

6. Capitalizing on inequalities to build a sound partnership: The story of SISSTEM, an international collaboration between a continental and a small island state university

Aprovechar las desigualdades para construir una asociación sólida: La historia de SISSTEM, una colaboración internacional entre una universidad continental y una pequeña isla estatal

Anouk Mertens¹  @ Nadine Buys³  @ Patrick Arens³ @
Georges Gielen⁴  @ Eric Mijts⁵  @

^{1,2,4} KU Leuven, Leuven, Belgium

^{3,5} University of Aruba, Oranjestad, Aruba

ABSTRACT

The literature on north-south inter-university collaborations emphasizes on the need for equality amongst partners when aiming to develop successful and sustainable partnerships. However, universities in the north usually differ largely from their counterparts in the south in terms of amongst others access to resources and scale and are therefore often inherently unequal. This is especially true when a large-scale renowned university in Europe, like KU Leuven, establishes a partnership with a young small-scale university located on a small island state, like the University of Aruba, in establishing a new education and research institute in STEM (Science, Technology, Engineering and Mathematics). In this paper, we investigate how an equal and sustainable partnership between these institutes is established, not despite these inequalities but precisely by recognizing and capitalizing on their inequalities. Based on an explorative case study analysis using semi-structured interviews, we aim to contribute to the literature by reporting on this continental-small island state inter-university partnership and by providing insight into the broader critical drivers and challenges of the partnership.

Keywords: Small Island states; inter-university partnership; continental-small island state partnership; Aruba; SISSTEM.

Aprovechar las desigualdades para construir una asociación sólida: la historia de SISSTEM, una colaboración internacional entre una universidad continental y una pequeña isla estatal

RESUMEN

La literatura sobre colaboraciones interuniversitarias norte-sur enfatiza la necesidad de igualdad entre los socios cuando se aspira a desarrollar asociaciones exitosas y sostenibles. Sin embargo, las universidades del norte suelen diferir en gran medida de sus contrapartes del sur en términos, entre otros, de acceso a recursos y en su escala, y, por tanto, a menudo son intrínsecamente desiguales. Esto es especialmente cierto cuando una universidad de gran escala y renombre en Europa, como KU Leuven, establece una asociación con una universidad joven de pequeña escala ubicada en un pequeño estado insular, como la Universidad de Aruba, para establecer un nuevo instituto de educación e investigación en CTIM (Ciencia, Tecnología, Ingeniería y Matemáticas). En este artículo, investigamos cómo se establece una asociación equitativa y sostenible entre estos institutos, no a pesar de estas desigualdades, sino precisamente reconociendo y capitalizando sus desigualdades. Basándonos en un análisis exploratorio de un estudio de caso mediante entrevistas semiestructuradas, nuestro objetivo es contribuir a la literatura informando sobre esta asociación interuniversitaria continental-pequeño estado insular y aportando conocimiento sobre los impulsores y desafíos críticos más amplios de la asociación.

Palabras clave: Pequeños Estados insulares; colaboración interuniversitaria; colaboración continental-pequeño Estado insular; Aruba; SISSTEM

Capitalizando as desigualdades para construir uma parceria sólida: a história do SISSTEM, uma colaboração internacional entre uma universidade continental e uma pequena universidade estadual insular

RESUMO

A literatura sobre colaborações interuniversitárias norte-sul enfatiza a necessidade de igualdade entre os parceiros quando se pretende desenvolver parcerias bem-sucedidas e sustentáveis. No entanto, as universidades do norte geralmente diferem amplamente de suas contrapartes do sul em termos de escala e de acesso a recursos, entre outros aspectos, e, portanto, são, muitas vezes, inerentemente desiguais. Essa situação acontece especialmente quando uma universidade de renome de grande escala na Europa, como a universidade KU Leuven, estabelece uma parceria com uma

jovem universidade de pequena escala localizada em um pequeno Estado insular, como a Universidade de Aruba, para estabelecer um novo instituto de educação e pesquisa em STEM (Ciência, Tecnologia, Engenharia e Matemática). Neste artigo, investigamos como se estabelece uma parceria igualitária e sustentável entre esses institutos reconhecendo e capitalizando justamente as desigualdades apesar das desigualdades. Com base em uma análise exploratória de estudo de caso usando entrevistas semi-estruturadas, queremos contribuir para a literatura relatando sobre esta parceria interuniversitária continental-pequeno Estado insular e fornecendo informações sobre os impulsionadores e desafios críticos mais importantes da parceria.

Palavras-chave: Pequenos Estados insulares; colaboração interuniversitária; colaboração continental-pequeno Estado insular; Aruba; SISSTEM

Capitaliser sur les inégalités pour construire un partenariat solide: l'histoire de SISSTEM, une collaboration internationale entre une université continentale et une petite université d'État insulaire

RÉSUMÉ

La littérature sur les coopérations interuniversitaires nord-sud met l'accent sur le besoin d'égalité entre les partenaires lorsqu'il s'agit du développement de partenariats fructueux et durables. Néanmoins, les universités du nord diffèrent notamment de leurs homologues du sud en termes d'accès aux ressources et de taille et sont dès lors souvent intrinsèquement inégales, ce qui est particulièrement vrai lorsqu'une grande université renommée en Europe, comme la KU Leuven, établit un partenariat avec une jeune université de petite taille située sur un petit État insulaire, comme l'Université d'Aruba, dans le but de créer un nouvel institut d'enseignement et de recherche STEM (Science, Technologie, Ingénierie et Mathématiques). Dans cet article, nous étudions comment s'établit un partenariat égalitaire et durable entre ces instituts, non pas malgré ces inégalités mais précisément en les reconnaissant et en tirant profit. Sur la base d'une analyse d'étude de cas exploratoire utilisant des interviews semi-structurées, nous visons à contribuer à la littérature en rendant compte de ce partenariat interuniversitaire continental-petit État insulaire et en donnant un aperçu des moteurs et des défis critiques plus larges du partenariat.

