribution to the effectiveness of international aid remains an underexplored terrain in academic literature.

This chapter aims to address this knowledge gap, focusing on a particular phenomenon observed in several developing countries: the existence of university systems characterized by marked asymmetry. In these contexts, a large public university dominates the educational landscape, concentrating the majority of students, academics, budgetary resources, and political influence. Simultaneously, a constellation of smaller and less influential institutions, primarily private in nature, orbit around this academic giant.

The importance of this study lies in its potential to shed light on how these asymmetric university structures may affect a country's capacity to absorb, adapt, and effectively apply international development aid. How does this configuration influence the generation and dissemination of knowledge necessary for the success of development projects? In what ways does the concentration of resources and influence in a single institution impact the diversity of perspectives and approaches in development cooperation?

To address these questions, the present chapter is structured as follows. Following this introduction, a brief but comprehensive review of existing literature on aid effectiveness, the role of knowledge in development, and the function of universities in this context is presented. This review not only establishes the theoretical framework for our study but also highlights the scarcity of research specifically addressing the relationship between university structures and the effectiveness of development aid.

Subsequently, the methodology employed in this study is detailed. A qualitative approach has been chosen, based on a questionnaire administered to experts from five aid recipient countries, each characterized by a university system dominated by a large public institution. This method allows us to obtain valuable insights from the perspective of those directly involved in the intersection between academia and development cooperation.

The following section presents and analyzes the main findings obtained through this questionnaire. It examines the experts' perceptions of how the asymmetric structure of their university systems influences the generation and dissemination of knowledge relevant to the development, as well as the implementation and effectiveness of international cooperation projects.

Finally, the chapter concludes by synthesizing the main inferences of the study and proposing future lines of research. These conclusions not only seek to contribute to the body of knowledge on development aid effectiveness but also aim to provide practical insights that can inform both educational policymakers in developing countries and international cooperation agencies.

In a world where the effectiveness of development aid is increasingly crucial, understanding the role of universities as generators and disseminators of knowledge becomes imperative. This chapter aspires to be a significant step in that direction, opening new avenues of research and reflection on how we can optimize the contribution of Higher Education Institutions (HEIs) to global development efforts.

2. Aid effectiveness, knowledge and universities

Among the issues that have occupied the academic and strategic debates on how to boost development in developing countries, two have occupied a preeminent position: the role of knowledge and the potential of aid. Knowledge plays a crucial role in the development of developing countries, serving as a catalyst for economic growth, social progress, and technological advancement (Tierney & Lanford, 2016). It empowers individuals and communities to make informed decisions, innovate, and solve complex problems. The acquisition and application of knowledge contribute to human capital formation, which is essential for productivity gains and sustainable development (Cader, 2008). In developing nations, knowledge transfer through education, research, and technology adoption can help bridge the gap with more advanced economies. Moreover, indigenous knowledge systems, when integrated with modern scientific approaches, can lead to more contextually relevant and effective development strategies. Knowledge also enhances institutional capacity, improves governance, and fosters entrepreneurship, all of which are vital for a country's progress. By investing in knowledge creation and dissemination, developing countries can accelerate their transition towards knowledge-based economies, potentially leapfrogging traditional development stages. However, challenges such as the digital divide and brain drain must be addressed to fully harness the power of knowledge for development (Lundvall & Lema, 2014).

Aid plays a complex and often controversial role in the development of countries. While intended to alleviate poverty and promote economic growth, its effectiveness has been subject to intense debate. Proponents argue that aid can provide crucial resources for infrastructure, healthcare, and education. It can also offer technical assistance and knowledge transfer, potentially catalyzing long-term development (Alesina & Dollar, 2000; Burnside & Dollar, 2000). However, critics contend that aid can create dependency, distort local markets, and sometimes perpetuate inefficient governance structures (Banerjee, 2011). The effectiveness of aid often depends on factors such as the recipient country's policies, institutional quality, and the aid modalities employed. Some studies suggest that targeted aid in specific sectors, such as health and education, can yield positive outcomes. Others emphasize the importance of aligning aid with recipient countries' priorities and fostering local ownership (Arndt et al., 2015). Recent trends in aid include a greater focus on results-based approaches, increased South-South cooperation, and efforts to enhance aid transparency and accountability. Despite ongoing challenges, aid remains a significant tool in the international development landscape, with potential to contribute to poverty reduction and sustainable development when implemented effectively.

By leveraging both local and global knowledge, aid interventions can be better tailored to specific contexts, increasing their relevance and impact. Knowledge management within aid organizations facilitates the sharing of best practices, lessons learned, and innovative approaches, potentially improving project design and implementation. Furthermore, knowledge transfer between donors and recipients can build local capacity, fostering long-term development beyond the duration of aid programs (Qian, 2015).

Higher Education Institutions (HEIs) play a crucial role in enhancing foreign aid effectiveness in developing countries, serving as catalysts for knowledge creation, dissemination, and application. Universities and research centers contribute to capacity building by training skilled professionals and leaders who can effectively manage and implement aid projects. These institutions often engage in collaborative research with international partners, fostering knowledge exchange and innovation that can inform more effective aid strategies. By conducting context-specific studies, they help tailor aid interventions to local needs and realities, potentially increasing their impact. HEIs also serve as think tanks, providing evidence-based policy recommendations that can guide aid allocation and implementation. Their involve-

ment in monitoring and evaluation processes can improve accountability and learning in aid programs. Furthermore, these institutions can act as bridges between international donors and local communities, facilitating cultural understanding and ensuring aid relevance. By nurturing critical thinking and problem-solving skills, they empower future generations to address development challenges independently. However, challenges remain in fully leveraging HEIs' potential, including issues of funding, brain drain, and aligning academic priorities with development needs. Despite these challenges, strengthening the role of HEIs in foreign aid processes is increasingly recognized as vital for sustainable development and aid effectiveness in developing countries.

3. Methodology

In this section, we establish the working method we have followed to: i) reflect on the relevance of universities in aid recipient countries to the degree of aid effectiveness; ii) examine the relationship between the importance of universities' potential contribution to the various aspects determining aid effectiveness, drawing inspiration from the 2005 Paris Declaration; and iii) compare the functionality of university models exhibiting a large, hegemonic public university accompanied by a constellation of smaller, subordinate universities, versus those presenting a framework composed of relatively equal, and thus more competitive, universities.

To this end, a questionnaire was developed and sent to 25 members of cooperation directorates and academics with experience in development cooperation, belonging to seven universities across five aid recipient countries. In all cases, these countries exhibit university systems dominated by a large HEI. A preliminary version of the questionnaire was submitted for validation to a small group of recipients, whose contributions helped improve the tool. Ultimately, 23 correctly completed questionnaires were received. Of the five countries, three are from Latin America (Guatemala, El Salvador, and Honduras) and two from Asia (Bhutan and Seychelles).

The study sample comprises 23 individuals with extensive experience in international cooperation:

- 10 researchers specializing in development cooperation.
- 6 international cooperation officers.
- 7 heads of Departments/Faculties who have managed aid projects and programs.

These participants bring substantial expertise to the study. On average, they have 9.5 years of experience in their current positions within the field of international cooperation. Additionally, they possess an average of 6 years of experience in previous related roles. This diverse and experienced group provides a well-rounded perspective on international cooperation and development aid initiatives.

The questionnaire, after presenting the study's purpose and collecting information on the respondents' experience profile, is structured in two blocks. The first block formulates various questions aimed at ascertaining the experts' opinions on the degree to which the universities they have worked with and know have effectively contributed to the efficacy of the cooperation projects and programs in which they have participated. For this purpose, we have relied on the five major determinants of aid effectiveness outlined in the Paris Declaration on Aid Effectiveness: Ownership, Alignment, Harmonization, Managing for Results, and Mutual Accountability. Do universities in developing countries, through their participation in cooperation projects and programs, contribute to fostering ownership by institutions and

society, aligning aid with national strategies, harmonizing aid from different donors, focusing evaluation on development results, and ensuring effective accountability of donors and recipients, thereby making aid more effective in terms of development?

The Importance-Performance Analysis is the tool we have employed to attempt to answer this question. This analysis is a simple yet powerful tool for identifying the adequacy of the quantity and distribution of resources an organization allocates to a particular purpose. The most evident utility of this analysis is to identify aspects in which the organization can confirm and consolidate its ongoing actions, and those aspects to which it is devoting more effort than their importance justifies, and from which resources should be transferred to others of greater importance. In this case, 10 determinants of aid effectiveness were identified, and questions were asked about the Importance of university participation for activating each determinant, and the performance that university participation has shown in each of the determining factors of development cooperation effectiveness. Essentially, this analysis allows universities to identify areas of cooperation to which they should transfer resources to increase the impact of their participation in cooperation effectiveness.

The second part of the questionnaire aims to investigate the experts' opinion on whether the presence of a hegemonic public university, which we call a university-of-state, contributes favorably or unfavorably to the participation of universities in improving aid effectiveness. Alongside the scale advantages for combining multidisciplinary knowledge, mobilizing relevant societal stakeholders, or organizing relatively demanding capacity-building processes, universities-of-state often attract political confrontation, experience social mobilizations and repressive reactions from the political power that paralyze their activity and negatively affect their goals achievement, subordinate their objectives to those of the options holding political power, or form part of corrupt schemes to divert or misuse public resources.

In this regard, experts are invited to express their level of agreement with a set of 14 propositions that establish comparisons between the hegemonic participation of universities-of-state and, alternatively, the involvement of university systems with relatively equal and competitive nodes, for the effectiveness of development cooperation projects and programs. Given that this is a pretest and, consequently, involves a very small sample, the results are treated with simple descriptive statistics and should be analyzed with caution.

4. Results and discussion

The results are organized into three sections:

- General perspectives on universities' contributions to the effectiveness of international development cooperation projects and programs, providing context for the two following parts.

- Presentation of the I-P Analysis findings.

- Comparative study examining the unique aspects within a state-dominated higher education system.

As framing questions, scholars and experts were asked about their opinions regarding general statements on the role of universities from developing countries in international cooperation projects and programs. Table 5.3.1 shows the results for a 1-5 Likert scale where 1 meant *strongly disagree* and 5 *strongly agree*.

STATEMENT	Mean	SD
Table 5.3.1. **The contribution of universities to the aid effectiveness**		
Universities generally contribute decisively to increasing the effectiveness of strategies, programs, and projects for development cooperation.	4,0	0,7
Universities are far removed from social reality; their approach to development cooperation is too theoretical, and their action is usually guided by self-interest; their contribution to the effectiveness of cooperation is low or null.	2,6	1,4
Based on your specific experience with universities you have been involved with and are aware of, they have contributed significantly to the effectiveness of international development cooperation.	4,1	0,0

Surveyed experts widely agreed with the statements of universities as key contributors to aid effectiveness. No one scored the questions below 3. Regarding the more controversial Question 2, despite its average score falling below 3, the standard deviation (SD) reveals significant dispersion in responses. Notably, two experts assigned the highest score of 5, while three others scored it a 4.

4.1. I-P Analysis

Ten academics and cooperation staff members from universities in the aforementioned countries were selected to conduct the Importance-Performance Analysis. Generally, the results do not greatly facilitate drawing conclusive analyses regarding the correspondence between the importance of universities' role in achieving various aspects of what is understood as effective development aid and the resources actually allocated to their development. Figure 5.3.1 illustrates the results derived from the opinions expressed by the consulted academics and experts.

Overall, universities' performance scores 1,3 points under the importance that experts and academics give to the role of universities to improve the set of factors the influence aid effectiveness. A simple interpretation of it is that universities should increase efforts devoted to improving aid effectiveness as a whole, and it is so for all the single items.

