Final Report

Thematic End-Term Evaluation of the Nature, Role, and Impact of Networks in view of Higher Education for Sustainable Development

vliruos
SHARING MINDS, CHANGING LIVES

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Syspons GmbH

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The information and views set out in this evaluation report are those of the author(s), independent evaluators, and do not necessarily reflect the opinion of VLIR-UOS or the universities/university colleges involved.

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ACRONYMS

DGD	Directorate-General for Development Cooperation and Humanitarian Aid
HEI	Higher Education Institution
LIC	Low-income country
LNOB	Leave No One Behind
M&E	Monitoring and Evaluation
MDGs	Millennium Development Goals
MIC	Middle income country
MSP	Multi-Stakeholder Partnership
OECD-DAC	Organisation for Economic Cooperation and Development – Development Assistance Committee
PRM	Project Risk Management
RACI	Responsible, Accountable, Consulted, and Informed
SDGs	Sustainable Development Goals
SI	Short Initiatives
ToC	Theory of Change
ToR	Terms of Reference
VLIR-UOS	Vlaamse Interuniversitaire Raad – Universitaire Ontwikkelingssamenwerking

PREFACE

EXECUTIVE SUMMARY

I. Background

In the field of university cooperation projects, different cooperative structures such as networks, partnerships, and multi-stakeholder partnerships (MSPs) have emerged as potential catalysts for co-creating knowledge and promoting innovative solutions. These cooperative structures are supposed to play a crucial role in facilitating collaboration and knowledge exchange among academic institutions and other stakeholders. By serving as dynamic platforms, networks, partnerships and MSP should enable the sharing of resources, expertise, and good practices, which should enhance the effectiveness and sustainability of university cooperation projects. Through the convergence of diverse actors from various sectors and disciplines, cooperation structures in university cooperation projects aim to create an environment conducive to innovation, problem-solving, and addressing the complexities of global challenges.

Recognizing the importance of networks, partnerships and MSPs, VLIR-UOS, an organization supporting partnerships between universities and university colleges in Flanders (Belgium) and the Global South, aimed to strengthen the role of the different cooperation structures in their project types. While the Theory of Change (ToC) for VLIR-UOS projects in the 2017-2021 program did not explicitly emphasize networking components, the upcoming 2022-2027 program highlights the significance of cooperative structures. However, prior to conducting the thematic evaluation, there was limited clarity and understanding regarding the specific role of networks, partnerships and MSPs in achieving developmental objectives, contributing to Agenda 2030, and promoting sustainability. Additionally, the factors influencing the success or failure of networks, partnerships and MSPs remained largely unexplored.

To bridge these knowledge gaps, VLIR-UOS has commissioned Syspons GmbH to conduct the *thematic end-term evaluation focused on networks, partnerships, and MSPs within the context of Higher Education for Sustainable Development*. By conducting this evaluation, VLIR-UOS and Syspons GmbH seek to enhance the understanding of networks, partnerships, and MSPs in the context of university cooperation projects and pave the way for more informed decision-making and strategic planning in the future.

Evaluation objectives and design

The main objective of this evaluation was to examine the added value of networks, partnerships and MSPs in the past VLIR-UOS portfolio under the 2017-2021 program, focusing on their (potential) contribution to project effectiveness and sustainability (objective 1). Hereby, networks were defined as rather informal and less formalized, while partnerships involved two parties working towards a common objective and had a higher level of formalization. MSPs, as a subtype of partnerships, required participation from actors representing different sectors and entailed written documents specifying clear roles and responsibilities in the MSPs. Additionally, the evaluation aimed to evaluate the performance of VLIR-UOS projects based on the OECD-DAC criteria (objective 2), taking into consideration the heterogeneity of project types (i.e., SI, TEAM and JOINT projects) in terms of funding and duration. Moreover, the evaluation focused on identifying lessons learned regarding projects resilience in crisis situations (objective 3).

In this regard, the evaluation put an emphasis on a cross-case assessment of projects rather than a detailed analysis of individual projects. To achieve these objectives, it was crucial to recognize the interconnectedness of the evaluation's objectives. For instance, to thoroughly analyse the importance of

networks, partnerships and MSPs in achieving results, it was necessary to evaluate these projects against the OECD-DAC criteria. Only by conducting an in-depth examination of selected projects could a comprehensive understanding be gained of how networks and MSPs influenced goal achievement at the project level. Furthermore, the evaluation considered the impact of factors such as the Covid-19 pandemic and political crises when identifying lessons learned and assessing the extent to which networks, partnerships, or MSPs aided in overcoming these challenges.

The evaluation was carried out between September 2022 and June 2023. Within the given timeframe the evaluation team conducted an in-depth analysis of all relevant documents and data, literature review, in-depth interviews, a survey among all Flemish and local promoters in the departmental projects sample as well as three case studies in Ecuador, Vietnam, and DR Congo. Based on the evaluation's findings, the evaluation team developed recommendations for the programme's future implementation in general and on how VLIR-UOS-supported projects can leverage networks, partnerships and MSPs to enhance project effectiveness and sustainability.

II. Main findings

The evaluation aimed to achieve three objectives: examining the value of the different cooperation structures (i.e., networks, partnerships, and MSPs) in the VLIR-UOS portfolio, evaluating project performance based on OECD-DAC criteria, and assessing the resilience of the projects. The findings revealed the following:

Under Objective 1, the findings revealed that among the three cooperation structures, networks were found being the most prevalent cooperation structure, followed by MSPs and partnerships in the VLIR-UOS 2017 – 2021 program. Further, it was found that MSPs contributed the most to project sustainability and the strengthening of research capacities, which was one of the long-term goals of the projects, while networks excelled in enhancing educational capacities, the other long-term goal.

Thereby, MSPs involved diverse stakeholders from the Global North and South, such as other research institutes/ higher education institutions form the partner country, public sector stakeholders (e.g., local/ regional government) form the partner country and other VLIR-UOS projects / other projects of Belgian development actors. Furthermore and regardless of the type of cooperation structure (e.g., MSP, network or partnership), it was found that although companies and cooperatives from Belgium and Europe were involved in the cooperation structures to a limited extent, those that did participate were considered to be very innovative. Further, it was found that MSPs demonstrated ownership, clear roles, and sustained engagement, which influenced project effectiveness and created mutual benefits. Co-creation and effective communication within the MSP contributed to the enhancement of research capacities. MSPs outperformed networks in project sustainability, achieving local embeddedness, access to target groups, and long-term resource provision. They were less vulnerable and more likely to ensure financial resources and strengthen digitization. Effective communication and active contributions from partners drove project sustainability through co-creation.

Among networks the most prominent stakeholder groups involved in the network were other local/ regional governments, other research institutes / higher education institutions and national governments from the partner country. Further, the networks contributed to project effectiveness mostly by addressing beneficiary needs, especially vulnerable groups, and strengthening educational capacities with context-specific products. Thereby, networks excelled in incubating broader knowledge networks compared to MSPs. Effective networks prioritized co-creation processes, which had a positive impact on strengthening educational capacities, one of the long-term goals of the project. Surprisingly, a lower frequency of

communication among network members was associated with greater project effectiveness in terms of educational capacity strengthening. However, the reasons behind this unexpected relationship were not further explored in the evaluation. While networks were not as effective as MSPs in terms of sustainability, high-scoring networks demonstrated mutual respect and co-creation, contributing to project sustainability.

Regarding Objective 2, the evaluation indicated that projects generally performed well across the OECD-DAC criteria of relevance, coherence, and effectiveness. Projects aligned with beneficiary needs, partner institutions, and global frameworks, demonstrating both internal and external coherence. Yet, for efficiency, impact and sustainability, some limitations were found. Regarding the impact of projects, it was found that participants' competencies and knowledge were improved, although the quality of project reporting was sometimes inadequate. Thereby, it was found that among the different project types, JOINT projects excelled in strengthening educational capacities. Regarding efficiency, clear roles and responsibilities within project teams were observed, but financial efficiency varied due to factors such as reporting systems, travel restrictions, and differing financial management practices. Moreover, results on the impact achievements of projects were rather mixed, with JOINT and TEAM projects showcasing more evident impacts. While projects implemented strategies for sustainability, few addressed financial and environmental sustainability adequately.

Objective 3 focused on the resilience of projects. Almost all projects were affected by the Covid-19 crisis, and some encountered political, economic, or social crises as well. MSPs, networks, and partnerships played an equal, beneficial role in helping projects adapt to these challenges. Hereby, the MSPs, networks and partnerships contributed primarily by supporting the adaptation of project activities in response to crises.

Overall, the evaluation underscored the substantial contribution of MSPs to project sustainability and in enhancing research capacities, with networks excelling in enhancing educational capacities. Projects performed mostly well according to OECD-DAC criteria but identified areas for improvement in financial and environmental sustainability. The projects displayed resilience and effectively utilized cooperation structures during times of crisis.

III. Recommendations

Based on the findings of the evaluation the following eight recommendations for the future implementation of the VLIR-UOS programme are put forward. These are divided into recommendations for the first objective, the assessment of networks, MSPs and partnerships on projects' effectiveness and sustainability, and the second objective, the evaluation of SI, TEAM and JOINT projects along the OECD-DAC criteria.

Recommendations regarding networks, partnerships and MSPs:

1. For enhanced research capacities and project sustainability, VLIR-UOS should promote MSPs in future projects. According to the findings of the evaluation, MSPs have proven to be most impactful in strengthening research capacities and contributing to project sustainability.
2. When funding MSPs, VLIR-UOS should put an emphasis on strengthening co-creation processes within these MSPs. Thereby, a clear definition of the co-creation process and identification of specific products to be co-created are essential. Feedback mechanisms should be established during project implementation to monitor co-creation progress.
3. VLIR-UOS should consider engaging Belgian/European companies as potential partners for MSPs, if suitable for the project context. Although companies from Belgium/Europe were not

previously involved in the evaluated projects, they were assessed as highly innovative. In future MSPs, VLIR-UOS should explore collaborations with innovative actors, including companies, to enhance project outcomes.

4. For strengthening educational capacities and addressing the needs of target groups, VLIR-UOS should promote networks in future projects. Networks excel in enhancing educational capacities and are effective in achieving broad outreach and practice-oriented outcomes.
5. When funding networks, VLIR-UOS should consider the frequency of communication. Excessive communication within networks may not be contributing to projects' achievements and therefore should be closely looked at by VLIR-UOS.

Recommendations regarding SI, TEAM and JOINT projects in general:

6. To maximize the effective uptake of project results, VLIR-UOS should prioritize funding TEAM and JOINT projects due to their larger financial volume and longer duration.
7. VLIR-UOS should support project applicants in integrating strategies for financial sustainability and monitoring their progress. Explicit strategies should be outlined in project proposals and re-assessed in the first progress report to ensure long-term viability.
8. VLIR-UOS should encourage applicants to incorporate strategies for environmental sustainability in their project design and closely monitor their implementation, if appropriate in the project's context. Hereby, VLIR-UOS should provide guidance / inspiration for effective integration of environmental sustainability strategies into project design and implementation.

1. Introduction

VLIR-UOS commissioned Syspons GmbH to conduct the thematic end-term evaluation of the nature, role and impact of networks in view of Higher Education for Sustainable Development. This evaluation had three main objectives. First, it examined the added value of networks, partnerships and Multi-Stakeholder Partnerships (MSPs) in the VLIR-UOS portfolio, focusing on their (potential) contribution to project effectiveness and sustainability. Second, the evaluation assessed the performance of a sample of projects based on the OECD-DAC criteria. Finally, lessons learned concerning the resilience of projects and partnerships were identified, focusing on how projects have managed crisis situations such as the Covid-19 pandemic or political crises.

The evaluation covered TEAM projects, Short Initiatives (SI, formerly South Initiatives) and JOINT projects under the 2017-2021 programme period (excluding SI initiated in 2017). It thereby took into account the specificities of and links between these intervention types. In addition, the links with other project types were considered to understand network/partnership/MSP structures in the broader VLIR-UOS portfolio.

The thematic evaluation was conducted from August 2022 to June 2023. Within this period, the Syspons evaluation team conducted a literature review on networks, partnerships and MSPs, analysed VLIR-UOS (project) documents, and conducted explorative interviews with VLIR-UOS personnel and expert interviews with academics. The evaluation team furthermore developed and implemented an online survey among all Flemish and local promoters in the sample of departmental projects. Finally, numerous interviews were conducted with stakeholders of eleven selected departmental projects during case studies in Ecuador, DR Congo and Vietnam. On the basis of the data collected, Syspons developed recommendations on how to enable effective and sustainable contributions of networks and partnerships/MSPs to VLIR-UOS projects.

The users of the evaluation are envisaged to be VLIR-UOS as well as (future) Flemish and local promoters of VLIR-UOS funded (applied research/educational development) projects, project stakeholders and cooperation partners as well as the general public.

The evaluation report is structured as follows:

- **Chapter 2** contains an overview of VLIR-UOS TEAM projects, Short Initiatives and JOINT projects;
- **Chapter 3** summaries the conceptual framework (incl. an overview of VLIR-UOS TEAM projects, Short Initiatives and JOINT projects);
- **Chapter 4** provides an overview of the evaluation methodology and process;
- **Chapter 5** provides findings from the quantitative and qualitative assessment of the thematic evaluation;
- **Chapter 6** draws conclusions;
- **Chapter 7** contains the recommendations.

2. VLIR-UOS TEAM projects, Short Initiatives and JOINT projects

VLIR-UOS supports partnerships between universities and university colleges in Flanders and in the Global South. Through the funding provided, VLIR-UOS supports research on innovative responses to global and local challenges and strengthens higher education in the Global South as well as globalisation of higher education in Flanders.

Short Initiatives (SI, formerly South Initiatives) and TEAM as well as JOINT projects, the types of **projects subject to this evaluation**, are three specific approaches by which VLIR-UOS contributes to this end. Taking place at the **departmental level**, SI and TEAM projects emerge from a local development problem/need that is addressed through a common initiative taken by one or more academics from a VLIR-UOS partner country, in collaboration with one or more Flemish academics. JOINT projects, though equally initiated at departmental level, in contrast provide networking opportunities at a national and/or international level as well, so that ideas and concepts for development change can be cross-fertilised.

The first intervention type that was considered, **TEAM projects**, has a maximum duration of four years and maximum budget of 300.000 €. With their aim to address region-related challenges, they address specific developmental topics. TEAM projects moreover aim at strengthening the research and education capacity in a specific thematic domain. They often build on previous contacts between departments of Flemish Higher Education Institutions (HEI) and HEI in VLIR-UOS partner countries, e.g., through an explorative SI.

Moreover, **Short Initiatives (SI)** were examined in the context of this evaluation. They are shorter-term projects with a duration of one to two years and a maximum budget of 75.000 €. The projects are initiated by academics at a HEI or (national) non-profit research institute in a partner country, in collaboration with Flemish academics/lecturers. Other civil society actors in partner countries may be involved as supporting partners. SI projects can stress different aspects:

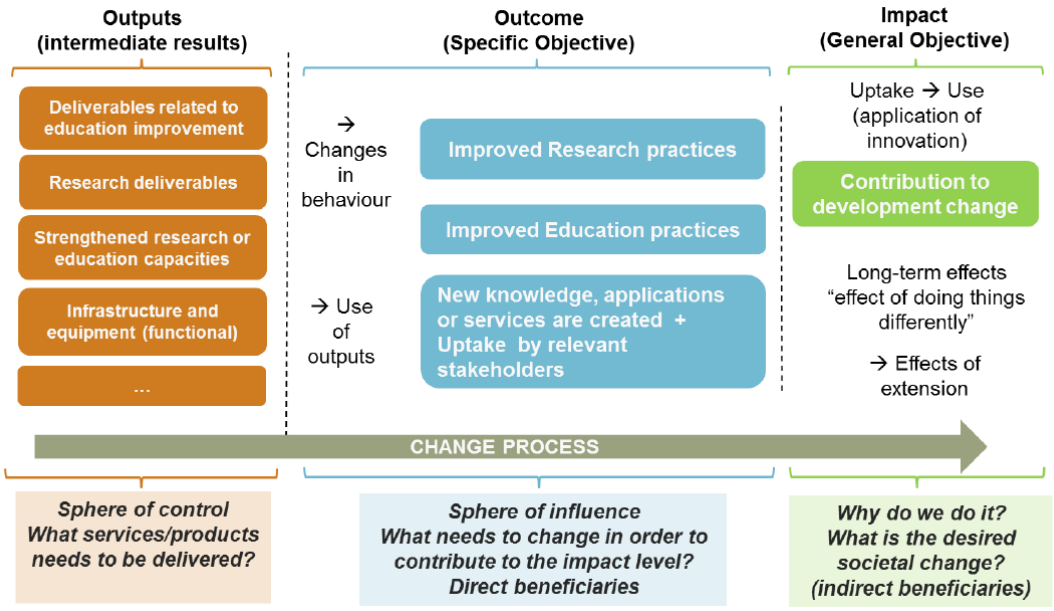
- *Explorative* projects take the form of pilot projects which aim to facilitate new partnerships and innovative forms/modalities of cooperation. These projects may grow into TEAM projects or a cooperation at the institutional level.
- *Stand-alone* projects define clear outcomes and potential impacts. Unlike explorative SI, these projects are not so much directed towards facilitating further cooperation. Different categories within this type exist: synergy initiatives among VLIR-UOS projects or with other Belgian/local/international actors and exchange and multiplication efforts (national/international conferences, training workshops).
- *"Broadening"* projects intend to expand the scope of other research projects, with the option of upscaling them to the national level (harvesting, multiplication).
- *Demand-oriented* projects, piloted under the 2017-21 programme, are proposed by third parties in the framework of the JSF, and have a particular focus on the involvement of the private sector.
- Additionally, specific SI have been set up for university colleges to encourage the deployment of Flemish university colleges. These SI encompass one project line focused on practice-based research and one dedicated to educational innovation/curriculum development.

Finally, **JOINT** projects were analysed by the evaluation team. With a maximum duration of 3 years and a maximum budget of 135.000 €, **JOINT** projects may be situated in between TEAM and SI projects in terms of duration and financial volume. As opposed to the other two project types, JOINT projects are less focused on scientific work but on the exchange of ideas and the creation of (inter)national alliances or tools. They can equally focus on domains of transversal expertise/support of importance for all academic projects in a given country/regional setting, or on university policy and management themes. The projects are intended to include multiple actors. In this regard, actors from different VLIR-UOS interventions are always involved, however third parties may also be part of the projects. Nevertheless, the interviews during the inception mission revealed that this intervention type has not evolved as foreseen and will thus not be continued under the 2022-2027 programme. Instead, networking components are to be integrated into the other intervention types.

3. Conceptual framework

Networks and partnerships/MSPs play a central role in facilitating effective and sustainable projects in higher education and research cooperation. This holds true for VLIR-UOS interventions as well. However, the theory of change (ToC) for departmental projects under the 2017-2021 five-year programme did not explicitly include this aspect (see Figure 1).

Figure 1: Theory of Change of VLIR-UOS departmental projects



Source: Terms of Reference, 2022

As opposed to the 2017-2021 ToC, the ToC for the 2022-2027 programme includes an explicit reference to partnerships. Here, VLIR-UOS clearly aims for contributing to "knowledge-driven partnerships" at the impact level as well as an increased science-society interaction at the outcome level (VLIR-UOS 2022). Against this backdrop, MSPs are explicitly mentioned and described as a mechanism to "promote co-operation and partnerships at different stages and spanning the boundaries of civil society, private sector, government, and academia" to be able to tackle the complex societal challenges we are faced with (ibid.). Accordingly, an analysis of how networks and partnerships/MSPs (already) contribute to effective and sustainable projects is needed, so that VLIR-UOS can steer the projects accordingly.

3.1 Conceptualising networks, partnerships and MSPs

VLIR-UOS differentiates between networks, partnerships and MSPs as cooperation structures. To analyse the concrete contributions of these structures to the effectiveness/sustainability of VLIR-UOS' departmental projects, we first need to clearly define them.

Networks refer to a variety of cooperation structures and are covered by a broad array of research fields. Consequently, diverse definitions and layers of analysis exist, focusing on different application contexts. At an overarching level, network research differentiates between interactions between and within organisations (inter- and intraorganizational networks) and individuals (interpersonal networks). For the purpose of this evaluation, we focused on interorganisational links. In the cooperation between organisations (or companies), certain characteristics of networks are stressed (see Gray 2000, Lerch et al. 2006, Lerch et al. 2007, Sydow & Windeler, 2003). Among others, the voluntary nature of the cooperation, the agreement on certain rules and structures, the absence of sanction possibilities and mutual benefit considerations play a role. The form/depth of cooperation varies depending on the partners, sectors and types of joint activities (Gesell & Poser n.d.). Accordingly, network research has identified a variety of network types (see for example Borgatti & Foster 2003, Sydow 2006, 2007). For the purpose of this evaluation, we applied Weyer's social network definition, which describes networks as "an independent form of coordination of interactions, the core of which is the trusting cooperation of autonomous but interdependent actors who work together for a limited period of time, taking into account the interests of the respective partner, as it enables them to realise their particular goals better than through non-coordinated action" (Weyer 2000, translated by Syspons).

Regarding **partnerships** as another cooperation structure, we observed that "partnership" is the basic term used by VLIR-UOS to describe its cooperation structures (see chapter 3). Like networks, partnerships are linked to different areas of research and application. Considering the field of development cooperation in particular, the term has become part and parcel of development discourses from the 1980s onwards. It was particularly emphasised in the 1996 report from the Organisation for Economic Co-operation and Development (OECD) and further applied and endorsed in the context of the Millennium Development Goals (MDGs), as well as the Paris Declaration on Aid Effectiveness (2005) and the Accra Agenda for Action (2008) (Bailey & Dolan 2011). The MDGs dedicate a specific goal to a "global partnership for development" (UN, n.d.). The term has also been gaining importance in cross-border[1] relations between HEI (Amey et al. 2007). To define the concept for the purpose of this evaluation we draw on both, the development cooperation and higher education field, combining the partnership definition by Mohiddin (1998) and Eddy (2010). Accordingly, we define partnerships as cooperation structures that unite two stakeholders from the same or different sectors in the pursuit of a shared objective and sustained by the subscription to common visions. Given the pursuit of a common goal, the definition marks a more binding nature of this structure as opposed to networks.

Building on the partnership idea and in the continuum of evolving development discourses and research, the concept of **MSPs** had come into play more recently. Here, the explicit inclusion of the term as one of the principles of the MDGs successor framework, the 2030 Agenda, with its Sustainable Development Goals (SDGs) is of particular relevance. SDG 17 ("Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development") acknowledges MSPs as key "vehicles for mobilising and sharing knowledge, expertise, technologies and financial resources to support the achievement of the sustainable development goals in all countries, particularly developing countries". Moreover,

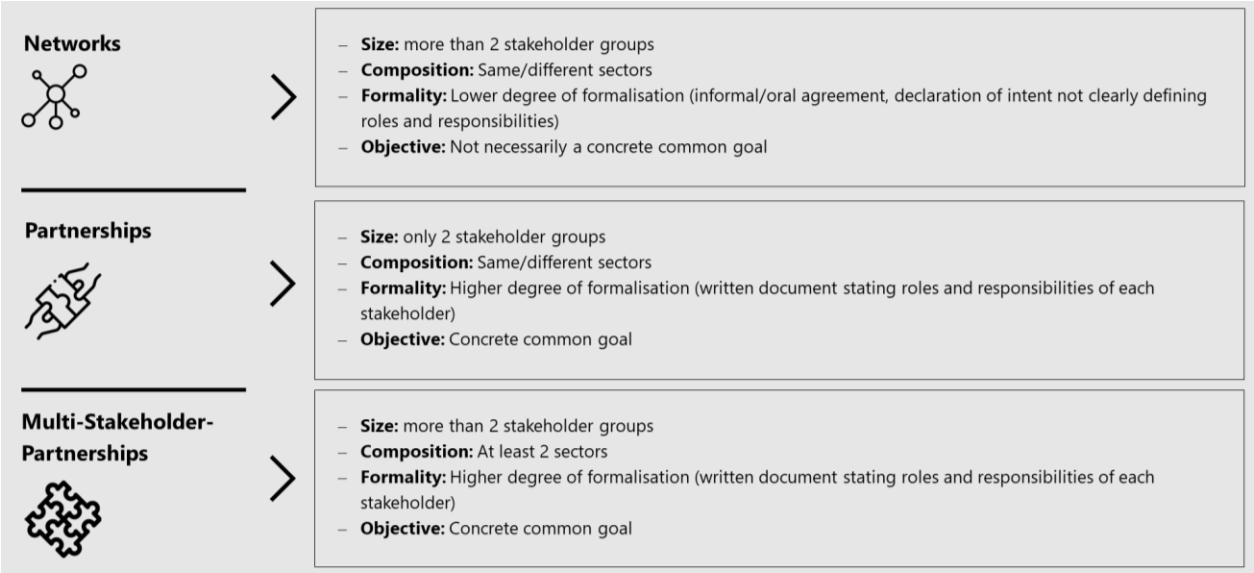
[1] The term refers to relations between HEI located in different countries.

the goal wishes to promote effective public, public-private and civil society partnerships (UN, n.d). Defining MSPs, the academic literature puts forward broader as well as more narrow definitions. In a broader sense, MSPs are conceptualised as a collaborative form of governance (Rasche 2012). In a narrower sense, MSPs are defined as "voluntary, cross-sectoral[2] partnerships that are formed to address a common purpose, often a complex, social issue related to the UN's sustainable development goals which could not be solved without the help of partners" (Tandon & Chakrabarty 2018; see also MacDonald et al 2019), aiming at affecting decision-making processes in the field of global development (Biekart & Fowler 2018). This emphasis on cross-sectoral and SDG-related engagement was increasingly emphasised by VLIR-UOS in the context of its interventions, thus the narrower definition was applied in the context of this evaluation. In terms of formality, MSPs (like partnerships) have a more binding character than networks, as a specific goal is defined (Beisheim, Ellersiek, & Lorch 2018; Tandon & Chakrabarty 2018).

To sum up, networks are understood as a generic term for generally less formalised cooperation structures. Partnerships, in turn, are an umbrella term for more binding cooperation structures, of which MSPs may constitute a specific sub-type. In this sense, networks are the basic structure needed for partnerships and MSPs to come into being. In figure 2, we operationalized distinguishing features of the three cooperation structures for the means of this evaluation, based on the elements presented above. Accordingly, regarding the size of the structure both, MSPs and networks, must be conformed of more than two parties, while partnerships are made up of a two-party cooperation structure. Looking at the composition of cooperation structures, partnerships as well as networks may be made up of actors from the same sector as well as actors from different sectors, while MSPs must include actors from different sectors. Another aspect to distinguish the cooperation structures is the degree of formalisation. While networks are mostly characterised by more informal relationships, bound together by similar interests/concerns between actors involved, both partnerships as well as MSPs imply a higher degree of formalisation with a written document that refers to the roles and responsibilities. Moreover, partnerships and MSPs need to work towards a concrete common objective while networks do not necessarily need to pursue a concrete common goal.

[2] By cross-sectoral, a cooperation between stakeholders from different spheres i.e. the public and private sector and civil society is meant.