Mots clés : Petits États insulaires; coopération interuniversitaire; coopération continentale-petit État insulaire; Aruba; SISSTEM

1. INTRODUCTION

Small island states (SIS) in the Caribbean and beyond have a complex set of intertwined environmental and socioeconomic characteristics that challenge conventional approaches for sustainable development. Given the specific characteristics of SIS, state-of-the-art knowledge of technological solutions embedded in the local context is key to their further sustainable development and to increase their resilience. To achieve this, efforts are also required for local and regional academic capacity building. Especially higher education is stated to be the most promising educational subsector when it comes to potential contribution to strive for the Sustainable Development Goals (SDGs). The reason is that higher academic education pursues a combination of three missions: teaching, research and contribution to social and economic development (Francesc, 2021).

In response to this need, the idea of a SISSTEM – Sustainable Island Solutions through Science, Technology, Engineering and Mathematics (STEM) – academic bachelor and research program was developed at the University of Aruba (UA). However, given the scale of the University of Aruba and the resources available, a strategic partnership with another university was key to turn the idea into reality. That strategic partnership was built with KU Leuven, a renowned university located in Belgium, Europe.

Many authors before us – e.g. (KFPE, 2018; King, 2008; Stibbe & Prescott, 2020; Wann, N, Hinz, A & Day, 2010; Woodfield et al., 2009) – have already discussed good practices and challenges for such north-south partnerships. The literature on north-south partnerships stresses the importance of building equal partnerships, often between European and African, Asian or Latin-American institutes. In this paper, we focus on the partnership between a continental European institute and a small island state institute in the south, two institutes which are inherently unequal in size, human and financial resources, experience etc.

As has been put forward by Hagenmeier (2015), such inequality is frequent in partnerships between two higher education institutes. As the question remains today how successful and sustainable partnerships can be built despite these “unequal resources and divergent strengths” of universities, Hagenmeier (2015) calls for the establishment of a “suitable theoretical framework to

achieve the equitable sharing of the benefits of joint endeavors and consequently lead to real equality in partnerships” (Hagenmeier, 2015, p. 10).

While in this paper, we do not propose such a framework, we aim to provide insight from the SISSTEM case study, that might inspire other authors when developing such a framework. More specifically, we aim to answer the following question: “What are the key drivers and barriers in a successful equal and sustainable partnership between two higher education institutes that are inherently unequal in terms of scale and access to resources?”. In order to answer this question, we give insight into the partnership between the UA and KU Leuven; how it functions, how inequalities between the two institutes are not hampering but propelling the collaboration, and what are the broader critical drivers and challenges of the partnership. Further, we emphasize not only general drivers and challenges as such, but also describe how the partnership is actually put into practice.

In order to understand the different settings in which the KU Leuven and the UA operate, we provide some background on the particular setting of a SIS, like Aruba, and on the SISSTEM program and both partner universities. We also present a short overview of common principles for a successful partnership described in literature.

1.1. General characteristics of small island states, including Aruba

The World Bank defines SIS as island states with a population of 1.5 million or less (World Bank, 2020). Due to their specific geographical context, they come with a collection of distinct characteristics that all together make them complex entities. SIS are in the first place characterized by their small size, remoteness and insularity, and their limited availability of natural resources, including land. While the islands are often populated with unique biodiversity and ecosystems, their smallness also makes them very fragile as environmental and human impacts remain concentrated on the limited surface, with tight feedback loops between environmental stressors, such as cyclones and human influences, and their impacts. As such, SIS are also highly susceptible to the impacts of climate (and hence climate change) (Briguglio, 1995; UN-OHRLS, 2009; UNEP, 2014).

From an economic perspective, due to their small size, SIS cannot profit from economies of scale, and they have easily saturated internal markets

and limited internal market competition. On the international trade markets SIS are confronted with high transaction and transportation costs and limited negotiation power. Additionally, due to the limited population and hence limited tax base, communication, the per capita energy and infrastructure costs are high (Briguglio, 1995; CBA, 2019; Connell & Lowitt, 2020; Gomes, 2014; Guillaumont, 2010; Kerr, 2005; UN-OHRLLS, 2009).

Most of these characteristics of SIS also apply to Aruba, an island with a surface of about 180 km² and with about 112,000 inhabitants (CBS Aruba, 2020). With about one million stay-over tourists, and over 800,000 incoming cruise ship passengers per year (APA Aruba, 2019; CBS Aruba, 2015), the tourism sector largely contributes to revenues and employment on the island. On the flip side, with 87% of the Aruban economy depending directly or indirectly on tourism (IMF, 2019; Peterson, 2020), Aruba's economic growth volatility is very high compared to the region and the world economy. As a result, Aruba is stated to be the most vulnerable small open economy in the Caribbean region (CBA, 2019; IMF, 2021). This vulnerability and low resilience has fully revealed itself during the current COVID-19 pandemic when the revenues from tourism disappeared, and the country became dependent on external financial aid to avoid bankruptcy (IMF, 2021). Furthermore, the tourism sector also has a profound impact on Aruba's environment and ecosystem (Peterson, 2020).

As such, in order to make the Aruban economy more resilient, there is an urgent need to diversify Aruba's economy and to make it less dependent on tourism and at the same time more focused on long-term sustainable development (CBA, 2019). At the same time, both the Aruban public and the private sector have identified a need for highly skilled people who can contribute to its longer-term sustainable growth and development. Indeed, the largest growth in the labor market is observed to occur in sectors that require relatively highly-skilled labor (Hermans & Kösters, 2019). Technology plays a key role in this further sustainable development. Until recently, the absence in Aruba of any higher education in STEM made the island highly dependent on external education, leading to a brain drain of young talents and limiting a sustainable knowledge base on the island itself, making the island largely dependent on external expertise and consultancy.