The quadrants resulting from the comparison between importance and performance across different items have been constructed using the mean values given by the consulted academics and experts for the entire set of comparison categories as axes: 8.7 for importance and 7.4 for performance. Taking these values as a reference, the IPA model reveals that, in general, universities have been dedicating the necessary resources to two elements that highly contribute to aid effectiveness: i) ensuring the quality of aid management procedures, resulting in its efficacy (item 4), and ii) promoting collaboration and understanding among the various stakeholders converging in development cooperation projects and programs, both national and from donor countries (item 5). The values revealed in Figure 5.3.1 also indicate that universities respond above average to the challenge of correctly identifying the development needs of the aid recipient country, promoting the active involvement of concerned social sectors (item 2).

According to the consulted experts and academics, it also appears that universities coherently allocate fewer resources to those determinants of aid quality that respondents consider less relevant. Firstly, the low relevance conferred by respondents to defending autonomy in the conception and execution
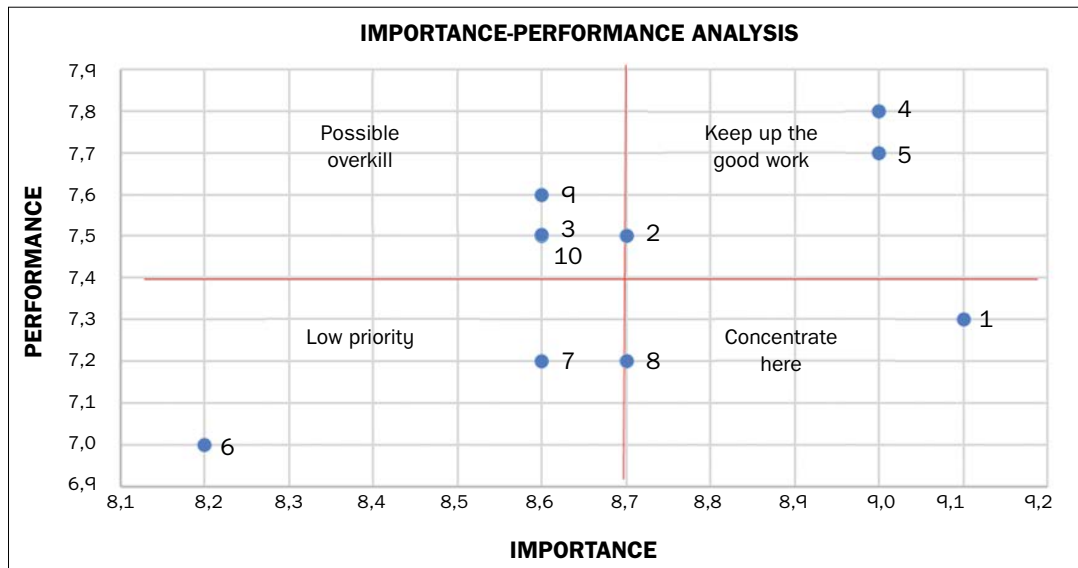
Figure 5.3.1. Important-Performance Analysis of universities participating in development cooperation

Source: own elaboration

of cooperation projects and programs against interested interference from public and private actors coincides with the low performance that universities show regarding this determinant of aid quality (item 6). Secondly, the rigor with which the evaluation of projects and programs' effectiveness is carried out possesses a relatively low level of importance for the consulted experts, which also corresponds to the lesser effort that universities allocate to this dimension of aid effectiveness contributors (item 7).

According to the experts and academics participating in the study, there are three determinants of aid effectiveness in which universities should perhaps invest less effort to transfer resources to two others where their performance is not commensurate with the importance these have for effective development aid. The first three, in order of over-effort, are as follows: i) the contribution of university participation to the environmental sustainability of development cooperation projects and programs (item 9); ii) the relevance that university participation has in the quality of development strategies that are formulated and with which development aid should align (item 3); and iii) the promotion of social equity, gender equality, and non-discrimination based on ethnicity or religious creed among the beneficiary population of cooperation projects and programs (item 10). On the other hand, the areas in which universities should strengthen their presence and, consequently, transfer more resources for their promotion are, above all, their dedication to building capacities for analysis, deliberation, management, and evaluation of the different stakeholders concerned with development cooperation projects and programs (item 1); and to a lesser extent, their involvement in ensuring that the development processes driven by development cooperation projects and programs have continuity beyond their period of validity (item 8).

4.2. Comparing effectiveness of alternative university systems

The results presented below show an obvious limitation derived from the bias of the sample towards academics and experts linked to universities-of-state (70%). In addition, the private universities in the

sample (7) belong to three countries, only one from Bhutan. Consequently, these are very preliminary results that will have to be moderated by the participation in the sample of other academics and experts from other types of universities, and also from non-university actors involved in development cooperation projects.

Nevertheless, even with these limitations, the results obtained are of interest and relevance in some aspects that we summarize below (see Table 5.3.2):

- Strong consensus exists regarding that the DEUs favor those aspects of cooperation that have to do with coordination with international partners, to attract their participation and to harmonize their interventions. This derives from the capacity of large universities to weave and sustain collaboration networks with cooperation agencies and universities in donor countries.

- Statements with lower consensus, with means around 3 and high standard deviation, refer to which model of universities contributes most to the generation of research and development; to the fact that the presence of universities-of-state can lead to lower levels of transparency and accountability, as well as favoring various forms of administrative corruption; and that political conflict within these universities impedes or diverts the objectives of the development cooperation projects and programs in which they participate.

- The rest of the responses of the experts consulted generally show a favorable perception of the contribution of universities-of-state to the effectiveness of aid programs, compared to more decentralized and competitive university models. Thus, they obtain mean scores of 4 or slightly higher, and standard deviations of less than or equal to 1, indicating a relatively low dispersion around the mean, statements that imply a relative superiority of the models led by universities-of-state in aspects such as the rigorousness of the diagnoses on which project formulation is based, ownership of the projects by the beneficiary communities, greater results orientation of development cooperation actions or the achievement of a more balanced relationship based on mutual accountability between donor and recipient countries.

Table 5.3.2. **Comparative analysis of universities-of-state performance in development cooperation**

Statement	Mean	SD
The presence of UoS contributes to a more productive and efficient national R&D system compared to a dispersed and competitive university system.	3,2	1,2
The hegemonic position of the UoS hinders transparency and accountability and favors administrative corruption in the granting and management.	3,0	1,3
The UoS make external collaboration with universities and participation in international projects more feasible.	4,0	0,8
Competition among comparable universities stimulates external collaboration and participation in international projects.	4,0	0,9
The UoS ensure more independent and autonomous research from political parties and pressure groups than a system of smaller, more influenceable universities.	3,8	1,2

Research and development autonomy from corporate pressures and instrumentalization is better safeguarded with a competitive university system.	4,0	1,0
The presence of a UoS facilitates/promotes/guarantees/makes possible (more than with a decentralized and competitive university system):		
…a broader participation in international networks and effective contact with the necessary counterparts to increase development cooperation projects and funds.	4,5	0,8
…the design of more accurate diagnostics and problem-trees better rooted in social reality due to their large capacities.	4,1	1,0
…the struggle for political power within it, thus distracting from the true purpose of international cooperation projects and hampering their proper execution.	3,4	1,2
…the consortia inspiring more trust in international partners, raising their interest in participating in aid programs and projects.	4,2	0,9
…the participation and appropriation of the project by the beneficiary communities more feasible	4,2	1,0
…the alignment of donor countries with the objectives and strategies of the partner countries (recipients) and the strengthening of the national systems more probable.	4,3	0,9
…the donor countries actions to be more complementary and harmonized, and more transparent and collectively effective.	4,4	0,7
…the management of the cooperation processes to be less routinized and bureaucratic and more results-oriented, using information to improve decision-making.	4,1	1,1
…the relationship between donors and partners to be more balanced, with mutual responsibility, and accountability operating in both directions.	4,3	1,0

5. Conclusions and further research

This study has provided valuable insights into the role of universities in development cooperation, particularly in contexts where a dominant public university coexists with smaller institutions. Our findings suggest that universities generally contribute positively to aid effectiveness, aligning with previous research highlighting the importance of higher education in development (Cloete et al., 2015).

The Importance-Performance Analysis revealed that universities are performing well in ensuring quality aid management procedures and promoting collaboration among stakeholders. However, there is room for improvement in capacity building and ensuring the sustainability of development initiatives beyond project timelines, transferring resources from other overkilled domains. This aligns with calls for more sustainable and locally owned development processes (Riddell, 2014).

Our comparative analysis of university systems dominated by a large public institution versus more decentralized models yielded mixed results. While universities-of-state (UoS) seem to excel in coordinating with international partners and attracting their participation, concerns were raised about potential issues with transparency and political conflicts affecting project outcomes. These

findings echo the complex dynamics of higher education in developing countries discussed by Altbach (2013).

Several limitations of this study should be noted. The sample size was relatively small and biased towards academics from UoS, which may have influenced the results. Future research should aim for a more diverse sample, including more representatives from private universities and non-academic stakeholders in development projects.

Moving forward, we propose the following avenues for further research:

- A larger-scale study incorporating a more diverse range of universities and countries to validate and expand on these findings.
- In-depth case studies of successful university-led development projects to identify best practices.
- Longitudinal studies to assess the long-term impact of university involvement in development cooperation.
- Comparative analysis of different models of university engagement in development cooperation across various cultural and political contexts.

In conclusion, while universities, particularly large public institutions, play a crucial role in enhancing aid effectiveness, there is a need for continued improvement and adaptation. As the global development landscape evolves, universities must strive to balance their academic pursuits with practical contributions to sustainable development. This study serves as a stepping stone towards a more comprehensive understanding of the complex interplay between higher education systems and development cooperation effectiveness.

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5.4. Integrating structural capacity building measures into South-South-North strategic partnerships and networks

This article contributes to the debate around impact in Higher Education Capacity Building (HECB, as coined by this book) by examining not just the how but ultimately the 'who' of impact assessment and the support and empowerment of these actors. It argues for the importance of capacity building at the level of Higher Education Institutions (HEIs) and systems, from a structural perspective, and suggests that multi-lateral associations and networks with a South-South-North dimensionality, committed to cooperation for development, can be advocates for such types of capacity building. They can nature capacity building projects and undertake more meaningful impact assessment at different points in time, in the context of the more longitudinal and structured cooperation that the network provides, beyond a one-off project or funding opportunity. Finally, associations and networks can advocate for investment in project management capacity at the level of HEIs in developing countries, so that they can ensure ownership, conduct meaningful monitoring, and lead future projects which might normally be led by partners in the Global North.

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1. The challenge (1): Generating impact through capacity building projects in higher education

1.1. Overview

Impact assessment is both persistent and polemic in development cooperation. It is an obligatory feature of any capacity building programme but is often variable in definition, focus, substance, and feasibility, depending on the nature of projects and their objectives. Hearn and Buffardi (2016) suggest that impact is a multi-dimensional concept, arguing that how it is defined may greatly affect the design,

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[1] https://obreal.org/

management and assessment of development programmes. They contrast the different definitions of impact employed by a range of development cooperation organisations, including that of the European Commission:

> In an impact assessment process, the term impact describes all the changes which are expected to happen due to the implementation and application of a given policy option/ intervention. Such impacts may occur over different timescales, affect different actors and be relevant at different scales (local, regional, national and EU). In an evaluation context, impact refers to the changes associated with a particular intervention which can occur over the longer term. (Hearn & Buffardi, 2016, p. 8).