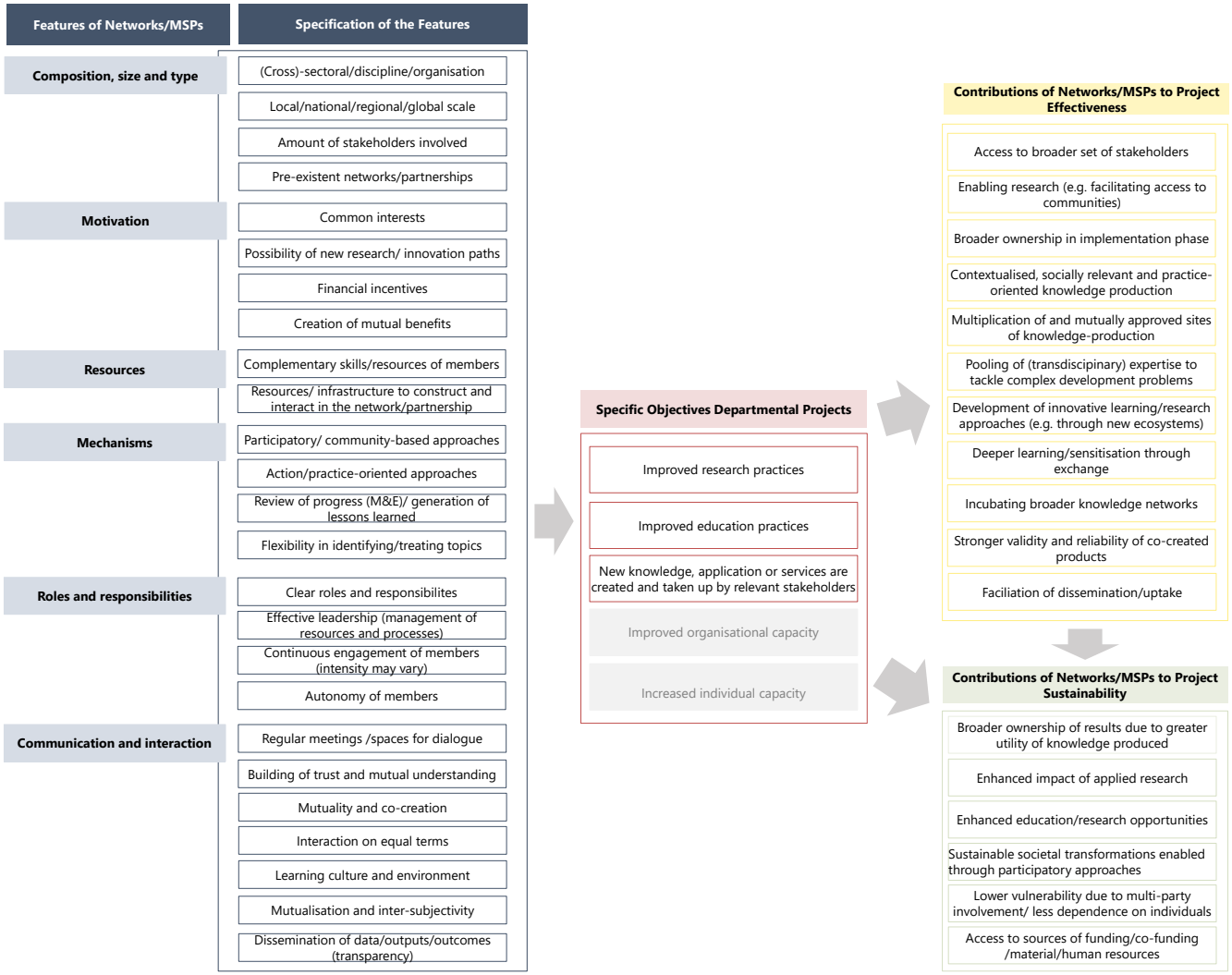
Figure 2: Cooperation structures



Source: Syspons 2022

Keeping in mind these definitions, a series of network, partnership and MSP features are relevant in contributing to effective and sustainable projects according to literature. Drawing on academic and grey literature as well as the explorative and expert interviews during the inception phase and keeping the scope of VLIR-UOS' departmental projects in mind, we developed a **conceptual framework** to guide this evaluation (see figure 3). It is relevant for evaluation objective 1 in particular (see chapter 4.1). The conceptual framework is divided into three sections. First, it illustrates features needed for networks/partnerships/MSPs to successfully work. They are clustered along six categories (composition, size and type; motivation; resources; mechanisms; roles and responsibilities; communication and interaction). Second, the specific objectives of VLIR-UOS departmental projects are listed. Here, the specific objectives valid for the timeframe 2017-2021 are marked in red, while objectives included in the new ToC valid from 2022 onwards are marked in grey. VLIR-UOS expressed the wish to consider the latter to reflect on future developments in the context of the evaluation (prospective analysis). Finally, the model states potential contributions of networks/partnerships/MSPs to project effectiveness and sustainability. In the following, we will further explain the features of networks/partnerships/MSPs and propose hypotheses concerning the potential contributions of networks and partnerships/MSPs to project effectiveness and sustainability.

Figure 3: Conceptual framework 'Features and Contributions of Networks'



Source: Syspons, 2023

Composition, size and type

As a first feature, the composition, size, and type of network/partnership/MSP plays a role in determining whether a cooperation structure may contribute to a project's effectiveness and sustainability. Concerning composition, both partnerships and networks may be made up of actors from the same sector as well as actors from different sectors, while MSPs must per definition include actors from different sectors (see Tandon & Chakrabarty 2018; MacDonald et al 2019; for a first overview of sectors involved in VLIR-UOS departmental projects see chapter 4.2). In this sense, MSPs necessarily cover a variety of sectors, including diverse actors. For networks and partnerships, this can but must not be the case. Regarding their size, both networks and MSPs must be conformed of more than two parties, while partnerships are made up of a two-party cooperation structure. The literature does not point to different effectiveness/sustainability potentials of cooperation structures based on their size. What is important, however, is an ongoing engagement of stakeholders involved (see roles and responsibilities). Moreover, networks, partnerships and MSPs are characterised by different degrees of formalisation: while networks are defined by more informal relationships, bound together by similar interests/concerns between actors involved, both partnerships as well as MSPs imply a higher degree of formalisation (see Beisheim, Ellersiek, & Lorch 2018). Further, while partnerships as well as MSPs need to work towards a concrete common goal (see Tandon & Chakrabarty 2018; MacDonald et al 2019), networks do not necessarily need to pursue a concrete common goal. Accordingly, partnerships and MSPs have a stronger potential for contributing to effectiveness as stakeholders involved are united by a common goal. If that objective is maintained once a project ends, the sustainability potential is also given (also see motivation). In terms of scale, all three cooperation structures may span from the local up to the global level. An additional criterion is the presence or absence of pre-existing cooperation in the projects analysed. It can be assumed that previous links between actors contribute to a more binding cooperation and thus higher potentials for effective and sustainable projects.

Motivation

With regard to the motivation of stakeholders to engage in networks and partnerships/MSPs, the literature and the expert interviews show that common interests of stakeholders involved are a key driver in successful cooperation structures. As indicated above, the pursuit of common goals in turn contributes to an enhanced project's effectiveness and sustainability. Particularly in the field of higher education cooperation, the possibility to pursue innovative research in specific fields of interest that may only be conducted by establishing cooperation structures is a central element motivating actors to become involved. Accordingly, researchers united by common interests seek to realise projects together. In this sense, VLIR-UOS explicitly aims at bringing together actors from Flanders and VLIR-UOS partner countries to jointly tackle local and global challenges, thus formulating the demands of conducting socially relevant research. Against this backdrop, MSPs are a particularly admissible structure as they are often "formed when a social issue is considered too complex and multifaceted for a single organization or sector to address alone, thus necessitating joint action across sectors" (Selsky & Parker 2005 in MacDonald, Clarke & Huang 2017). In this sense, the provision of collective goods plays an important role for motivating the creation of MSPs (Beisheim, Ellersiek, & Lorch 2018), thus focusing not only on social relevance but also a tangible social impact. Keeping in mind the interests of the individuals involved, an aspect that is crucial for motivating them while pursuing greater goals of societal relevance is the feeling that mutual benefits are created at a personal level (Loban et al., 2021; Tremblay, Sing & Lepore 2017). A further element to consider is in how far financial incentives are an additional motivation for actors to become involved in networks and partnerships/MSPs. If stakeholders join a cooperation structure merely to obtain funding but not because they see value in the cooperation itself, chances that the structure will

not persist once the project ends are high. This is because the cooperation in these cases would be based on an external rather than an intrinsic motivation (see Chan 2004).

Resources

Complementary skills and resources of actors involved as well as the sufficient resources to build and maintain a cooperation structure are crucial for it to contribute to a project's effectiveness and sustainability. Regarding the first aspect, Tandon and Chakrabarty (2018) state that in the case of MSPs, stakeholders with different "perspectives, access to resources, approaches and ways of understanding the problem" reunite around a problem that they are all affected by. In this context, the diverse resources brought in by the actors are understood to be enriching. Accordingly, "synergistic partnerships mobilize partners' complementary financial and nonfinancial resources, resulting in improved outcomes beyond that achievable through individual efforts" (Loban et al., 2021). The different perspectives and resources brought in by a variety of actors, may then be developed and leveraged through the cooperation (Clarke, MacDonald 2019), leading to outcomes that could not be reached by individual organisations. Referring to networks, Gesell and Poser (n.d.) observe that though competences may be developed through the cooperation structures themselves, their formation already requires specific competences, thus a mix of expertise brought in by the stakeholders involved. Against this background, it can be assumed that "a high density of experts ensures a high level of discussion and a good qualification of knowledge and results" (Abeler 2007: 49). Moreover, and as a precondition for a network/MSP to work effectively and sustainably, sufficient financial, material, and human resources must be available for constructing and maintaining a network/partnership/MSP throughout time (Chan 2004). Only this allows for an effective and sustainable contribution to project effectiveness and sustainability.

Mechanisms

Different mechanisms of networks/partnerships/MSPs can lead to higher project effectiveness and sustainability. First, projects must be rooted in a concrete societal challenge (action/practice-oriented approach), tackling a current problem of relevance (Clarke & MacDonald, 2016). In addition, they must emphasise the participation of all stakeholders interested in/affected by the problem treated (participatory/community-based approach). Referring to MSPs, Nurul Momen (2020) stresses that participatory decision-making processes through which every member may take ownership in all common processes, are key. Moreover, the cooperation structures need to stress a learning culture to produce results that are of ongoing societal relevance, e.g., in case external or internal circumstances change. Thus, the structure must be dynamic with mechanisms and processes able to respond to changing cooperation needs (Brouwer et al. 2019; Orthey 2005). In this sense, the progress made vis-à-vis the problem at hand should be continuously monitored and assessed (M&E) to generate lessons learned and take concrete actions to change the course taken in case circumstances demand so (ibid.). In terms of the potential contribution to a project's effectiveness and sustainability, the project itself must then have the capacity to adapt to its implementation context.

Roles and responsibilities

For networks/partnerships/MSPs to contribute to effective and sustainable projects, the roles and responsibilities of actors involved need to be clear (Tandon & Chakrabarty, 2018). In this context, effective leadership by one or several actors involved is emphasised as a necessary feature (Brouwer et al. 2019; Pattberg 2016). Accordingly, one or several actors involved must take care of managing the resources available to the cooperation structure and organising the processes necessary for the structure to work (Ayala-Orozco et.al, 2018; Beisheim, Ellersiek, & Lorch 2018; Pattberg 2016). Leadership alone is not

sufficient, as a successful network/partnership/MSP requires the continuous engagement of its members (Brouwer et al. 2019, MacDonald et al. 2019). At this level, the intensity of engagement may vary, depending on the roles and responsibilities the respective actor has to fulfil in the cooperation structure. In all cases, though binding agreements with regards to the pursued goals are fixed (to a lesser extent for networks), the actors involved always remain autonomous entities that interact with each other (Sanderink & Nasiritousi, 2020).

Communication and interaction

Effective structures for actors to communicate and interact with each other are key for successful networks/partnerships/MSPs. Accordingly, they are the basic condition for the cooperation structures to potentially contribute to a project's effectiveness and sustainability. As a precondition for good communication and interaction, trust between the parties involved must be built and a mutual understanding created (Allan, 2012; Everingham, 2012 in Lepore et al. 2022). For this, spaces for dialogue/ possibilities for regular meetings between actors involved must be provided (Ayala-Orozco et.al, 2018). Interaction should be characterised by mutual respect and on equal terms, especially if power imbalances between the actors involved come into play. In this context, the cooperation structure should facilitate the participation of everyone, independent from the level of power they have 'in the real world' (Brouwer et al. 2019; Tandon & Chakrabarty 2018). As stressed above (roles and responsibilities), it is key to provide for an environment that allows for learning. Crucial for achieving broad joint learning and reflection processes is the dissemination of products resulting from the cooperation such as data, outputs and outcomes (mutualisation). For this, as many members of a cooperation structure should communicate as often as possible (Brouwer et al. 2019; Chan 2004). Furthermore, facilitating continuous learning by drawing on the perspectives of different actors should be stressed (inter-subjectivity) so that everyone is able to contribute to the direction the cooperation takes and the form the products take (mutuality and co-creation) (Tandon & Singh, 2015).

3.2 Potential contributions of networks and partnerships/MSPs to project effectiveness and sustainability

From the features described above we derived hypotheses as to the pathways for a successful contribution of networks/partnerships/MSPs to a project's effectiveness and sustainability. These hypotheses will guide the contribution analysis to be implemented in the context of this evaluation (see chapter 4.1).

#	**Established hypothesis**
Networks/partnerships/MSPs may contribute to project **effectiveness**,	
1	if all parties interested in/affected by the problem at hand are invited to and willing to cooperate (access to broader set of stakeholders, enabling research).
2	if the cooperation is set up in such a way that participation leads to the rootedness of the project in its implementation context and the creation of socially relevant and practically usable products (contextualised, socially relevant and practice-oriented knowledge production).
3	if the roles and responsibilities of all parties involved are always clear and they remain engaged throughout project implementation (broader ownership in implementation phase).

4	if the common interest of actors involved is maintained and mutual benefits are created throughout project implementation with the help of effective structures for actors to communicate and interact (deeper learning/sensitisation through exchange).
5	if a learning culture open to take up new impulses is established (development of innovative learning/research approaches).
6	if comprehensive co-creation processes are facilitated (multiplication of and mutually approved sites of knowledge-production, stronger validity and reliability of co-created products).
7	if expertise in line with the goals of the cooperation is available (pooling of (transdisciplinary) expertise to tackle complex development problems).
8	if the cooperation structure enables a successful communication of project results (facilitation of dissemination/uptake).
9	if multiplication effects can be reached that lead to an enhanced cooperation structure that adds up to the goals pursued by the project (incubating broader knowledge networks).

#	**Established hypothesis**
Networks/partnerships/MSPs may contribute to project **sustainability**,	
10	if actors involved in the cooperation structure take up the results once the project ends (broader ownership of results due to greater utility of knowledge produced).
11	if practically oriented approaches successfully capture beneficiaries/end-users needs (enhanced impact of applied research).
12	if the cooperation structure established persists to continuously provide opportunities in the field of education or research (e.g., new transnational exchange networks) that would not be in place had the project not been implemented (enhanced education/research opportunities).
13	if concrete societal benefits created by the project are successfully anchored in the context due to the participatory approach and thus the engagement of all relevant stakeholders to carry on implementation steps once the project ends (sustainable societal transformations enabled through participatory approaches).
14	if the cooperation structure created continues to facilitate the engagement of actors involved during project implementation once the project ends (lower vulnerability due to multi-party involvement/ less dependence on individuals).
15	if enough material/financial/human resources can be acquired and maintained to continue relevant implementation steps after the project funding ends (access to sources of funding/co-funding/material/human resources).

3.3 Conceptualising project resilience

Besides their potential to contribute to a project's effectiveness and sustainability, networks, partnerships and MSPs may also contribute to project resilience. In line with evaluation objective 3 (examine the resilience of VLIR-UOS' departmental projects) and based on the synthesis of the literature and findings, we defined project resilience for the purpose of this evaluation as "the capability of a project to

respond to, prepare for and reduce the impact of disruption caused by the drifting environment and project complexity" (Blay 2019: 234). Analytical dimensions brought forward in the literature (see Blay 2019, Rahi 2019), and which were used for analysing in how far projects are resilient or not in terms of effectiveness and sustainability vis-à-vis crises are:

- **Proactivity/awareness**: anticipatory steps the project took to influence in its endeavours. As an example, a project could have established clear steps that are to be taken in case an external disruption occurs, e.g., guidelines on the ways in which implementation structures were adapted to keep working under changed circumstances. This anticipatory behaviour then enables adaptive capacity.
- **Adaptive capacity** (flexibility, coping ability and persistence): ability of a project to recover from negative known or unknown risks (disruptive events or conditions that may or may not occur) by transforming itself in response to these changes (e.g., through adaptations in its structure, processes or methods).

If projects showed proactivity/awareness as well as adaptive capacity, they were considered as resilient, being the main consequence thereof the ability to recover from crises through the ability to transform in a way that (modified) project goals were completed under changed circumstances within their implementation period (Blay 2019, Rahi 2019). In this sense Rahi (2019) argues that the greater the project's resilience, the better is its capacity to manage ambiguities, hardly predictably risks and uncertainties. Further, resilient projects can also better respond to already identified and analysed risks by current PRM practices.

At a practical level, the following indicators/capabilities may help projects manage crises to become resilient (Blay 2019):

- Open-mindedness, curiosity, self-motivation
- Contracts
- Trainings
- Experience
- Continual monitoring
- Continual planning
- Contingency
- Innovation/ continual identification of innovative ideas
- Responsibility allocation and responsibility taking
- Negotiations

These elements were used to determine in how far the analysed projects show elements of resilience in terms of their effectiveness and sustainability. They were operationalised accordingly in the analytical grid (see annex 5).

4. Evaluation methodology and process

4.1 Evaluation design

To test the conceptual framework illustrated above, we combined a contribution analysis with a social network analysis based upon the concepts of relational coordination and co-creation to assess the nature, role and impact of networks and partnerships/MSPs (objective 1). Further, the performance of a

set of SI/ TEAM/ JOINT projects under the 2017-2021 were evaluated along the OECD-DAC criteria (objective 2). Finally, the resilience of different projects was examined (objective 3).

Objective 1: Evaluating the Nature, Role and Impact of Partnerships and Networks

The first and foremost objective of the evaluation was linked to a close examination of the networks and partnerships/MSPs in VLIR-UOS' departmental projects. To fulfil this goal, a *social network analysis*[3] based on the *concepts of relational coordination and co-creation*[4] was implemented by means of an online survey among all promoters in Flanders and the partner countries in which TEAM/SI/JOINT projects were implemented under the 2017-2021 programme. The advantage of this design is that the social network analysis provides an overview of the different types/functions of networks and partnerships/ MSPs. The *contribution analysis* then provided us with answers concerning the extent to which these networks and partnerships/MSPs play an important role in realising the projects' objectives and impacts by also considering the three Agenda 2030 principles leave no one behind (LNOB), interconnectedness and MSPs. Moreover, it can also shed light on the resilience of projects and how they manage crisis situations to achieve their objectives (see objective 3). Finally, the concepts of relational coordination and co-creation answered the question of how and why certain MSPs and networks work better than others in order to provide us with essential insights on how to increase VLIR-UOS and its partners' effectiveness in supporting networks and partnerships/MSPs with a sustainable impact.

Objective 2: Assessing the Performance of SI/ TEAM/ JOINT Projects 2017-2021

Second, a **sample of projects** was assessed along the **OECD-DAC** criteria – namely coherence, effectiveness, impact, sustainability, efficiency and relevance. One part of the data to analyse the cases came from the social network analysis, excluding data on relevance and efficiency.

In this regard, the social network analysis provided us with a description of the stakeholders which are involved in the established networks and MSPs. This allowed us to assess the **coherence** of the different projects as well as for the VLIR-UOS portfolio as a whole. Moreover, the analysis allowed us to see to what extent other stakeholders from the Belgian development cooperation field respectively further stakeholder groups (e.g., international agencies) were part of the established networks and partnerships/MSPs. To cover this point, data from the online survey as well as in-depth data for the projects in the selected field visits was used.

Moreover, the criteria of **effectiveness** and **impact** were analysed and thus the proposed contribution analysis based upon Mayne's analytical approach (2001, 2008, 2011) enriched. It was assessed whether a realised outcome (e.g., improved research, education and extension capacity of a department) can possibly be ascribed to an intervention and which factors functioned as drivers and inhibitors to realising the desired outcome. In this regard, a contribution analysis attempts to address cause and effect by focusing on questions of "contribution", specifically to what extent observed results (whether

[3] The aim of social network analysis is to analyse cooperation structures between a set number of individuals or organisations to map and identify types/ functions of networks. In this evaluation, the analysis focused on analysing the cooperation structures between network actors. The results of this analysis was a mapping of the existing types/ functions of networks and MSPs in the 2017-2021 programme as well as an understanding of why and how these structures did or did not work.

[4] The approach of relational coordination focuses on the interplay of communication and relation between the actors involved in a network or partnership/MSP. With the concept of co-creation, it was assessed if and how knowledge is co-created in the networks and partnerships/MSPs, but it also showed if power imbalances existed between different stakeholders concerning knowledge creation, usage, and adaptation.

positive or negative) are the consequence of the policy, programme or in this case the selected departmental project (ibid.). By developing a “theory of change” showing the links between the outputs, outcomes, impacts and the contexts of the selected projects and collecting evidence from various sources to test this theory, the aim was to build a credible (or plausible) “performance or contribution story”. This demonstrated whether the respective selected projects were indeed important influencing factors in driving change, perhaps along with other factors (ibid.). Conceptually, the contribution analysis was based on the (reconstructed) theories of change for each selected project and on the “established” hypotheses from the conceptual framework (see chapter 2). This incorporation of the conceptual framework allowed us to draw conclusions beyond the individual projects. Further, the concepts of relational coordination and co-creation was used to assess why and how in some cases networks and partnerships/MSPs do (not) helped to achieve the objectives and sustainability as well as how the three principles of the Agenda 2030 (LNOB, interconnectedness and MSPs) were (or not) an integral part of VLIR-UOS funded projects. Again, the online survey as well as data from the in-depth interviews during the case studies was used for this.

Regarding the **sustainability** criterion, we analysed, if and how networks and partnerships/MSPs strengthened the local ownership of project’s results, how they transferred necessary capacities for maintenance of project results and how they ensured that locally adapted knowledge for knowledge transfer and capacity strengthening is developed by using the in-depth data for the selected projects gathered in the field visits and the online survey data. In comparison, the online survey did not generate needed data for the criterion of **relevance**. Thus, the overlap between the needs of the respective partner countries, beneficiaries and partners and the project objectives will be analysed through triangulated data from the desk research and the case studies. Finally, with regard to the criterion of **efficiency**, the analysis focused on the selected cases. We assessed to what extent the projects have converted the inputs (funds, expertise, time, etc.) into outputs as well as if they managed the inputs cost-efficiently. Moreover, we examined whether the intended processes were implemented within the time envisaged using a *RACI analysis*[5] to assess the efficiency of the project’s structure and processes.

Objective 3: Assessing the Resilience of Different Projects

Finally, the evaluation analysed the resilience of VLIR-UOS’ departmental projects. To analyse the resilience of the departmental projects, the online survey mapped whether projects in different contexts were subject to crises and if so, of what type (e.g., Covid-19 pandemic or political crisis). Here, we also used the collected data for the relevance criterion (e.g., are changed context conditions described in reports?). Then, we selected projects which have coped with changed circumstances well or not so well in relation to their goal attainment to identify lessons learned and good practices in adaptive project management. Thereby, we also investigated to what extent well working networks and partnerships/MSPs were a factor to strengthen the resilience of projects.

4.2 Sampling

In this chapter, the selection of the sample for the case studies is presented. The initial sample provided by VLIR-UOS, which included 213 projects located in the Global South, served as the basis. The final

[5] RACI (short for Responsible, Accountable, Consulted, and Informed) is an acronym derived from the four key responsibilities that are necessary to establish an efficient programme and project management between different stakeholders. Through these responsibilities, it is possible to illustrate and clarify roles and responsibilities in programme management activities and identify possible inefficiencies.

sample should comprise nine to twelve projects, with three to four projects selected per country. Thereby, the selection of the final sample was guided by the objectives to a) ensure diversity of background characteristics, b) to ensure a variety of typologies and c) theoretical and practical evaluability. As a means to these ends, a three-step selection process was applied: The first step was to select a sample of projects with different background characteristics (e.g., representation of continents or diversity of disciplines). In a second step, preliminary findings of the online survey were used to ensure that a variety of cooperation structures (i.e., networks, partnerships and MSPs) as well as typologies of cooperation are presented in the selected sample. As a final step, the evaluability assessment was conducted in order to identify the final sample. Therefore, we first assessed the availability of documents and second, we discussed the general suitability and practical evaluability of selected projects with the VLIR-UOS representatives.

In the end our sample included 12 projects which are located in three countries, Peru, DR Congo and Vietnam (see annex 1 for an overview). After the inception mission, we decided to keep the maximum number of 12 projects (from a range of 9 to 12 projects), in case projects cannot participate in the evaluation. During the preparation of the case studies, one project in Vietnam proved to be unable to provide the evaluation team with contact data within the time frame foreseen for the evaluation. Thus, finally, 11 cases were included (i.e., 3-4 projects per country). The selection included a variety of project types, namely five SI, three TEAM, and three JOINT projects. In addition, eight networks, one partnership, and two MSPs were included in the sample, and we ensured that all typologies of cooperation were covered. Yet, we recognize that having only one partnership within the sample was a limitation. Moreover, it was decided with the VLIR-UOS representatives that one project that did not participate in the online survey would be included in the final sample because it contributed to a greater diversity of background characteristics. For this project, the type of cooperation structure was unknown at the time of the inception phase. We collected the missing data from the online survey for this project during the field visits. **Annex 1** provides an overview of all finally selected projects.

4.3 Implementation of the evaluation

The evaluation consisted of three phases, an inception phase, a data collection (implementation of field visits) and a reporting phase.

Figure 4: Evaluation Design

Source: Syspons, 2023

The objective of the **inception phase** was to get a detailed overview over the networks, partnerships and MSPs in the VLIR-UOS projects (i.e., SI, TEAM and JOINT projects) as well as to identify all relevant analytical aspects for the evaluation. Therefore, an in-depth document analysis was conducted as well as explorative interviews with relevant actors and an online survey were implemented. Based upon these findings an evaluation design rooted in a conceptual framework for networks, partnerships and MSPs was developed. This evaluation design included all analytical aspects and evaluation questions and reflected the perspectives of all relevant stakeholders.

The objective of the **data collection** phase was to collect a valid and comprehensive database to evaluate selected projects along the OECD-DAC criteria and also to confirm or not to confirm the hypothesis of partnerships, networks and MSPs (see chapter 3). To achieve this objective, case studies in DR Congo, Ecuador and Vietnam, covering 11 projects (also see annex 1) were conducted in February/ March 2023 jointly by an international (Syspons) and local consultant. Yet, in the DR Congo, the case study was only conducted by an international consultant. Within each selected project a set of interviews, focus group discussions or workshops were conducted with e.g., the main (and if applicable co-) promoter from the southern partner institution, involved PhD candidates and/or master/bachelor students, respective top management of the university and superiors of the team leader and with external stakeholders such as local government agencies, civil society actors, private sector stakeholders or research institutes.

The objective of the **reporting phase** of this evaluation was to synthesise and systematise all evaluation findings in a clear and concise report. In this phase, Syspons delivered a first draft of the evaluation report to VLIR-UOS at the end of May 2023 and an updated final report was submitted in June 2023. The final draft report includes an Executive Summary of conclusions and recommendations and clearly described the mapping of networks and MSPs within VLIR-UOS departmental projects. In addition, the assessment along the OECD-DAC criteria of selected projects is included as well as the findings related to project resilience. Furthermore, the report includes the revised and final conceptual framework on networks, partnerships and MSPs. Afterwards, the findings of the evaluation report were presented to VLIR-UOS in a restitution session in Mid-June 2023. All received feedback was incorporated into the report by Syspons and the final evaluation report was submitted by the end of June 2023 to VLIR-UOS.

4.4 Limitations

While the evaluation was conducted thoughtfully, some limitations affecting both – the quantitative and qualitative data collection – exist:

Since this evaluation was an end-of-program evaluation, some impacts may not have yet materialized. As such, a plausibility analysis was conducted for the OECD-DAC criteria of impact and sustainability.

With regard to the results of the online survey in particular, some data limitations must be taken into account (see Section 5-7). First, in regard of aggregating results (i.e., creating indices), some limitations were documented which are described in annex 4. Second, the classification of MSPs, networks, and partnerships was a classification made by the evaluation team and based on information from the online survey. In addition, the sample of partnerships is very small (n=4) and the sample of MSPs is also limited (n=20). Therefore, it was not possible to develop regressions for partnerships, and the findings from the regressions for MSPs and networks could not be compared with each other. Consequently, to increase the reliability of the indicative results of the online survey, the results of the qualitative analysis were used.

With regard to the findings of the field visit in particular, data limitations occur as – to cover geographic representation and the overall distribution of networks, partnerships and MSPs – only one partnership was included in the field visit as well as only two MSPs. Consequently, qualitative findings for these two types of cooperation structure are interpreted with caution as they are prone to include a bias and might not be representative.