1.2. Background of the SISSTEM program and the partner institutions

The SISSTEM program aims to provide the conditions for the further sustainable development of Aruba by setting up an academic education and research program at the University of Aruba (UA) to educate local and regional youth in STEM, thereby focusing on sustainability issues in SIS. It has been kick-started by the SISSTEM project, funded under the 11th European Development Fund for Overseas Countries and Territories (EDF-11). The new 3-year bachelor program, which started in Fall 2019, offers three specialization tracks: 1) bio-environmental sciences; 2) information and data sciences; and 3) technology and engineering. In February 2023, the subsequent multidisciplinary 60 credits master program will be kicked off. Additionally, 11 PhD studies¹ are started under the SISSTEM project to conduct research on a wide range of topics relevant for the further sustainable development of Aruba in particular, and of SIS in general. Finally, the program also focuses on service to society, by delivering highly educated people with the technical skills to make a contribution to the innovative and sustainable development of Aruba and other SIS. A triple-helix platform is created where businesses, institutes, governments, and NGOs can exchange their knowledge, experiences and resources in order to develop and support sustainable practices in Aruba and other SIS.

The SISSTEM academic program is developed within a partnership⁽²⁾ between KU Leuven and the University of Aruba. The UA was founded in 1988 and has 4 faculties. KU Leuven is the oldest and largest university in Belgium, based in Leuven, founded in 1425, and today one of the world's leading universities in research and innovation. Table 1 presents comparison between some features of the two institutes. Admittedly, this is not a comprehensive list but it highlights some of the very obvious differences, which make clear that the scale at which these two institutes operate is completely different, leading to several inherent inequalities in terms of access to financial, human and other resources.

In the remainder of this paper, we focus on how these two institutes managed not only to overcome these inequalities, but to capitalize on them, in order to build a sustainable partnership. However, first we give a short overview of the literature on north-south partnerships.

Table 1. Comparison KU Leuven (KU Leuven, 2020) and University of Aruba (University of Aruba, 2021). Source: own depiction.

Two institutes and four exemplary features		
	KU Leuven	University of Aruba
Year founded	1425	1988
Study programmes	Comprehensive university with 15 faculties, 48 bachelor programs, 137 master programs and 42 advanced master programs	University with 4 faculties, 8 bachelor programs (+ 2 post bachelor programs), 3 master programs and 1 pre-bachelor program
Numer of students	60,057 students	924 students
Number of staff	21,605 staff (including 7637 researchers and professors, 6236 PhD researchers)	82 FTE and 47 part time workers (including lecturers, researchers, and administrative staff)

1.3. Guiding principles for a successful partnership for the achievement of the SDGs

In this section, we present a short overview of guiding principles for a successful north-south partnership as described in literature. By no means is it our intention to give an exhaustive overview of the literature on north-south partnerships. The United Nations define a multi-stakeholder partnership as an “Ongoing collaborative relationship between or among organizations from different stakeholder types, aligning their interests around a common vision, combining their complementary resources and competencies and sharing risk to maximize value creation towards the SDGs” (Stibbe & Prescott, 2020, p. 23), in our case ‘SDG 4, aiming to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (SDG-Education 2030 Steering Committee Secretariat, 2021)’. Already before the development of the SDGs, the Paris Declaration, signed in 2005, focused on

defining five principles, to “improve the quality of aid and its impact on development” (OECD, 2005, p. 1): (1) ownership; (2) alignment; (3) harmonization; (4) managing for results; and (5) mutual accountability.

Today, SDG 17 is entirely set to “strengthen the means of implementation and revitalize the global partnership for sustainable development”. The SDG Partnership Guidebook written by Stibbe and Prescott (2020) defines 4 building blocks for designing and implementing a partnership: (1) Fundamentals, implying the need to create significant added value for all partners and that all the ‘right’ partners should be included; (2) Partnership relationship, implying that the relationship between the partners, while it can be complex, multifaceted and dynamic, should be kept strong; (3) Structure and set-up, implying that the way the partnership is set up should fit its purpose; and (4) Management and leadership; implying that solid management of the partnership through sound leadership at all levels is needed (Stibbe & Prescott, 2020). For each building block they define several key elements (21 in total) to achieve them. Many of these key elements can also be found elsewhere in literature, e.g. (KFPE, 2018; King, 2008; Wann, N, Hinz, A & Day, 2010). Wann *et al.* (2010) have set forward 10 guiding principles for good north-south partnerships in Africa. These are: (1) shared ownership of the partnership; (2) trust and transparency amongst partners; (3) understanding each partner’s cultural environment and working context; (4) clear and agreed division of roles and responsibilities; (5) effective and regular communication between partners; (6) strategic planning and implementation of partnership plan and projects; (7) strong commitment from junior and senior staff and management; (8) supportive and enabling institutional infrastructure; (9) systematic monitoring and evaluation of partnership and partnership projects; and (10) sustainability of the partnership.

Literature on north-south partnerships mainly focusses on a continental setting between a continental partner in the north and a continental partner in the south. As to our knowledge, besides a publication by the OECD (2018) focusing on concessional financing for SIS, the literature on north-south continental-SIS partnerships is scarce. By providing insights into the UA-KU Leuven continental-island partnership, this paper therefore also contributes to the literature.

2. METHODS USED FOR THE PARTNERSHIP ASSESSMENT

To assess and get a thorough understanding of the SISSTEM program and the UA-KU Leuven partnership, we have conducted 26 online semi-structured interviews with different stakeholders of the SISSTEM program. Table 2 presents an overview of the semi-structured interviews conducted. Semi-structured interviews were chosen as they allow researchers to obtain a lot of in-depth information in a short timeframe and are especially useful when respondents can only be interviewed once. In conducting semi-structured interviews, the interviewer uses a general script for every interview, but is free to deviate from the script or ask additional, more in-depth questions on a certain topic if needed (Bernard, 2006). Respondents for the interviews were selected via purposive sampling and snowball sampling (Bernard, 2006) until the point of saturation had been reached (Morse, 1991). We recorded and transcribed all interviews and organized and analyzed them using NVIVO 12 software.