This discussion is particularly vibrant in the higher education context, where many impacts tend to be (1) not evidenced immediately, (2) intangible, (3) qualitative, (4) subject to multiple interventions over a longer period, (5) unanticipated. The later has been a point of exploration by Vallejo and When (2016), who found that "linear approaches to capacity building (CB) have clear limitations" and that impact assessment must account for non-planned changes that exceed pre-defined indicators. This point has also been introduced in the lead article for this Chapter.

The complexity of assessment becomes even more pronounced when considering the expectations for capacity building projects funded by the European Commission, and specifically the description of impact as set out in the Erasmus+ 2023 Programme Guide (European Commission, 2024). Capacity Building for Higher Education (CBHE) projects should result in:

- Modernised HEIs which will not only transfer knowledge but also will create economic and social value through the transfer of their teaching and research results to the community/country.

- Improved access to and quality of higher education, in particular for people with fewer opportunities and in the poorest countries in the different regions.

- Increased participation of HEIs located in remote areas.

- Governance for efficient and effective policymaking and policy implementation in the field of higher education.

- Regional integration and establishment of comparable recognition, quality assurance tools to support academic cooperation, mobility for students, staff and researchers.

- A stronger link and cooperation with the private sector, promoting innovation and entrepreneurship.

- Alignment of the academic world with labour market enhancing employability of students.

- Increased students' sense of initiative and entrepreneurship.

- Increased level of digital competence for students and staff.

- Institutional ownership of the CBHE results thus ensuring sustainability.

- National ownership by experimenting and mainstreaming positive and best practices in HE.

- Increased capacity and professionalism to work at international level: improved management competences and internationalisation strategies.

Any beneficiary of such a project will define intended impacts at the level of different target groups and, via a logical framework for the intervention, establish both quantitative and qualitative indicators. While

this exercise is essential from the perspective of competitive funding, it is not always substantive in practice, nor does it capture the layered impacts that may be more difficult to quantify at different points in time, or that may emerge unanticipated, from a cascade effect. Few of the previously listed Erasmus+ impacts are quantitively demonstrable at the immediate end of what is often a three-year project intervention. And more generally, these impacts pertain in large part to how projects are designed and aligned with policy priorities in the countries, regions and communities where the projects are intended to incite change, whose capacities are targeted (at what level), how synergies are established, as well as how longer-term assessment is undertaken.

The primary challenge (and potential opportunity) is that a capacity building project does not happen in a vacuum. In the higher education sector, projects may be delegated to or ring-fenced by faculty, which can be a reflection of governance structures, faculty/professor autonomy and, quite often, a race for resources in institutions in developing contexts where salary structures are insufficient (ESSA, 2023). A project in a silo likely generates a siloed approach to impact assessment. It may reach its indicators demonstrably in its field or subject matter, yet fail to be catalysed more widely, or generate a more structural impact. While this may be an acceptable practice for projects with pure academic or disciplinary ends, the possibility for capacity enhancement of the Higher Education Institution (HEI) itself, to become a development agent that can generate wider societal impact, is more limited.

1.2. Possible solutions: Embedding capacity building in networks and associations

The presumption is that if development cooperation programmes take a more holistic approach, prioritising the institution as an agent of change and hence placing the institution as the *subject* of capacity development, wider and more longitudinal impact can be felt and demonstrated. This is a model that one can see increasingly integrated into certain development cooperation interventions. For example, the VLIR-UOS, which has a holistic approach to cooperation that places the university at the centre (see the example of the Institution University Cooperation Programme, 10-year structural investment (VLIR-UOS, n.d.), or the World Bank and the African Centres of Excellence (World Bank, n.d.), which invests in regional institutions as catalysts and hubs for knowledge generation). However, the majority of development aid for which HEI compete tends to be subject/disciplinary specific (curricular or research-focused, for example) or limited to student and staff mobility (Galan-Muros et al., 2022).

1.2.1. The role of networks and associations

This type of solution, notably that of structural, institutional investment for impact, requires advocacy in the face of governments and funders in both the global Souths and Norths[2]. It is a solution that has been increasingly taken up by associations, networks and alliances of HE providers: The Guild, a network of EU research universities, has joined forces with the Association of African Research Universities (ARUA) to advocate for EU investment in African research capacity rooted in university alliances (The Guild, n.d.); The Coimbra Group of Universities has a working group on Global Partnerships that emphasises "engagements to create an effective response to major cooperation challenges and a

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[2] The concepts of South and North are disaggregated to be plural, illustrating the diversity of both, and the relatively fluid definitions being applied in development cooperation policies.

fruitful relation with the main global partnership and development agencies" (Coimbra Group, n.d.); The European Association for International Education (EAIE) now focuses on equity and sustainability in higher education internationalisation and has a professional interest group related to development cooperation (European Association for the Internationalisation of Higher Education (EAIE), n.d.), and OBREAL (OBREAL, n.d.), an association committed to South-South-North partnerships for development, attempts to create a platform for project co-development and also policy dialogue.

Looking at these examples in depth, one ascertains that higher education associations and networks increasingly play a significant role in facilitating international cooperation and collaboration. This is done in various ways:

- Advocacy and representation. Advocating for the interests of their member institutions at national and international levels, providing a collective voice in front of stakeholders and in discussions with governments, policymakers, and international organisations.

- Information sharing and networking. Serving as platforms for sharing information, best practices, and resources among member institutions. They often facilitate networking opportunities, peer learning, collaborative research and partnership development.

- Policy development and implementation. Associations and networks contribute to the development of policies and strategies related to internationalisation, for example, but also scan sectoral trends and identify critical needs for investment in capacity building.

- Capacity building and training. Many associations offer training programmes, professional development opportunities, and capacity-building initiatives to help institutions enhance their internationalisation efforts. They provide guidance on developing international partnerships, managing exchange programmes, and navigating regulatory frameworks.

- Facilitating partnerships and collaborations. Associations connect universities, research centres, industry partners, and other stakeholders to promote joint research projects, student exchange programmes and academic cooperation initiatives.

More specifically, associations and networks can nurture capacity development projects between their members and provide a sustainable space for cooperation that extends beyond the time and funding limitations of the project. The association or network can define common objectives and projects between members, provide leverage for developing competitive project proposals and support a broader impact assessment beyond the indicators of the funding programme or project itself. In addition, the association or network can ensure that capacity building projects are integrated into a wider cooperation strategy, as opposed to being the primary focus of that strategy.

1.2.2. Example: Projects as catalysts in longer-term cooperation frameworks between associations

Taking the aforementioned example of OBREAL, an inter-regional association for higher education development, a model is proposed for embedding capacity building projects within a wider *process* for capacity building, which places Higher Education Institutions (HEIs) at the centre.

OBREAL's members and partners are HEIs, but they are also university associations, such as the Association of African Universities (AAU), the Association of Colombian Universities (ASCUN, for its acronym in Spanish) and the Association of Federal Universities of Brazil (ANDIFES, for its acronym in Spanish).

In the realm of capacity building projects and development cooperation, OBREAL has worked closely with numerous members, both at the HEI and association level, to generate capacity for them to lead, in order to receive and manage EU funding, for example, and to further capacitate their own constituencies to manage and lead[3]. Projects serve part of a broader collaboration and capacity building agenda, embedded in the network. For example, a long-standing relationship has been nurtured with the Central American University Council (CSUCA, for its acronym in Spanish). The two organisations have collaborated on EU funded projects, such as those under the previous ALFA programme, between 2009 and 2014. This relationship was nourished through a spin-off project of a structural nature under the first call of the Erasmus+ Capacity Building for HE programme 2015 'HICA: Harmonisation and Innovation in Central American Curricula: Enhacing and Implementing a Regional Qualifications Framework" (Alarcón Alba & Malo Álvarez, n.d.). The project was a platform for CSUCA to not only build higher education harmonisation frameworks for the region, but to collaborate with its members in six Central American countries in the reconceptualisation of curricula according to learning outcome-based approaches. At the same time, CSUCA became a co-coordinator of the project with OBREAL and the University of Barcelona and was delegated managerial capacity and grant management responsibility. Since this project, CSUCA has been a lead applicant on follow-up projects, developed collaboratively with OBREAL and other partners. In addition, OBREAL has established a 'Central American Chapter', led by CSUCA, with self-funded initiatives such as a virtual COIL training programme. This programme has been the basis for further project applications, as an upscaling measure, but also stands alone as a joint capacity building initiative for the region, targeting international teaching and digitalisation capacity.

2. The challenge (2): Enhancing impact by building project management and monitoring capacity in partner institutions and countries

2.1. Overview

The previous example speaks to the strategy of embedding capacity building projects within associations and networks committed to higher education for development. This example also demonstrates a concerted effort to build project management capacity and project ownership in developing country institutions and associations. Many HEIs in different parts of the developing world have benefited from cooperation funding from varied sources. This can range from programmes for mobility and staff exchange, to staff training, research capacity building and even infrastructure projects for ICT and connectivity. Simply within the European development cooperation context, different national development cooperation agencies, as well as the EU, have increasingly invested in higher education in developing regions, as it is seen as a means to produce the skilled labour and knowledge innovation needed to meet development challenges, and also to boost economies. The EU has more than quadrupled its investment in Higher Education Capacity Building (HECB) in Africa alone in the 2021-2027 programming

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[3] See workshop delivered in the 2022 Donor Harmonisation Group Forum : « Building Capacity for Project Management in Southern partners and institutions », co-organised by OBREAL and the Association of Colombian Universities : https://obreal.org/dhgforum-2022/#documents

period of Erasmus+. This is situated in the framework of a 979 million Euro 'Youth Mobility Flagship' of the EU's Global Gateway Africa-Europe Investment Package (European Commission, n.d.), where all sectors of education feature prominently.

While these forms of cooperation and support have led to transformations in higher education in developing countries, many challenges still exist in terms of measuring impact. These challenges are not only being faced by HEIs, but also within the development cooperation sector more generally, where coordination between development actors continues to be problematic. This is partly due to the diversity of development priorities amongst the different programmes at national or regional levels, in addition to their different funding rules, procedures, eligibility and reporting mechanisms. Different funding agencies also tend only perform monitoring and impact assessment linked to their own respective programmes and priorities, which neglects potentially synergetic effects that other programmes and investments may have in same countries and HEI. Lavignon and Donnely (2016), for example, explored success conditions for international development capacity building projects, and ascertained that the multiplication of project management procedures and guidelines has not always led to more impactful projects with local ownership.

On the side of many HEIs in developing countries, a common issue is that projects remain fragmented within the institution, due to a lack of centralised/coordinated project management and the inadequate means or incentives to assess the impacts of these projects and programmes at institutional and other levels. In addition, many HEIs have limited project management capacity, which is exacerbated by the multiple roles their staff must take, ranging from teaching to research to administration. As a result, cooperation projects between universities tend to be managed by the 'Northern' partner (either by requirement in the programme rules or by default, due to limited management and financial capacity in the 'Southern' partner). There is transfer of funds towards the Southern partner(s), but little systematic investment in building capacity for the Southern partners to lead. Most capacity building programmes for higher education have focused on strategic thematic areas, as opposed to structural capacity to manage international cooperation. ANIE (the African Association for Internationalisation of Higher Education), in consultation with its members, has found that there is little focus on what actually makes cooperation work, e.g. better management/coordination and monitoring of outcomes at institutional and national level in Africa (Early Career Researches, 2021). Moreover, at the national policy level, ministries in charge of coordination and policy development are often missing the tools and frameworks to enhance coordination between investments of different funding agencies, in articulation with the higher education sector (World Bank, 2016).