5. Thematic evaluation

5.1 Objective 1: Assessing the added value of networks, partnerships and MSPs in the VLIR-UOS portfolio

5.1.1 Description of features of networks, partnerships and MSPs

In this chapter we describe the features of networks, partnerships and MSPs based on the results of the online survey conducted in 2022 supplemented by the findings of the field visits (i.e., qualitative data from the sampled projects) conducted in 2023. In the first sub-chapter, we will describe overall findings for all three cooperation structures and in the following sub-chapters, we will look at the different cooperation structures in detail. Hereby, as written in subsection 4.4., due to the small sample of partnerships (n=4), the findings for partnerships are only indications and are thus not representative.

5.1.1.1 Composition, size and type

Overall, the online survey includes responses of promoters of all three types of VLIR-UOS projects, namely SI, TEAM and JOINT projects which were described in chapter 2. Most of the projects included in the sample were SI (53%; n=79) projects, followed by TEAM (28%; n=42), and JOINT projects (18%; n=27).

In addition to examining the distribution of VLIR-UOS project types (SI, TEAM, and JOINT projects), the main focus of the analysis was on identifying differences between the three *types of cooperation structure*, namely networks, partnerships and MSPs which were defined for the purpose of this evaluation in chapter 3 It is noteworthy that the **majority of projects represented networks, while only a few partnerships were identified**. The results from the survey show the following presence and distribution of cooperation structures from overall 148 projects[6]:

- four partnerships,
- 20 MSPs and,
- 101 networks.

[6] For the remaining 23 projects, no specific cooperation structure could be identified based on the information gathered from the online survey. An overview of the different types of cooperation structures among countries is given in Table 4.

Definition: Three types of cooperation structure

(1) Networks:

Within the VLIR-UOS projects, networks refer to the collaboration between the project team (i.e., the Flemish and local project staff) and multiple stakeholders (i.e., at least two stakeholders). These stakeholders can belong to the same field, such as higher education institutions, or different fields (e.g., NGOs, the public sector, and the private sector). Networks typically have a less formal structure and do not rely heavily on strict rules or written agreements. Instead, they often operate based on informal or oral agreements without clearly defined roles and responsibilities. The objective of a network does not necessarily have to be a concrete goal which is pursued by all network stakeholders. It can be more flexible and adaptable to suit the evolving needs of the collaboration.

(2) Partnerships:

In VLIR-UOS projects, partnerships refer to collaborations between the project team (i.e., the Flemish and local project staff) and a single stakeholder, which could be a public or private sector stakeholder, another research institute, or a civil society organization etc. The partner may come from the same field, such as higher education institutions, or different fields, including NGOs, the public sector, and the private sector. Unlike networks, partnerships are characterized by more formal arrangements. They often involve a written agreement that clearly outlines the roles and responsibilities of both the VLIR-UOS project team and the partner. The objective of a partnership is to work together towards a specific and tangible common goal that both partners are committed to achieving.

(3) Multi-Stakeholder Partnerships (MSPs):

MSPs are given if partnerships exist that do involve more than two partners. Thus, the project team (i.e., the Flemish and local project staff) collaborates with at least two partners from e.g., the civil society sector, public or private sector, NGOs, other research institutes etc. Thereby, it is essential that the stakeholders participating in the MSP represent at least two different areas or sectors, rather than solely being partners from higher education institutions. Similar to partnerships, MSPs have a higher level of formality. They are usually outlined in a written document that specifies the roles and responsibilities of each stakeholder within this collaboration. The objective of a MSP is the same as for partnerships, i.e., to accomplish a concrete common goal that all the stakeholders involved are striving to achieve.

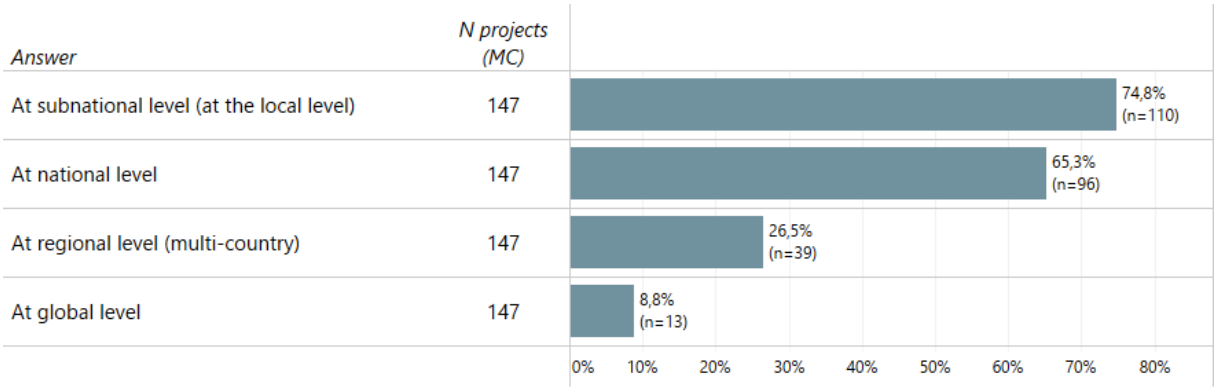
In the case of partnerships, they exclusively consisted of SI (75%; n=3) and TEAM (25%; n=1) projects. MSPs primarily comprised SI projects (60%; n=12), with an equal number of JOINT and TEAM projects (20%; n=4) also included. Networks were predominantly found in SI projects (54%; n=54), followed by TEAM projects (30%; n=30), and JOINT projects (16%; n=16).

The results of the online survey show further that the majority of projects exhibit a cross-disciplinary nature as promoters of 38% (n=57) of all projects confirmed that their **project combines different branches of knowledge and thus follows a multidisciplinary approach**. Moreover, 25% (n=37) of the respondents answered that their project encompassed a dynamic interaction of more than one branch of knowledge (i.e., transdisciplinary approach) and 29% (n=42) stated that their project related to more than one branch of knowledge (i.e., interdisciplinary approach). Consequently, a mere eleven

projects (8%) were identified as adhering to a disciplinary approach, which involves solely one discipline (see Figure 29 – Annex)[7].

Also in the online survey, most participants indicated that their project **aimed at achieving changes either at the subnational (local) level (75%; n=110) or national level (65%; n=96)** (see Figure 5). Consequently, only a few representatives of projects stated that they operated on a multi-country, regional scale (27%; n=39) and even less reported that they intended to achieve changes at the global scale (9%; n=13).

Figure 5: Project's Geographical Focus Area

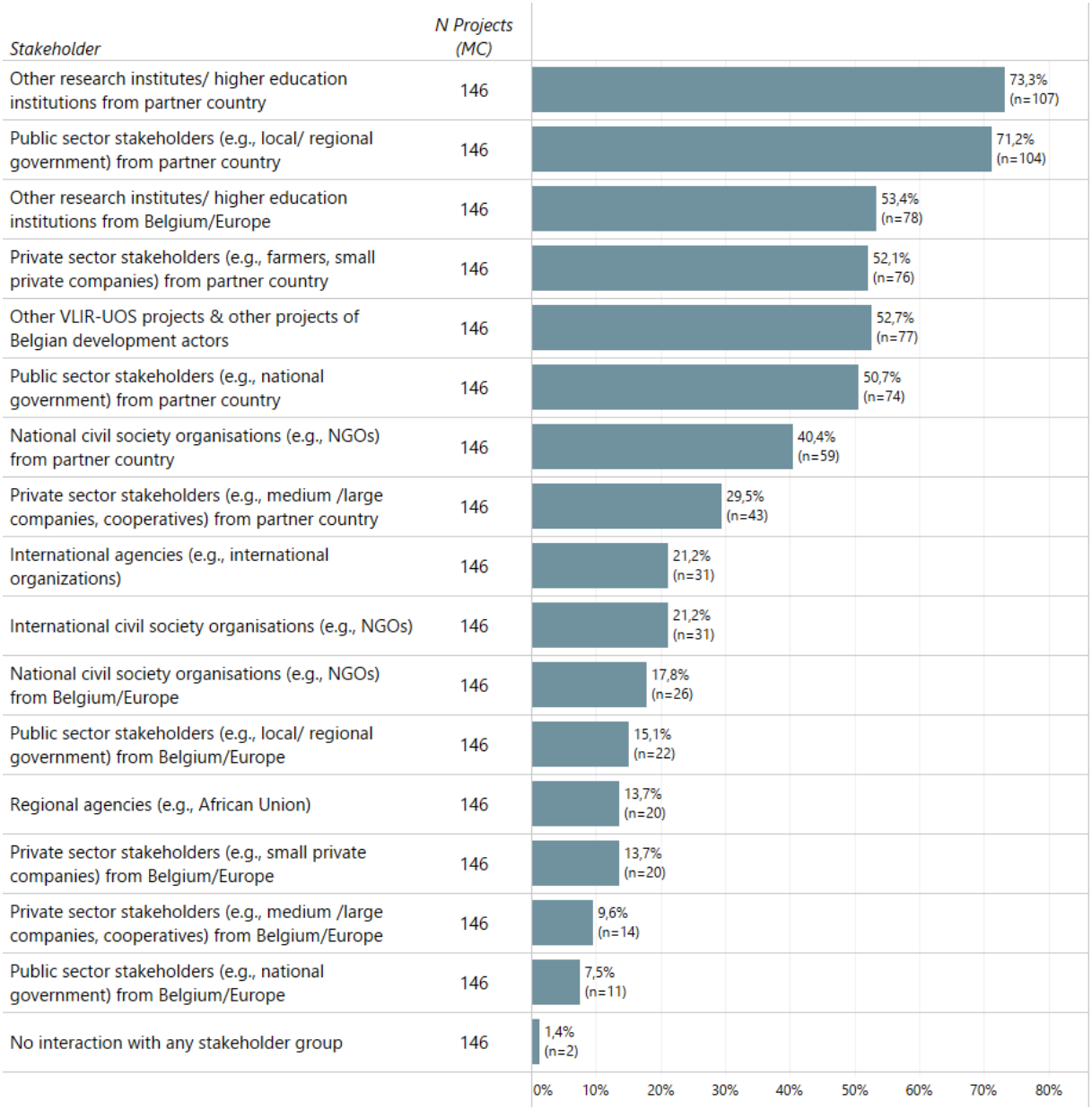


Source: Syspons, 2023

Regarding the stakeholder groups involved in the networks, partnerships and MSPs, the results of the survey show that **most projects collaborated with other research institutes /higher education institutions as well as with local/ regional governments** located in the respective countries of the Global South. Here, the percentage of promoters who participated in the survey and confirmed the involvement of these actors is equal to or greater than 70%. Approximately half of the respondents highlighted further the importance of local, regional and national governments from the respective countries in the Global South as well as other research institutes/ higher education institutions and VLIR-UOS projects or other development projects from Belgium/Europe (see Figure 6).

[7] Since for some projects, both the Flemish and the promoter from the Global South participated in the survey, the total percentage is higher than 100% in Figure 29.

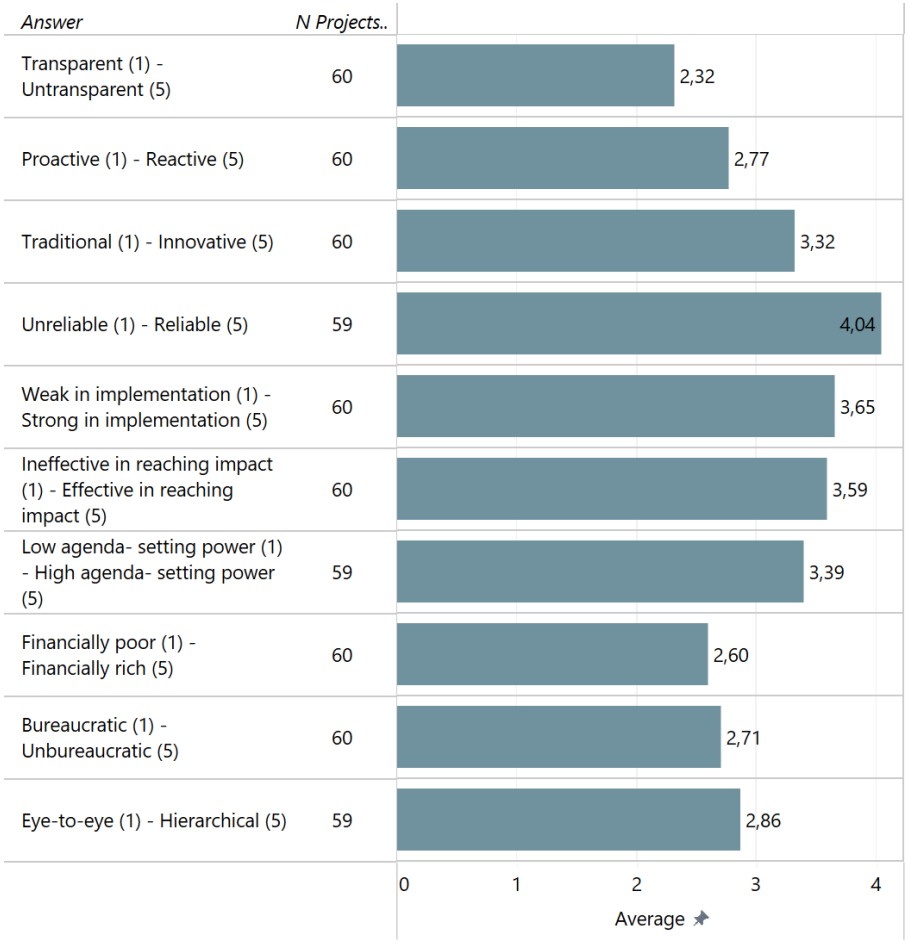
Figure 6: Stakeholder Groups Involved in the Collaborations



Source: Syspons, 2023

Hereby, given that usually the closest links in VLIR-UOS projects are established between researchers/academics, the high importance of other research institutes from the Global South is not surprising. Respondents of the online survey thereby rated them to be very reliable (mean of 4.0 out of a scale from (1) unreliable to (5) reliable), rather strong in implementation (mean of 3.7) and effective in agenda setting (mean of 3.4), whereby they were rated to be rather financially poor than rich (mean of 2.6) (see Figure 7).

Figure 7: Characteristics of Other Research Institutes / Higher Education Institutions from Partner Country

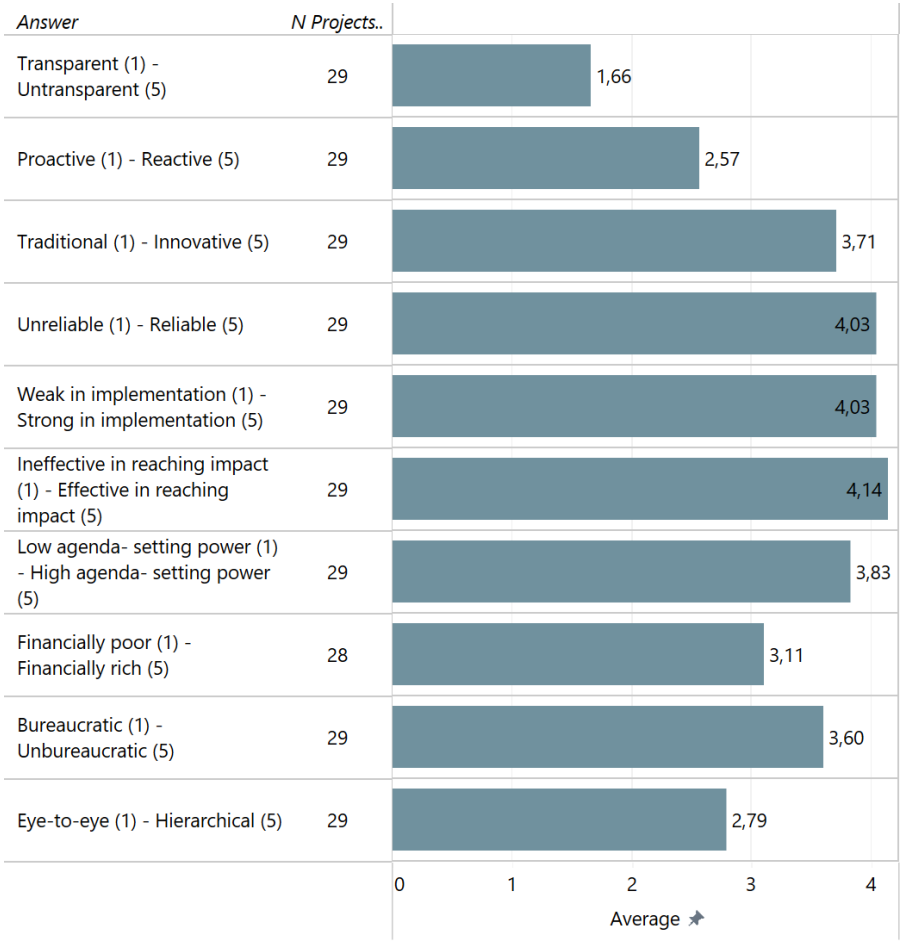


Source: Syspons, 2023

Furthermore, as can be seen in Figure 8, VLIR-UOS projects and further projects of Belgian development actors were described as very transparent, effective in reaching an impact as well as reliable and strong in implementation (mean of 4.0 or higher).

Moreover, the local, regional, and national governments from the respective country in the Global South were assessed to be rather reliable, effective in achieving impact, with a rather high agenda – setting power and rather strong implementation (mean values of above 3.0). Yet, relatively these two stakeholder groups were assessed to be weaker in these aspects than most of the other stakeholder groups. Further, there were assessed to be rather bureaucratic, financially poor and hierarchical (mean values of less than 3.0) (see Figure 30).

Figure 8: Characteristics of Other VLIR-UOS and Other Projects of Belgian Development Actors

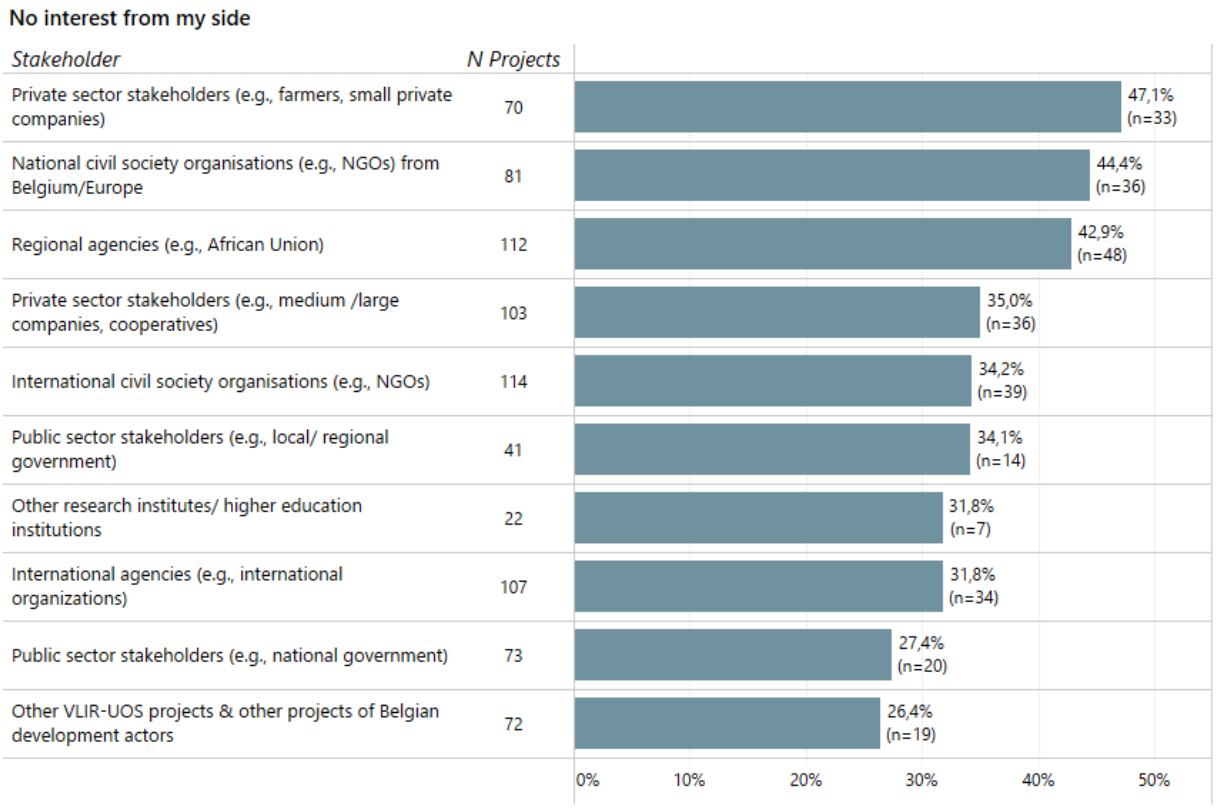


Source: Syspons, 2023

When asked for reasons why certain stakeholder groups were not involved in the projects, the most common answer refers to a **lack of interest to involve them** or a **lack of knowledge of whom to approach to get them involved**. As is illustrated in Figure 9 below, this especially concerns the involvement of small private sector stakeholders, national civil society organisations from the partner country and regional agencies. Other individual reasons provided for not involving stakeholders (i.e., "other reason" category - Figure 10) were consistent with this finding, as respondents mainly mentioned a lack of relevant projects or stakeholders and thus a lack of knowledge whom to approach.

Only a quarter of projects responds not to have had interest in involving other VLIR-UOS projects and other projects of Belgian development actors. A possible explanation for this could be the fact that projects tend to focus quite strongly on the academic sphere in which other VLIR-UOS (and e.g., projects of some other Belgian actors such as ARES) are equally active. Getting in touch with actors beyond this sphere requires a higher effort in terms of outreach.

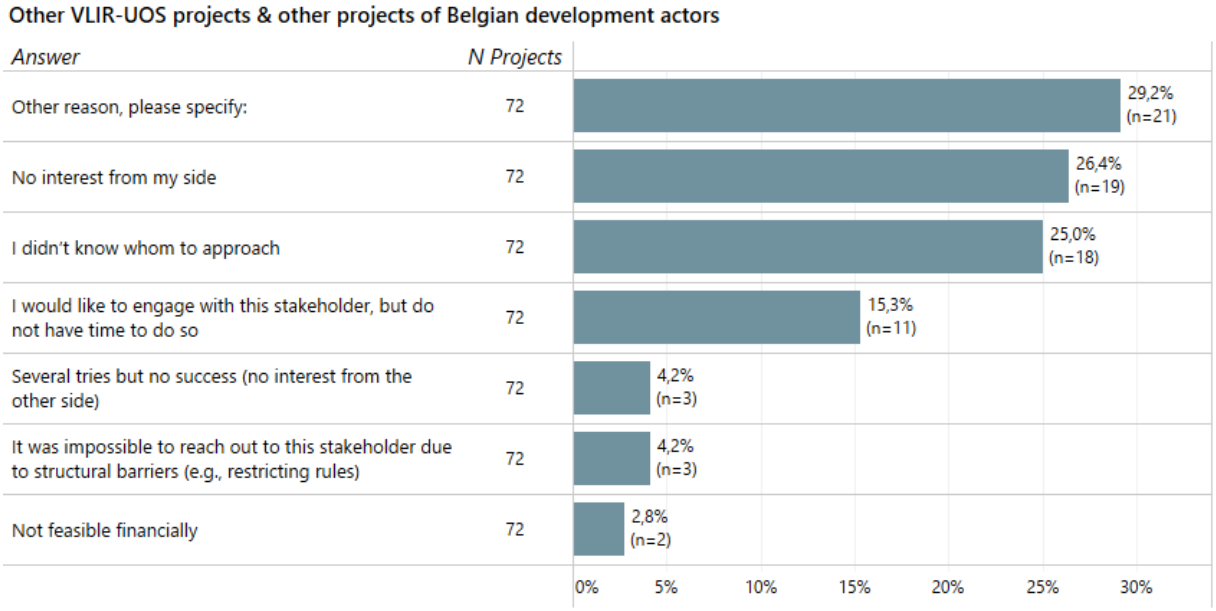
Figure 9: Most Important Reason for not Involving Stakeholders (all types)



Source: Syspons, 2023

However, when looking at the reasons not to involve other VLIR-UOS projects and other projects of Belgian development actors (see Figure 10), respondents also underline their **missing knowledge on whom to approach**, as can be seen in the Figure 10 below.

Figure 10: Reasons for not Involving other VLIR-UOS projects (all types)



Source: Syspons, 2023

Moreover, regardless of the type of cooperation structure, most respondents of the survey confirmed a rather **essential role of digital forms of communication and collaboration** (see Figure 11). This finding is in line with qualitative data from the field visits. Thereby, stakeholders confirmed the essential role of digital communication in order to keep implementation processes up, especially in the context of the Covid-19 pandemic (also see chapter 5.3). In line with that, as shown in Figure 31 (Annex), projects that concluded after to the Covid-19 outbreak perceived the role of digital communication and collaboration in initiating as well as implementing their cooperation structure as relatively higher. However, for ongoing collaboration after the project's conclusion, representatives from projects completed before Covid-19 assessed the importance of digital forms as very high and even slightly higher than for projects that have ended after the Covid-19 outbreak (see Figure 31 - Annex).

Figure 11: Role of digital forms of communication and collaboration

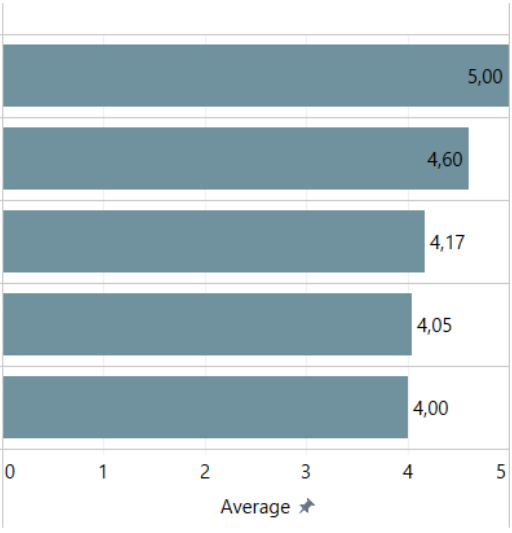
Answer	N Projects	n.a.	Mean	MSPs		Networks		Partnerships	
Digital forms of communication and collaboration were essential for initiating the network/partnership.	111	0	5,16	**5,53** 20	0,37	**5,05** 87	-0,11	**5,63** 4	0,47
Digital forms of communication and collaboration were essential for joint implementation.	111	0	5,30	**5,55** 20	0,25	**5,25** 87	-0,05	**5,13** 4	-0,17
Digital forms of communication and collaboration were essential for ongoing collaboration after the project ended.	104	9	5,31	**5,53** 19	0,22	**5,31** 81	0,00	**4,25** 4	-1,06

Source: Syspons, 2023

Although the survey findings show that there was limited participation from small, medium, and large companies as well as cooperatives from Belgium and Europe in the collaboration structures (n=7) (see Figure 27), these companies were rated to be highly **innovative** (see Figure 12). Thus, their involvement could potentially enhance the expertise in innovation, including digitalization, within the collaboration structures.

Figure 12: Top Five of Stakeholders – Level of Innovation

Stakeholder	Answer	N Projects
Private sector stakeholders (e.g., medium /large companies, cooperatives) from Belgium/Europe	Traditional (1) - Innovative (5)	2
Private sector stakeholders (e.g., small private companies) from Belgium/Europe	Traditional (1) - Innovative (5)	5
Public sector stakeholders (e.g., local/ regional government) from Belgium/Europe	Traditional (1) - Innovative (5)	6
Other research institutes/ higher education institutions from Belgium/Europe	Traditional (1) - Innovative (5)	43
Regional agencies (e.g., African Union)	Traditional (1) - Innovative (5)	2



Source: Syspons, 2023

5.1.1.2 Partnerships

For partnerships, the main specific *objectives* of the projects included in the survey were **to introduce new knowledge, applications, or services** (100%; n=4) **and strengthen research capacities** (100%; n=4). 75% of respondents with partnerships indicated moreover that they aimed to strengthen educational capacities while only half of the partnerships intended to strengthen organizational capacity (50%; n=2) (see Figure 28 – Annex). To support the achievement of these objectives, partnerships most frequently included the following *stakeholder groups*:

1 Public sector stakeholders (e.g., local/ regional government) form the respective country,
2 Other research institutes / higher education institutions from Belgium / Europe and
3 Other VLIR-UOS projects & other projects of Belgian development actors and other research institutes / higher education institutions form the respective country.