Table 2. *Overview of the semi-structured interviews conducted. Source: own depiction.*

Three types of respondents	
Type of respondent	Number of respondents
SISSTEM Steering Committee (SC) members	5
SISSTEM staff members at the UA	11
KU Leuven staff members	10
Total	26

3. RESULTS

3.1. The UA-KU Leuven partnership explained: short history of the partnership, the why and the how

3.1.1. Short history of the UA-KU Leuven partnership

Sometimes, all you need is a little luck, also when developing partnerships (Farrell, 2008). Indeed, the partnership between KU Leuven and the UA, started by a coincidence, when the former Prime Minister of Aruba and the Honorary

Vice-Rector International Affairs of the KU Leuven were sitting next to each other on a flight and started talking. At that time, the idea of developing an educational program and research center in STEM already existed in Aruba. However, no suitable partner nor funding was found at that time for the idea to be put into practice. During the talk between the Prime Minister and the Vice-Rector, it became clear that KU Leuven could be this partner. After the encounter, additional meetings with representatives from the Government of Aruba (GoA), the UA, the KU Leuven and the EU took place both in Leuven and in Aruba to further develop the program. Once it was clear that there was mutual understanding between the partners on the direction of the SISSTEM program a Letter of Intent was signed and two special agreements, one on capacity building and one on sustainable development, were signed by representatives of the UA and KU Leuven. Next, both the UA and KU Leuven worked together on a proposal to apply for the 11th EDF-OCT funding. In developing this proposal, meetings, and workshops with stakeholders from the Aruban public and private sector were organized in order to take into account their ideas and visions on the future sustainable development of Aruba, as well as to identify the most urgent research needs of the country. Additionally, exploratory discussions with KU Leuven professors were organized to understand how the program could be set up. During the negotiation phase, both the GoA and the Rectorate of the KU Leuven changed. However, respondents stated that while this could have meant the end of the partnership, support for the project and program was reconfirmed on both sides of the partnership. In the end, funding was granted in May 2019 and the project started on the 1st of August 2019.

3.1.2. Why? Creating a win-win situation

“It is in our DNA, this kind of project, this kind of initiatives.”
[SISSTEM SC member]

According to the respondents, KU Leuven was a good potential partner to contribute to the development of the SISSTEM program, due to its vast academic and administrative experience, also in setting up new educational and research programs in the global south. Furthermore, KU Leuven has the expertise in setting up STEM programs, also from a more practical oriented

angle. Indeed, the Bioscience Engineering program taught at KU Leuven was an ideal starting point from which the SISSTEM program could be further developed. Additionally, KU Leuven has a well-functioning doctoral school in STEM and is used to working with PhD researchers that are attached to multiple academic institutions.

As the island context is essential to reach the objectives of the SISSTEM program, a plain copy of KU Leuven practices and curricula would not fit the purpose. As such, while KU Leuven has access to more resources and to more experience in STEM education, it was clear from the start the UA has the expertise in education and research in a SIS context. Both partners therefore recognized from the start that they were complementary in the knowledge they bring in and that they really needed to co-create the program.

“I have the feeling that people will have much more trust in the program if they have the understanding that it is a collaboration, and that it is something well backed-up. So it not just the University of Aruba decided to create a new bachelor.”

[SISSTEM staff member]

For the UA, working with a renowned university has additional advantages, besides the sharing of knowledge. It was recognized by the respondents that the program benefits from the reputation of KU Leuven, as it increases trust in the program and has persuaded students and PhD researchers to access the program.

KU Leuven benefits from the partnership too. KU Leuven professors indicated that they have the opportunity to expand their research fields and expertise via the PhD researchers, and via this way introducing a new way of thinking about island-specific challenges versus continental settings and offering great opportunities for future research. Furthermore, the project largely benefits KU Leuven and its professors because PhD funding was incorporated in the budget. KU Leuven professors indicated that, while it was not a prerequisite for their support to the program, this provided a well appreciated incentive. Also, the project budget foresees the development of 6 SPOCs or MOOCs to support the SISSTEM bachelor program that can also contribute to KU Leuven's curriculum. Moreover, the project allows KU Leuven to get first-hand insight and experience in the development of a more generalist STEM educational program, something KU Leuven has been targeting before, but never had the

opportunity to realize. Finally, as the program is unique and ambitious, KU Leuven also benefits by being able to showcase this project to its network, thereby expanding its international relations.

“As a professor, I am proud of my courses, and I like to teach them and they deal about things that I consider important and which are my passion. I liked the idea of being able to transfer that knowledge, especially to a group of students for which this is very relevant”
[KU Leuven staff member]

While KU Leuven professors are supporting the project mostly voluntarily, they also indirectly benefit from the partnership with the UA. Indeed, some of them indicated that they were very motivated for the project, as it allows them to transfer their knowledge and course content to a wider public, and potentially making a real impact on the SISSTEM students, and by extension the Aruban and SIS society. This is something that is far more difficult to achieve without the context of a holistic project like SISSTEM.