The 'Donor Harmonisation Group' for Higher Education (DHG) has identified and prioritised these challenges in their discussions in recent years. The DHG is an informal group of national and regional development cooperation actors (Nuffic, DAAD and VLIR-UOS are members, as are agencies like DANIDA, SIDA, and other foundations, development banks and organisations that manage higher education cooperation programmes) that meet annually to discuss trends in higher education development cooperation. In recent years, the question of how to ensure mutually beneficial partnerships between HEI in developing countries and in the North has emerged as an important priority topic[4]. Consequently, many development actors and agencies have integrated the concept of 'de-colonizing'

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[4] The DHG is a practice exchange and coordination forum that has no formal website:
https://obreal.org/es/obreal-global-organizo-el-dhg-forum-2022-en-barcelona/

higher education[5] into their programmes. In practice, this means placing greater emphasis and ownership in the partner countries and institutions, from the needs analysis and project conception level, to project management, monitoring and impact assessment. How to ensure better ownership of the results in developing country partners, and how to develop synergetic approaches with the EU (and other) programmes have been critical themes, as well as the interest launch 'Team Europe' (European Commission, n.d.) initiatives under the framework of the EU's Global Gateway, where different national funding investments are merged under a common umbrella.

This concept has been addressed in a study conducted under the SPHERE initiative financed by the EU ("SPHERE - Centralised Support for Higher Education Reform Experts", 2018-2022) which looked at the impact of structural projects in the CBHE action of Erasmus+, mostly in EU neighbourhood regions, including Northern Africa. The study recommended that **"partner Country coordination should be more highly valued in project selection, as should the way in which the project intends to transfer capacity in project management from Programme to Partner Countries. The ability of universities from the Partner Countries to be coordinators and 'writers' of proposals is very important for generating ownership and relevance. The capacity to write and manage projects has evolved over time and should also be seen as an impact in itself. Shifting the focus from being 'recipients' to being initiators of projects is hence critical."

2.2. Solutions

What is needed are structural capacity building projects that tackle the aforementioned challenges and enable 'Southern' HEI to be more robust, leading partners in higher education development cooperation projects, while also enhancing articulation between 'Northern' development cooperation actors. Such projects should also support national ministries of education and science in partner countries to build frameworks and incentives for systematic impact assessment, untying impact assessment from external funding programme requirements. The presumption is that by capacitating HEI in Southern countries, in cooperation with ministries, to manage and monitor international development cooperation funds more coherently and efficiently, they can better ensure their role in sustainable growth and social cohesion. They can also subsequently attract and manage further funding.

The intention is to reinforce the capacity of the partner HEI to coordinate and monitor the different higher education development cooperation projects and funding they receive, in the interest of enhancing impacts at the level of academic study programmes and research and enabling them as stronger local development agents. The capacity of staff of the services and offices that manage international cooperation, as well as quality assurance and outreach services and structures, should be directly targeted. HEI leadership should also be implicated, to ensure sustainable institutional commitment to resourcing project management and impact assessment.

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[5] There is extensive literature on this topic, rangeing from de-colonizing the curricula to de-colonizing cooperation models more generally. For example, Enslin, P., & Hedge, N. (2023). Decolonizing higher education: The University in the new age of Empire. *Journal of Philosophy of Education*, qhad052.

3. Conclusions

Higher education associations and networks can and do play a crucial role in fostering international cooperation and collaboration, advocating for the higher education sector and contributing to the development of a more interconnected and knowledge-driven global community. There is a need for existing associations and networks, as well as new ones, to prioritise higher education cooperation for development, incubate capacity building projects between members and partners, and ensure systematic and meaningful impact assessment. Embedding projects within networks, whereby a broader and shared development mission frames the projects, and whereby project management capacity is nurtured, can create a stronger culture for impact assessment, extending well beyond a project life cycle.

When it comes to advocacy, associations and networks must also make the case for more targeted structural investment in HEI and HE systems in the global South. This can take the form of targeted measures and capacity building programmes to build and reinforce the structures within HEI that manage project funding and impact assessment. Associations can nurture alliances of institutions from the different Souths and Norths, which favour the Southern partners as project leads, generating a deeper degree of project ownership and transferring capacity for project management. This can yield deeper and potentially more longitudinal territorial impact and the possibility for greater Southern partner project leadership in the future.

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5.5. Higher education capacity building (HECB) as a mechanism for knowledge transfer and promotion of intersectoral collaboration in Latin America and the Caribbean

Currently, it is imperative for Higher Education Institutions (HEIs) to actively engage in projects that enhance capacity building with a vision that extends beyond traditional approaches. Public HEIs are experiencing significant budget restrictions and have ineffective governance structures. Their management practices often lack creativity and innovation, which hinders their ability to secure external funding in line with their internationalization and engagement objectives. Different national, regional, and international actions aimed at capacity building wish must contribute to strengthening the substantive actions of HEIs. They also need to address the increasingly high demand to effectively link with social and productive sectors as a mechanism contributing to the strengthening of governance structures and development strategies. This article addresses different mechanisms for HEIs to achieve greater impact in capacity building actions. Measuring the results and impact of interventions for capacity building in the higher education sector continues to be a challenge due to the lack of data, methodologies, or budgetary restrictions. However, by designing projects with a more strategic approach, it is possible to incorporate elements such as alliances with various sectors, approaches from various disciplines, and coordination with groups of key beneficiaries to whom knowledge is transferred. This makes it easier to generate indicators for ex-post evaluations that measure impact. This approach adds value to projects focused on capacity building in HEIs.

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1. Background

The article´s methodological approach is based on a comprehensive review of academic literature and reports from relevant international organizations, including the Economic Commission for Latin America and the Caribbean (ECLAC) and the World Bank. This information is analyzed to assess the current state of Higher Education Institutions (HEIs) in Latin America and the Caribbean. Additionally, data and statistics from reliable sources are used to back up the article´s observations and conclusions.

The analysis focuses on identifying the challenges facing HEIs in terms of budget, governance, innovation, and collaboration across sectors, while also proposing strategies to improve their capacity building and contribute to sustainable development in the region. The methodology is further supported with citations of relevant reports, documents, and references to previous research, such as the CRES+5 report, to reinforce the article´s claims and recommendations.

The World Bank (2019) defines capacity building as "the local driven process of learning by leaders, coalitions and other agents of change that brings about changes in sociopolitical, policy-related, and organizational factors to enhance local ownership for and the effectiveness and efficiency of efforts to achieve a development goal".

The year 2020 marked significant changes in management and governance models in the countries. The structural gaps identified in areas such as health, education, gender equality, technological infrastructure, and rural populations are indeed crucial issues that need to be addressed. According to the Economic Commission for Latin America and the Caribbean (ECLAC, 2021), Latin America was the most affected developing region by the COVID-19 pandemic, with an unemployment rate of 10.7%, equivalent to 44.1 million unemployed; 209 million people in poverty and 78 million in extreme poverty, representing 33.7% and 12.5% of the total population, respectively, as well as a region with the greatest economic contraction in 120 years, leading to the closure of 2.7 million small and medium-sized enterprises (SMEs).

Moreover, it is important to consider that out of the 33 countries in Latin America and the Caribbean, 28 are middle-income, four are high-income, and one is low-income (ECLAC, 2012). This has led to a considerable decrease in resources from Official Development Assistance (ODA)[1] over the last decades since they have been directed to countries with greater disadvantages.

In addition, HEIs in Latin America and the Caribbean have faced scrutiny from various sectors regarding the necessity to align their actions and knowledge products with society, particularly in addressing economic, environmental, and sociocultural challenges in line with the 2030, specifically Sustainable Development Goal (SDG) 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

In this context, higher education arises as a lever that offers and mobilizes individual and collective capacities for collaborative knowledge creation and the generation of productive and social innovations that contribute to social transformation and the development of fairer, more equitable, and less unequal societies, which is undoubtedly imperative in Latin America and the Caribbean, (CRES+5, 2024).

Public HEIs in the region are consistently facing a decrease in funding from the state, which is sourced from the Gross Domestic Product (GDP)[2] and Official Development Assistance (ODA). This is further exacerbated by low investment by governments to promote research, development, and innovation (R&D&I) in various sectors.

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[1] The per capita income level constitutes the main criterion used to allocate financial resources for development cooperation. Official Development Assistance (ODA) directed to Latin America and the Caribbean went from representing 1% of the regional gross national income in the 1960s to 0.4% in the 1990s and to 0.22% currently. (ECLAC, 2012).

[2] According to the Ibero-American Network of Science and Technology Indicators (2024), starting from the year 2015, investment in the region was 0.7% of the GDP and began to decrease, reaching 0.61% by 2021, the same level it had in 2007.

Local cooperation bodies, regional organizations, international cooperation agencies, and multilateral organizations continue to offer resources to strengthen institutional capacities. However, the rules of the game have changed, making it imperative for HEIs to think "outside the box" to effectively attract fresh funds to achieve the maximum impact of capacity-building projects.

2. Mechanisms to increase the impact of HECB projects

Over the past four years, HEIs have faced increasing pressure to address the challenges encountered by various sectors of society. The CRES+5 (2024) highlights the need for a reassessment of knowledge production, urging HEIs and national scientific and technological systems to question the underlying principles of their work. It is essential to generate spaces and moments for effective reflection on practices, challenges, and innovations.

In line with this, donors have incorporated specific criteria into their funding guidelines to support the development of collaborative models that foster interaction among agents of change so that, through project funding, spaces are created for the joint addressing of critical issues. Table 5.5.1 exemplifies the efforts made by funding entities to generate this dynamic.

Table 5.5.1. **Examples of scope of calls for capacity-building projects**

Title of the call	Scope of the call
European Union – Costa Rica, Latin America, and the Caribbean Triangular Cooperation Fund	Enhancement of technical and managerial capacities of academia, civil society organizations, public sector, and private sector in ecological transition, green recovery, and decarbonization; digitization and innovation, and other areas of cooperation aligned with the Sustainable Development Goals (SDGs).
The ADELANTE2 Window of the European Union	Creating joint solutions through shared knowledge, complementarity, and joint coordination to foster ownership, trust, and sustainability of interventions aimed at achieving the SDGs.
Strengthening Inclusive Science and Innovation Systems in Latin America, Central American University Council (CSUCA) – International Development Research Center (IDRC), Canada	Promoting collaborative efforts among universities, government, multilateral organizations, businesses, entrepreneurs, and community groups through regional scientific exchange and collaboration, to generate policies that integrate social, economic, and environmental areas, providing viable solutions to the challenges faced by vulnerable groups in the Central American population in local development, climate change, renewable energies, and digital transformation.
Development Cooperation Actions in the Field of Innovation. Spanish Cooperation	Knowledge-driven actions in the field of innovation to promote networking between the private enterprise sector, social sector, and entities in the academic and research spheres in areas such as circular economy, nature-based solutions, food security, territorial rural development, digital education, gender equity, and climate change adaptation.

Source: Self-preparation, with data extracted from the mentioned calls, 2024.

The need for coordination has been reflected in working documents and plans of various regional mechanisms such as the International UNESCO Institute for Higher Education in Latin America and the Caribbean (IESALC, for its acronym in Spanish), the Union of Universities of Latin America and the Caribbean (UDUALC, for its acronym in Spanish), the Regional Conference on Higher Education in Latin America and the Caribbean (CRES, for its acronym in Spanish), and the Economic Commission for Latin America and the Caribbean (ECLAC).

According to CRES (2024), research is a key driver of societal engagement, focusing on knowledge generation and exchange. This perspective recognizes the complexity of problems, advocating for holistic approaches and embracing multi and interdisciplinary viewpoints. Basic and applied research are essential in driving social innovation, needing active participation from universities and HEIs. Together, these research streams substantially contribute to tackling economic, social, environmental, technological, and cultural challenges. It is their synergistic interaction that fosters the emergence of innovative and sustainable solutions.