Notably, no partnerships with national civil society organizations or public sector actors (e.g., national governments) from the respective country in the Global South was reported (see Figure 27 – Annex).

Regarding the *motivation* for the partnership, half of the respondents (n=2) stated that they saw the possibility to work on innovative solutions jointly **whereby most projects were approached by the partner of their partnership directly** (75%; n=3). Also, all partnerships involved in the survey came into being as the project knew each other from other VLIR-UOS projects (100%; n=4) (see

Figure 37).

When looking at resources, it was outstanding that, in comparison to networks and MSPs, **all partnerships (100%; n=4) reported that their partners have provided financial resources**. Moreover, all respondents (100%; n=4) confirmed that the partnership provided the project with expertise and helped establishing new contacts at the national level (i.e., within the country) (see Figure 33 – Annex).

Regarding the type of work with partners from the partnership, the *mechanisms*, it can be seen that in all partnerships, respondents stated that they have received as well as provided information from/ to their partners, consulted each other on matters of joint concern and that they jointly defined project objectives (100%; n=4). Yet only one project confirmed that they jointly steered the project which might be an indication for a rather low level of engagement of partners in the project's strategic decisions (see Figure 34 – Annex).

Yet, partnerships were characterised by a high degree of formality (index of 0.74). This indicates that for these partnerships, roles and responsibilities were, on average, formally documented[8] (see Figure 30 – Annex).

The survey also specifically asked for an assessment of the *characteristics of communication* and interaction with stakeholder groups involved in the cooperation structure as part of the of social network analysis with the systemic approach of relational coordination (see chapter 3). In terms of frequency, timeliness, accuracy, and its orientation towards problem-solving of communication[9], respondents of partnerships have assessed the **quality of communication to be high**, i.e., an index of 0.88 (i.e., with a range from 0 to 1) (see Figure 30– Annex). Hereby, the communication quality in partnerships with other VLIR-UOS projects and other projects of Belgian development actors was assessed to be high. The same applies to the quality of communication in partnerships with local/regional governments from the Global South (see Figure 38 – Annex). The results of the online survey show further that the actors **in partnerships do not communicate very frequently** (i.e., an index of 0.65) (see Figure 30 – Annex). Thereby, however, communication in partnerships with other research institutes / higher education institutions from Belgium / Europe were rated to be rather frequent (mean value of 4.00) for three partnerships that cooperated with them (see

[8] This finding is not surprisingly as the cooperation structures were, among others, defined by their degree of formality (see data annex).

[9] To this end, respondents were asked to assess three statements regarding the quality of communication for each stakeholder group the interact with along a 6-point scale (1 – strongly disagree to 6 – strongly agree).

Figure 39- Annex).

Further it was shown that for **partnerships the level of shared goals, mutual respect and partners knowledge about the project was high**.[10] Thus, stakeholder groups in partnerships show a high knowledge about the work of the evaluated projects (i.e., an index of 0.88) (see Figure 30 – Annex). Thereby, all relevant stakeholder groups seem to be informed (i.e., all stakeholder groups having an average of 4.00 -5.00 (see

[10] Within the concept of relational coordination, these categories are seen as an operationalisation of the level of trust within the relationship.

Figure 39- Annex). Moreover, respondents stated that, on average, stakeholders share the same goals that the respective project pursues (i.e., an index of 0.86 for partnerships) and recognize or mutually respect the work of the project (i.e., an index of 0.86) (see Figure 30 – Annex). Hereby, however, it was noted that, on average, partnership projects rated the occurrence of shared goals with and the recognition of the work of the project by other VLIR-UOS projects and other projects of Belgian development actors to be rather low (i.e., a mean value of 3.00 along a 6-point scale (1 – strongly disagree to 6 – strongly agree)) (see Figure 42 and Figure 43 – Annex).

Finally, the respondents assessed the **process of knowledge co-creation also to be high**, i.e., an index of 0.86 (see Figure 30 – Annex). In this regard, the data shows that for one partnership (n=1), the interaction with public sector stakeholders from the respective country was assessed to be high (Figure 41 – Annex). Again, as for the degree of shared knowledge, three partnerships stated that the process of knowledge co-creation is rather high with other research institutes/ higher education institutions from Europe / Belgium (mean value of 4.74; n=3).

5.1.1.3 Networks

For networks, the most prominent objectives were to **strengthen research and educational capacities** (93%; n=93 and 71%; n=71) while only 44% of projects with networks (n=44) indicated that they aimed to strengthen organizational capacity and 62% (n=62) aimed to strengthen uptake of knowledge, service and application (see Figure 28 – Annex).

To support the achievement of these objectives, the **most selected stakeholder groups were local public sector actors** (e.g., local or regional authorities) in the respective countries of the Global South:

1 Public sector stakeholders (e.g., local/ regional government) form the respective country,
2 Other research institutes / higher education institutions form the respective country and
3 Public sector stakeholders (e.g., national government) form the respective country (see Figure 6 – Annex).

Regarding the *motivation* for networks, most respondents (71%; n=66) stated that they **actively searched for suitable partners for this project** and **saw the possibility to work on innovative solutions together** (61%; n=57). Thereby, more than half of the respondents (58%; n=54) confirmed that they got to know their network members through professional events, trainings, exchange meetings etc (see Figure 37).

When looking at *resources* and different *mechanisms* of cooperations, in comparison to MSPs, a relatively low number of respondents from networks confirmed that their network partners helped **establishing new contacts at the national level** (66%; n=58). Instead, their partners mainly supported in creating access to beneficiaries and/or end-users (82%; n=72). Also, they helped in disseminating the work of the project (78%; n=69) (see – Annex). Regarding the *mechanisms*, it can be seen that in comparison to MPS, joint work in networks was mostly related to information exchange. Thus, most respondents state that they provided their network members with information (77%; n=72), they consulted each other on matters of joint concern (74%; n=69) or exchanged working material (71%; n=66) (see Figure 34– Annex). Consequently, the degree of shared knowledge within the network (i.e., if stakeholder were provided information and/or gave information by/to the project) was rather low (index of 0.47) (see Figure 30 – Annex).

Moreover, the degree of formality (index of 0.22) was very low which means that networks were rather informally agreed upon based on common interests and respective *roles and responsibilities* were not formally defined (see Figure 30 – Annex).

In addition, networks are **characterised by a rather high quality of communication** (i.e., index of 0.77) whereby the communication with actors in Belgium / Europe, namely public sector stakeholders (e.g., national government) and private sector stakeholders (e.g., medium / large companies, cooperatives) was assessed to be accurately, in a timely manner and helpful in challenging situations (i.e., 6 – strongly agree) (see Figure 38 – Annex). Yet, the quality of communication index is lower than the Indices for partnerships and MSPs (see below). Also, the overall **frequency of communication within networks is comparably low** with an index of 0.55. Thereby, the communication with stakeholder groups located in Belgium/ Europe (i.e., national civil society organizations from Belgium/Europe and public sector stakeholders (i.e., national government) is most frequent (see Figure 38 - Annex).

Further it was shown that for **networks the level of shared goals, mutual respect and partners knowledge about the project was high**.[11] Thus, stakeholder groups in networks show a high knowledge about the work of the evaluated projects (i.e., an index of 0.88) (see Figure 40 – Annex). Thereby, other research institutes / higher education institutions from Belgium / Europe seem to be very informed (mean value of 4.69, n=24) (see Figure 11 - Annex). Additionally, respondents stated that, on average, stakeholders share the same goals that the respective project pursues (i.e., an index of 0.79 for) and recognize or mutually respect the work of the project (i.e., an index of 0.78) (see Figure 30– Annex). Hereby, many promoters stated that they share similar goals as other research institutes/ higher education institutions (mean value of 4.5; n=24) as well as with public sector stakeholders such as national governments from the Global South (mean value of 4.1; n=40). While only few networks include these stakeholders (n=4), the level of shared goals with public sector stakeholders (i.e., local and regional governments) from Belgium/ Europe is assessed to be comparatively high as well (mean value of 4.5; n=4) (see Figure 43 – Annex).

Finally, the respondents assessed the **process of knowledge co-creation to be rather high while its index is lower than for partnerships and MSPs**, i.e., an index of 0.76 (see Figure 30– Annex). Hereby, data shows that for networks the knowledge co-creation process with national civil society organisations from the respective country was assessed to be rather low which might be an indication for power imbalances in these types of networks (see Figure 41 – Annex).

5.1.1.4 Multi-Stakeholder-Partnerships (MSPs)

For **MSPs**, the most prominent objectives are strengthening research (85%; n=20) and educational (60%; n=12) capacities and uptake of knowledge, services and applications (70%; n=14). Yet only 13% of projects with MSPs, indicated that they aimed to strengthen organizational capacity (see Figure 28 - Annex).

Looking at the cooperation structures separately, it appears that among MSPs, the most prominent stakeholder groups are the following:

1 Other research institutes/ higher education institutions form the respective country,
2 Public sector stakeholders (e.g., local/ regional government) form the respective country and

[11] Within the concept of relational coordination, these categories are seen as an operationalisation of the level of trust within the relationship.

3 Other VLIR-UOS projects and other projects of Belgian development actors.

Hereby, in comparison to networks, **stakeholder groups from Belgium/Europe are among the most prominent stakeholder groups**. Also, the data show that the percentage distribution of interaction with stakeholder groups is quite similar for networks and MSPs[12] (see Figure 27 - Annex).

Compared to networks and MSPs, nearly all respondents (80%; n=16) of MSPs stated that they **saw the possibility to work on innovative solutions together** as their motivation to form a MSP. Thereby, similar as for networks, most respondents (75%; n=15) confirmed that they got to know their network members through professional events, trainings, exchange meetings etc. (see Figure 36 - Annex).

When looking at *resources*, most respondents of MSPs **reported that their partners helped disseminating the work of the project (90%; n=18), create access to beneficiaries/ end – users (85%; n=17) and establishing new contacts at the national level (85%; n=17)** (see Figure 33 - Annex). Regarding the type of work with partners, the *mechanisms*, from MSP, it can be seen that **in comparison to networks, more joint work on strategic eye-to-eye level was conducted**. Thus, most respondents state that they jointly defined project objectives (90%; n=18), worked on coordinating activities, exchanged work materials and implemented projects together (85%; n=17) (see Figure 34– Annex). Thus, within MSPs the primary type of work was not knowledge exchange (i.e., they have a rather low index of shared knowledge of 0.41) (see Figure 30 – Annex). Furthermore, MSPs were characterised by a high degree of formality (index of 0.79). This indicates that for these MSPs, roles and responsibilities were, on average, formally documented[13].

Like partnerships, MSPs are **characterised by a high quality of communication** (i.e., index of 0.83). Thereby, the communication with actors in Belgium / Europe, namely public sector stakeholders (e.g., national government) and private sector stakeholders (e.g., medium / large companies, cooperatives) was assessed to be highly accurately, in a timely manner and helpful in challenging situations (i.e., 6 – strongly agree) (see Figure 38 - Annex). Regarding the **frequency of communication among MSP partners, the survey findings show that, on average,** the frequency is rather low (i.e., index of 0.55) and the same as for networks (see sub-chapter above). Among the stakeholder groups involved in MSPs, the communication with actors located in Belgium/ Europe (i.e., national civil society organizations from Belgium/Europe and public sector stakeholders (i.e., national government) is most frequently (see

[12] In the Annex, all stakeholder groups the projects have interacted with are listed.

[13] This finding is not surprisingly as the cooperation structures were, among others, defined by their degree of formality (see data annex).

Figure 39 - Annex). The *qualitative data* is in line with these findings. The quality of communication is judged to be high by stakeholders engaged in the cooperation structure overall. As to the frequency of interaction, communication was clearly more focussed on the academic sphere, while interaction with external stakeholders was less frequent. Thus, regular meetings and spaces for dialogue were often limited to the engagement of academic stakeholders (e.g., through monthly meetings) rather than the cooperation structure at large. Some external stakeholders would have liked to be more strongly engaged in communication processes.

Further it was shown that for **MSPs the level of shared goals, mutual respect and partners knowledge about the project was rather high.** Thus, stakeholder groups in MSPs show a high knowledge about the work of the evaluated projects (i.e., an index of 0.84) (see Figure 30 – Annex). Hereby, several promoters of MSPs reported a rather high degree of knowledge of other research institutes and higher education institutions placed in both locations (i.e., mean value of 4.5 for institutes in the Global South (n=11) and Belgium / Europe (n=6) as well as other VLIR-UOS projects and Belgian development actors (n=5) (see Figure 40 – Annex). Furthermore, respondents confirm that stakeholders share the same goals that the respective project pursues (i.e., an index of 0.82) and recognize or mutually respect the work of the project (i.e., an index of 0.85) (see Figure 30 – Annex).

Regarding the process of knowledge co-creation, MSPs have a similar high index as partnerships, i.e., an index of 0.83 (see Figure 30 – Annex). Hereby, data shows that for MSPs the knowledge co-creation process with public sector stakeholders from the respective country was assessed to be rather low, while a lot of MSP promoter stated a rather high process of knowledge co-creation with other research institutes / higher education institutions from the respective country in the Global South (mean value of 5.4; n=11) (see Figure 41 – Annex).

5.1.2 Contribution of networks, partnerships and MSPs to effectiveness

In order to assess the contribution of various cooperation structures (such as networks, partnerships, and MSPs) on the projects' effectiveness, this chapter is divided into three subchapters. The first subchapter analyses the effectiveness of the project (in relation to the educational and research objectives) for the three types of cooperation. Then, the approaches used by these cooperation structures to increase effectiveness are examined. Building upon the hypotheses outlined in Chapter 3, in the second subchapter the specific features of cooperation structures that contribute to a project's effectiveness are analysed. Finally, in the third subchapter synergistic effects of these features in order to identify the most effective features of cooperation structures in relation to project effectiveness are explored.

5.1.2.1 Effectiveness of the projects and related approaches adopted by the cooperation structures

When analysing the achievements in terms of projects' effectiveness based on the type of cooperation structure, it is observed that MSPs exhibit a higher average index[14] (0.83) for research capacities compared to networks (0.78). On the other hand, networks tend to outperform MSPs in terms of educational capacities, with an average index of 0.78, whereas MSPs have a slightly lower index of 0.72. For partnerships, the average achievement of educational capacities (0.81) was higher than for research capacities (0.74).

[14] These indices were compiled by Syspons and range between 0 and 1. A higher value indicated a better achievement of the respective area of interest.

Looking now at these aggregated indices in detail, the survey specifically asked for an assessment of the level of goal attainment at the educational and research capacity development level. To this end, respondents were asked to assess the questions along a 6-point scale (1 – strongly disagree to 6 – strongly agree). When looking at the role networks, partnerships and MSPs play in contributing to educational goals**,** slight differences emerge between networks and MSPs, while overall, networks tend to score higher (see Figure 13). As can be seen in the Figure 13, **networks have on average better results than MSPs in all three capacity development categories for educational capacity**. Partnership structures score best, although again, the low number of such structures in the sample make a comparison difficult. A possible explanation for the strong results of networks in terms of educational goals could be the fact that they may be more strongly focused on the higher education sector, encompassing projects that aim at objectives such as curriculum development or teaching methods.

Figure 13: Educational goal achievement (by type of collaboration structure)

Answer	*N Projects*	*n.a.*	*Mean*	MSPs		Networks		Partnerships	
Other, specify:	8	6	4,88	**6,00** 3	1,13	**4,20** 5	-0,67		
The project participants have state-of the-art didactical competences.	68	10	4,84	**4,60** 10	-0,24	**4,88** 56	0,04	**5,00** 2	0,16
(New) courses address state-of-the-art contents and/or methodologies.	70	6	4,73	**4,50** 11	-0,23	**4,74** 56	0,01	**5,33** 3	0,60
(New) curriculum/curricula have state-of-the-art contents and are well-structured.	69	5	4,35	**4,09** 11	-0,26	**4,37** 55	0,02	**4,83** 3	0,49

Source: Syspons, 2023

A different picture emerges with regards to research-related capacity development goals. In this regard, **projects working in a MSP structure assess their level of success higher, in comparison to those working within a network structure** (see Figure 14). While this extends to all items displayed below, the highest differences emerge with regards to achieving that project participants have state-of-the-art knowledge on research practices and to project participants attending more academic conferences. As MSPs imply a direct link to sectors which potentially apply the research produced, it can be assumed that through the interaction between the academic and non-academic actors, the research acquires a higher relevance in the sense of treating state-of the-art topics and of producing innovative and socially relevant knowledge. The treatment of such topics could in turn lead to a broader interest in the produced research and thus a more active participation in academic conferences.

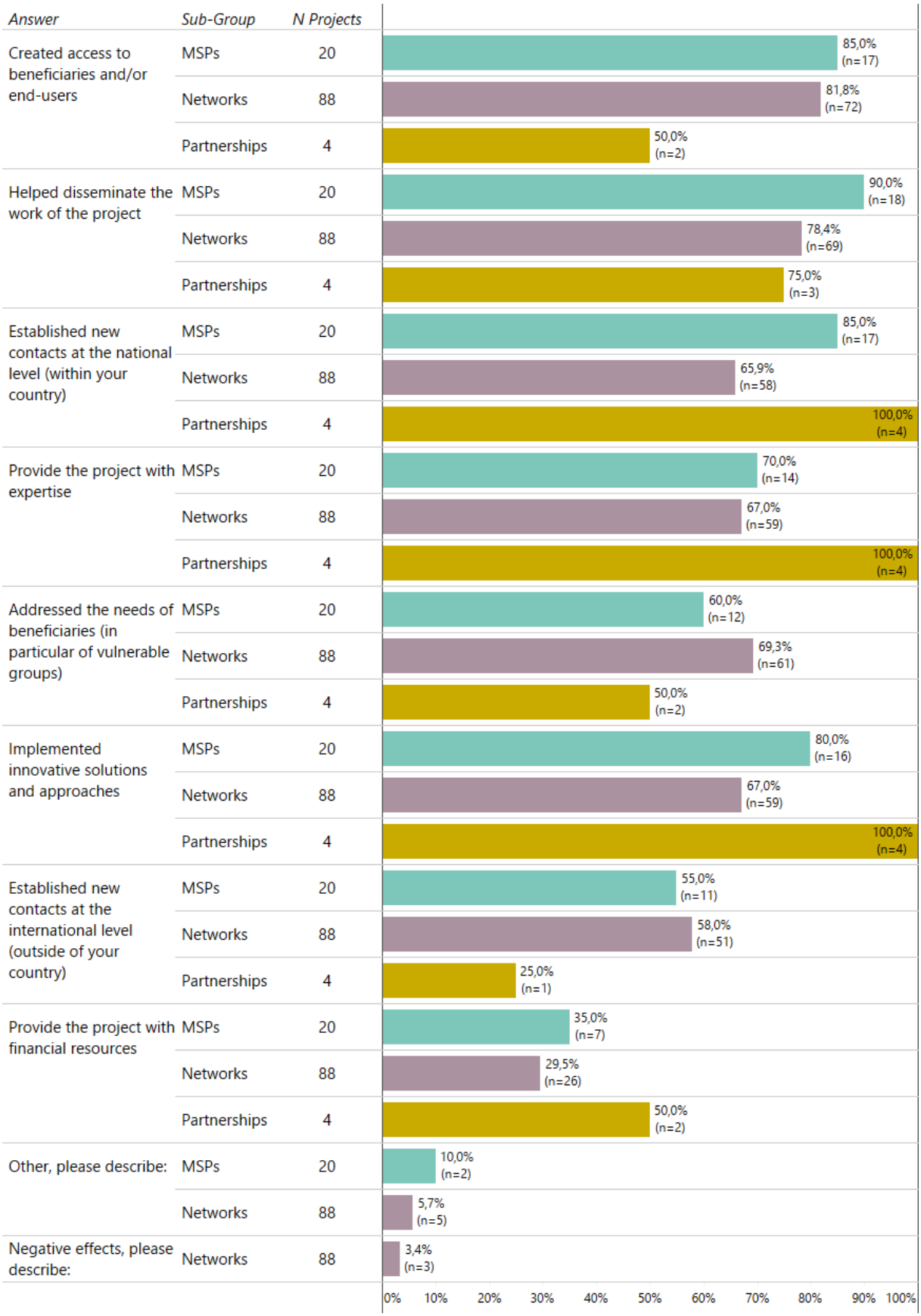
Figure 14: Research goal achievement (by type of collaboration structure)

Answer	N Projects	n.a.	Mean	MSPs		Networks		Partnerships	
The project participants have state-of the-art knowledge on research practices (with regards to the specific research field).	103	0	5,03	**5,34** 16	0,31	**4,96** 83	-0,07	**5,25** 4	0,22
Other, specify:	13	4	5,00	**5,00** 5	0,00	**5,00** 8	0,00		
The partner institution generates more academic publications in (inter-)national peer reviewed journals.	104	0	4,80	**5,00** 17	0,20	**4,80** 83	0,00	**3,88** 4	-0,92
The project's participants attend more academic conferences.	100	6	4,73	**5,17** 15	0,44	**4,70** 82	-0,03	**3,50** 3	-1,23
Research facilities at the partner institution allow for state-of-the-art research.	102	2	4,41	**4,47** 17	0,06	**4,35** 82	-0,06	**5,67** 3	1,25

Source: Syspons, 2023

Regarding the approaches of networks and MSPs to contribute to project's effectiveness, it can be noted that the **approaches differ only slightly among the three types of cooperation structure** (see Figure 15). Results with regards to partnerships differ more strongly to the other two types, which could however be explained by the low number of partnership structures in the project sample. Overall, the data suggest that – on the one hand – MSPs are best to (1) create access to beneficiaries and/or end-users, (2) help disseminate the work of the projects, (3) establish contacts at the partner country level, (4) provide the project with expertise, (5) implement innovative solutions and approaches and (6) provide the project with financial resources. On the other hand, networks score highest when it relates to (1) addressing the needs of beneficiaries (in particular vulnerable groups) and (2) to establishing contacts at the international level. A partnership structure seems to strongly benefit the (1) establishment of new contacts at the partner country level, (2) the provision of expertise for the project and (3) the implementation of innovative solutions and approaches.

Figure 15: Effects of collaboration with other stakeholders (by type of collaboration structure)



Source: Syspons, 2023

5.1.2.2 Specific contribution to effectiveness by type of cooperation structure

Drawing upon the theoretical framework outlined in chapter 3, the active involvement of all relevant parties was identified as a crucial factor for the contribution of cooperation structures on the effectiveness of the projects. Consequently, it is expected that cooperation structures involving relevant stakeholders - including those with a vested interest or affected by the issue at hand - will yield greater effectiveness in achieving the projects' research and educational objectives (see 5.1.2.1). Thereby, the qualitative and quantitative findings show that **most projects confirmed the involvement of relevant actors in their cooperation structure**. However, differences in the constellation of stakeholders within MSPs, partnerships, and networks were identified affecting the achievement of educational and research goals. Especially, **for networks some limitations were observed.**

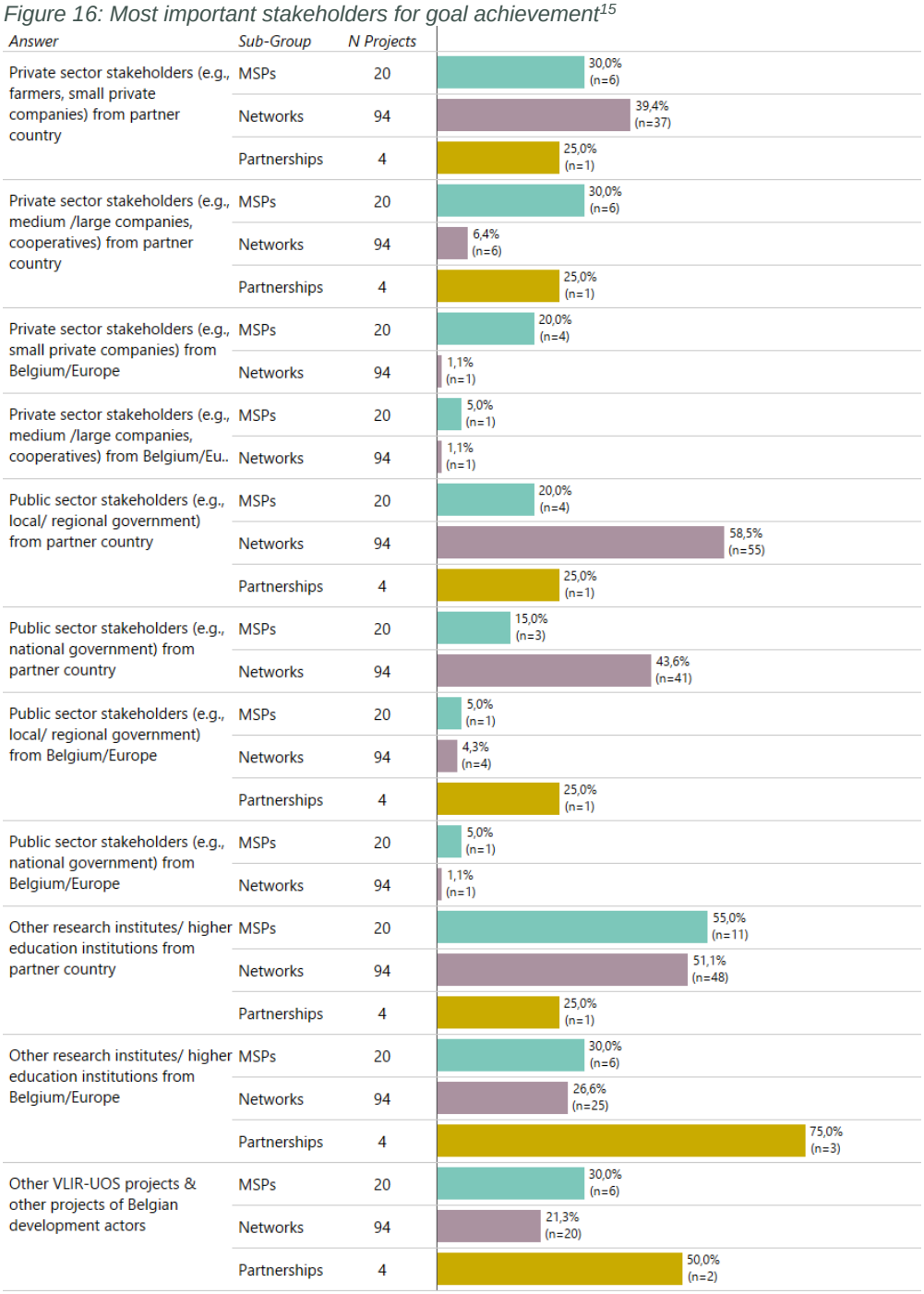
To allow for a more comprehensive analysis, the survey data provides findings on the specific stakeholder groups with which the projects collaborated (see

Figure 16). This shows that partnerships tend to focus on academic actors from Belgium and Europe, while networks primarily engage with actors from the partner country. In comparison, **MSPs show a more diverse geographic engagement, involving actors from both the Global North and South and a wider range of stakeholders from within and outside academia** (e.g., demonstrating relatively high engagement with NGOs).

In alignment with the survey data, the findings from the field visit show that while for MSPs, the diverse involvement of actors contributing to projects' effectiveness was confirmed, for networks, some limitations were identified. For instance, some networks remained strongly academic in their core, while stakeholders outside academia were involved only occasionally and more on a needs-based level. Strengthening educational and research capacities beyond the academic community was therefore often not pursued, which limited the effectiveness of the projects.

Moreover, the difficulty to raise the interest of external stakeholders or to get them truly involved was stated as another limitation affecting projects' effectiveness. For instance, a network aiming at reforming informatics curricula wished to engage with potential employers to understand what their expectations and needs towards IT alumni were on the one hand and to try and improve employment and internship conditions for the alumni on the other hand. Stakeholders involved in this network reported that initially, it was hard to motivate the potential employers to engage with them. Thus, due to the lack of integration of non-academic actors, the outputs developed by the project did not address the needs of these actors, which affected the overall achievement of the project's objectives (P_5). Similarly, members from a project researching the impact of saltwater intrusion on water resources and irrigation stated that farmers (i.e., members of the external stakeholders the structure wished to engage with) were hard to reach which also led to limitations of the project's effectiveness (P_8).