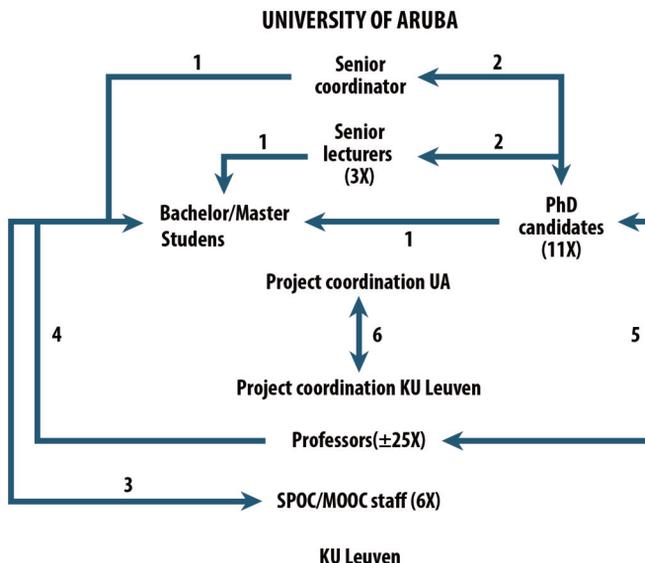
3.1.3. How? Putting the win-win situation into practice

“It should always be a win-win situation. That is the only thing that lasts.”
[KU Leuven staff member]

In practice, from the onset of the partnership between KU Leuven and the UA, both partners aimed to create a win-win situation. That this is a prerequisite to be able to create an effective partnership was also recognized for example by Jon-Andri (2008), Habermann (2008), Berit (2008) and Stibbe and Prescott (2020). Indeed, it is generally accepted that north-south partnerships should not be seen anymore as one-directional knowledge and skills transfer and more and more researchers in the north recognize that their partnership with southern institutes increases their academic capacities too (KFPE, 2018). As explained above, in the UA-KU Leuven partnership the benefits for participating in this partnership are clearly present for both institutes. Additionally, the explicit recognition that both partners are complementary in their knowledge and experiences creating a bi-directional knowledge and skills transfer is fundamental in putting the win-win situation into practice.

A schematic representation of how this win-win situation for both partners is put into practice and the different roles and responsibilities of each partner is depicted in Figure 1.

Figure 1. Schematic representation of the partnership between the UA and KU Leuven and of the win-win situation created. Source: Own depiction



As can be seen in Figure 1, there are 6 different ways (represented by the numbered arrows) in which the UA-KU Leuven partnership is put into practice:

1. One-directional arrow: the senior coordinator, senior lecturers and PhD researchers at the UA teach and coach the bachelor students. Most course materials are obtained from KU Leuven professors (arrows 3 and 4). As these often have a continental, European or even Belgian focus, the course content and/or examples are adapted in order to increase relevance for the SISSTEM students and to ensure the SIS focus.

2. Bi-directional arrow: the senior coordinator and senior lecturers at UA co-guide the PhD researchers in their research in order to guard the island focus in the research. Having PhD supervisors from both institutes

is a precondition in the mutual agreements. In the other direction, the PhD researchers develop local knowledge through their research, which in turn is transferred to the senior coordinator and senior lecturers.

3. Bi-directional arrow: developing SPOCs or MOOCs requires a significant investment of time and money. KU Leuven has received funding to develop 6 MOOCs or SPOCs for the SISSTEM project, but these can of course also be used for educational purposes at KU Leuven.

4. One-directional arrow: KU Leuven professors teach SISSTEM bachelor students and provide course material. Also, in their 5th semester, SISSTEM bachelor students are spending one semester in a foreign host institute, e.g., KU Leuven, allowing them to take more specialized courses and offering them research experience.

5. Bi-directional arrow: KU Leuven professors co-guide and train the SISSTEM PhD researchers both in their research and teaching tasks. As KU Leuven has all the research infrastructure available, the PhD researchers are hosted by their KU Leuven promotors for about 3 months yearly, allowing them to make use of the Leuven infrastructure, to follow courses in the context of their doctoral training and to discuss their research with their promotors and colleagues. In the other direction of the arrow, KU Leuven receives funding to support 11 PhD researchers, which is a significant number even in a large institution as KU Leuven. It offers the KU Leuven professors access to a new field of expertise within the context of SIS. The shared ownership of the research results by both KU Leuven and the UA is guaranteed by signed agreements.

6. Bi-directional arrow: 6 members of the steering committee, 3 on both sides of the partnership, intensively worked on the academic program design and implementation before the start and still intensively continue collaborating to keep steering the program in the right direction. On each side of the partnership, two members of the steering committee are regularly involved in making substantive decisions about the program. On a daily basis, the 2 project managers, 1 on each side of the partnership, intensively work together and have regular (online) meetings to discuss the progress of the project and program and to intervene if needed.

3.2. Critical drivers for the partnership between the UA and KU Leuven

Besides the design of the SISSTEM program and the design of the partnership ensuring the win-win situation needed, there have been some critical drivers that have allowed the partnership to become successful, namely the enabling environment for the partnership to grow; and communication and mutual understanding.

3.2.1. Enabling environment for the partnership to grow

“The people that have been on the forefront to get the funding, which are a few colleagues from within the university here, but also at KU Leuven side, who collaborated very well to get the funding. That has been essential for this project”
[SISSTEM staff member]

The success of the SISSTEM project and program and the UA-KU Leuven partnership is only possible when it is embedded in a wider enabling environment, including local political support and local financial resources that support the partnership. The initial phase of the program was financially kick-started by the 11th EDF-OCT fund that allowed to involve the KU Leuven professors and to recruit the PhD researchers, and that established a more formalized setting in which the partnership can take place. However, even before the funding was obtained, the UA and KU Leuven collaborated to jointly construct the initial design of the project and the program as well as to jointly apply for the funding.

Over the course of the project writing, both the GoA as well as the Rectorate at KU Leuven changed. Despite change of the top and final decision makers, SISSTEM received continued support from these two organs, which was crucial for the project to apply for the funding and to start up successfully. Additionally, respondents stressed the importance of champions, namely the members of the UA-KU Leuven SC that tirelessly put time and effort in the development of the project design and later on in the start-up and functioning of the program.