From a practical perspective, strategies have been identified to enhance the success rate in programs funded by collaborating entities for research and university management projects. While these programs strive to develop skills, they also need to ensure that the outcomes address a wider range of issues than those that have been traditionally considered.

2.1. Inter-institutional and intersectoral collaborative actions

In Latin America and the Caribbean, there is a continuous demand for action to close the gap between academia and social and economic groups.

Collaborative work[3] with key actors in participatory spaces to ensure ownership of the results is essential in the new dynamics of capacity-building projects.

Collaborative efforts enable the creation of detailed proposals that can be used in the planning processes of public institutions, local governments, and the private sector. This results in coordinated solutions to address common challenges at the national, regional, and international levels.

The goal is to achieve commitments to implementing sustainable development models that have a direct impact on enhancing internal processes in HEIs. Gibbons et al. (1994) emphasize that "knowledge generation is characterized by collaboration among multiple actors and intersectoral interaction, where universities lead collaborative initiatives to address shared challenges and promote innovative solutions".

Moreover, intersectoral[4] and interinstitutional dynamics foster the identification of structures that serve as mechanisms for establishing effective multilevel governance models. This is done through coordination spaces that develop strategies for implementing development agendas collaboratively.

Another tool for fostering long-term relationships between sectors is the establishment of public-private partnerships. These partnerships can strengthen institutional competencies, promote joint research efforts, and develop education programs that meet the needs of other sectors in order to boost their

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[3] Collaborative work is understood as shared spaces or processes involving heterogeneous individuals or organizations with common ideals and objectives (Vargas et al., 2021).

[4] Intersectorality has two perspectives: on one hand, it refers to the integration of various sectors —government-private-civil society— or it can refer to knowledge specialties —health-education-agriculture-others (Cunill, N, 2013).

competitiveness. It is essential to emphasize that these initiatives, aimed at building capacities, can also be oriented on achieving more widespread impact results that contribute to national objectives. Examples of such include attracting foreign direct investment, improving educational, health, and technological models, reducing structural gaps, and conducting prospective national studies.

Collaborative work between various institutions enables more effective use of resources and knowledge, leading to more comprehensive problem-solving approaches. Additionally, it promotes the exchange of perspectives and experiences, enriching the development of solutions.

An example of this mechanism can be seen in the project "Smart Tourist Destinations: Information and Communication Technologies Applied to Tourism" (2023), co-financed by the European Union's Ventana Adelante 2 Program. Through knowledge creation directed towards strategic members of the academy, local governments, groups of tourism entrepreneurs, and information and communication technology entrepreneurs, participants acquired skills needed to assess destinations and generate continuous improvement strategies for their transformation into smart tourist destinations, with the potential to replicate this experience in other countries. Table 5.5.2 lists the institutions that participate in this initiative by sector.

Table 5.5.2. **Distribution of institutions by sector**	
Academic sector	• Costa Rican Technological Institute. • University of La Laguna, Spain.
Public sector	• Institute for Municipal Development (IFAM), Costa Rica. • Costa Rican Institute of Tourism, Costa Rica. • General Institutional Secretary of Tourism of Buenos Aires, Argentina. • Canarias Tourism Promotion Board (Promotur Turismo de Canarias), Government of the Canary Islands, Spain. • Undersecretariat of Tourism of Colombia.
Private sector	• Rural electrification cooperative of San Carlos, Costa Rica. • Chamber of Information and Communication Technologies of Costa Rica.
Local governments	• Municipality of of Medellín, Colombia. • Municipality of Tarrazú, Costa Rica. • Municipality of Sarchí, Costa Rica. • Municipality of San Carlos, Costa Rica. • Local governments of Eastern Antioquia, Colombia.
Civil society	• Promotion Agency of Eastern Antioquia, Colombia. • Smart Latam Alliance, Argentina.

Source: Prepared in 2024 with data from the project of reference.

Intersectoral and interinstitutional collaboration will establish the foundation for the model for using information and communication technologies (ICTs) in smart tourist destinations. The model will then systematically guide the digital transformation of local tourism to implement smart tourist destinations. Likewise, capacity-building for creating public-private models for smart tourism management will allow innovation and transformation of the tourism industry with the help of ICTs.

2.2. Joint construction of knowledge products and their transfer

Projects focused on effectively transferring knowledge to other stakeholders ensure continuous improvement processes, not just for Higher Education Institutions (HEIs) but also for their sector partners. This type of transfer is essential for identifying new research avenues that can lead projects or more significant actions. Active involvement in these processes promotes dialogue spaces strengthening the relationship between HEI actions and societal needs.

Some of the support tools for implementing this mechanism are: result validation exercises with key actors, joint design of roadmaps and action plans; identification of opportunities for scaling results; establishment of agreements promoting long-term interaction among diverse groups; dissemination activities targeted at change agents to ensure sustainability of achieved products; and alignment of outcome indicators with national databases, observatories, or repositories of freely accessible information.

Effective knowledge transfer from universities to society is crucial for economic and social development as it contributes to reducing scientific and technological gaps. One example of this mechanism is the project "Effect of emerging contaminants on marine ecosystems: Bio-monitoring through mariculture to improve the conservation of biodiversity, health and productive activity in the ECOMAR zone," financed by the European Union under a Triangular Cooperation structure. This project emerged from capacity-building efforts by the Federal University of the State of Sao Paulo (UNIFESP, for its acronym in Portuguese), Brazil, within the Technological Institute of Costa Rica (ITCR, for its acronym in Spanish), on the topic of emerging contaminants[5] and their effect on marine biodiversity. Starting with the design of the capacity-building process, project leaders envisioned that the results would help structure a new project to transfer knowledge to key actors on these issues. Thus, during the year 2022 and 2023, an intervention was carried out in the Gulf of Nicoya of Costa Rica that involved four Costa Rican public universities; the University of Montpellier, France; UNIFESP; seven oyster and mussel producer associations; 125 livestock farms; three public hospitals; the National Animal Health Service (SENASA, for its acronym in Spanish) of the Ministry of Agriculture and Livestock (MAG, for its acronym in Spanish); and the Ministry of National Planning and Economic Policy (MIDEPLAN, for its acronym in Spanish). Among the primary results of the project, the following stand out:

- Research component. An initial baseline was established for the presence of drugs for human use and drugs for animal use in Costa Rica, as well as their characterization. The information determined the presence and concentration of these contaminants in salt water, characterized the most-consumed medications in the area of influence, and identified the practices used in their final disposal.

- Knowledge transfer component. The project identified contaminants by analyzing oysters and mussels, because these act as bio monitors. This process involved seven associations made up of 125 producers who improved their production practices to guarantee the safety of the products for placement in the market. Producers also began the process to obtain a quality seal that will allow them to add value and charge a fair price.

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[5] According to the National Laboratory of Sustainability Sciences of the National Autonomous University of Mexico (2021), emerging contaminants are classified into three large categories: pharmaceuticals, personal care products, and endocrine disruptors. The laboratory also points out that scientific knowledge about their trajectories, accumulation, interactions, persistence, and effects on human and ecosystem health continues to be limited, especially in developing countries.

- Public policy component. Through a participatory process that involved various actors, the project formulated a roadmap for decision-making and the design of public policies related to this issue. The results of the intervention will be used as inputs for the design of bills by the Costa Rican Legislative Assembly, and to provide feedback to the National Sea Policy of Costa Rica 2013-2028. In addition, within the action plan framework of the National Strategic Plan of Costa Rica 2020-2050, the products generated will be adopted to promote projects that contribute to expanding research into other types of pollutants (fossil fuels).

This example demonstrates that the strategic design of capacity-building projects aimed at HEIs lay the groundwork needed to capitalize on the knowledge acquired, and to generate actions with greater impact.

2.3. Results leading to public policy generation

Working within collaborative frameworks provides a foundation for project outcomes to influence the development of public policies that go beyond the realm of education and have an impact at the local or national level. Public policy analysis is a collective learning process on how to address issues of public interest, involving technical analysis in communication with citizens.

Public policies can address challenges in various sectors or strengthen the core functions of higher education. Projects that promote collaboration across sectors and institutions create opportunities for joint development of knowledge products that significantly contribute to generating inputs for well-defined public policies. Higher education must contribute to shaping state public policies through its teaching, research, innovation, and extension functions. This requires a harmonious integration of these functions to enhance the quality and significance of HEIs and the overall education system. This translates into continuous updating of teaching and learning methods and the establishment of explicit and defined procedures to broaden access and permanence, promoting inclusivity, social justice, human dignity, interculturality, and sustainability in the national and regional education systems (CRES+5, 2024).

3. Conclusions

This chapter offers guidance on factors to consider, in order to enhance the effectiveness of interventions implemented in initiatives aimed at developing higher education.

The COVID-19 pandemic has worsened pre-existing structural issues, emphasizing the main challenges that HEIs in Latin America and the Caribbean face in terms of budge limitations, the need for collaboration with various sectors, and the funding strategies employed by cooperation agencies.

It is important to strengthen institutional capabilities to comprehensively address social, economic, and environmental challenges by working together with public institutions, the private sector, and civil society. HEIs must embrace innovative approaches that encourage collaboration across sectors, effective transfer of knowledge, and contributions to shaping public policies to address regional challenges and promote sustainable development.

The region has limited resources for financing research, development, and innovation (RDI) projects, so triangular cooperation mechanisms and South-South cooperation represent valuable opportunities to strengthen the linkages of HEIs with civil society, government, and the private sector.

Interventions conducted through HECD projects produce multiple benefits for HEIs, such as identifying new labor market needs related to academic programs, prioritizing thematic areas for research and extension projects with more significant impact, and developing strategies to design public policies that enhance HEIs.

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5.6. Engaging external stakeholders in CBHE projects

Capacity Building in Higher Education (CBHE) initiatives are essential for enhancing the intellectual resources and institutional adaptability needed to foster innovation, competitiveness, and social change. Nevertheless, the impact and sustainability of such programs heavily rely on creating strong links and maintaining active communication with relevant stakeholders who possess significant influence, resources, and experience both within and without the higher education system.

Higher Education Institutions (HEIs) face a huge problem when it comes to engaging with external stakeholders, especially those in the productive sector, traditionally disconnected from the academic world. The growing diversity of stakeholders adds an extra layer of complexity to these engagement efforts because every set of stakeholders presents distinct interests, goals, and communication preferences, which require customized techniques to secure their involvement.

Furthermore, the proliferation of projects within the higher education landscape intensifies the competitive environment for gaining the attention and support of external stakeholders. With an increasing number of initiatives competing for limited resources, relationships, and recognition, HEIs face a difficult challenge in distinguishing their projects and gaining significant collaborations with external stakeholders. Thus, navigating this intricate and competitive landscape requires strategic planning, innovative approaches and persistent efforts to establish mutually beneficial relationships and promote shared objectives within the higher education ecosystem. This chapter explores the definition and classification of external stakeholders for capacity building projects in higher education. It highlights their crucial role and reflects on relevant methods and recommendations for improving the stakeholders' engagement to enhance project outcomes in this particular context. In addition, we provide several success stories showcasing various efforts that serve as prime examples of good practices in the field of CBHE projects.

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1. Stakeholder mapping

In the following sections, we will provide a definition and categorization of stakeholders in order to understand the significant role they can play in a project's improvement.