Figure 16: Most important stakeholders for goal achievement[15]



Source: Syspons, 2023

Another contribution factor of the type of cooperation structure to the projects' effectiveness is the extent to which contextualised, socially relevant and practice-oriented knowledge products were produced. Hereby, the quantitative data shows that **most networks helped to address the needs of the project's beneficiaries** (in particular of vulnerable groups) (69%; n=61) leading to context – specific products and thus strengthened research and educational capacities (i.e., the projects' objectives).

[15] For NGOs from Belgium / Europe and the partner countries, regional agencies and international NGOs and agencies, the percentages – among all three cooperation structures – were rather low and are thus not shown graphically.

Thereby, relatively fewer MSPs (n=12; 60%) and partnerships (n=2; 50%) confirmed this contribution to project effectiveness compared to networks (see Figure 15). The results of the field visit show that projects were generally well-rooted in the implementation context and no differences were found between networks, partnerships and MSPs' contribution to goal achievements in this regard. However, as mentioned above, it was found that most structures remained academic in their core, with some engaging more with their environment than others. In this sense, the social relevance and practical usability of products varied and thus the contribution of the cooperation structure to effectiveness. On the one hand, this was linked to the different foci and objectives defined. As an example, two projects aimed to improve curricula in the fields of informatics and statistics. Accordingly, the academic community was their target population. In these cases, the social relevance was narrower, benefitting primarily academia rather than society at large. Nonetheless, the abovementioned project clustered as a network which worked in the fields of informatics made an effort to engage external stakeholders to make sure the reformed curricula would correspond to the needs and realities of the job, thus increasing the achievement of the project's objectives (P_2).

Furthermore, the degree of broader ownership during project implementation, which includes having clear roles and responsibilities for all parties involved and their sustained engagement throughout the project, significantly influences the contribution of the cooperation structure on project effectiveness. According to the defined criteria (refer to annex - data analysis), **partnerships and MSPs are per definition characterized by a high level of formality** (as shown in Figure 30), indicating that roles and responsibilities are formally defined and agreed upon within the cooperation structure. Networks, in contrary, are expected to operate with less formalized and relatively unclear roles and responsibilities within the network. Consequently, networks are expected to have a lower level of ownership during project implementation and thus a lower contribution to project effectiveness in this regard.

The results of the field visit confirm the quantitative data, as MSPs generally had a continuous commitment of a core team leading the implementation processes and the stakeholders involved perceived the roles and responsibilities to be clear throughout the project implementation. Thus, the level of broader ownership was quite high, leading to better achievement of project objectives. However, for the partnership included in the sample, roles and responsibilities were stated to be rather unclear as the communication between the involved stakeholders could have been stronger (P_9). Yet, the finding might not be representative as it only relates to one included partnership. For networks, as mentioned above, in many cases the engagement with external actors was rather needs-based. Accordingly, not all stakeholders remained engaged in all cases throughout implementation which limits the extent of broader ownership and thus the contribution to projects' effectiveness.

Also, the degree of mutual benefits created throughout project implementation is defined as a contributing factor of the cooperations to projects' effectiveness. The quantitative and qualitative data thereby shows that **– independent of the type of cooperation structure – actors involved were tied by a common interest /shared goals in a broader sense**, which motivated their engagement in the first place and thus led to higher contributions to projects' goal achievement (see Figure 30 – Index on Shared Goals). Beyond that, the quantitative data and the qualitative results confirm that in most cooperation structures the actors mutually benefited from each other throughout the project implementation (i.e., deeper learning/sensitisation through exchange) which led to strengthened research and educational capacities involved. Hereby, stakeholders involved in the field visits reported benefits created by the cooperation on different levels: access to contacts/network (enabling research), knowledge gains (e.g., on a specific topic, with regards to project management, collaborative/participatory work including

diverse disciplines and/or stakeholders), benefits in terms of personal development (e.g., enhanced education opportunities through easier access to (international) mobility). Thereby, the quantitative data shows that projects not only received information and training throughout their cooperation but also provided information and training to the actors involved in their cooperation structure and thus strengthened actors' educational and research capacities (see Figure 34 – Annex).

Among the three cooperation structures, **MSPs seem to create the highest mutual benefits** and thus contribute most to projects' effectiveness in this regard. Thus, most MSPs confirmed providing information and training, exchanging working material with their partners, coordinating activities with them, and consulting each other on matters of joint concern (i.e., at least 80% (n=16) of MSP or more). For the sampled partnership and networks, mutual benefits were only partially confirmed and thus their contribution to projects' effectiveness in this regard limited. As mentioned earlier, challenges related to communication were reported among stakeholders, leading to limitations in achieving mutual benefits and thus in contributing to the project's effectiveness (P_9). Also, in an exemplary network, the mutual benefits from the project were not immediately tangible for all stakeholders involved. More specifically, the relevance of research conducted about saltwater intrusion was not evident to all of the farmers whose land was used to obtain soil samples right away. Consequently, the lack of awareness regarding mutual benefits resulted in decreased farmer engagement, thereby reducing the networks' effectiveness in enhancing research and educational capacities (P_8).

Generally, the findings from the field visit show further that a deepened learning/sensitisation through the engagement in cooperation structures which contribute to projects' effectiveness are mostly limited to the academic community. For example, transdisciplinary exchange, key feature of one of the networks allowed involved academics to deepen their knowledge on the treated topic, integrating research perspectives they would not have thought of independently (P_1). As to sensitisation, actors involved mostly referred to the learnings form the intercultural exchange experience between Belgian and partner countries stakeholders, covering joint reflections on aspects such as different learning cultures and approaches. Aside from this, the collaboration with researchers from other fields also sensitised researchers on new topics and future opportunities. For example, in a network one Vietnamese professor, whose expertise lays in the field of beef, was sensitised on opportunities concerning dairy production by implementing a project together with dairy-focused researchers in Sub-Sahara Africa (P_6).

Moreover, the establishment of a learning culture to take up new impulses and develop innovative learning / research approaches was identified as another contributing factor for projects' effectiveness. Hereby, quantitative and qualitative data shows that **MSPs, networks and partnerships were characterised by a learning cultural and the openness to integrate new/innovative approaches**, **with some limitations.**

The survey results indicate that a majority of respondents from MSPs (n=16; 80%), partnerships (n=4; 100%), and networks (n=16; 67%) confirmed the implementation of innovative solutions and approaches through their collaboration with other stakeholders which contributed to improved research and educational capacities. The qualitative findings align with the survey results, further supporting the conclusions (see Figure 15). Thereby, good practice examples from the field visits show that stakeholders stressed that joint reflections took place, e.g., in form of kick off workshops, progress reviews and dissemination meetings. These facilitated mutual learning processes encompassing various aspects, including learning from different working methods (e.g., teaching and interaction approaches) influenced by distinct contextual conditions. They also encompassed the implementation of action/participatory research, such as the development and testing of new business models. Furthermore, there was an exchange of knowledge on specific scientific inquiries or research methods, contributing to the overall mutual learning

within these structures. These learning processes resulted in various gains, such as the opportunity to engage in diverse research approaches and methodologies. Additionally, participants reported the benefit of looking at research problems from different perspectives, leading to a deeper and more comprehensive understanding of the subject matter. Thus, the cooperation structures contributed to more state-of-the-art research and strengthened educational capacities in this regard.

As mentioned above, several stakeholders considered that conditions for learning within academia varied between Belgium and the partner countries (e.g., availability of internet access and access to scientific papers, adequate equipment). Accordingly, knowledge transfer at the academic level was directed more from Belgium to the partners countries than vice versa, although several examples for knowledge-transfer to Belgium were found, too. The Belgian actors mainly profited from partner knowledge on local circumstances and contacts to relevant stakeholders. For example. in a biodiversity project in the DRC, the Belgian actors benefited from the partners' knowledge on local species. In another example, a governance project in Ecuador, the partners' knowledge on participative processes and the needs of the population were highly beneficial for the project. Academics from different partner countries reported to have obtained scientific input from their Belgian peers, and some of the Belgian stakeholders were able to create new locally relevant trainings or obtained insights for adjusting or applying research methods to new questions and data. Other actors also stressed the gained knowledge with regards to project design and management through the cooperation. This did however not apply to all cooperation structures and implementation contexts, because in some cases the promoters from partner countries had already implemented multiple VLIR-UOS projects in the past.

Regarding limitations in terms of learning culture, some stakeholders stated the wish for a more intense exchange with other stakeholders involved in implementation processes and thus a higher contribution to projects' effectiveness in this aspect. In a few projects, stakeholders worked rather independently on separate work packages and the mutualisation of the different products remained limited, both within and beyond academia. Generally, the academic stakeholders engaged in the projects were more involved in regular exchange, while the extent to which a more comprehensive learning culture also included non-academic actors varied. External stakeholders often constituted sources of information for researchers and would be informed about the research produced based on this information rather than being truly involved in the knowledge production itself.

Along the concepts of relational coordination and co-creation (see chapter 4), the facilitation of comprehensive co-creation processes (multiplication of and mutually approved sites of knowledge-production, stronger validity, and reliability of co-created products) was defined as another contributing factor to projects' effectiveness. Hereby, the index on the extent of co-creation processes shows **that for all three cooperation structures, many respondents confirmed the contribution to co-creation processes by their cooperation structure** and thus the strengthening of research and educational capacities (see Figure 30). While the qualitative findings confirm that for MSPs and most networks, co-creation processes were facilitated, for the partnership no comprehensive co-creation process neither within project team nor with non-academic actors was reported and thus no contribution to the project's effectiveness in this regard.

As mentioned beforehand, the depth of engagement with stakeholders outside academia varied. Thus, the findings of the field studies show that the degree to which a knowledge production process took place externally varied, too. Similarly, the extent to which products were fully validated varied and thus the contribution of the cooperation structures to projects' effectiveness in this regard. For example, for

some networks, the projects primarily aimed at collecting data. In these cases, the researchers came in with a clear idea of what they were looking for (P_2, P_3). E.g., one project aimed at collecting data in tropical forests. Though local communities were consulted to find out more about local species and trained to collect samples, they did not engage in "scoping" the research and thus the extent to which research capacities were strengthened was limited (P_2). In other cases, it was defined in a more participatory manner what the final product should look like (P_1,6, 7). Hence, a contribution to strengthened research capacities was observed in this case.

Having a pool of transdisciplinary expertise within the cooperation structure, was defined as another contributing factor to tackle complex development problems and thus increase the projects' effectiveness. Based on the conceptual framework (see chapter 3), it was expected that MSPs provide most transdisciplinary expertise among the three types of cooperation structure as it involved several actors from different fields. Through a diverse set of expertise, an enhancement of research and educational capacities (i.e., projects' objectives) was anticipated. Consequently, it was expected that partnerships provide less expertise. Yet both – quantitative and qualitative data – **do not confirm a greater pool of expertise for MSPs than for partnerships or networks** and thus a contribution to projects' effectiveness in this regard. As can be seen in Figure 15, all partnerships confirmed that the collaboration with other stakeholders led to higher expertise benefiting the project's achievements (n=4; 100%). Further most MSPs (n=14; 70%) and a similar share of networks (n=59; 67%) successfully pooled the expertise needed to tackle the specific problems they worked on. Therefore, it cannot be concluded that cooperation structures with more stakeholder groups automatically lead to higher expertise benefiting the project. The presence of a diverse range of stakeholders does not guarantee a greater pool of expertise. Other factors, such as for example the active engagement and collaboration of stakeholders, the nature of knowledge exchange, and the specific context of the project, play also a crucial role in determining the level of expertise within the cooperation structure and thus the contribution to projects' effectiveness.

Another important factor that contributes to the effectiveness of projects is the successful communication of project results facilitated by the cooperation structure. Hereby, the quantitative findings show that generally **most cooperation structures (approximately 75%) – regardless of the type of cooperation structure – have facilitated the dissemination of results of the projects** (e.g., additional audiences for project outputs) leading to a larger outreach and thus contribution to projects' effectiveness (see Figure 33). The qualitative data shows that for MSPs and most networks, a facilitation of dissemination of projects results was confirmed. While for the partnership, the communication of project results was confirmed, the stakeholders involved stated that it could have gone further (P_9).

For MSPs and networks, an efficient channel to successfully communicate project results was to present final results to a broader set of stakeholders, e.g., through cooperation with a third-party actor that could provide access to relevant entities in the private sector (e.g., developed business models were handover to the chamber of commerce) (P_11)). Also, products (e.g., open access courses, training material, online publications, videos) were made available to a wider public (P_5, 10). Hereby, one successful channel was identified to be the Belgian embassy involved to publish information about one of the network projects in Vietnam, thus making information about it available to the wider public. At one results presentation, media were present and reported locally on the project results. Another network successfully disseminated the results of the project to the local level. With regards to uptake, new learnings were directly taken up by the target group in their day-to-day practice (P_6). In another network, a strong exchange between government authorities and informants was build which went beyond the dissemination of projects results and lead to an uptake of data produced through the network by the respective government authorities (P_7). As networks, MSPs and partnerships helped to increase the outreach

and uptake of project results, they contributed to projects' effectiveness in terms of educational and research capacity development.

Lastly, another contributing factor of cooperation structures to the projects' effectiveness are multiplication effects leading to an incubation of broader knowledge networks. The results from the survey show that more MSPs confirmed the contribution of MSPs to the establishment of new contacts at the *national level* (n=17; 85%) in comparison to networks (n=58; 66%). However, for establishing contacts at the *international level*, the shares of these two types of cooperation structure were approximately the same (n=51; 58% for networks and n=11; 55% for MSP). For partnerships, contacts were predominantly established on the national level (n=4; 100%) and to a lesser extent on the international level (n=1; 25%) and thus contributions to research and educational capacity development rather achieved at the national level.

The qualitative data, however, presents a more pessimistic view. Even though new contacts at the (inter-) national level are confirmed in the field studies as well, the findings indicate that **neither MSPs nor the partnership included in the sample were successful in establishing broader knowledge networks** and thus contributing to projects' effectiveness through this channel. Yet, some networks were identified which helped incubate broader knowledge networks. Examples of multiplying effects were the emergence of new cooperations with additional academic and non-academic actors (P_4) or the inclusion of additional research institutes during project implementation (P_7). In another network, a broader/new set of stakeholders engaged with a follow-on project, thus not contributing to the effectiveness of the single project but an effective engagement in the field of research overall (P_2). While some other networks reported that an incubation of broader knowledge is plausible (e.g., through exchange formats including a great variety of stakeholders), evidence was missing (P_8, P_6).

Table 1: Summary – Specific contribution of MSPs, networks, and partnerships to projects' effectiveness

#	Established hypothesis	MSPs	Networks	Partnership[16]
Networks/partnerships/MSPs may contribute to project **effectiveness**,				
1	if all parties interested in/affected by the problem at hand are invited to and willing to cooperate (access to broader set of stakeholders, enabling research).	Confirmed	Partially confirmed	-
2	if the cooperation is set up in such a way that participation leads to the rootedness of the project in its implementation context and the creation of socially relevant and practically usable products (contextualised, socially relevant and practice-oriented knowledge production).	Partially confirmed	Confirmed	-
3	if the roles and responsibilities of all parties involved are always clear and they remain engaged throughout project implementation (broader ownership in implementation phase).	Confirmed	Not confirmed	-

[16] Due to the limited scope of the survey, which included only four partnerships, and the field visits which involved just one partnership, it was not possible to draw a comprehensive conclusion regarding the achievements of partnerships with respect to the various hypotheses.

4	if the common interest of actors involved is maintained and mutual benefits are created throughout project implementation with the help of effective structures for actors to communicate and interact (deeper learning/sensitisation through exchange).	Confirmed	Partially confirmed	-
5	if a learning culture open to take up new impulses is established (development of innovative learning/research approaches).	Confirmed	Confirmed	-
6	if comprehensive co-creation processes are facilitated (multiplication of and mutually approved sites of knowledge-production, stronger validity and reliability of co-created products).	Confirmed	Confirmed	-
7	if expertise in line with the goals of the cooperation is available (pooling of (transdisciplinary) expertise to tackle complex development problems).	Confirmed	Partially confirmed	-
8	if the cooperation structure enables a successful communication of project results (facilitation of dissemination/uptake).	Confirmed	Confirmed	-
9	if multiplication effects can be reached that lead to an enhanced cooperation structure that adds up to the goals pursued by the project (incubating broader knowledge networks).	Partially confirmed	Confirmed	-

Source: Syspons, 2023

5.1.2.3 Successful features of partnerships, networks and MSPs to achieve effectiveness

To assess which single features of these cooperation structures were most successful to achieve effectiveness, regressions for partnerships, MSPs and networks were constructed using data obtained from the survey. The regressions show the influence of the:

- frequency of communication,
- quality of communication with stakeholder members of the MSP or network,
- stakeholder's knowledge about the project,
- recognition of the project by stakeholder members,
- degree of shared goals within the MSP or network and
- degree of co-creation within the cooperation

on the project's effectiveness.[17]

[17] The details of the regressions are described in the data annex.

Thereby, two regressions for each type of cooperation structure were build; one measuring the strengthening of research capacities as the project's effectiveness[18] and the other one measuring the strengthening of education capacities[19]. Due to the small number of partnerships included in the survey, a statistical valid regression could only be conducted for MSPs and networks.

For MSPs, the results of the multiple regression analyses indicate that none of the features included in the regressions – both measuring the effect on research and educational capacities – were significant (see regression results in Figure 46 and Figure 47 - Annex). Alternatively, we therefore used the accompanying correlation matrixes[20] to identify successful factors for MSPs (see Figure 48 and Figure 49 - Annex). Thereby, the analysis shows that generally, **MSPs with a strong emphasis on co-creation and thus a balanced power dynamic among partners appears to have a more positive impact on projects' effectiveness**. This contribution is observed in terms of achieving the long-term objectives in the field of enhancing educational and research capacities.

To be more specific, the first correlation matrix revealed a significant positive correlation between effectiveness in regard of strengthened *educational capacities* and the co-creation process (r=0.580). For the other features, the correlations were not significant (see Figure 48 - Annex).

Looking at the second correlation matrix on effectiveness in terms of strengthened *research capacities*, again a positive, significant correlation between effectiveness in regard of strengthening research capacities and the co-creation process was (r=0.614) found. While being of less strength, **a positive, significant correlation between effectiveness in regard of research capacities and the quality of communication** (r=0.490) was identified (see Figure 49 - Annex).

For networks, instead, the findings of the regression models were used as the included features show a significant effect on the project's effectiveness. The results indicate that **networks with a lower frequency of communication are more likely to contribute to a project's effectiveness**, in terms of both educational and research capacity. Additionally, similar to MSPs, **networks that prioritize co-creation demonstrate a positive influence on a project's effectiveness**.

Regarding the effectiveness of strengthened *education capacities* (see Figure 44 - Annex), the regression output showed that the frequency of communication has a negative relationship with educational capacities, as evidenced by its negative coefficient (-0.528) and significant p-value (0.006). This indicates that the more frequent the communication, the lower the effectiveness on educational capacities is. Thus, it is assumed that a more frequently communication might be due to challenges in the project implementation which acquire a more frequent communication. Also, a more frequent communication could be related to a lower efficiency (i.e., if responsibilities and tasks are not clearly defined) which would result in a lower effectiveness.

[18] The strengthening of research capacities includes generating more academic publications in international peer-reviewed journals, attending more academic conferences, having up-to-date knowledge on research practices in the specific field, and having research facilities that allow for state-of-the-art research.

[19] The strengthening of the educational capacity of the department involves developing a new curriculum with up-to-date and well-structured content, offering courses that address state-of-the-art content and methodologies, and ensuring project participants have state-of-the-art didactical competences.

[20] The correlation matrix provides information about the strength and direction of the relationship between variables. The values range from -1 to +1, where -1 indicates a perfect negative correlation, 0 indicates no correlation, and +1 indicates a perfect positive correlation.

Moreover, the co-creation process has a positive relationship with educational capacities, as evidenced by its positive coefficient (0.586) and significant p-value (0.012). This indicates that the more stakeholders are involved in the co-creation process, the higher the effects on educational capacities. The other independent variables (quality of communication, knowledge project, mutual respect, and shared goals) do not have a statistically significant relationship with educational capacities.

Looking at the findings on strengthened *research capacities* (see Figure 45 - Annex), the regression results show that frequency of communication has a significant negative effect on research capacities (B = -0.257, p = 0.035), meaning that as the frequency of communication increases, effects on research capacities decrease. However, quality of communication, knowledge project and co-creation process have significant positive effects on developing research capacities (B = 0.393, p = 0.008; B = 0.469, p = 0.034; B = 0.495, p = 0.002, respectively), indicating that as these factors increase, research capacities also increase. The features on mutual respect and shared goals, however, have non-significant effects on research capacities, with Beta values of -0.272 and -0.255, respectively.

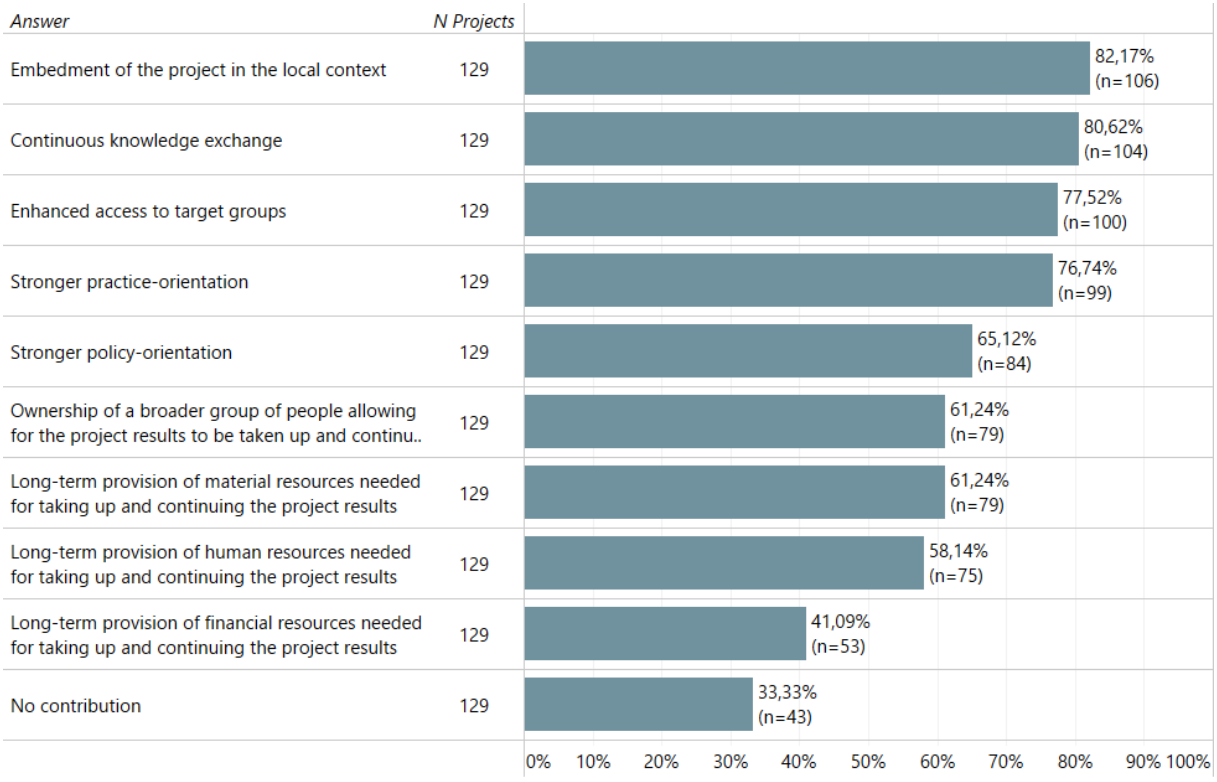
5.1.3 Contribution of networks, partnerships and MSPs to sustainability

Next, the analysis of the contribution of networks, partnerships, and MSPs to project sustainability will be presented; divided into three subchapters. In the first subchapter, the overall analysis of the sustainability of projects along the three types of cooperation is presented. Moreover, approaches employed by these cooperation structures to enhance project sustainability are analysed. Building on the hypotheses presented in Chapter 3, the second subchapter examines the specific characteristics of cooperation structures that contribute to project sustainability. Finally, in the third subchapter, the most effective features of cooperation structures in relation to project sustainability are identified.

5.1.3.1 Sustainability of the projects and related approaches adopted by the cooperation structures

When examining sustainable achievements by the type of cooperation structure, it is noted that **MSPs have a higher average value (i.e., 3.1) of aspects promoting sustainability than networks (2.7), suggesting a greater contribution to project sustainability compared to networks**. Partnerships, despite having the highest mean value of 3.8, should be interpreted with caution as only four partnerships are included in the sample, potentially impacting the reliability of the mean value.

Figure 17: Contribution of the cooperation structures to sustainability of the projects

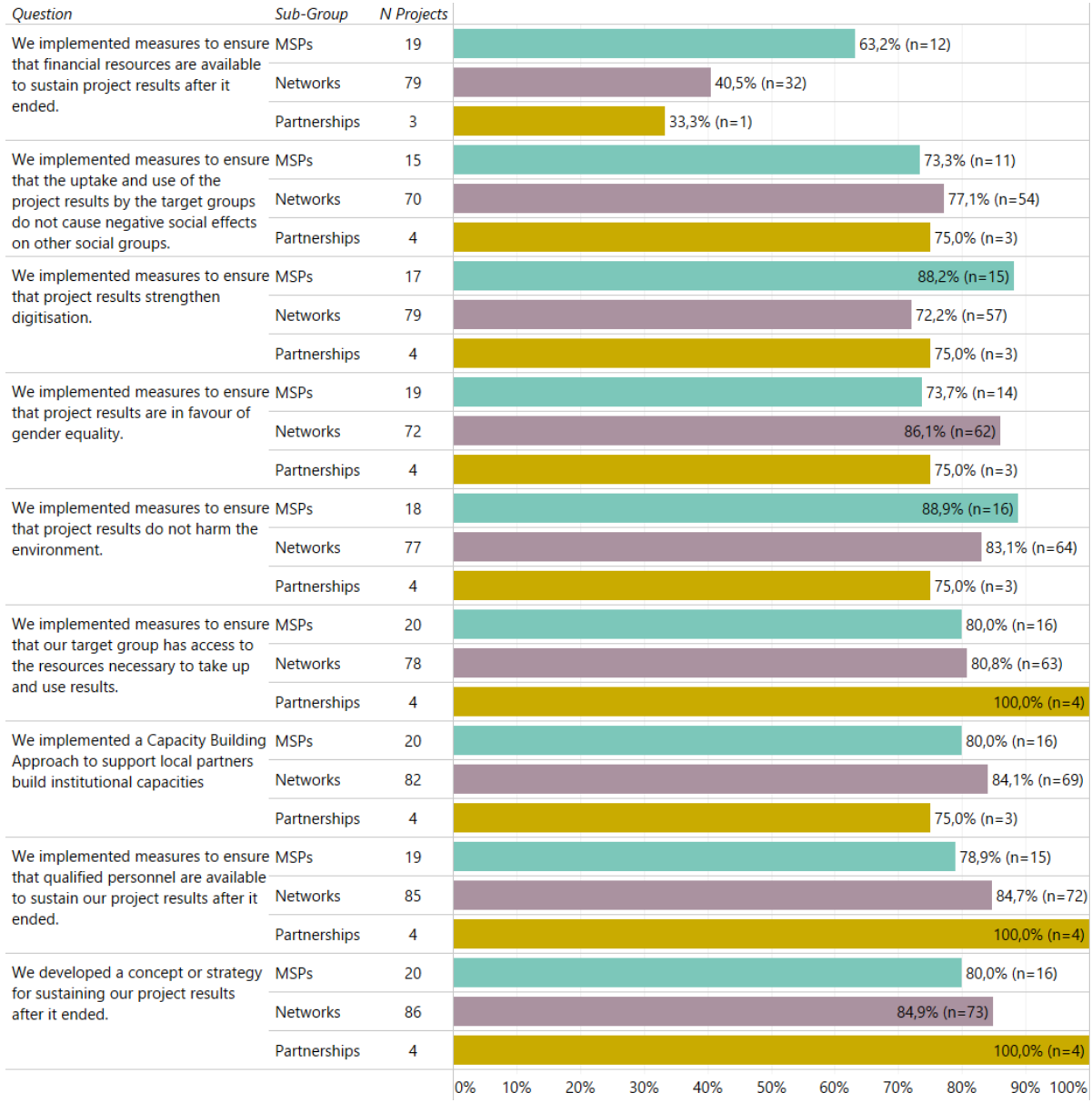


Source: Syspons, 2023

Further, with regards to sustainability, survey results show a strong overall commitment of the projects – independently from the collaboration structure – to accomplish sustainable results.