3.2.2. Communication and mutual understanding

The interaction has always been positive and constructive. There has never be any problem. That is very important, I think.
[SISSTEM SC member]

One of the most important drivers of the partnership between the UA and KU Leuven is the explicit recognition that the two parties are complementary in bringing knowledge to the table, thereby co-creating this unique program. As such, there is the explicit recognition of the inequality in knowledge: while KU Leuven is providing the expertise in STEM education – even though mostly from a continental viewpoint – the SISSTEM staff at the UA side is best equipped to understand the local context which is unfamiliar for most KU Leuven professors involved. As such, the UA is crucial to make the translation of the expertise of KU Leuven to this local context and to ensure the insular focus of both the educational program as well as the PhD research projects. Hence, it has been clear from the start for both parties that neither KU Leuven nor the UA could develop this on their own, but that only joint collaboration can lead to an effective contribution to the further sustainable development of Aruba in particular and of other SIS by extension. Indeed, while north-south partnerships often focus on the development of discipline-specific fundamental knowledge, this partnership is intended to develop SISSTEM as a holistic concept and equal collaboration. Regular and transparent communication between the SC members and the daily management allows for this holistic concept to develop and for the partnership to continue in a constructive way.

However, it must also be noted that during the interviews it became clear that although the division of the roles in this partnership and the communication channels are clear to the management of the SISSTEM project, mutual understanding of the division of the roles and tasks and the relationships of trust still need time to develop at the level of the senior lecturers and the KU Leuven professors. This also has to do with the large (and increased) physical distance between the two partners, as further discussed next.

3.3. Challenges to be overcome in the partnership between UA and KU Leuven

3.3.1. Physical distance between the partnering institutes

So, it was very frustrating, partly because we were not on the same page and the communication was very difficult. He is busy and it is different when you have met someone in person than when you only talk online with each other.

[SISSTEM staff member]

The physical distance between the UA and KU Leuven (almost 8000 km) is quite significant and hampers regular face-to-face meetings. In literature, the need for regular meetings is often stressed, e.g. (Berit, 2008, Toure, 2008). Initially the project had foreseen regular face-to-face meetings between the promoters and the PhD researchers as well as between the steering committee members. KU Leuven professors were foreseen to travel at least once a year to Aruba and vice versa, while PhD researchers were foreseen to travel at least once a year to Leuven for a research stay of 3 to 4 months. Additionally, at least 2 face-to-face meetings between the management were foreseen every year. Unfortunately, the COVID-19 pandemic has hampered these regular travels. While modern technology allows for regular and fluent online communications, respondents indicated that face-to-face encounters are nevertheless indispensable for being able to convey information more clearly and for building mutual trust. As such, extra efforts were and are still needed for this mutual understanding to grow further.

3.3.2. Institutional and contextual differences

It is evident that there are institutional and contextual differences between the UA and KU Leuven. Beyond the usual differences in (academic) culture (Preston, 2008) and the much-discussed asymmetries between partners in north-south partnerships (Yasin, 2008; Berit 2008; Habermann, 2008), the island setting versus the continental setting of the two institutes led to some more unexpected institutional and contextual differences. KU Leuven professors, even when they had been in capacity-building projects with the south before, noted that:

- the number of SISSTEM students is far lower than what they are used to (e.g., 13 SISSTEM students at UA versus e.g., 300 bioengineering students at KU Leuven in a first bachelor year).
- the background of the SISSTEM students is quite heterogenous with students at UA widely differing in their prior education, in their age, in their family and income situation, while KU Leuven students in general are much more homogenous.
- the students' familiarity with university life differs from the average KU Leuven students, e.g., in Aruba the majority of the SISSTEM students are the first in their families to attend university.

“I think we mainly have to learn to be flexible and be quick in making the necessary changes and really making sure that what we are doing, that it is really relevant for the Aruban context. And again, being flexible, maybe even more than we are used to.”
[KU Leuven staff member]

Additionally, respondents stressed the difference in research environment between Belgium and Aruba. While at KU Leuven research infrastructure and consumables are available more easily, data are obtained more easily and research is frequently building upon the research of a previous PhD study, allowing for more in-depth research, in Aruba the PhD researchers are operating in an environment where STEM research conducted by the UA is new, where data is only limitedly available and where they have no peers to connect with. These differences and challenges were known by both partner institutes at the start of their collaboration and are in fact one of the reasons why SISSTEM was set up in the first place. During the SISSTEM development phase, however, it requires both the PhD researchers and their promotors to be flexible in the research objectives they define and in the detail of the research.

Conveying and translating these institutional and contextual differences between the two institutes is not easy and requires clear and iterative communication by the program management team, and time to be understood by all individuals involved in the project and program.

3.3.3. Time and resource limitations

“The research is such a slow process that the time investment is sometimes not worth the output and then you have to make choices”
[KU Leuven staff member]

An ambitious project like SISSTEM requires a substantial amount of time, effort and resources of all individuals involved. For some KU Leuven professors the balance between their existing institutional obligations e.g., towards their other PhD candidates and their students and towards the university (e.g., tenure track) and the time needed for the SISSTEM project is considered too much for the direct outcomes it generates. Indeed, given that the SISSTEM research center is being developed from scratch, considerable investment of

time and resources are needed that do not directly pay off in terms of research results or publications. This challenge is also recognized by e.g., McGinn (2008), who states that for younger partners still struggling to assure their place in their institution, pressures can be very high and by Levesque (2008) who states that capacity building requires time that could otherwise be spent on producing high-quality internationally recognized research.

Additionally, some professors, especially those without a PhD candidate, struggle to find a good connection to the project and its final goal; for them it is hard to find the time and resources to spend on this project. The majority of the KU Leuven professors involved, however, stated that while the project indeed required significant time and efforts, they were happy to collaborate as they believe in the project and program and its final outcomes. As one respondent stated:

“We have the people here that say “ Look, it is these kinds of things that we want to engage us for.” They would like to cooperate, despite the fact that they know, if you are looking at the amount of articles that you are going to publish, that this project will not immediately pay off.”