1.1. Categorization of external stakeholders in Capacity Building in Higher Education (CBHE) projects

According to the Project Management Institute, stakeholders are "individuals and organizations who are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or successful project completion" (Project Management Institute, 1996). Considering the specific nature of capacity building projects in higher education, which are normally carried out by multi-partner consortiums mainly composed by HEIs, we can make a distinction between internal and external stakeholders in capacity building projects:

- **Internal stakeholders** include individuals and bodies within partner HEIs, such as faculty members, students or student associations, administrative staff or units and university managers, among others. As active members of the university community, they might be directly impacted by the project's success or failure and often play key roles in its execution.

- **External stakeholders**, on the other hand, include a wide range of individuals and organizations outside the partner HEIs, with a direct or indirect impact in shaping the educational landscape.

Although external stakeholders are not usually direct beneficiaries of project results, the importance of incorporating them in capacity building projects cannot be overstated. They play an important role as significant sources of knowledge, skills, and resources, enriching the project's design, implementation, and outcomes in a variety of ways: contributing with specialized information, insights, and views that supplement project teams' expertise, allowing easier access to a variety of resources (such as financial support, technical assistance, infrastructure, and networks), and promoting collaboration, mutual support, and shared ownership of the project. Relevant external stakeholders can include:

- **Government and regulatory bodies.** This category encompasses a wide range of national and local governmental agencies and ministries likely to participate in higher education related projects. The main actors included in this category are ministries of education, accreditation bodies and other similar regulatory bodies, not only for their role defining educational policies, but also for their power of mobilization among HEIs. Thus, aligning project objectives with government priorities ensures coherence and potential synergies with national educational strategies.

- **HEIs not included in the project consortium.** In the case of CBHE projects, non-partner HEIs in the country or region of intervention may be considered as potential beneficiaries of the project results. Thus, their active engagement in project activities will be crucial to maximize the exploitation of the results and ensure their sustainability. This is especially critical in projects aiming to foster structural reforms at national level.

- **Industry partners and employers.** Industry partners, including big corporations, small and medium-sized enterprises, chambers of commerce and industry associations, are essential for ensuring the impact and sustainability of higher education projects, especially those devoted to improving access to the labor market and fostering innovation and competitiveness. Their engagement facilitates alignment between educational programs and industry demands, enhancing students' employability and encouraging innovation and entrepreneurship within Higher Education Institutions (HEIs). Furthermore, through their financial support, technical assistance and strategic collaborations, those stakeholders can ensure the sustainability and long-term impact of project results.

- **Academic networks.** These networks facilitate the sharing of best practices, cutting-edge research, and innovative teaching methods. By fostering this type of collaborative environment, these networks not only provide access to relevant resources for the project implementation but also to increase the exploitation of project results in the academic landscape.

- **Non-profit organisations and foundations.** These entities can play an important role in supporting capacity-building initiatives within higher education projects, not only providing financial resources and technical assistance, but promoting long-term strategic partnerships to advance in social challenges such as access to higher education and equity.

- **Alumni networks and professional associations.** These types of networks and entities provide access to key individuals, who may play an important active role by offering mentorship, networking opportunities and career development support to students and graduates. They can also play an important role as advocates for higher education, promoting its value and relevance to a broader society.

- **Community and civic organisations.** Community-based organizations and civic groups constitute important stakeholders in higher education, advocating for community engagement and enhancing the social relevance and impact of capacity building projects.

This extensive range of external stakeholders shows a fragmented landscape, but nevertheless with a common vision: the conviction that fostering innovation, competitiveness, and social change is only possible by strengthening a quadruple helix innovation model, in which academia joins forces with companies, government bodies and civil society in facing global challenges such as those addressed by the Sustainable Development Goals (SDGs).

1.2. Analyzing external stakeholders

Considering the complex and diverse landscape described above, examining and charting external stakeholders is crucial for creating customized engagement strategies that effectively meet their distinct requirements and expectations. To systematize this effort, a wide range of complementary methodologies have been developed by academics and practitioners working in this field.

One of the most common methods for stakeholder analysis is the Power-Interest Grid. It consists of a simple grid that helps to identify and prioritize stakeholders based on their level of influence/power and their level of interest/impact on the project (Murray-Webster & Simon, 2006).

The first step of the process implies a brainstorming exercise aiming at identifying and listing specific organizations that can be included as potential stakeholders for the project. This long list of stakeholders should be classified following the typology mentioned in section 2.1. Once the list is structured, the second step is to gather quantitative and qualitative data (via desktop research, interviews, or surveys) about potential stakeholders and their level of influence and interest on the project topic and potential outcomes. Then, each of the stakeholders identified is plotted on a matrix with four quadrants (see Figure 5.6.1): high power/high interest, high power/low interest, low power/high interest, and low power/low interest based on their perceived level of influence and interest. This mapping exercise helps to prioritize engagement efforts and tailor communication strategies accordingly.
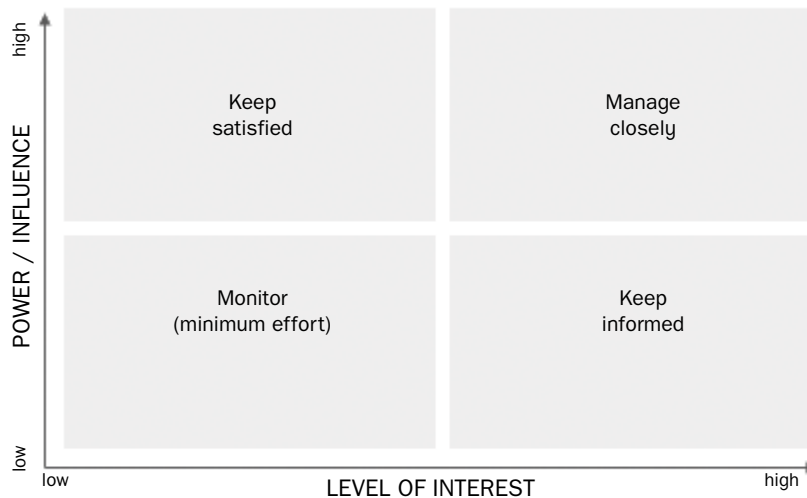
Figure 5.6.1. Power-Interest grid
Source: Adapted from Eden & Ackerman, 1998.

This systematic procedure of analyzing external stakeholders serves as the initial stage in delineating engagement strategies, allowing to classify potential stakeholders and prioritize engagement efforts. Thus, selecting which stakeholders should be involved in the project, and how, will establish strong foundations for its implementation.

2. Stakeholder engagement strategies

In this section, we will define the role of stakeholders and their level of involvement in the project. Likewise, a series of recommendations to increase the stakeholders' involvement will be outlined, as well as several success stories that serve as prime examples of good practices in the field of CBHE projects.

2.1. Stakeholder roles

Already at the design stage of a project it is important to plan how external stakeholders will be involved. Will they be regularly involved in the project as partners (full or associated) or brought in only for one-off activities? If they are brought in as a full partner, can they be assigned leadership roles or should they be support for others who act as task or work package (WP) coordinators or is it best to simply involve them in a limited number of tasks? Through their networks can they help expand the reach of the project, increasing the impact and sustainability of its results?

Involving, or not, and how, these entities in a capacity building project is a strategic decision that must be made when assembling a consortium at the proposal stage of the project. Depending on the funding scheme and the call, it could be mandatory to include a non-academic partner, such as, for example, the ministry responsible for higher education in Erasmus+ Key Action 2 Capacity Building in Higher Education Strand 3 projects (European Commission, 2023). Even when including external stakeholders

is not obligatory, it could be highly encouraged (resulting in a higher evaluation score), particularly if the focus of the call is on building or strengthening ties with the private sector or if the project aims to support value chains in key priority areas of investment at national or regional level (European Commission, 2023).

As shown in Table 5.6.1, there are clear obligations and benefits (both for the stakeholder and the consortium) linked to the form in which the stakeholders are involved in a CBHE project. These need to be fully understood by the project consortium, but most especially by the institution that is being invited to participate in the project as a full or associate partner.

Table 5.6.1. **Involvement of external stakeholders in CBHE projects**

	Obligations	Finances	Benefits for the Stakeholder	Benefits for the Consortium
Full partner	Contractual obligation to help ensure the success of the project through the implementation of activities that have been assigned to them in the proposal.	Receives funding. Costs are covered by the assigned budget.	Possibility to develop a strong relationship with the partners which may lead to future collaborations. Access to all project activities and results.	Regular access to the stakeholder's experience and views. Full support of stakeholder for achieving project objectives. Partners can develop a strong relationship with the stakeholder which may lead to future collaborations.
Associated partner	No contractual obligation. Highly encouraged to support the project through dissemination, feedback on key outputs, participation in events and activities whenever possible.	Does not receive funding. Catering costs for participation in an event covered by the project. Possibility of covering transportation costs by project as an invited speaker if foreseen in the budget.	Only participates in activities if they want to. Kept informed of the project. Access to some partner-only activities (e.g., online training). Access to public results.	Can consult with the stakeholder for input or feedback on key actions or results. Increased reach of project dissemination actions and support for exploitation of results.
Non-partner	No contractual obligation. Invited to participate in a specific activity or event to share their views and experience.	Does not receive funding. Catering costs for participation in an event covered by the project. Possibility of covering transportation costs by project as an invited speaker if foreseen in the budget.	Only participates in the activity or event they have been invited to. Access to public results.	Can count with an external view for a specific activity.

Source: own elaboration.

In order to decide how to involve an external stakeholder in a project, the following points should be considered:

- How can the stakeholder contribute to achieving the project's objectives?
- As a partner, what would they bring to the consortium?
- What is their level of commitment to the project?
- What is their availability?

2.2. Practical recommendations

Although there are many ways external stakeholders can provide a valuable contribution to a CBHE project (Table 5.6.2), it can often be challenging to secure their active participation in project activities. To mitigate this, it is important to identify if this is due to a lack of interest, resources, time or understanding of the project on their part, and try to address the issue to secure their participation. Thus, it is important to understand from the start the role of the multiple stakeholders in a project, as well as their interest in it and their limitations. A strong communication plan will be a crucial tool to guide the consortium through engaging with them, and will ensure awareness and recognition of the project, increasing their interest. Finally, never underestimate the attractiveness of refreshments when inviting stakeholders to participate in an activity and be sure to include it in the event plan.

Table 5.6.2. **Tools for external stakeholders' engagement in CBHE projects**

Tools	Stakeholders' contributions	Key aspects to be considered
Surveys	• Input for situational analysis • Input for opinion study	• Targeted dissemination plan to get the survey to the target audience
Interviews	• Input for situational analysis • Evaluation of some aspect of the university	• Ensure the participation of the key contact person
Case Study	• Identification of challenges • Identification of good practices • Input for student activities	• Ensure the contact person has access to the information
Focus Group	• Input for situational analysis • Input for survey design • Identification of challenges • Evaluations • Decision-making	• Ensure the participation of the key contact person • Budget (e.g., for catering or travel of the moderator or an expert)
Round table, panel discussion or world café	• Input for situational analysis • Input for opinion study • Identification of challenges • Sharing of expertise • Networking	• Ensure the participation of the key contact person • Budget (e.g., for catering or travel of an expert)

Workshop	• Beneficiaries of training • Trainers • Networking • Developing joint initiatives	• Ensure the participation of the persons with relevant profile (for trainees) or expertise (in case of trainer) • Budget (e.g., for catering or travel of an expert)
Conference	Audience member Speaker Sponsorship	Ensure the participation of the persons with relevant profile (for participants) or expertise (in case of speaker) Budget (e.g., for catering or travel of an expert)
Competition	Input for the basis of the competition Jury member Sponsorship	Ensure the participation of jury members with relevant profile Budget (e.g., for catering or travel of a jury member)
Site visits	Input for situational analysis Identification of good practices Input for student activities Identification of challenges Sharing of expertise	Venue is relevant Budget for transportation to the site
Mentoring and internships	Guiding students or staff through their own experience Provide resources for the development of activities in their institution	Relevant profile of mentor and availability Signed agreement with stakeholder
Revision of outputs	Feedback or evaluation of project reports and/or publications	Ensure the reviewer or evaluator has the relevant profile
Network	Ensure institutional commitment to the network Contributes to the sustainability of the network allowing for continued collaboration with HEIs	Signed agreement between partners to create and maintain the network

Source: own elaboration.