When disaggregating the data by type of cooperation structure, it becomes apparent that **MSPs and networks do not vary significantly and seem to implement similar measures for ensuring the sustainability of results** (see Figure 18). Only regarding three items some differences emerge. MSP-projects more often implement measures to ensure financial resources are available after the project ends (63,2%; N=19) in comparison to networks (40,5%; n=79). Moreover, MSPs implement measures to ensure that project results strengthen digitisation more often (88,2%; n=17) in comparison to networks (72,2%; n=79). Finally, networks more often implement measures to ensure that project results are in favour of gender equality (86,1%; n=72) in comparison to MSPs (73,7%; n=19).

Figure 18: Measures implemented to ensure sustainability (by type of collaboration structure)



Source: Syspons, 2023

5.1.3.2 Specific contribution to sustainability by type of cooperation structure

Now, in this sub-chapter it will be analysed in how far networks, partnerships and MSPs contributed to sustainability by covering aspects such as ownership or ongoing engagement of stakeholders which are in line with the hypotheses defined for this evaluation (see chapter 3). The quantitative results of the survey in this regard are graphically presented in Figure 19.

Based on the conceptual framework, the level of ownership of results by stakeholders plays a significant role in determining the contribution of networks, partnerships and MSPs on projects' sustainability. Hereby, the survey data reveals that there is **no significant difference in the level of ownership among a broader group of individuals, enabling the project results to be adopted and continued, across the three different cooperation structures**. Approximately 50% to 65% of the respondents within each type of cooperation structure confirmed their effectiveness in establishing ownership with external stakeholders and thus promoting sustainability.

Hereby, in the field visits, a key success factor in developing broader ownership was an in-depth engagement with all stakeholders, e.g., in the context of capacity-building measures, which led to a higher likelihood of projects' achievements to last after the project ended. A notable example is a network in which the indigenous communities were directly engaged in designing and implementing the project. Consequently, strong ownership was developed by these communities and thus the capacities of the direct target group strengthened. Further examples from the field visits show how non-academic actors actively use products elaborated by the cooperation structure, such as a guide for practitioners engaged in (informal) urban governance (P_9 - partnership) or indications on improved feeding practices for cattle (P_6 – network). In the latter case, good results of the practices sparked interest by additional stakeholders (cattle farmers, local authorities). The involvement of further stakeholders secures the independently continuation of the projects' results and thus its durability.

Another key success factor for the contribution of cooperation structures to the projects' sustainability was identified as having a strong practice orientation. This refers to the effective utilization of practical approaches that accurately address the needs of beneficiaries or end-users, contributing to project's sustainability. Both qualitative and quantitative data indicate that a majority of the cooperation structures were primarily focused on successfully applying practical approaches to capture the needs of beneficiaries or end-users. In the survey, no major differences between the cooperation structures were observed as approximately **two-thirds (75% or higher) of the participants within the different cooperation structures confirmed their strong emphasis on practice orientation**. In the field visits, for most projects, the target groups confirmed that urgent needs were responded to through the cooperation. In these cases, it can be concluded that the applied research led to a bigger (social) impact. Yet, for one network project, it was stated that the project did not correspond to the actual needs of the target group (P_8). According to the Belgian promoter for this project, this perception among the target group may have related to the limited communication about the project and its goals to the target audience in the early stages of the research. Furthermore, it was found that among the networks as well as the MSPs, some projects had a strong academic focus and thus no strong emphasis on practice orientation was aimed for and thus also not strengthened by networks / MSPs. Further, regardless of the type of cooperation structure, projects found to strengthen broader ownership of results (see paragraph above) were unsurprisingly found to be most successfully in capturing the needs of beneficiaries/end-users.

Further, the continuation of enhancement of education and research opportunities (i.e., the long-term goals of the project) was defined as another contributing factor of cooperation structures to sustainability (see chapter 3). The achievement of these long – term goals in general and the contribution of MSPs, networks and partnerships have been discussed in detail in subchapter 5.1.2.

Moreover, the contribution of the cooperation structures to the embeddedness of the project in the local context and thereby the enhanced access to target groups (in particular beneficiaries) was identified as being a success feature to create societal transformation and thus ensure the project's sustainability (see chapter 3). Hereby, the data of the survey does not show significant differences between networks, partnerships and MSPs. Consequently, for both, access to target groups and embeddedness of the project in the local context leading to societal transformation, **most respondents confirmed a dominant role of their cooperation structure in this regard which increases the sustainability of the respective projects** (i.e., for each question disaggregated by the type of cooperation structure, at least 75% or more respondents confirmed the contribution).

However, the results of the field visits in terms of the potential contribution of the cooperation structures to anchoring the societal benefits that ultimately lead to sustainable societal change are rather mixed.

While the contributions for MSPs and partnership are plausible, the contribution for networks was (partially) affirmed by only half of the projects that participated in the field studies (i.e., four out of eight networks). Here, for some projects, it was reported that the project was not designed to bring about social change by embedding the projects in the local context and improving access to the target groups. One reason for this was, for example, that academic projects (e.g., focusing on data collection or improving curricula) have a limited reach and the societal benefits are indirect and may only become visible in the long term (P_2, P_3). The **differences in this regard are thus more related to the design of the projects than to the type of cooperation structure of the projects**.

Another contribution factor of the cooperation structures to increase the sustainability of projects is the lower vulnerability due to multi-party involvement/ less dependence on individuals. Hereby, as per definition, **MSPs are expected to have the lowest vulnerability among the three cooperation structures as they include different parties and are formally agreed upon**, meaning that roles and responsibilities are clearly defined. Thus, it is expected that the actors involved are aware of their roles and responsibilities even after the project has ended, which contributes to an independent continuation of the project results. The findings from the field visit confirm the survey results as both MSP projects included have a multi-party involvement which will lead to continued engagement of stakeholders even though the project ended, e.g., facilitated through the exchange networks established. Yet, also for networks it could be observed that though promoters often played a central role, cooperation structures rarely were carried by a single individual but a core team of actors in which each person played a specific role. A limitation in this regard was, however, that for some networks the continued engagement of stakeholders requires securing human and financial resources (P_3, P_6) (see next paragraph). In this sense, perspectives are less clear if no concrete follow-up initiative is given. When formal follow-up cooperation took place, be it through VLIR-UOS funding or funding acquired from other sources, stakeholders reported an ongoing and even deepened engagement when the same stakeholders were involved, as trust had already been built. For the partnership being included in the field visit, the future engagement of actors involved during project implementation depends on whether a follow-up project will be implemented or not (P_9); thus indicating – as expected by theory – a higher vulnerability due to high dependency on individuals and thus a lower contribution to the project's sustainability in this regard.

Lastly, access to financial, material, and human resources for taking up and continuing project results was defined as the ultimate contribution of cooperation structures to projects' sustainability (see chapter 3 – hypotheses). **Regarding financial contributions, the data of the online survey shows that levels are comparably low in general** with the share of MSP promoters being the highest as half of them confirmed the contribution of their MSP to the long-term provision of financial resources contributing to projects' sustainability (50%; n=10). Considering all three types of resources, it can be seen that, on average, **MSPs seem to contribute more to the long-term provision of resources in comparison to networks**. The qualitative findings confirm the results of the online survey as both MSPs involved in the field studies confirm access to resources to continue project results. In line with the findings on vulnerability due to high dependency, for the partnership involved in the field visit a sustainable access to resources could not be secured and depends on whether a follow-up project will be implemented or not. Regarding networks, most networks included in the field studies facilitated acquiring/maintaining sufficient material/financial/human resources to keep working on objectives related to the initial project funding. Thereby, several network projects generated open access data which could serve to be further used by any number of stakeholders and thus do not require many resources of any kind. Regarding financial resources in particular, some structures were able to secure follow-up funding either from VLIR-

UOS or other agencies which increases the durability of results. Often, the focus of the follow-up cooperation would differ slightly, e.g., to include different regions of the partner countries or focus on a specific aspect. One network clearly indicated that they were only able to secure a considerable funding sum due to the VLIR-UOS cooperation history (the project was working in its second phase and the roots of the cooperation dated back even further). In some cases, actors indicated that other VLIR-UOS projects continued to work on parts of the goals of the cooperation structure. Yet, for one network project, stakeholders referred to a lack of human resources or investment and a strong focus on one person in implementation. In this regard, it became evident that sustainably securing resources was often linked to good personal networks and motivation of the key stakeholders (e.g., the promoters) (P_6). Generally, it was stated that the actors trained through capacity-building measures constituted a facilitating factor for an ongoing engagement with related topics. As capacity-building measures were – in some way or the other – an element in all projects, this was emphasized by most interview partners being capacity-building measures part of all projects.

Table 2: Summary – Specific contribution of MSPs, networks, and partnerships to projects' sustainability

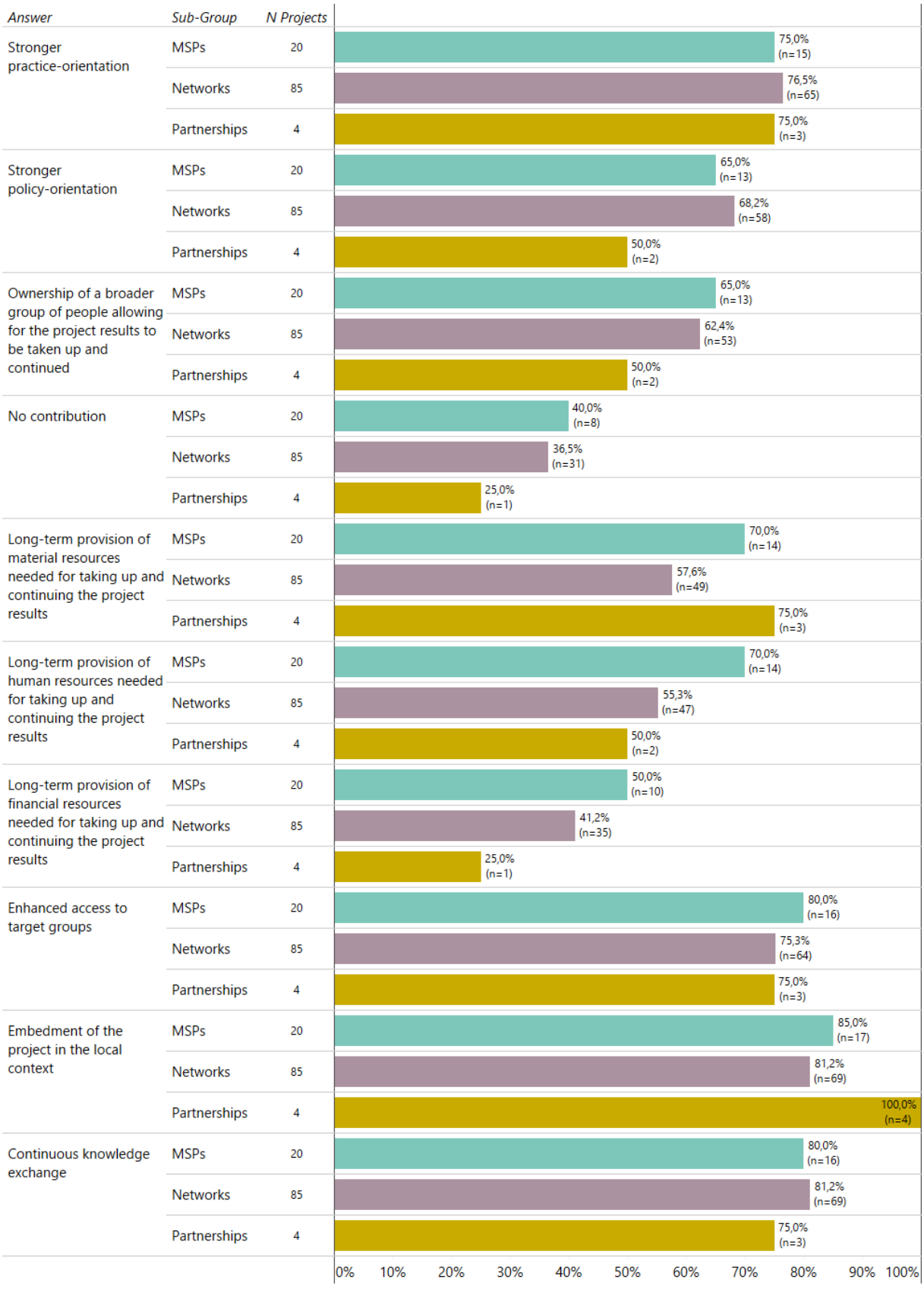
#	**Established hypothesis**	**MSPs**	**Networks**	**Partnerships**[21]
Networks/partnerships/MSPs may contribute to project **sustainability**,				
10	if actors involved in the cooperation structure take up the results once the project ends (broader ownership of results due to greater utility of knowledge produced).	Confirmed	Confirmed	-
11	if practically oriented approaches successfully capture beneficiaries/end-users needs (enhanced impact of applied research).	Confirmed	Confirmed	-
12	if the cooperation structure established persists to continuously provide opportunities in the field of education or research (e.g., new transnational exchange networks) that would not be in place had the project not been implemented (enhanced education/research opportunities).	Confirmed	Confirmed	-
13	if concrete societal benefits created by the project are successfully anchored in the context due to the participatory approach and thus the engagement of all relevant stakeholders to carry on implementation steps once the project ends (sustainable societal transformations enabled through participatory approaches).	Confirmed	Partially confirmed	-
14	if the cooperation structure created continues to facilitate the engagement of actors involved during project implementation once	Confirmed	Partially confirmed	-

[21] Due to the limited scope of the survey, which included only four partnerships, and the field visits which involved just one partnership, it was not possible to draw a comprehensive conclusion regarding the achievements of partnerships with respect to the various hypotheses.

	the project ends (lower vulnerability due to multi-party involvement/ less dependence on individuals).			
15	if enough material/financial/human resources can be acquired and maintained to continue relevant implementation steps after the project funding ends (access to sources of funding/co-funding/material/human resources).	Partially confirmed	Not confirmed	-

Source: Syspons, 2023

Figure 19: Contribution of networks, partnerships and MSPs to projects' sustainability



Source: Syspons, 2023

5.1.3.3 Successful features of partnerships, networks and MSPs to achieve sustainability

After examining the contributions of partnerships, networks, and MSPs to various aspects of sustainability in the previous subchapter, our focus now shifts to analysing the specific features of these cooperation structures that have proven successful in promoting sustainability.

Therefore, to assess which single features of MSPs and networks were most successful to achieve sustainability, the same approach as for effectiveness (see subsection 5.1.2.2) was conducted. Thus, the compiled regressions show the influence of the:

- frequency of communication,
- quality of communication with stakeholder members of the MSP or network,
- stakeholder's knowledge about the project,
- recognition of the project by stakeholder members,
- degree of shared goals within the MSP or network and
- degree of co-creation within the cooperation

on the project's sustainability[22].

Here again, due to the small number of partnerships included in the survey, the analysis was only conducted for MSPs and networks. Thereby, the multiple regression results for both networks and MSPs indicate that none of the features included in the regression were significant (see regression results in Figure 50 and Figure 51 - Annex). Alternatively, here again we used the accompanying correlation matrixes to identify successful factors.

Overall, as for the contribution to effectiveness (see subchapter 5.1.2.2), **MSPs and networks have been found to play a significant role in the sustainability of projects when characterized by a high degree of co-creation**. Thereby, when comparing the impact of features of MSPs and networks on project sustainability, it is evident that MSPs have a higher magnitude than networks. This is indicated by higher correlation factors for the significant features in MSPs.

In the case of MSPs, the correlation matrix revealed a significant positive correlation between sustainability and quality of communication (r=0.506). Thus, **a higher quality of communication within MSPs is related to a higher sustainability of the respective project**. The quality of communication thereby measures if interactions within the MSPs are highly accurately, in a timely manner and helpful in challenging situations. Hereby, as shown in subchapter 5.1.1.4, MSPs communication with various actors from Belgium / Europe was assessed to be of high quality.

Moreover, for MSPs the correlation matrix revealed a significant positive correlation between the projects' sustainability and the degree of co-creation process applied (r=0.539). The **sustainability of projects is thus closely linked to the extent to which a greater number of partners within MSPs can actively contribute to shaping the direction of cooperation and the form of the products through**

[22] This question used for the sustainability variable asks to what extent networks/partnerships have contributed to the sustainability of the project. Possible answers include enhanced access to target groups, embeddedness of the project in the local context, stronger policy/practice orientation, long-term provision of financial/human/material resources, continuous knowledge exchange, and ownership by a broader group of people. Respondents may choose multiple answers or indicate that there was no contribution.

co-creation. Hereby, the relatively high positive correlation of co-creation process (r=0.539) suggests that this feature is closely linked to the project's sustainability for MSPs.

Notably, the two key feature of MSPs are interrelated. Therefore, effective communication within a MSP is considered a prerequisite for partners to actively contribute to shaping the direction of cooperation and the development of project products.

For networks, also a positive correlation with the co-creation process was observed (r=0.219), but it was not as strong as that found for MSPs. **Therefore, although the process of knowledge co-creation is associated with the sustainability of projects within networks, the connection between the two is relatively weak.** This is in line with the overall finding that networks have, on average, a lower degree of knowledge co-creation than partnerships and MSPs (see subchapter 5.1.1.3). A possible explanation therefore is that networks are expected to work together only for a limited period of time which decreases the networks' contribution to the projects' sustainability (see subchapter 3.2). Further, in contrary to MSPs, for networks no significant interlinkage between the projects' sustainability and the quality of communication was found.

However, in contrast to the findings for MSPs, mutual respect exhibited a positive and significant correlation with sustainability (r=0.222) within networks. Consequently, **a higher level of mutual respect among members of a network is associated with greater sustainability of the respective project**. As demonstrated in chapter 3.2, in cooperation structures that involve a diverse range of actors without formally defined roles and responsibilities, and potential power imbalances among participants, such as networks, interactions should be characterized by mutual respect and equality. This key feature then enhances the working relationship within networks and ultimately the contribution to project sustainability. When mutual respect among network actors is high, they are more inclined to actively participate in the project, such as by disseminating project results or adopting and utilizing project outcomes. This active engagement then significantly contributes to the durability of project achievements.

5.2 Objective 2: Assessing the performance of sampled projects along the OECD-DAC criteria

As described in chapter 4.1, a sample of projects was assessed along the OECD-DAC criteria relevance, coherence, effectiveness, efficiency, impact and sustainability. This assessment is based mainly on the qualitative data from the case studies.

5.2.1 Relevance and Coherence

The criterion of **relevance** considered to what extent the projects responded to the needs of beneficiaries/ the target country (policies, priorities)/ the partner institutions as well as relevant global frameworks. In this context, the extent to which the three principles of the Agenda 2030 (LNOB, interconnectedness and MSPs) were an integral part in the projects was also analysed. Further, the continued relevance of the projects vis-à-vis changing circumstances was considered.

The collected qualitative data confirms the relevance of the 11 projects analysed. Accordingly, no difference was evident between the types of projects (i.e., SI, TEAM and JOINT). Given the diversity of the projects analysed, the relevance of the project showed different nuances and could be linked to different global frameworks, policies and priorities as well as target group needs.

Regarding the question whether the projects responded to the **needs of beneficiaries** and/or the **partner country**, it can be said that some projects were more directly linked to the needs of specific target groups, while others were more relevant at an overarching level. As an example, one of the projects related directly to improving the treatment of people living with oculocutaneous albinism (P_1). In this case, a clearly defined target group benefitted from the project. Two other projects were concerned with collecting data monitoring the state of tropical forests (P_2, P_10). In these cases, the relevance is rather linked to the potential contribution the data collected may play in preservation/reforestation efforts to combat climate change.

If the **relevance** of the projects for the **implementing partner institutions** is considered, common features can be observed independent of the cooperation structure type or the country. Relevance at this level is mainly linked to the access to capacity-building measures (e.g., to increase research capacity) and (previously unavailable/hardly accessible) scientific knowledge. An additional point was the access to relevant contacts or networks and, to a minor degree, to funds for scientific activities.

Further, regarding **international and respective national policies,** the projects were assessed to be aligned with respective policies. A project originating from Ecuador for example, which seeks to enhance the governance of cultural heritage sites, addresses a subject that resonates with several international and European policies highlighting the potential of heritage for sustainable development (UNESCO 2013, European Commission 2014, CHCfE consortium 2015) (P_4). Furthermore, Ecuador's government, as outlined in its 2008 constitution, emphasizes the importance of learning about the historical past (art. 21) and the recognition of indigenous communities and their right to uphold their identity and traditions (art. 57).

Thereby, at **global level**, all projects can be linked to specific goals of the **2030 agenda** (e.g., quality education, climate action/life on land, sustainable cities and communities) and further frameworks such as the Convention on Biological Diversity.

Taking a closer look at the **agenda 2030 principles** (LNOB, MSPs, interconnectedness), a few findings can be stressed. The principle of **LNOB** was more evident in some projects than others. As an example, one project engaged in research on oculocutaneous albinism (P_1). The target group (people living with oculocutaneous albinism) is highly vulnerable and subject to severe discrimination in the partner country. The project directly worked on establishing conditions that would improve the situation of the target group. Here, the focus was very evidently put on "not leaving behind" a marginalized group. Another project directly engaged with indigenous populations thus directly responding to their specific needs in terms of governance (P_4). Several projects, covering different sectors, related to improving the livelihood of relatively vulnerable people in the target region (e.g., improved agricultural production for small-scale farmers, enhancing economic opportunities for small and medium enterprises led by women). Two projects focused on adapting curricula (in the fields of informatics and statistics) (P_3, P_5). Though being of high benefit for the student population, they did not explicitly target an especially vulnerable group of people. Nonetheless, these projects contributed to improving the quality of education in public universities.

Considering the **MSP principle**, chapter 5.1.1 showed that out of 148 projects in the sample overall, 20 projects showed characteristics of a MSP. While the importance of MSPs was emphasized on during the 2017-2021 VLIR-UOS program, it was not explicitly aimed for, unlike the current program phase. Therefore, the presence of 20 MSPs is assessed to be a high enough number of MSPs within the program.

As a last principle, **interconnectedness** relates to the interlinkage between the different SDGs. One element that hints at the consideration of this principle by departmental projects overall is the fact that the majority of projects connects academics from different disciplines (see 5.1.1).

None of the projects reported a diminished relevance of the topics treated.

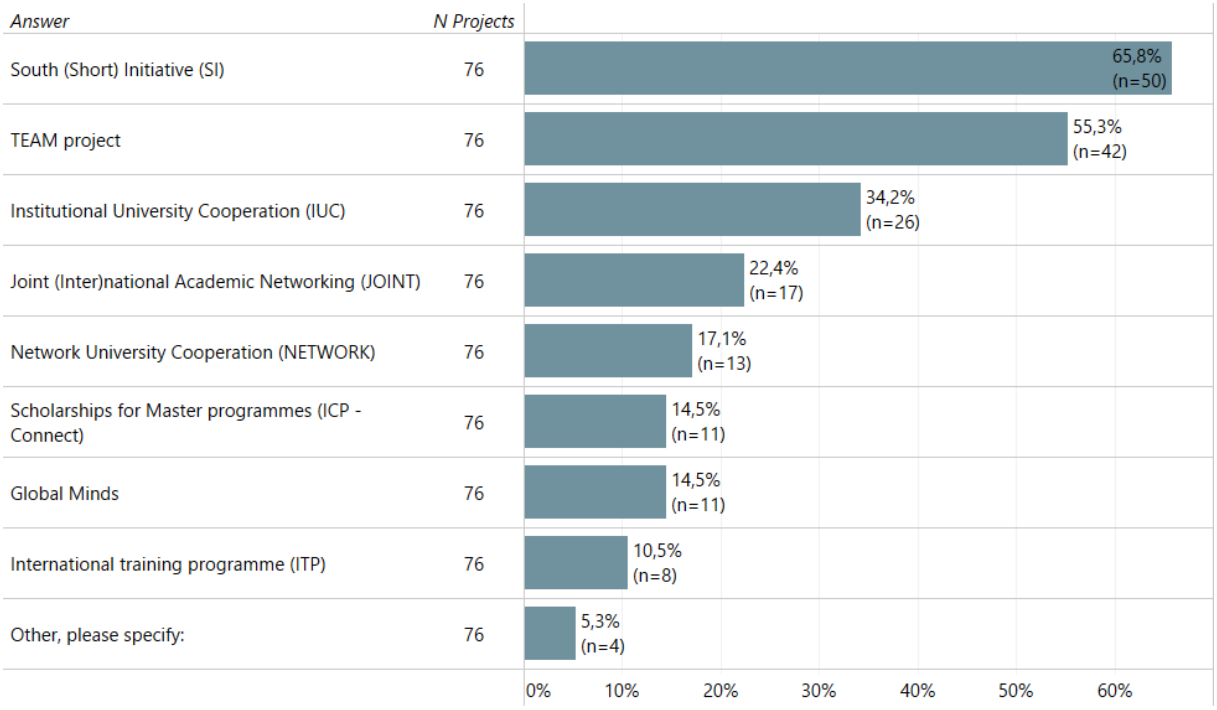
Coherence

The **coherence** criterion assessed to what extent the projects were connected to other projects in the country, sector or institution, considering complementarity and possible synergies created. Thereby, this chapter is divided into internal (i.e., other VLIR-UOS projects) and external (i.e., other (inter-)national founding agencies) coherence. Overall, the analysis shows that diverse linkages between the projects analysed and other projects exist, with examples of complementarity as well as synergy.

Regarding internal coherence, several projects were linked to other **VLIR-UOS projects**, in different ways. As can be seen by the results of the online survey (see **Fout! Verwijzingsbron niet gevonden.**), most respondents answered that they know each other from other SI (66%; n=50) or TEAM (55%; n=42) projects. When disaggregating the findings by project team (see Figure 52 - Annex), it is shown that for JOINT projects included in the sample, they know each other either from Institutional University Cooperation (IUC) or other JOINT projects.

The same was observed during the field visit where some projects constituted themselves a first VLIR-UOS project phase (e.g., SI) and reported to have applied or plan to apply for a follow-up phase (e.g., P_9). Other projects were themselves follow-on projects (e.g., a TEAM project succeeding a SI) (e.g., P_2). Moreover, in a few cases, the partner institutions also benefitted from IUC. In one case, the project started at the end of the IUC and little overlap was reported between the two (P_3). In another, it was also stated that both projects worked independently from each other (P_9). Contrarily, in another case, an ongoing VLIR-UOS *network* project acted as facilitator, as the promoters of the project under review were also part of the other network project (P_5). Further example for links between projects at the personal level could be found in one case, the promoter of a project was engaged as a promoter of a similar project in another country. Though in the project phase subject to this analysis, no links beyond the personal insights of the promoter were established, a follow-on phase foresaw an exchange of experience between project members from both countries (P_8). Furthermore, project ideas sometimes stemmed from other VLIR-UOS projects (e.g., deepen results of another project, apply knowledge/results to another sector) or an exchange (e.g., of working materials, expertise, project staff) took place among different VLIR-UOS projects (e.g., P_8).

Figure 20: Stakeholder Constellation: Type of VLIR – UOS project



Source: Syspons, 2023

Additionally, resource sharing played a role in several cases. As an example, one project reported to be benefitting other VLIR-UOS projects through a laboratory set up while the project itself benefitted from IT infrastructure set up in the framework of other projects (P_3). In several cases, additional links to individual Belgian universities or universities within the partner countries were referred to, who provided additional funding (e.g., through strategic institutional partnerships) or simply added additional perspectives/broadened the overall network. This was for example the case in a JOINT project carried out across Vietnam, Uganda and Ethiopia, where the researchers from all three countries as well as from Belgium held regular exchange calls (P_6).