[SISSTEM SC member]

3.4. Long term partnership

“As a human and person, you have benefited from those years of cooperation, and if you do, that is also a form of sustainability in terms of relationships I think”

[KU Leuven staff member]

The partnership between the UA and KU Leuven has from the start been envisioned as a long-term partnership, which is guaranteed by a strategic academic partnership agreement between the two institutes. The 11th EDF-OCT project funding from EU was needed to kick-start the SISSTEM program as such, but the partnership existed before the funding and will continue to exist after the funding. As such, the partnership underpins the EU-funded SISSTEM project. Additionally, most respondents, especially the KU Leuven professors and their PhD researchers, indicated that they believed that the relationships formed over the course of the project can survive on the long term,

even though more on a voluntary basis. This is also recognized by literature stating that personal relationships between individuals contribute to the success of institutional partnerships (Blendi, 2008; Levesque, 2008).

4. DISCUSSION

This paper was intended to inspire authors working on a “theoretical framework to achieve equitable sharing of the benefits of joint endeavors and consequently lead to real equality in partnerships” (Hagenmeier, 2015, p. 10) with a description of the UA-KU Leuven partnership in developing the SISSTEM program. The question we aim to answer is “What are the key drivers and barriers in a successful equal and sustainable partnership between two higher education institutes that are inherently unequal in terms of scale and access to resources?”

Essential to building an equal and sustainable partnership between UA and KU Leuven is the awareness and explicit recognition on both sides of the partnership that each partner is dependent on the other to make the program successful. Indeed, in a more traditional north-south partnership there is usually a transfer of money from donors to a northern partner, who is then transferring knowledge from north to south. In this SISSTEM partnership, the program is co-created, whereby the partnership leads to a jointly defined model to develop solutions and approaches for the further sustainable development of Aruba in particular, and other SIS by extension. As such, both partners are inherently unequal in bringing knowledge and resources to the table. Making these inequalities explicit and making use of these inequalities lead to the co-creation of the programme. In a day-to-day setting, this co-creation of the program is put into practice by the creation of a win-win situation whereby KU Leuven and its professors gained access to funding for PhD researchers and the development of MOOCs and SPOCs and have the opportunity to expand their research fields and expertise via the PhD research projects in return for KU Leuven’s support to the education program. Furthermore, for this collaboration to be kick-started beyond the local champions and management, we found that the support from the Government of Aruba and the Rectorate at KU Leuven, and the financial kick-start provided by the EU’s 11th EDF-OCT fund was crucial.

From the insights of the interviews, this mutual recognition of each other’s’ contributions to build a successful truly equal and sustainable partnership is

a first crucial step, especially at management level. However, it became also evident that the idea of the co-creation of the program as truly equal partners was not clear at all levels of the program. Indeed, the partnership was also confronted with several challenges, such as the physical distance between the two institutes, hampering regular face-to-face meetings and mutual trust building, a challenge exacerbated by the COVID-19 pandemic; institutional and contextual differences between the two institutes, including differences not expected by individuals from KU Leuven caused by the SIS context in Aruba, creating different assumptions and expectations; and time and resource limitations while they are much needed in an ambitious program like SISSTEM.

In the end, the question, is whether the KU Leuven-UA partnership is a truly equal and sustainable partnership. As the partnership and the program are still young, it is too soon to be able to answer this question at this stage. However, what is clear is that the first essential steps towards such a partnership are taken. A limitation of our research is that we only cover one case study, the SISSTEM program. Complementary case studies on interuniversity continental-small island state partnerships would be beneficial to gain additional insights, and to definitely establish a theoretical framework to achieve “real” equality in partnerships.

5. CONCLUSIONS

The literature on north-south inter-university collaborations emphasizes on the need for equality amongst partners when aiming to develop successful and sustainable partnerships. The KU Leuven-UA partnership was set up to establish the SISSTEM program at the University of Aruba. However, with KU Leuven being a large-scale renowned and continental university and the University of Aruba being a small-scale, young, small island state university, these partners are inherently unequal in terms of scale and access to resources. Based on the analysis of 26 semi-structured interviews, we have identified some of the key drivers and barriers that allow this partnership to become “truly” equal, not despite but precisely by capitalizing on these inherent inequalities. Barriers to the collaboration were the physical distance between the two institutes, the contextual differences between the two institutes that require flexibility at all levels of the partnership, and the time and resources

required to build this partnership. Drivers for an equal and sustainable partnership to grow are explicit recognition from the start of the collaboration that both partners are bringing essential knowledge to the table, stressing the need to co-create the program; the win-win situation created, and the enabling environment that allowed for the partnership to grow and develop. As such, the mutual learning at the UA side and at KU Leuven side is not a secondary effect of the partnership but is at the core of the partnership. Therefore, whereas each of these institutions would fail to achieve this on their own, they can now be successful through this joint collaboration and overcome their inherent inequalities.

ACKNOWLEDGEMENTS

This publication was produced with the financial support of the European Union (FED/2019/406-549). Its contents are the sole responsibility of KU Leuven and the University of Aruba and do not necessarily reflect the views of the European Union. We would like to thank the interviewees for providing inputs and valuable insights into the issues discussed.