As previously discussed, external stakeholders can be involved in a CBHE project as either full partners, associate partners, or independent actors brought in for a specific activity (Table 5.6.1). Below we present some practical recommendations for the proposal-drafting and implementation phase of a project to ensure a meaningful participation of external stakeholders in the project, based on the authors' experience in drafting and managing CBHE projects.

As full partners

Despite being full partners and directly involved in most or all aspects of the project, it is important to **keep in mind that as non-academic partners they are not direct beneficiaries of the project** (minimal budget compared to HEIs, actions usually not targeting their own staff), so they might not be as invested as the academic partners. To mitigate this, the following recommendations are proposed:

- At the proposal phase:

  – Organise a meeting with the stakeholder(s) to present the project objectives, the main activities, explain what their role would be (including activities they would participate in, profile of staff who should be involved, calendar of meetings and events), together with any obligations and financial benefits. Find out what they could bring to the table, for example in terms of expertise

for trainings or contributions to drafting of deliverables, expansion of the project reach through dissemination to their own network of contacts, etc.

- – Take into account the possible limitations of the institution's involvement based on their nature (e.g., a ministry of education will require a significant amount of time for administrative issues, they might not use the budget; a small NGO will probably be very enthusiastic about the project but will have very limited resources of their own to support their efforts and might depend entirely on the budget you assign them within the project proposal).

- – If possible, identify the key person(s) who would be involved in the project and determine their level of commitment and availability. Evaluate whether they will be able to assume a leadership role (e.g., work package coordinator) or not.

- During the implementation phase:

- – Communication is key! Be sure the stakeholder is included in the project mailing list and is kept informed. Involve them in the project management meetings (as a member of the management board if there is one) and invite them to share their views regarding the planning of activities, quality of deliverables, or general progress towards achieving the project's objectives.

- – Monitor their level of satisfaction in order to be able to intervene quickly should any aspect of their participation needs to be modified.

- – The stakeholder might be an institution, but it is important to keep in mind that the consortium's link to them is through an individual with their own priorities and availability. Engage with them on a regular basis to ensure their interest in the project is being maintained. Build win-win scenarios.

- – If any of the partners has an existing or previous relationship with the stakeholder, this will facilitate communications and possibly increase their willingness to be an active participant.

As associate partners

The key to ensuring a successful participation of external stakeholders as associate partners is **treating them as full partners and involving them as much as possible in the project implementation**, taking into account of course budgetary constraints.

- At the proposal phase:

- – Invite the stakeholder to support the project as an associate partner, making it clear there will be no contractual obligations, but no assigned funding either. Highlight how their participation will be of support to the project, and how this will benefit them as well.

- – In the project design, define activities that associate partners will be able to participate in at little or no cost (e.g., online activities).

- – If the participation of an associate partner in an event is deemed crucial, consider including a line in the partner host's budget to cover the associate partner's travel expenses to said event.

- During the implementation phase:

- – Include them in the partners section of the project's website to show they are members of the project.

- Inform them on a regular basis regarding the project's progress.

- Send invitations to participate in relevant project activities or events with sufficient notice for them to be able to make the necessary arrangements. Highlight what might be needed from them, how they would benefit from participating, and any resources available to support their participation.

- After their participation, highlight their contribution in any project communications (e.g., news briefs, social media posts) and follow-up with them to thank them and share any key outputs resulting from their contributions (e.g., reports or publications).

- Invite them to contribute to or provide feedback on key project deliverables and help increase their impact and exploitation by disseminating them through their own networks.

- Monitor their level of satisfaction in order to be able to intervene quickly should any aspect of their participation need to be modified.

- Follow their social media channels through the project's social media channels and tag them in key project posts to increase the social media reach of promoted project activities.

As independent actors (non-partners)

External stakeholders that are not included in the consortium as full or associate partners can have a key role to play in the project's implementation. In fact, due to the complexity that is sometimes entailed in involving a non-academic institution as a partner, and the limited budget available to do so, it is more common to involve external stakeholders in limited roles in a CBHE project, than to do so as a partner. Considering that this type of engagement of external stakeholders requires very little in terms of resources, it is possible to define a large and diverse group of institutions and key actors to target for relevant activities, such as those described in Table 5.6.2.

- At the proposal phase:

  - Do a stakeholder mapping to determine potential external stakeholders that could be involved in the project.

  - Identify the various stages at which the project would benefit from or require input from external stakeholders, what type of stakeholders these should be, and define what type of input would be needed (Table 5.6.2).

  - Determine what kind of resources would be necessary to secure their participation and if these could be covered by the partners (e.g., through co-funding, sponsors, etc.) or if it should be included in the project budget.

- During the implementation phase:

  - Update the stakeholder mapping and identify specific entities or individuals to target within the project. Do both at the start of the project and after any stakeholder-engagement activity.

  - Have a good stakeholder communication strategy to ensure their awareness of the project.

  - Send invitations to participate in relevant project activities or events with sufficient notice for them to be able to make the necessary arrangements. Inform them what resources are available to support their participation.

After their participation, highlight their contribution in any project communications (e.g., news briefs, social media posts) and follow-up with them to thank them and share any key outputs resulting from their contributions (e.g., reports or publications).

2.3. Success stories

With government entities

When bringing government entities (e.g., ministry responsible for higher education) into a CBHE project as a partner, it is particularly important to **identify the specific department or expert whose area of action is aligned with the objectives of the project**, in order to ensure the relevance of the project to the people who would be directly involved.

Successful examples of this can be seen in the Erasmus+ CBHE projects ANTENA, PATHWAY, V2WORK or ANSWER (Table 5.6.3). In the first two cases, although both involved as a partner the Commission on Higher Education of the Philippines (CHED), the staff participating in the projects were from different departments specifically selected for the projects' priorities falling under their purview. For ANTENA, a project on internationalization of higher education, this was the International Affairs Service (IAS), while for PATHWAY, which aimed to increase employability and entrepreneurship of graduates, the selected unit was the Office of Programs and Standards (OPS). In the case of V2WORK, the relevant department of the Ministry of Education and Training (MOET) in Vietnam was the Politics and Student Affairs Department, whose members were involved in a working group on entrepreneurship in higher education. The participation of these key individuals, fully integrated into the projects' management boards and frequently consulted by the partners, allowed for the projects to ensure their strategic outputs were aligned with the ministries' priorities, ensuring full support from the government for any national events they organized (and thus increasing participation), promotion of the projects' policy recommendations, and adoption of several of these recommendations' key points into a government decision on supporting students to start a business. In the case of ANSWER, a project on inclusion of students with disabilities in higher education, the key staff of the Ministry of Education of Rwanda (MINEDUC) involved in the project is an expert on Special Needs and Inclusive Education (SN&IE) reporting directly to the Permanent Secretary. Also, the Strategic Advisor to the Permanent Secretary is directly involved in the project ensuring the project activities are fully aligned with MINEDUC Strategic Plan.

Another successful example is the ACCESS project (Table 5.6.3). This Erasmus+ Key Action 2 CBHE Structural project involved as full partners three ministries responsible for higher education (Ministry of Public Education in Costa Rica, Ministry of Higher Education in Cuba and Ministry of Education, Science and Technology in Dominican Republic). Their high involvement in all project activities from the very beginning ensured the formal establishment of the Student Support Centres for students with disability at partner HEIs, the tax exemption, nationalization and delivery of assistive technology equipment to beneficiary HEIs, the creation of three Higher Education Inclusive National Networks in Costa Rica, Cuba and Dominican Republic, the creation of the ACCESS Network and the organization and implementation of sectoral round tables that produced roadmaps for drafting policy papers for an inclusive HE system. To ensure their active participation, the project's coordinator had regular on-line and face-to-face meetings during the implementation phase, and feedback surveys were conducted to gather their views and input on main projects outputs, deliverables and events.

Government stakeholders do not need to be limited to the sphere of education. If the project objectives are closely aligned with another government entity, then these could be invited to participate in the project either as a partner or for one-off actions. For example, the project ANSWER, in addition to MINEDUC, includes in its consortium the National Council of Persons with Disabilities (NCPD). The active involvement of the NCPD during the needs analysis phase, contributing to the design of the methodology, disseminating the surveys and supporting partner HEIs in the implementation of the focus groups, addressed the lack of meaningful, extensive, valid and comparative data on disability in the context of the higher education system in Rwanda and contributed to adjusting and tailoring the project activities to the needs of the target groups as well as providing the first concrete recommendations on higher education policy issues in Rwanda. In the case of the PATHWAY project, while drafting a framework for entrepreneurship competencies in the Philippines, the partners consulted several times with experts from the Department of Labor and Employment (DOLE) in order to ensure the document's relevance to the Filipino context. Finally, ECOViP has the Khanh Hoa Department of Tourism of Vietnam (SDL), with a role of principally helping the Vietnamese HEI partners to identify ecotourism businesses to involve in the project activities and advising them on their work of evaluating and updating the curriculum of their Tourism degree programs so they are better aligned with the current situation of tourism in Vietnam and respecting of government regulations and priorities.

Another example would be IPICA (Table 5.6.3), a project that focused on analyzing intellectual property rights (IPR) and knowledge transfer (KT) regimes in the Caribbean to identify areas for improvement and raise awareness among policymakers about good practices in KT and IPR frameworks. To reach this objective the project involved intellectual property offices as both full and associated partners: Jamaica Intellectual Property Office (JIPO) and National Industrial Property Office of Santo Domingo (ONAPI, for its acronym in Spanish) as full partners, and as associate partners the Intellectual Property Office of Trinidad and Tobago (TTIPO), Spanish Patent and Trademark Office (OEPM, for its acronym in Spanish), World Intellectual Property Organization (WIPO), European Union Intellectual Property Office (EUIPO) and Caribbean Community Secretariat (CARICOM). These stakeholders were involved via multi-stakeholder working groups and national and regional multi-stakeholder forums. The National Stakeholders' Forums secured the commitment and collaboration of stakeholders to upgrade the IPR and KT regime in the CA countries as a critical part of the thrust to apply science technology and innovation to development. The reports produced following the National Multi-Stakeholder Forums included policy recommendations for filling gaps in the national IP/KT system. In addition, as a result of the feedback gathered from a wide range of stakeholders during the Regional Multi-Stakeholder Forums, the Policy White Paper "Encouraging IPR & KT Good Practices in the Caribbean Region" was elaborated. IPICA had the positive effect of engaging relevant stakeholders in the national innovation systems, including at the highest level of the Government, increasing awareness about intellectual property and its importance in the innovation process and producing a set of policy recommendations that reflect the views of the stakeholders, as well as building bridges between government entities, academia, and industry.

With the business and industry sector

A key to successfully involving business partners in a CBHE project is to **identify their interest** in collaborating with HEIs, and from the start **clearly defining with them their contribution to the project and the corresponding budget**. They need not be involved in all aspects of the project.