In addition, projects also established links to **other funding agencies** (external coherence), e.g., to obtain follow-up funding for working on the same topics once the project ended or simply network to add up to common efforts in the same fields. As an example, one project tried to engage with Belgian NGOs in the project location to seek internship opportunities for students (P_3). Another project reported to have obtained considerable funding from an international agency (UNESCO) to add up to the results worked on thus far (P_2). In this case, another international funding agency (JICA) approached the project, as it wished to become involved in the same area. Another project obtained national funds (Ecuadorian university consortium CERIA) to keep working on similar topics through two other research projects. Here, synergies at the level of research activities could be created (P_11). Furthermore, complementarities with projects of other funding bodies were referred to (e.g., a SIDA regional project on methane emissions in agricultural production) (P_6).

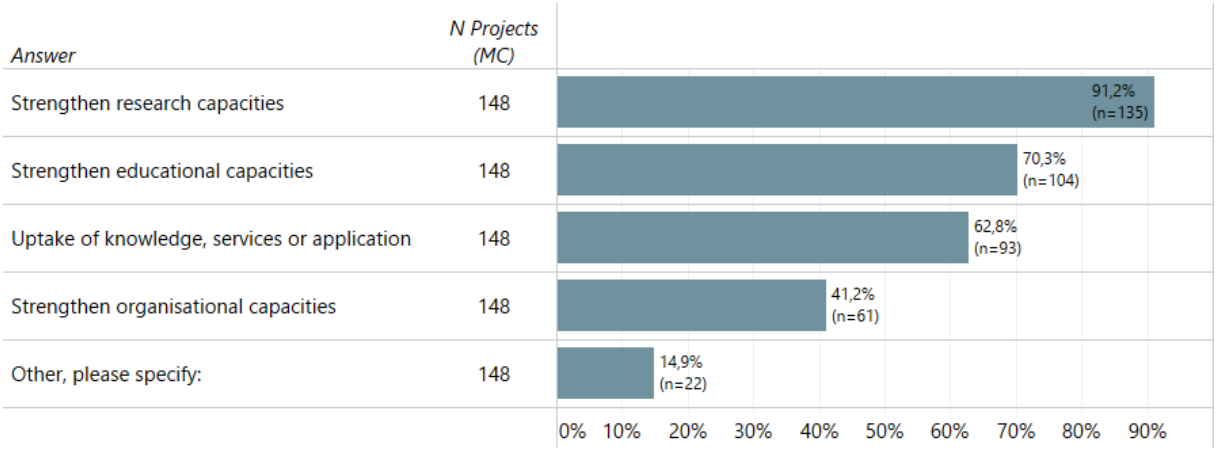
5.2.2 Effectiveness and Efficiency

The **effectiveness** criterion assessed in how far a project has reached its objectives and which factors mainly influenced this achievement or non-achievement. As visible in the VLIR-UOS Theory of Change (see chapter 3), departmental projects first aim at improving the research practices. Second, they aim at improving education practices. Third, they aim at creating new knowledge, applications, or services

as well as the conditions for their uptake. Projects are free to concentrate on one, two or all three focus areas. In general, the results from the survey and qualitative data indicate that, **on average, most projects have made tangible endeavours to improve research and educational capabilities and thus reached their goals**.

Following, more details on the findings from the survey are presented. In general, projects in the sample **focused most strongly on strengthening research capacities** (91%; n=135) and **on strengthening educational capacities** (70%; n=104). Yet only approximately 60% aimed at enhancing the uptake of knowledge, services or application (n=93) and even less than half of the projects (41%; n=61) aimed at strengthening organisational capacities (see Figure 21).

Figure 21: Project's Contribution to Specific Outcomes



Source: Syspons, 2023

Upon closer examination of efforts to enhance research capacities, it becomes evident that across all three project types, the **majority of respondents affirmed that their project participants have acquired state-of-the-art knowledge in research practices**. These affirmations are reflected in mean values surpassing 5 on a scale ranging from 1 (strongly disagree) to 6 (strongly agree). Also, for the other statements, the differences between the three project types are relatively minor (see Figure 22). However, it is worth noting that for JOINT projects, the mean value of respondents acknowledging the availability of state-of-the-art research facilities at partner institutions is comparably low.

Figure 22: Effectiveness - Strengthening Research Capacities by Project Type

Answer	N Projects	n.a.	Mean	JOINT		SI		TEAM	
The project participants have state-of the-art knowledge on research practices (with regards to the specific research field).	119	0	5,05	**5,12** 21	0,06	**5,03** 60	-0,02	**5,05** 38	0,00
Other, specify:	13	6	5,00	**5,00** 1	0,00	**5,88** 8	0,88	**3,25** 4	-1,75
The partner institution generates more academic publications in (inter-)national peer reviewed journals.	120	0	4,82	**4,74** 21	-0,08	**4,81** 61	-0,01	**4,87** 38	0,05
The project's participants attend more academic conferences.	116	7	4,76	**4,80** 20	0,04	**4,66** 58	-0,10	**4,89** 38	0,14
Research facilities at the partner institution allow for state-of-the-art research.	118	3	4,46	**3,93** 20	-0,54	**4,48** 60	0,01	**4,72** 38	0,26

Source: Syspons, 2023

After a more detailed analysis of efforts to enhance educational capacities, it becomes evident that **JOINT projects show the highest mean values across all three aspects** (see Figure 23). These aspects, measured on a scale of 1 (strongly disagree) to 6 (strongly agree), encompass the inclusion of state-of-the-art content in (new) courses and curricula, their effective organization, and the possession of up-to-date didactical competences by project participants. Nevertheless, respondents reported that SI and TEAM projects, on average, have also bolstered educational capacities, with mean values ranging between 4 and 5. Across all three project types, most projects confirmed that project participants have state-of-the-art didactical competences (i.e., a mean value of approximately 5). Consequently, the results presented in Figure 22 and Figure 23 show that for **both educational and research capacities, the majority of respondents agreed that the competences and knowledge of project participants have been enhanced**.

Figure 23: Effectiveness - Strengthening Educational Capacities by Project Type

Answer	N Projects	n.a.	Mean	JOINT		SI		TEAM	
Other, specify:	11	6	5,05	**4,25** 2	-0,80	**5,71** 7	0,67	**3,50** 2	-1,55
The project participants have state-of the-art didactical competences.	81	10	4,86	**5,23** 15	0,38	**4,76** 44	-0,10	**4,80** 22	-0,06
(New) courses address state-of-the-art contents and/or methodologies.	83	6	4,75	**5,22** 16	0,47	**4,64** 42	-0,10	**4,62** 25	-0,13
(New) curriculum/curricula have state-of-the-art contents and are well-structured.	82	6	4,34	**4,94** 16	0,60	**4,17** 42	-0,17	**4,23** 24	-0,11

Source: Syspons, 2023

In addition to the promoters' self-assessment regarding the achievement of projects' effectiveness conducted in the survey, a desk study was carried out. The aim of this desk study was to measure the achievement of specific objectives by the projects included in the field visit. The analysis was based on the log frames of these projects and yielded two main findings. Firstly, several projects lacked sufficient data for evaluation, resulting in the indicators' achievement not being assessed. Secondly, among the projects with recent data, **only one project was identified that successfully accomplished its indicators and thus met its specific objectives** (see Table 3 - Annex). Consequently, and in contrast to the promoters' self-assessment above, findings from the desk study suggest a relatively low level of project success in meeting their specific objectives.

Furthermore, to validate either the results from the survey or the contradicting findings from the case study stated above, during the field visits, interviews were conducted with various stakeholders to assess the effectiveness of the projects. Thereby, nine of the eleven projects were reported to have either achieved or mostly achieved their goals. Thus, the findings from the online survey were validated. Additionally, consistent with the quantitative findings, most interviewees emphasized that a **greater number of stakeholders or individuals than initially planned participated in the project's activities and contributed to the creation of products**. The high number of projects not achieving its objectives in the case studies therefore rather indicates a lack of documentation than a lack of goal attainment, with most projects successfully reaching their goals.

Example of Good Practice: Enhancing Research Capacities of Involved Stakeholders

The SI project, titled "Incorporating sustainability concepts to management models of textile Micro, Small and Medium Enterprises (SUMA)", successfully achieved its indicators and specific objectives (see Table 3– Annex). Thereby, in the interviews conducted it was highlighted that SUMA was highly effective in enhancing research capacities of involved stakeholders by conducting and disseminating state-of-the-art research on the Ecuadorian textile industry, with a particular focus on the MSME sector. According to the interviews, these capacity development efforts within the project yielded remarkable results, surpassing the intended outcomes through the creation of additional instruments, models, and information products. These project results which were used in the Ecuadorian universities contributed to the knowledge and capacity development of the respective students empowering them to conduct research and become proficient researchers and young professionals.

The criterion of **efficiency** considers to what extent the projects have converted the inputs (funds, expertise, time, etc.) into outputs as well as if they managed the inputs cost-efficiently, e.g., through adequate structures and processes. Regarding the efficiency of project's operation, the findings from the field visits show that **roles and responsibilities within the project team were clear and defined which increased the efficiency of the projects.** Hereby, in most cases, (co-)promoters would take a leadership role in project implementation as defined in the proposal (e.g., P_1, P_3, P_8). In some cases, however, roles and responsibilities evolved rather organically and other team members as well as further stakeholders (e.g., local communities) were more involved (P_2, P_4, P_10).

Further, the qualitative data from the case studies suggests that **the allocated budget to most projects in the field studies is adequate**. Thereby, an enabling factor for efficiency mentioned during the interviews was the ability of a project to leverage knowledge and networks developed in a previous project (ICU), thereby increasing its financial efficiency (P_6).

Example of Good Practice: Efficient Utilization of the Network and Resources

The JOINT project titled "Joint endeavour to enhance dairy and beef production in Vietnam, Uganda & Ethiopia" exemplified exceptional cost and time efficiency, despite facing limited financial resources. According to the interviews, it was evident that the project team demonstrated adeptness in leveraging their network and resources. They successfully utilized leftover resources from the post-Covid-19 period to fund the implementation of research findings in local farms, specifically directing the funds towards the purchase of cattle feed. Additionally, a selective payment strategy was implemented, ensuring that farmers utilized the feed for only one cow. Furthermore, the team optimally employed available resources from various projects, effectively maximizing both human expertise and financial investments.

Despite the challenges posed by the Covid-19 pandemic, the Vietnamese and Flemish promoters extended the project's duration and seamlessly collaborated using platforms like MS Teams and other digital media, guaranteeing uninterrupted progress. Lastly, the team capitalized on the knowledge and networks established in a previous project (ICU), further enhancing the project's overall efficiency.

Yet, in terms of impeding factors, some respondents stated that the VLIR-UOS projects, given their funding and duration, were quite ambitious in their scope (P_2). Further, various projects criticized the detailed financial reporting system implemented by VLIR-UOS, which consumed a significant amount of time for the project team (P_1, P_5, P_6). This issue was particularly highlighted by SI projects with smaller budgets, where monitoring and reporting requirements were perceived as burdensome (P_11).

Other limitations affecting financial efficiency were also reported. In this regard, the Covid-19 pandemic disrupted travel plans, leading to unutilized travel budgets in most projects (P_5). Additionally, time constraints prevented some projects from executing all planned activities, resulting in unspent funds. However, in certain cases, remaining funds were utilized during an extension period for further activities (P_6).

Moreover, it was noted that the financial management requirements differed between VLIR-UOS and the local university. Thereby, especially the rigid requirements for funds usage imposed by the partner countries' (i.e., Vietnamese) side created some difficulties and administrative burden for the partner (P_7).

Finally, it was noted by multiple projects that the financial management practices of partner country universities, specifically in Ecuador, varied significantly. To address this challenge, one project implemented a solution by dividing the responsibilities between the northern and southern regions of the country. This approach led to increased efficiency in the project's operations (P_10).

5.2.3 Impact and Sustainability

The **impact** criterion looked at the long-term effects that result from an intervention, considering positive and negative, intended and unintended consequences. The VLIR-UOS Theory of Change for departmental projects focuses on the project's aim in the long-term to contribute to an effective uptake or use of the project results (application of innovation) as well as effective extension ("effect of doing things differently").

The qualitative data from the case studies shows that **overall impact perspectives across the cases analysed are mixed**. While some projects could state clearly achieved impacts, others could only refer

to potential long-term effects. In some cases, the assessments between stakeholders engaged in the different project differed. No unintended or negative effects were reported.

As it was shown in the effectiveness analysis (see subchapter 5.2.1), differences were found between SI, TEAM and JOINT projects in the achievement of their objectives, which also applies to the achievement of the impact of the projects. Thereby, it was noted that **most of the projects with clear impacts in terms of effective uptake or extension of project results were JOINT or TEAM project**. This is rather unsurprising as TEAM and JOINT have a higher financial volume and longer project duration than SI projects.

Examples of Good Practice: Impactful Engagement and Effective Uptake of Project Results

A noteworthy example of good practice was observed in the TEAM project "Innovative governance systems for built cultural heritage, based on traditional Andean organisational principles in Ecuador". The project's primary objective was to deepen the understanding and activation of traditional Andean knowledge regarding organizational principles and collective management in the South-Eastern Ecuadorian Highlands. Significantly, the project facilitated attitudinal and cultural impacts by actively involving indigenous communities in decision-making processes, deviating from past practices. This shift resulted in the establishment of a positive relationship between community actors and universities, paving the way for the uptake of the project's main result by these actors, i.e., evidence-based guidelines for local collective governance of endangered cultural heritage and traditional architectural assets.

Another exemplary case of effective project result extension was observed in the JOINT project "Joint endeavour to enhance dairy and beef production in Vietnam, Uganda & Ethiopia" which focused on enhancing cattle breeding practices. Stakeholders engaged in the project reported that veterinarians and cattle farmers gained awareness on how to treat and feed cows differently for breeding purposes, resulting in positive effects on the breeding process and overall cattle health. Thereby, both the farmers themselves and the project team confirmed that there is a high likelihood of farmers continuing to maintain these newly acquired habits. This suggests that the sustainable practices implemented during the project have been well received and are likely to be continued in the long term.

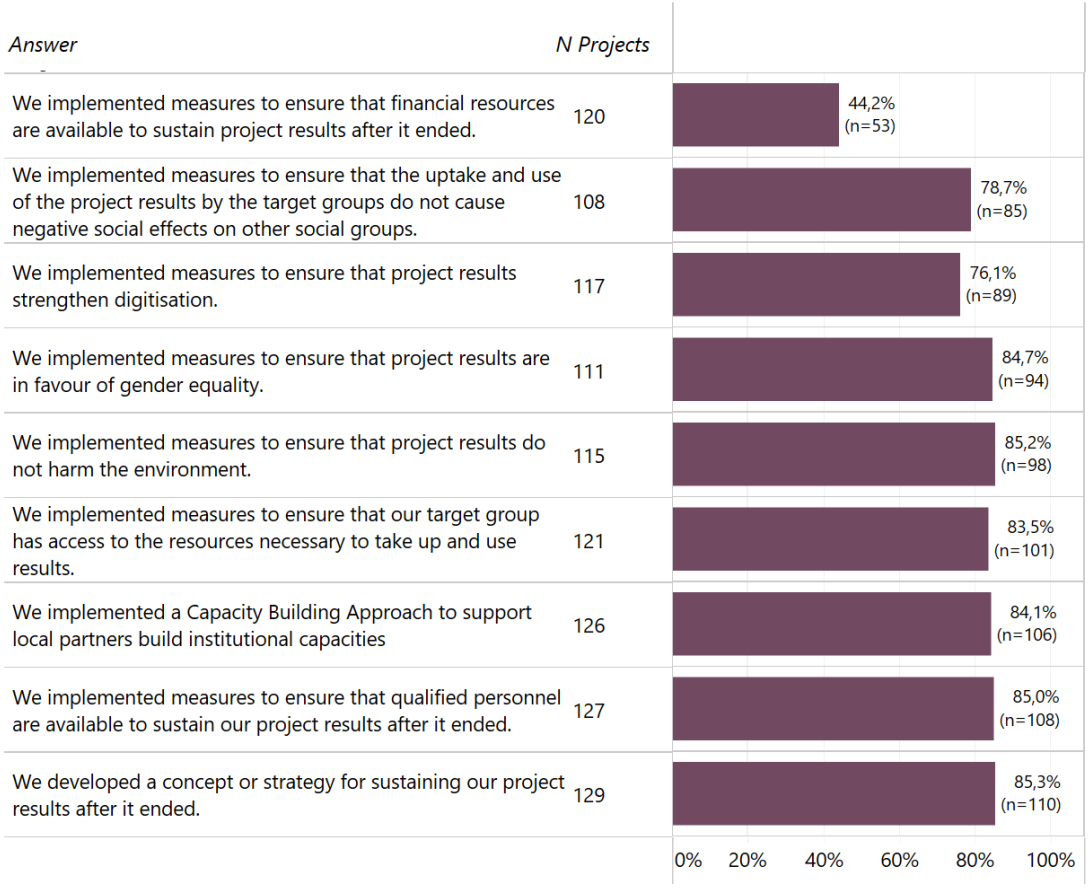
Apart from these two good practice examples, in other cases, mostly SI projects, only potential impacts could be observed. For example, in a **SI** project which aimed at generating data on tropical forests, stakeholders indicated that it is hard to measure the impact of reforestation on the ecosystems locally and that though information was passed on to local landowners, it remained unclear in how far this translated into practice (P_10). In another **SI** project, case studies on sustainable business practices were conducted. The stakeholders involved indicated that a manual on business practices was developed and turned in to a relevant authority for its further distribution but no application thereof by companies beyond those initially involved had taken place so far (P_11). Two further projects (SI and JOINT) worked on reforming academic curricula. In these cases, potential positive effects at a societal level are indirect (long impact chain). Within academia, the curricula could potentially improve the quality of education as (P_3, P_5).

The **sustainability** criterion evaluated what the likelihood of maintaining and repeating the benefits of the project once it ended was, considering aspects such as the financial and economic sustainability,

conditions and perspectives for local ownership, partner capacities to continue the results, the sustainability of methods, instruments and materials developed in the context of the project (technical sustainability.

In terms of specific strategies applied by the project, quantitative data from the survey shows that most respondents confirmed that they applied specific strategies such as developing a concept or strategy for the projects exit, ensuring that qualified personnel are available to sustain project results or implemented a capacity building approach to strengthen local partners in building institutional capacities (see Figure 24). Yet, regarding financial sustainability, only 44% (i.e., 53 out of 120 respondents) stated that they have implemented measures to ensure that financial resources are available to sustain the project achievements after the project ended (see Figure 24). The disaggregated data shows that JOINT, TEAM and SI projects respond very similar (see Figure 36 - Annex).

Figure 24: Projects strategies for sustainability



Source: Syspons, 2023

The qualitative data confirm the survey findings as the **data indicate overall positive perspectives with regards to the possibility of maintaining the benefits of the projects in the long run**. Thereby, as for the quantitative data, no distinguished differences between JOINT, TEAM and SI projects were observed.

The findings from the field visits regarding the likelihood of maintaining project benefits in the long term suggest that overall achievements are sustainable. For example, in one project, multiple interviewees, including the project team and the target group, confirmed an increase in awareness throughout the project duration, along with the establishment of new habits among the target group. These newly formed habits are expected to persist in the future due to the creation of conditions and perspectives

that promote local ownership, coupled with tangible results (P_6). Furthermore, several projects mentioned that aspects requiring minimal technical input could be easily sustained even after the project concluded.

However, in terms of financial and economic sustainability, some projects expressed the need for additional support to ensure the continuity of project outcomes. In one project, stakeholders reported securing funding for ongoing results through follow-up funding from the French cooperation (P_3), highlighting an example of achieving financial sustainability.

Regarding the implementation of environment-related measures, the findings presented a mixed picture, with most projects stating that it was not their thematic focus, resulting in the absence of applied measures. Nevertheless, one noteworthy project exemplified good practices by utilizing local resources instead of imports and assessing nitrogen emissions in their food resources (P_6).

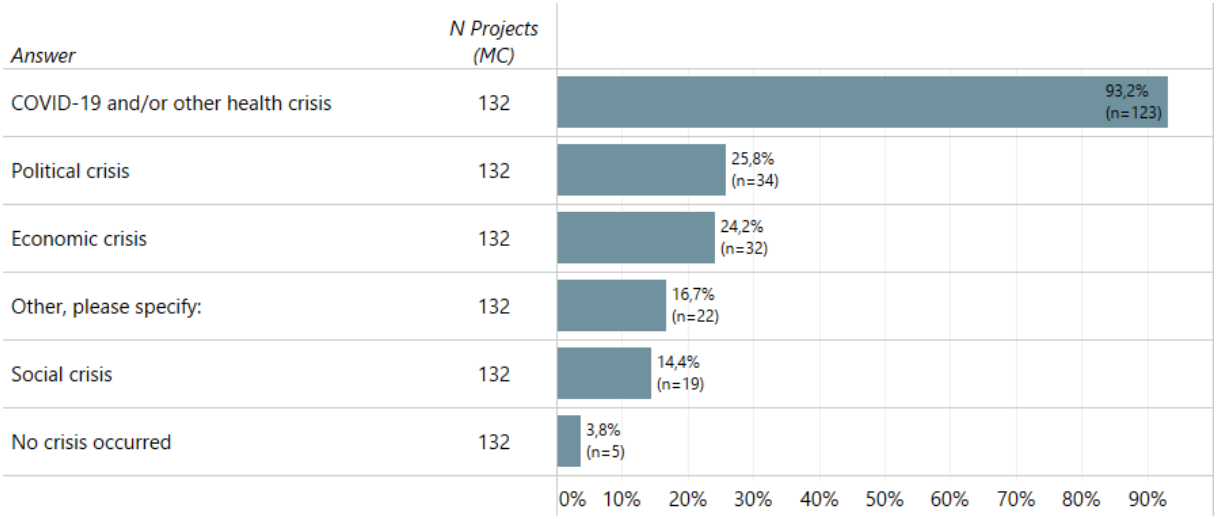
Example of Good Practice: Contributions towards Capacity Development, Financial and Environmental Sustainability

The TEAM project "Joint endeavour to enhance dairy and beef production in Vietnam, Uganda & Ethiopia" was identified as a good practice example on sustainability as it encompassed various aspects that contributed to the durability of results. Firstly, financially, the implementation of adjusted feeding practices in cattle breeding enabled farmers to generate more income, which could be used to fund the required feed. Secondly, the practices were easy to apply and garnered interest among other farmers, fostering a sense of ownership and attracting attention from local authorities. Thirdly, the technological requirements were minimal, and the feed could be conveniently purchased from sellers. Furthermore, the project prioritized environmental sustainability by utilizing local feed resources instead of imported soy and evaluating nitrogen emissions. This approach allowed for better protein and glucose balance in diets, indirectly promoting sustainability. Additionally, the project successfully increased awareness among local farmers regarding proper cow breeding techniques and their positive effects. Thus, there is a strong likelihood that farmers will continue practicing these methods due to their simplicity and tangible results. Moreover, the local authority expressed interest and willingness to provide formal recommendations to support and expand the adoption of improved treatment and feeding practices for mother cows.

5.3 Objective 3: Assessing the Resilience of Different Projects

The evaluation also intended to better understand to what extent different types of collaboration structures contribute to project resilience in time of crisis. As a reminder, we defined project resilience for the purpose of this evaluation as “the capability of a project to respond to, prepare for and reduce the impact of disruption caused by the drifting environment and project complexity” (Blay 2019: 234). In this regard, the online survey results show that almost all projects were affected by the Covid-19 crisis (see Figure 25). Around a quarter of projects also mentioned to have navigated through a political and/or an economic crisis. A rather small number of projects further indicate to have implemented activities in the context of a social crisis. The results of the field visit revealed a comparable trend. Among the eleven projects, three confirmed that a political, economic, and/or social crisis occurred. However, the majority of projects (five out of eleven) stated that no crisis affected them.

Figure 25: Type of Crisis During Implementation



Source: Syspons, 2023

The qualitative data provides insights on the **extent to** which the **projects** analysed in depth were **affected by Covid-19**. While some projects referred to a more severe impact of the crisis on project implementation, others stated no minor consequences. Among the most frequently encountered difficulties were mobility restrictions which made (more frequent) personal encounters between all members of the project team impossible and led to the need to cancel or delay activities requiring international travel (or shipment of equipment). Further, travel within the partner countries, necessary to access research sites or external stakeholders the project wanted to engage with was also restricted (e.g., limited access to indigenous communities during several months). Even in such cases where data was collected close to the location of the partner university, team members indicated that during Covid-19, it was harder to encounter external stakeholders and interview them.

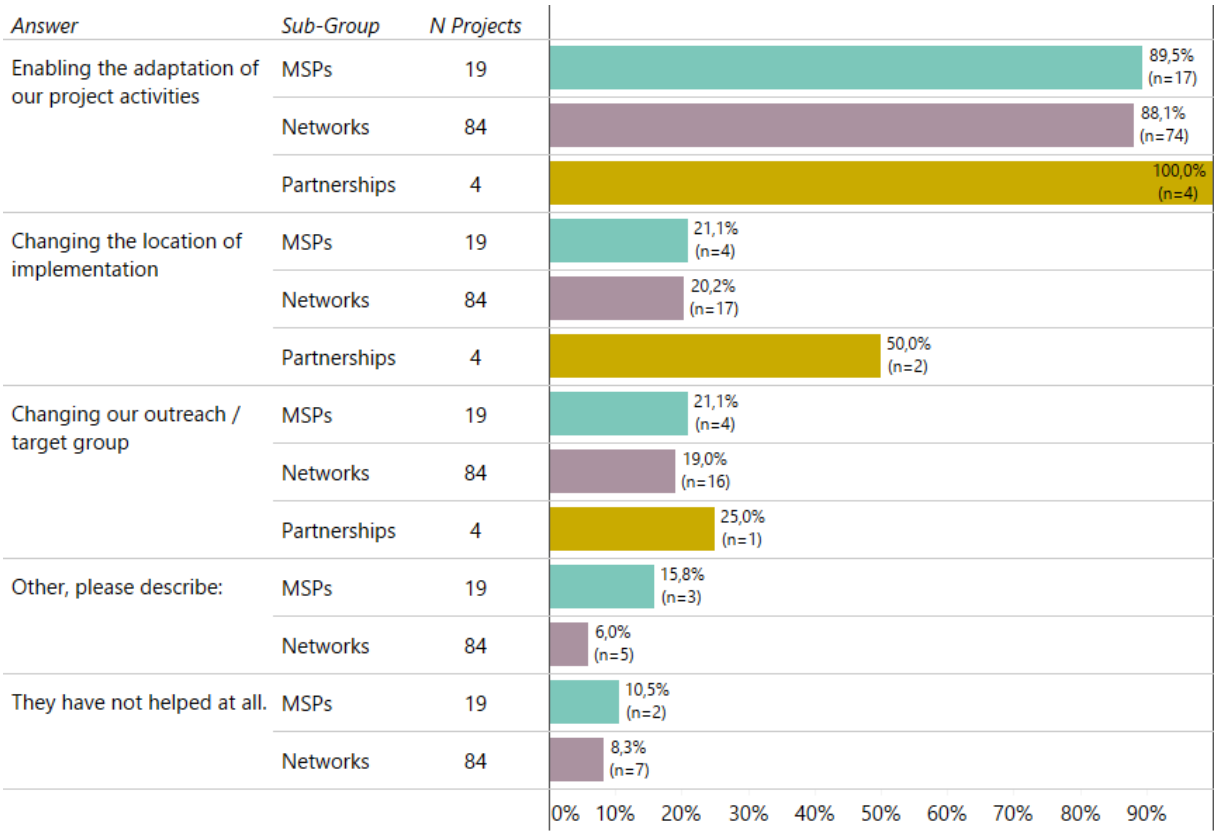
Regarding **strategies** applied by the project to respond to Covid-19, several elements can be cited. Overall, continuous, adaptive planning, commitment and flexibility as well as constant, open communication in the project team were named as key factors for a successful response to crises situations. More concretely, projects replied by acting in a flexible way, e.g., adapting the project activities and indicators as well as the timeline initially foreseen as well as communication channels (using formats such as WhatsApp, Viber, Zalo facebook and social media), e.g., focusing more strongly on online exchanges and activities or the implementation of local workshops without international participation. Project members from DRC stressed that it was not self-evident to engage with university students through online formats as many do not have access to laptops or an internet connection. For students without internet access at home, materials were put at their disposition to download and work with them independently. A strategy implemented by the partner university to make laptops available to the students was to introduce a re-selling system, supported by a financing scheme.[23]

Beyond Covid-19, some stakeholders engaged in DRC also referred to a difficult security situation as hindering factor for mobility (impossibility of Belgian team members to travel and personally engage with team members at the partner institution) while no such restrictions applied in the case of Ecuador and Vietnam.