REFERENCES

- APA Aruba (2019). Historic cruise data. <https://acortar.link/xgObf5>
- Berit, O. (2008). Symmetry and asymmetry in research partnerships: lessons from 20 years experience. *NORRAG News*, 41, 78-80.
- Bernard, H. R. (2006). *Research methods in anthropology - Qualitative and quantitative approaches*. Fourth Edition. Lanham: AltaMira Press. <https://doi.org/10.1525/aa.2000.102.1.183>
- Blendi, G. (2008). Partnership in research programmes – A case study of Albanian-Swiss cooperation. *NORRAG News*, 41, 83-84.
- Briguglio, L. (1995). Small island developing states and their economic vulnerabilities. *World Development*, 23(9), 1615–1632. [https://doi.org/10.1016/0305-750X\(95\)00065-K](https://doi.org/10.1016/0305-750X(95)00065-K)
- CBA (2019). *Fostering Economic Resilience: From Roots to Routes*. Centrale Bank van Aruba.

- CBS Aruba (2015). *Statistical Yearbook 2015*, Statistical Yearbook 2015. <https://acortar.link/T4Jetb>
- CBS Aruba (2020). *Quarterly Demographic Bulletin 2020*. <https://acortar.link/UPjTLf>
- Connell, J. and Lowitt, K. (2020). *Food Security in Small Island States*. First edition. Singapore: Springer Nature Singapore Pte Ltd. doi: 10.1007/978-981-13-8256-7
- Farrell, J. (2008). Reflections on 40 years of partnership. *NORRAG News*, 41, 49-50
- Francesc, P. (2021). *Time to embed higher education into the international education agenda*. <https://acortar.link/eZSPYe>
- Gomes, C. (2014). The case of Small Island Developing States of the Caribbean: The Challenge of Building Resilience. <https://acortar.link/km1JCr>
- Guillaumont, P. (2010). Assessing the economic vulnerability of Small Island developing states and the least developed countries. *Journal of Development Studies*, 46(5), 828–854. <https://doi.org/10.1080/00220381003623814>
- Habermann, B. (2008). Research partnership: charity, brokerage, technology transfer or learning alliance? *NORRAG News*, 41, 33-37.
- Hagenmeier, C. (2015). Ensuring Equality in Higher Education Partnerships Involving Unequal Universities in Divergent Contexts. *International Higher Education*, 83, 9–10. <https://doi.org/10.6017/ihe.2015.83.9077>
- Hermans, B. and Kösters, L. (2019). Labour force on the Dutch Caribbean islands. <https://acortar.link/VjQH6d>
- IMF (2019). Kingdom of the Netherlands – Aruba: 2019 Article IV Consultation. Recovered from: <https://acortar.link/5nUhy8>
- IMF (2021). Kingdom of the Netherlands - Aruba IMF Country Report.
- Jon-Andri, L. (2008). Effective research partnerships. *NORRAG News*, 41, 58-60
- Kerr, S. A. (2005). What is small island sustainable development about? *Ocean and Coastal Management*, 48(7–8), 503–524. doi: 10.1016/j.ocecoaman.2005.03.010
- KFPE (2018). A Guide for Transboundary Research Partnerships: 11 Principles and 7 Questions. <https://acortar.link/hnDrst>
- King, K. (2008). The historical effect of partnerships: Peril or promise. *NORRAG News*, 41, 124.
- KU Leuven. (2020). KU Leuven Corporate Booklet.

- Levesque, D. (2008). Perspectives on partnerships in DFID's education research consortia. *NORRAG News*, 41, 75-76.
- McGinn, N. (2008). North-South research partnerships: a personal viewpoint. *NORRAG News*, 41, pp. 22-24.
- Morse, J. M. (1991). Chapter 8 - Strategies for Sampling. In J. M. Morse (Ed.), *Qualitative Nursing Research: A contemporary dialogue* (127-145). Thousand Oaks: Sage Publications.
- OECD. (2005). The Paris Declaration on Aid Effectiveness: Five Principles for Smart Aid. <https://acortar.link/NY4cGC>
- Peterson, R. R. (2020). Over the Caribbean Top: Community Well-Being and Over-Tourism in Small Island Tourism Economies. *International Journal of Community Well-Being*. <https://doi.org/10.1007/s42413-020-00094-3>
- Preston, R. (2008). Whose knowledge, what expertise? Cross-national partnerships between universities in Europe and Andean America. *NORRAG News*, 41, 51-53.
- SDG-Education 2030 Steering Committee Secretariat. (2021). Sustainable Development Goal 4 (SDG 4). <https://sdg4education2030.org/the-goal>
- Stibbe, D. & Prescott, D. (2020). The SDG Partnership Guidebook: A practical guide to building high impact. <https://acortar.link/fV02om>
- Toure, K.. (2008). Developing quality partnerships for quality research, *NORRAG News*, 41, 55-58.
- UN-OHRLLS. (2009). The impact of climate change on the development prospects of the least developed countries and small island developing states. New York: United Nations Office of the High Representative for the Least Developed Countries, Landlocked Countries and Small Island Developing States.
- UNEP. (2014). *Emerging Issues for Small Island Developing Countries: Results of the UNEP Foresight Process*. United Nations Environment Programme.
- University of Aruba. (2021). *Annual Report 2020 - University of Aruba*. University of Aruba.
- Wanni, N., Hinz, A. & Day, R. (2010). Good Practices in Educational Partnerships Guide: UK-Africa Higher and Further Education Partnerships. <https://acortar.link/0AVwy3>

Woodfield, S., Middlehurst, R., Forland, H. & Fielden, J. (2009). *Universities and international higher education partnerships: making a difference*. <https://acortar.link/Q4okfW>

World Bank. (2020). The World Bank in Small States. <https://acortar.link/QmHvCp>

Yasin, J. (2008). Information asymmetries in North-South development and research partnerships. *NORRAG News*, 41, 60-63.

NOTES

⁽¹⁾ At the moment of writing 10 out of the 11 PhD researchers have been recruited

⁽²⁾ In setting up SISSTEM, the UA also collaborates with the Department of Economic Affairs, Commerce, and Industry of Aruba (DEACI) and the United Nations Development Program (UNDP). Describing the drivers and challenges of these other partnerships is beyond the scope of this paper.