The PATHWAY and V2WORK projects both included a chamber of commerce in their consortium: the European Chamber of Commerce of the Philippines (ECCP) and the Vietnam Chamber of Commerce

and Industry (VCCI). In both cases the chamber representatives were active members of the project management board and invited to give feedback on the plans for activities, events or deliverables, from the point of view of the business sector. They also contributed to the training of the academic staff and assisted the academic partners in identifying and inviting local businesses to their student employability/entrepreneurship events. Finally, both ECCP and VCCI were responsible for the organization of national events in the Philippines and Vietnam, respectively, to foster discussion between representatives of the business and higher education sectors. Their viewpoint and their network of contacts proved invaluable for the success of both projects.

ECOViP (Table 5.6.3) is another project that includes business sector partners as both full and associate partners. The Bojo Aloguinsan Ecotourism Association (BAETAS) of the Philippines is an award-winning entity whose interest in joining the project was to strengthen ties with the higher education sector, and both to learn from the project what was being done in other regions and to share their own good practices. Thanks to their participation in the project launch and in the management meetings the academic partners have developed a deeper understanding as to what ecotourism can be and how it can be a driver of local development in isolated communities. Students also directly benefited from BAETAS expertise through the summer bootcamps organized for young ecotourism entrepreneurs from the six partner universities. In addition to BAETAS, two other business representatives were VCCI and ECCP who had a consulting role in the project as associated partners. They provided useful input on the entrepreneurial ecosystem of Vietnam and the Philippines for an online course created during the project and helped disseminate the project to a wider audience.

With NGOs

NGOs can play a key role in CBHE projects that aim to improve the quality of life for individuals and communities. To make sure that they are successfully involved, they should be **assigned to coordinate specific tasks or work packages** that are aligned with their objectives and **allocate enough resources** for the implementation, as they usually lack resources. With this win-win approach they will operationalize and sustain in the long term the implementation of the project.

ANSWER is a successful example of this, with Uwezo Youth Empowerment Rwanda as a partner. UWEZO, a disability-led NGO focused on empowering youth with disabilities with a solid background on managing internships programs and collaborating with the private sector, is leading the WP focused on the implementation of an internship program with a disability-inclusive approach. Having already implemented different disability-inclusive internship programs oriented towards graduated students with disabilities (SWDs), they are transferring this scheme within the context of the HE system in Rwanda. Prior to the establishment of the internship program, UWEZO has signed memorandums of understanding with the three Rwandan partner HEIs oriented toward boosting recruitment, effective employment and career perspectives of SWDs.

With other HEIs

Other educational institutions, including HEIs, can be included among the external stakeholders and involved in projects either as associate partners or invited to participate in specific activities or events. This could be for example to participate in a local replication or national training workshop, as members of a working group or participants in a conference or networking event to share their views on a key policy. In order to ensure their successful participation in the project, it will be important to **identify the best person to contact, make sure the invitation highlights the benefit for their institution or staff**

in participating, and ensuring it costs them as little as possible to participate. The presence of other HEIs in these actions will increase the impact of the project and the exploitation of its results.

A successful example of this can be seen in the ECOViP project. A total of 10 HEIs (7 in Vietnam and 3 in the Philippines) were included as associate partners and invited to participate in the project's public launch event and good practices workshop, as well as in online trainings, national workshops on curriculum reform and a final conference. In order to facilitate participation in the launch event in Vietnam, it was designed to be a hybrid event so the Filipino HEIs could join in online. To encourage the in-person participation of the Vietnamese HEIs, the event was set to coincide with an annual meeting of the network VEES-Net to which all belonged. Another case of the power of institutional connections among HEIs is observed in the CHAIN project (Table 5.6.3), in which the 5 Cambodian HEIs integrating the consortium, with the active support of the Ministry of Education, Youth and Sport (MoEYS), made use of their institutional networks for promoting the participation in project activities among other HEIs not formally integrated inside the CHAIN consortium. As a result, the analysis of HEI needs in inter-nationalization capacities and resources produced by this project included input from 22 additional Cambodian HEIs, allowing for a more complete understanding of the Cambodian context, which will result in the development of highly relevant internationalization policies and strategies for the higher education system in Cambodia.

With other networks

Involving networks in CBHE projects will increase the impact and ensure the sustainability of a project's results, especially when a key project result is a network. In this case, **mapping already existing networks on the topic of the project and analyzing the possibility of developing synergies** is key for ensuring a wider impact and sustainability in the long term.

A successful example of the integration with an already existing network can be seen in the ACCESS project. The integration of the ACCESS Network into the International Network on Inclusive Technologies and Education (RITIE, for its acronym in Spanish), a network created by academics from HEIs in Mexico, Peru, Colombia, Costa Rica and Spain, was a key step towards the expansion of the ACCESS network at regional and international levels and its consolidation through the creation of synergies with an already established international network. An international conference (CONTIE 2022) was jointly organized by ACCESS and RITIE, during which the ACCESS Network formally signed the integration as a member of RITIE with the aim of generating regional spaces to respond to common challenges, including increasing public awareness and understanding of inclusive education in the field of higher education. A second joint international conference (CONTIE 2023) allowed for the dissemination of project results at an international level. The integration of the two networks has led to the generation of a greater impact of the results of the ACCESS Network ensuring its sustainability, while allowing them to continue working together in improving accessibility, guaranteeing learning conditions and fostering policy change towards the inclusion of students with disabilities in the context of higher education.

Another case is the Memorandum of Cooperation signed in 2023 between the networks PHIL IN-NET and LUAI Network, products of the ANTENA and OPEN (Table 5.6.3) Erasmus + CBHE projects that focused on promoting internationalization in HEIs in the Philippines and Laos, respectively, to increase quality of education and research. Through this collaboration both networks are able to share the contacts and to maximize the benefits of belonging to a network for their members, allowing for the establishment of common activities or creating a greater network of experts to advance internationalization in the Philippines and Laos.

Table 5.6.3. **Erasmus+ CBHE projects involving external stakeholders as partners**

Name	Region	Funding	Objective	Stake-holder	type
ACCESS Promoting accessibility of students with disability to higher education in Cuba, Costa Rica and Dominican Republic	Latin America & Caribbean	Erasmus+ KA2 CBHE SP 2020 - 2024	To improve accessibility, ensure learning conditions and foster policy change towards inclusion for students with disabilities within the context of higher education in Costa Rica, Cuba and Dominican Republic via modern inclusion practices, training and networking.	MEP MES MESCyT	G G G
ANSWER Advance inclusion for students with disabilities on higher education in Rwanda	Sub-Saharan Africa	Erasmus+ KA2 CBHE Strand 3 2023 - 2026	To improve accessibility, ensure learning conditions and foster policy change towards inclusion for students with disabilities (SWDs) within the context of the Rwandan higher education system via modern inclusion practices, training and networking.	NCPD MINEDUC UWEZO	G G N
ANTENA Internationalization of higher education in the Philippines	Southeast Asia	Erasmus+ KA2 CBHE SP 2019 - 2023	To increase the academic quality and research of universities in the Philippines through the development of internationalization capacities.	CHED	G
CHAIN Cambodian higher education advancing in internationalization	Southeast Asia	Erasmus+ KA2 CBHE Strand 3 2024 - 2027	To introduce and develop internationalization strategies in Higher Education Institutions (HEIs) in Cambodia, aiming at increasing the academic quality and research activities of universities.	MoEYS	G
ECOViP Fostering innovation & entrepreneurship in ecotourism to support sustainable development in Vietnam and the Philippines	Southeast Asia	Erasmus+ KA2 CBHE Strand 2 2023 - 2026	To develop entrepreneurial and innovation capacities for sustainable development in tourism in Vietnam and the Philippines.	SDL BAETAS MOET CHED VCCI ECCP 10 HEIs in Vietnam & the Philippines	G B G G B B E

IPICA Empowering knowledge transfer in the Caribbean through effective IPR & KT regimes	Caribbean	ACP Science and Technology Program 2014 - 2016	To reinforce innovation systems in the Caribbean by empowering the generation, application and transfer of scientific knowledge for enhanced energy access and efficiency.	TTIPO OEPM WIPO EUIPO CARICOM	G G IO IO IO
OPEN OPEN-ing Laos higher education system to internationalization strategies	Southeast Asia	Erasmus+ KA2 CBHE Strand 3 2020 - 2023	To increase the academic quality and research of universities in Laos through the development of internationalization capacities.	MOES	G
PATHWAY Promoting the employability and entrepreneurship of higher education graduates through innovative ways in the Philippines	Southeast Asia	Erasmus+ KA2 CBHE SP 2021 - 2024	To enhance the entrepreneurship and employability culture of HEIs in the Philippines, to meet labor market needs and government reforms.	CHED ECCP	G B
V2WORK Strengthening the Vietnamese higher education system to improve graduates' employability and entrepreneurship skills	Southeast Asia	Erasmus+ KA2 CBHE SP 2018 - 2021	To strengthen the capacities of the Vietnamese HE system to improve the employability & entrepreneurship skills of its graduates, and to reinforce its relationships with the labor market, in line with the Vietnamese government's priority of improving graduate employment at a national level.	MOET VCCI AIESEC	G B S

Type: G (government), B (business/industry), S (student/youth association), N (NGO), E (educational institution), International Organization (IO)

Source: own elaboration based on information in the projects' grant agreements.

3. Conclusions

This chapter has emphasized the significant impact external stakeholders can have on the success of Capacity Building in Higher Education (CBHE) projects. Identifying and analyzing external stakeholders from the project's inception through to its conclusion is vital for ensuring this impact. A robust relationship built from the beginning, sustained by effective communication and active involvement, lays a strong foundation for collaboration.

The active engagement of external stakeholders not only enriches the project's design and implementation but also enhances its sustainability. Their diverse insights and resources contribute to the project's depth and reach, fostering an environment of mutual support and shared ownership. Furthermore,

leveraging these relationships can lead to the development of synergies between the project and other initiatives, creating opportunities for broader impact.

Successful collaboration with external stakeholders bridges gaps between institutions and individuals who might not have otherwise connected. This approach fosters innovation, competitiveness, and social change by integrating varied perspectives and expertise into the higher education ecosystem. Ensuring stakeholders feel a sense of ownership in the project is crucial for lasting impact. By creating win-win scenarios and developing strategic synergies, CBHE projects can achieve their objectives more effectively and sustainably.

In summary, the involvement of external stakeholders is not just beneficial but essential for the success and sustainability of CBHE projects. It requires strategic planning, persistent efforts, and innovative approaches to cultivate and maintain these crucial relationships. The experiences and case studies high-lighted in this chapter demonstrate the transformative potential of well-engaged external stakeholders in higher education projects, underscoring their importance in achieving long-term positive outcomes.

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Increasing the impact of higher education in developing countries through capacity building projects

The pivotal role of Higher Education (HE) for the progression of developing countries is widely acknowledged. Higher Education contributes to, among other important aspects, the generation of human capital for later incorporation into important sectors such as healthcare, agriculture, new technologies, or tourism. Important international donor agencies already acknowledge this fact, particularly within the past two decades. Since the beginning of the new millennium, Higher Education has acquired a prominent position on their agendas, and a notable increase in funding has been observed.

In this framework, Capacity Building (CB) interventions are one of the preferred actions by donors, in the development assistance domain. However, despite the fact that HE CB interventions in developing countries are becoming more popular, little research has been done to understand the impact of these multiple types of interventions neither by donors or practitioners.

By considering these gaps, the aim of this book is to capture the views of both donors and practitioners on the planning, the execution and the evaluation on HE CB interventions, with a specific emphasis on providing case studies, tools and strategies which may increase its impact in developing countries. The authors consider that providing evidence on these issues may inspire more efficient programmes/projects, and better evidence-based policies that could contribute to the development of these countries.