[23] This approach was taken independent from the VLIR-UOS project by the IT department.

The survey asked participants to also indicate to what extent their **MSP, network or partnership** helped them navigate through the crisis. Overall, the results show a clear enabling factor that comes from the MSP, Network, or partnership: For each type of cooperation structure, at least 88% of projects state to have benefitted from their MSP, network or partnership as it enabled the project to adapt its activities (see Figure 26). Only some projects also highlighted the help for changing the location of implementation and for changing the outreach strategy/target group. The disaggregated data shows that MSPs and networks respond very similarly (see Figure 26). The same occurs when disaggregating the data along the different project types. Again, no significant differences emerge between JOINT, TEAM and SI projects (see Figure 35 - Annex).

Figure 26: Role of Networks, Partnerships and MSPs in Overcoming a Crisis



Source: Syspons, 2023

The case studies deliver some further examples of **the ways in which cooperation structures were helpful** in times of crises. For instance, two projects indicated that the link established to communities directly located on the research sites and which had previously been trained by the project allowed for an ongoing data collection at times when members of the project team were unable to travel. Moreover, projects indicated that the links established to relevant stakeholders through the cooperation structures helped access actors with greater ease, particularly in the context of Covid-19 during which people limited their interpersonal contacts.

6. Conclusions

Objective 1: Assessing the added value of networks, partnerships and MSPs in the VLIR-UOS portfolio: In relation to the first objective of this evaluation, the analysis shows that overall Multi-Stakeholder-Partnerships (MSPs) **contribute most to projects' sustainability** in comparison to networks and partnerships and also show the highest contribution to **strengthening research capacities,** which is one of the long-term goals of the projects (i.e., one aspect of projects' effectiveness).

Thereby, it appears that among MSPs, the most prominent stakeholder groups involved were other research institutes/ higher education institutions form the partner country, public sector stakeholders (e.g., local/ regional government) form the partner country and other VLIR-UOS projects / other projects of Belgian development actors.

Regarding specific contributions to *projects' effectiveness*, MSPs were found to have more diverse geographical engagement compared to networks and partnerships, involving relevant actors from the Global North and South and a broader range of stakeholders within and outside academia. In addition, MSPs have a higher degree of broader ownership during project implementation than networks, which includes clear roles and responsibilities for all stakeholders and their sustained engagement throughout the project, and significantly influences the contribution of the collaborative structure to the effectiveness of the project. Further, MSPs seem to create the highest mutual benefits and thus contribute to projects' effectiveness in these regards.

Thereby, the features of MSPs that were most important for its successful contribution to effectiveness were, on the one hand, a strong emphasis on **co-creation** and thus a balanced power dynamic among partners that appear to have a more positive impact on projects' effectiveness. This contribution is observed in terms of achieving the long-term objectives in the field of enhancing both, educational and research capacities. On the other hand, a positive, significant correlation between effectiveness in regard of research capacities and the **quality of communication** was observed which contributed to the strengthening of educational capacities of the accompanying projects.

Regarding the contribution to *projects' sustainability*, the analysis showed that MSPs have a higher average value of aspects promoting sustainability than networks, suggesting a greater contribution to project sustainability compared to networks. Thereby, specific contributions of MSPs to increase projects' sustainability were, first, the embeddedness of the project in the local context and thereby the enhanced access to target groups (in particular beneficiaries). Secondly, MSPs are the least vulnerable among the three cooperation structures, as they involve different parties and are formally agreed. In addition, the evaluated MSPs contributed more to the long-term provision of resources in general (financial, human, material) compared to networks. Hereby, in particular, MSP projects are more likely to implement measures to ensure that financial resources are available after the end of the project compared to networks. In addition, MSPs more often than networks implement measures that ensure that project results strengthen digitisation.

The results of the evaluation also show that a higher quality of communication within the MSP is identified as a feature of MSP success, as it is associated with a higher sustainability of the respective project. And project sustainability is closely related to the extent to which a larger number of partners within the MSP can actively contribute to shaping the direction of the collaboration and the shape of the products through co-creation.

Networks, in contrast to MSPs, contribute less to sustainability as well as to strengthened research capacities, which is one of the long-term goals of the projects (i.e., one aspect of projects' effectiveness). Yet, they are **highly effective in enhancing educational capacities**, the other aspect of projects' effectiveness.

Thereby, it appears that among networks, the most prominent stakeholder groups involved were other local/ regional governments, other research institutes / higher education institutions and national governments from the partner country.

In terms of networks' specific contributions to the *effectiveness of projects*, the evaluation findings show that most networks helped to address the needs of the project's beneficiaries (in particular of vulnerable groups) leading to context – specific products and thus strengthened educational capacities. Further, in comparison to MSPs, relatively more networks were identified which helped incubate broader knowledge networks.

The most important features of networks thereby were that, as for MSPs, networks that prioritize **co-creation** processes demonstrate a positive influence on a project's effectiveness (i.e., enhancing educational capacities). Further, networks with a lower **frequency of communication** are more likely to contribute to a project's effectiveness.

Although, networks are not as good as MSPs in contributing to *projects' sustainability*, networks that achieve high scores in this regard exhibit certain success factors. Firstly, they demonstrate a high level of mutual respect among their members, which is related to a greater contribution to projects' sustainability. Additionally, the process of co-creation within these networks, where stakeholders collaboratively contribute to the project, is closely linked to projects' sustainability.

Those networks which score high, have the success features of a high level of **mutual respect** among members of a network, on the one hand. Moreover, the process of **co-creation** is associated with the sustainability of projects within networks, on the other hand.

Objective 2: Assessing the performance of sampled projects along the OECD-DAC criteria: The evaluation of the second objective indicates that projects are generally positively assessed in the *six OECD DAC criteria*, including relevance, coherence, effectiveness, efficiency, impact, and sustainability. However, the analysis of efficiency, impact, and sustainability also identified certain drawbacks or areas for improvement.

In terms of **relevance**, the projects adhered to the needs of beneficiaries/ the target country (policies, priorities)/ the partner institutions as well as relevant global frameworks. Moreover, several projects were linked to other VLIR-UOS projects (**internal coherence**) and most projects confirmed that links to other funding agencies were established (**external coherence**), e.g., to obtain follow-on funding for working on the same topics once the project ended or simply network to add up to common efforts in the same fields.

Regarding **effectiveness**, it can be confirmed that the competences and knowledge of projects' participants have improved. Hereby, it became obvious during the analysis that the projects' reporting was not of high quality, as the results from the project reports do not match reality. Thus, by triangulating findings from the evaluation it was shown that projects have strengthened the state-of-the-art knowledge in research practices of their target group. Further, regarding strengthening educational capacities, JOINT projects performed best and most projects, regardless of the project type, confirmed that project

participants have state-of-the-art didactical competences. Further it was found that even a greater number of stakeholders or individuals than initially planned participated in the project's activities and contributed to the creation of products.

In terms of the projects' **efficiency**, roles and responsibilities within the project team were clear and defined which increased the efficiency of the projects. Hereby, in most cases, (co-)promoters would take a leadership role in project implementation as defined in the proposal. In some cases, however, roles and responsibilities evolved rather organically and other team members as well as further stakeholders (e.g., local communities) were more involved. Yet, for financial efficiency, the results were rather mixed. An enabling factor for financial efficiency mentioned during the interviews was the ability of a project to leverage knowledge and networks developed in a previous project (ICU), thereby increasing its financial efficiency**.** However, some projects criticized the detailed financial reporting system of VLIR-UOS, which consumed a lot of time for the project team. This issue was particularly burdensome for projects with smaller budgets (i.e., especially for SI projects). Further, regarding the Covid-19 pandemic in particular, the analysis shows that disrupted travel plans, resulting in unutilized travel budgets for most projects limited the financial efficiency of these projects. Thereby, time constraints prevented some projects from completing all planned activities, leaving unspent funds. However, in some cases, remaining funds were used during an extension period for additional activities. Moreover, it was noted that the financial management requirements differed between VLIR-UOS and the local university. Thereby, especially the rigid requirements for funds usage imposed by the partner countries' side created some difficulties and administrative burden for the partner. Lastly, it was observed that financial management practices varied significantly among partner country universities.

The overall **impact** perspectives across the cases analysed are rather mixed. While some projects could state clearly achieved impacts, others could only refer to potential long-term effects. In some cases, the assessments between stakeholders engaged in the different project differed. Yet, the findings show that most of the projects with clear impacts in terms of effective uptake or extension of project results were JOINT or TEAM project.

The evaluation found no significant differences in **sustainability** between SI, TEAM, and JOINT projects. Hereby, the evaluation findings showed that the most prominent strategies adopted by the projects were developing exit concepts or strategies, ensuring the availability of qualified personnel to sustain project results, and implementing capacity building approaches to strengthen local partners' institutional capacities. However, in terms of financial sustainability, only a few projects have implemented measures to secure financial resources to maintain project achievements after the project's completion. Additionally, most projects did not address environmental sustainability.

Objective 3: Assessing the Resilience of Different Projects: Regarding the third and last objective of this evaluation, the assessment of the **resilience of the sampled projects,** the evaluation showed that almost all projects were affected by the Covid-19 crisis and that around a quarter of projects also mentioned to have navigated through a political and/or an economic crisis. A rather small number of projects further indicate to have been affected by social crisis. In response to these crises, most projects stated to have benefitted from their MSP, network or partnership as it enabled the project to adapt its activities. Regarding the Covid-19 crisis, projects, for instance, indicated that the links established to relevant stakeholders through the cooperation structures helped access actors with greater ease, particularly in the context of Covid-19 during which people limited their interpersonal contacts.

7. Recommendations

As outlined in chapter 4, networks, partnerships and MSPs were the subject of analysis for the first objective of this evaluation, namely, to assess the added value of these three types of cooperation structure to projects' effectiveness and sustainability. With regard to this first objective, it is therefore recommended that:

1. **If VLIR–UOS wants to put an emphasis on strengthened research capacities and enhance projects' sustainability, it should promote MSPs within future VLIR-UOS projects.** The evaluation demonstrated that MSPs are having the greatest impact on projects' effectiveness in terms of strengthening research capacities (i.e., regarding increasing knowledge on research practices, writing academic publications or attending academic conferences). Further, the evaluation showed that MSPs contribute most to projects' sustainability. Therefore, this type of cooperation structure was identified as the best performing type of cooperation structures for supporting projects' sustainability and effectiveness in terms of research.

2. **When funding MSPs, VLIR–UOS should support strengthening co-creation processes within MSPs.** The evaluation results show that the establishment of co-creation processes was identified as the key feature of MSPs in terms of contributing to projects' effectiveness, both regarding strengthening educational and research capacities. MSPs also performed best in terms of contributing to projects' sustainability, as actors were deeply involved and thus, the likelihood of them taking-up or even extending the projects' results is higher. To ensure effective co-creation, it is recommended that VLIR-UOS actively supports the joint definition of the co-creation process with partners during project design. It is essential to clearly identify the specific products to be co-created, moving beyond a broad focus on knowledge co-creation. During project implementation, it is further advisable that VLIR-UOS establishes feedback mechanisms, such as conducting interviews with local promoters and MSP partners, to monitor the progress of co-creation efforts. Thereby, challenges related to time and geographical constraints in engaging with some MSP partners, such as stakeholder groups located far from partner universities, should be considered.

3. **When funding MSPs, VLIR-UOS should support the identification of companies from Belgium / Europe as potential partners for MSP if appropriate for the project's context, at the proposal or early implementation stage.** The results of the evaluation show that companies from Belgium / Europe were not among the prior actors of any cooperation structure within the sample. Yet, they were assessed to be very innovative. The evaluation team therefore recommends engaging with this stakeholder group more in future MSPs, in case this is appropriate for the project's context. Thereby, the results show that MSP is the cooperation structure in which innovative approaches are most often implemented and thus the evaluation team recommends strengthening innovative approaches within MSPs incl. innovative actors.

4. **If VLIR–UOS wants to focus on strengthening educational capacities, it should promote Networks within future VLIR-UOS projects.** The evaluation results show that, in comparison to MSPs, networks are more effective in contributing to strengthened educational capacities (i.e., regarding establishing new courses or curricula and enhance didactical competences) and thereby, perform well in addressing the needs of the target groups. Consequently, if cooperation structures are meant

to contribute to effectiveness with regard to a broad outreach and a strong practice – orientation, the evaluation team concludes that networks are the most beneficial.

5. **When funding networks, VLIR–UOS should investigate to what extent the frequency of communication is aligned with the essential needs within these networks.** The results of evaluation demonstrate that, in comparison to MSPs, for networks a higher frequency of communication was found to be negatively related with the networks' contribution to the effectiveness of projects. However, what causes the deteriorating effect of frequency of communication within networks on the projects' effectiveness could not be identified. A possible explanation might be that as networks are a rather practice-oriented and loose form of cooperation, a very frequent (e.g., daily, or weekly) exchange between network actors might hinder their effectiveness. Furthermore, a high frequency of communication within networks could be a sign of more disagreements or challenges in the cooperation rather than a deeper level of engagement. Yet, this could not be validated within the evaluation. The evaluation team therefore recommends VLIR-UOS to keep an eye on the frequency of communication within networks.

As outlined in Chapter 4, with regard to the second objective, the evaluation of the performance of the SI/TEAM/COMMON projects 2017-2021, the following is recommended:

6. **To achieve the greatest impact in terms of effective uptake of project results, VLIR – UOS should emphasis on funding TEAM and JOINT projects.** The evaluation showed that most of the projects with clear impacts in terms of effective uptake or effective extension of project results were JOINT or TEAM project. Thereby, the benefits of these types of projects are that they have a higher financial volume and longer project duration than SI projects. With a higher financial volume, an extension of project results/ take – up, for instance, in other implementation sites, is more likely. Further, with a longer project duration, the take – up / use of project results by the target group is more likely as processes are expected to be in a participative way and capacities of the target group can be strengthened in depth over the time.

7. **In general, when VLIR–UOS funds project, it should support applicants to integrate strategies on financial sustainability in their project design and to effectively monitor the progress and achievement of these strategies.** The analysis shows that, regardless of the type of project (SI, TEAM and JOINT), only few projects reported having implemented measures to ensure financial sustainability, while some projects mentioned a lack of future fundings as a treat for the sustainability of project results. At the same time, it became obvious that depending on the type of project, the need for financial strategies differs. Specifically, explorative SI projects, which are in a preliminary "try-out" stage and not a continuation of previous VLIR-UOS projects, place limited emphasis on financial sustainability. Therefore, it is recommended that for such explorative SI projects, which are not continuations of previous VLIR-UOS projects, less detailed information regarding the design and implementation of financial strategies is required. Yet, for TEAM, JOINT as well as non-explorative SI projects (i.e., SI projects with a predecessor VLIR-UOS project), the evaluation team recommends that VLIR-UOS should not only require applicants to outline explicit strategies for financial sustainability in their project proposals but also review and assess them in the progress report after the first year of implementation. Additionally, complementary approaches aligned with these strategies should be closely monitored during the project implementation phase. By integrating financial sustainability measures and implementing robust monitoring systems, VLIR-UOS can thus ensure the long-term viability and success of funded projects.

8. **Also, when VLIR–UOS funds project, it should encourage applicants to embed strategies on environmental sustainability in their project design, if applicable to the project's context, and to effectively monitor the progress and achievement of these strategies.** The evaluation results indicate that only a small number of projects have addressed environmental sustainability, highlighting the need for implementation measures in this area. Therefore, the evaluation team suggests that VLIR-UOS encourages applicants to include specific strategies for addressing environmental sustainability in their project proposals, considering the project's context. However, this recommendation does not apply universally to all projects. Projects focused on curriculum development, for example, may not prioritize environmental sustainability. Nonetheless, for other projects without an explicit environmental objective, it may be appropriate to incorporate strategies for environmental sustainability. For instance, projects requiring numerous international input products could explore areas related to trade. Furthermore, the respective measures aligned with these strategies should be monitored during the project implementation phase. To facilitate this process, it is advisable for VLIR-UOS to emphasize providing guidance and practical guidelines that inspire applicants to effectively integrate environmental sustainability strategies into their project design and implementation.

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ANNEXES

Annex 1: Overview of projects selected for field visit

Annex 2: Online Survey – Further figures

Annex 3: List of persons interviewed *(separate annex)*

Annex 4: Documentation of data analysis *(separate annex)*

Annex 5: Analysis grid *(separate annex)*

Annex 7: Interview guidelines for field visits *(separate annexes)*

Annex 8: Questionnaire of the online survey *(separate annex)*

Annex 9: List of projects who participated in the online survey (separate annex)

Annex 1: Overview of projects selected for field visits

VLIR-UOS Programme	Project Title	Name of Flemish promoter	Discipline	Start year	Flemish (main) institution	Partner (main) institution	Project End	Diversity of Flemish higher education institutions	Project focus	Typology I	Typology II
Ecuador											
South Initiatives	COFOREC Consolidating a long-term forest monitoring network in a human modified landscape in Northern Ecuador.	Hans Verbeeck	0401 Agriculture, forestry, fisheries and allied sciences	2018	Universiteit Gent	Escuela Politécnica Nacional	post-Covid-19	University	Research, education and uptake	Multi-Actor-Networks	MSP - Type 2
South Initiatives	Incorporating sustainability concepts to management models of textile Micro, Small and Medium Enterprises (SUMA)	Alexandra Van den Abbeele	0205 Materials engineering	2020	KU Leuven	Universidad de Cuenca	post-Covid-19	University	Research and uptake	Multi-Actor-Networks	MSP - Type 1
TEAM project	Innovative governance systems for built cultural heritage, based on traditional Andean organisational principles in Ecuador.	Koenraad Van Balen	0201 Civil and building engineering	2019	KU Leuven	Universidad de Cuenca	post-Covid-19	University	Research and education	Networks	Network - type 2
JOINT project	Statistics for development	Ziv Shkedy	0503 Pedagogical and educational sciences	2018	Universiteit Hasselt	Escuela Superior Politécnica del Litoral	post-Covid-19	University	Research and education	Networks	Network - Type 1

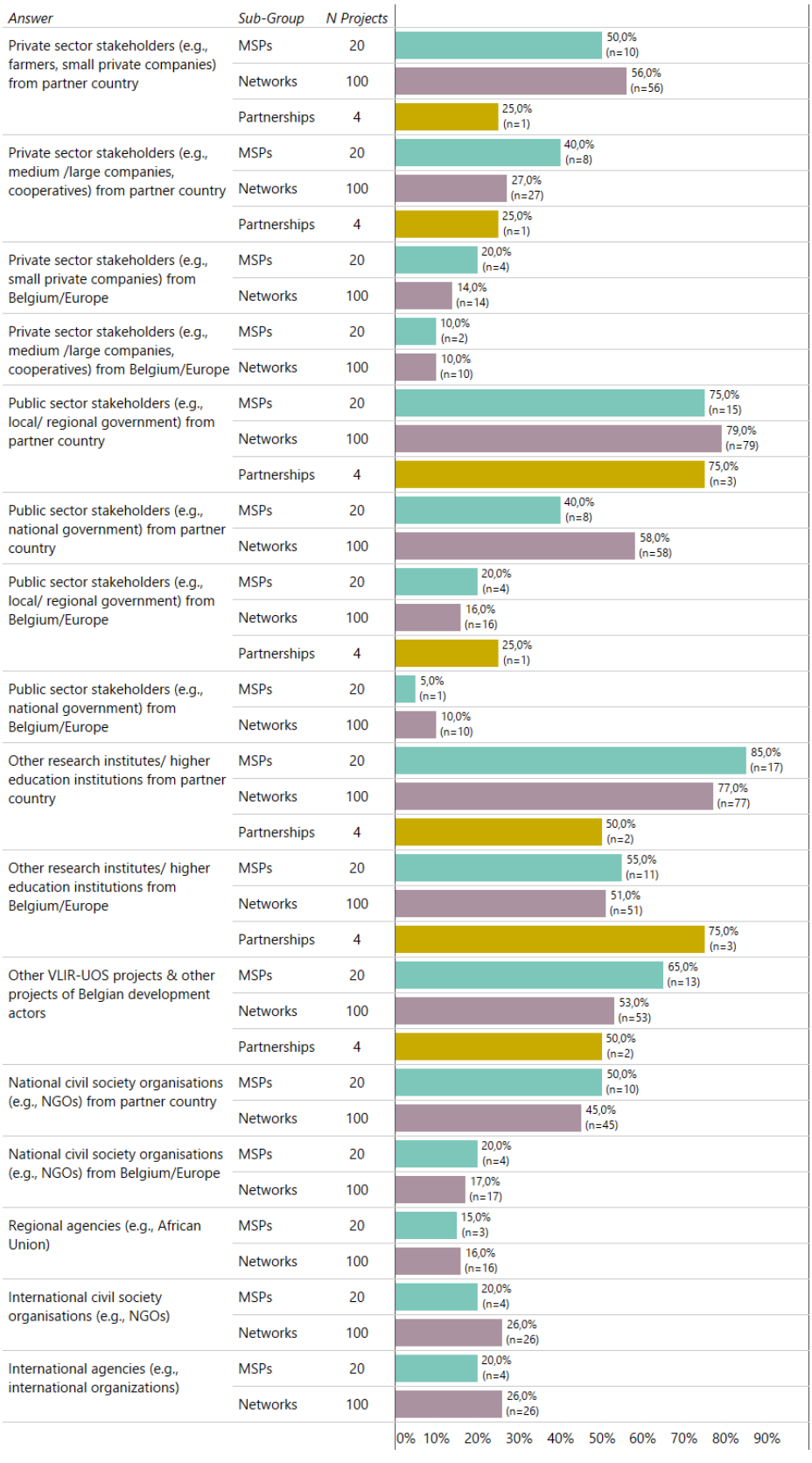
Vietnam											
JOINT project	Joint endeavour to enhance dairy and beef production in Vietnam, Uganda & Ethiopia	Veerle Fievez	0401 Agriculture, forestry, fisheries and allied sciences	2019	Universiteit Gent	Hue University of Agriculture and Forestry	post-Covid-19	University	Research and uptake	Networks	Network - Type 3
South Initiatives	Building Capacity for Disaster Management for the Mountainous region of Da Bac district, Hoa Binh Province, Vietnam	Matthieu Kervyn	0107 Environmental sciences	2020	Vrije Universiteit Brussel	Vietnam Institute of Geosciences and Mineral Resources	post-Covid-19	University	Research	Networks	Network - Type 1
South Initiatives	Enhancing the educational program and the research of the master in solid state physics at Quy Nhon University	Kristiaan Temst	0503 Pedagogical and educational sciences	2018	KU Leuven	Quy Nhon University	pre-Covid-19	University	N/A	N/A	N/A[24]
TEAM projects	Impact of saltwater intrusion on water resources and irrigation in the Southern Central region of Vietnam under climate change	Thomas Hermans	0201 Civil and building engineering	2019	Universiteit Gent	Vietnam Institute of Geosciences and Mineral Resources	post-Covid-19	University	Research and uptake	Networks	Network - Type 2
DR Congo											

[24] As explained in chapter 3, this project was excluded from the sample since the interviewees were not available to participate in the field visit.

South Initiatives	Practical reorientation and quality improvement of the Informatics curriculum at the Catholic University of Bukavu.	Piet Boedt	0503 Pedagogical and educational sciences	2018	Karel De Grote Hogeschool	Université Catholique de Bukavu	pre-Covid-19	University college	Education	Networks	N/A
South Initiatives	Planification du développement territorial et gestion urbaine par les cadres de base de la ville de Lubumbashi	Oswald Devisch	0201 Civil and building engineering	2020	Universiteit Hasselt	Université de Lubumbashi	post-Covid-19	University	Research and uptake	Partnerships	Partnerships
JOINT project	A network for research and multidisciplinary medical care for oculocutaneous albinism in the DR Congo.	Koenraad Devriendt	0303 Health sciences	2020	KU Leuven	Université de Kinshasa	post-Covid-19	University	Research, education, organisation and uptake	Networks	Network - Type 4
TEAM projects	Understanding responses and resilience of central Congo basin forests to a changing environment – FORMONCO II	Pascal Boeckx	0105 Earth sciences	2018	Universiteit Gent	Université de Lubumbashi	post-Covid-19	University	Research	Networks	Network - Type 5

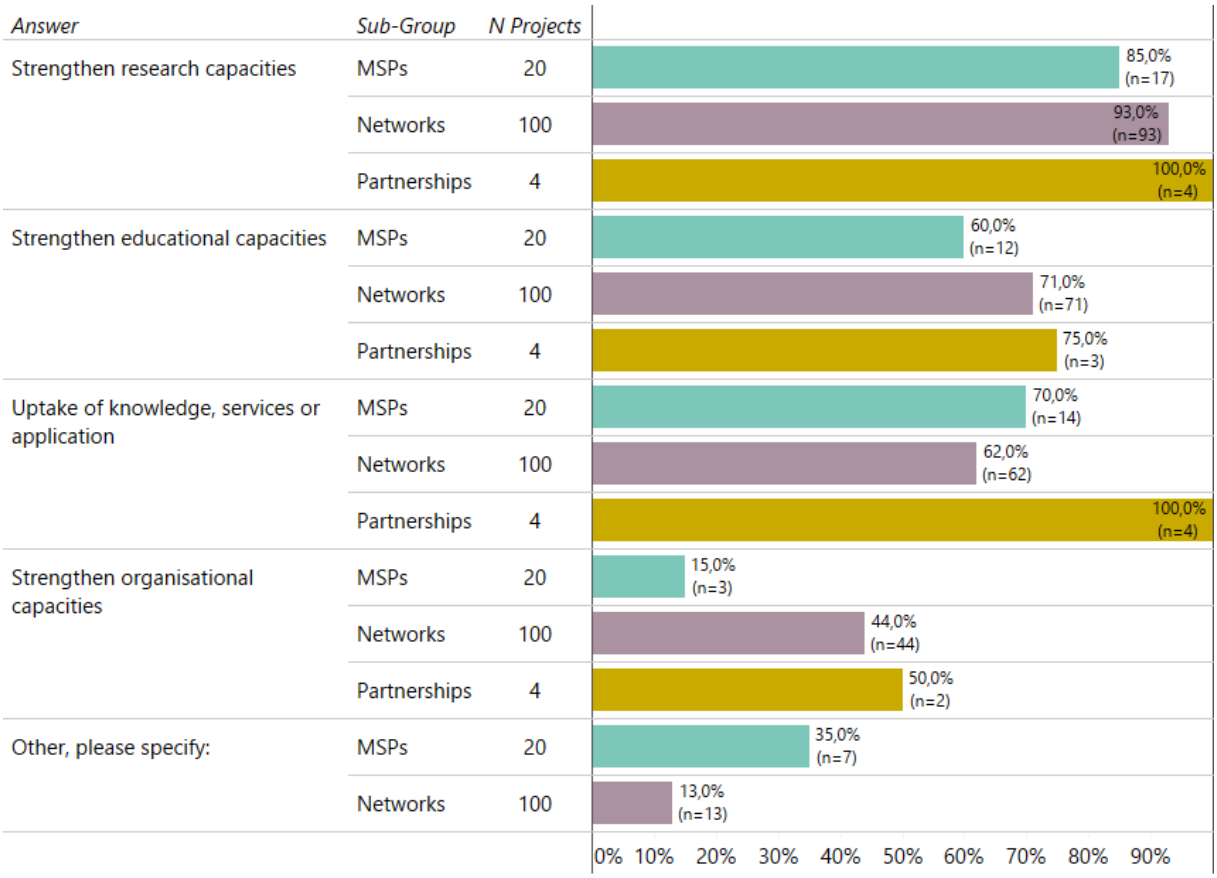
Annex 2: Figures - Online Survey

Figure 27: Stakeholder Groups Involved in the Networks/Partnerships and MSPs



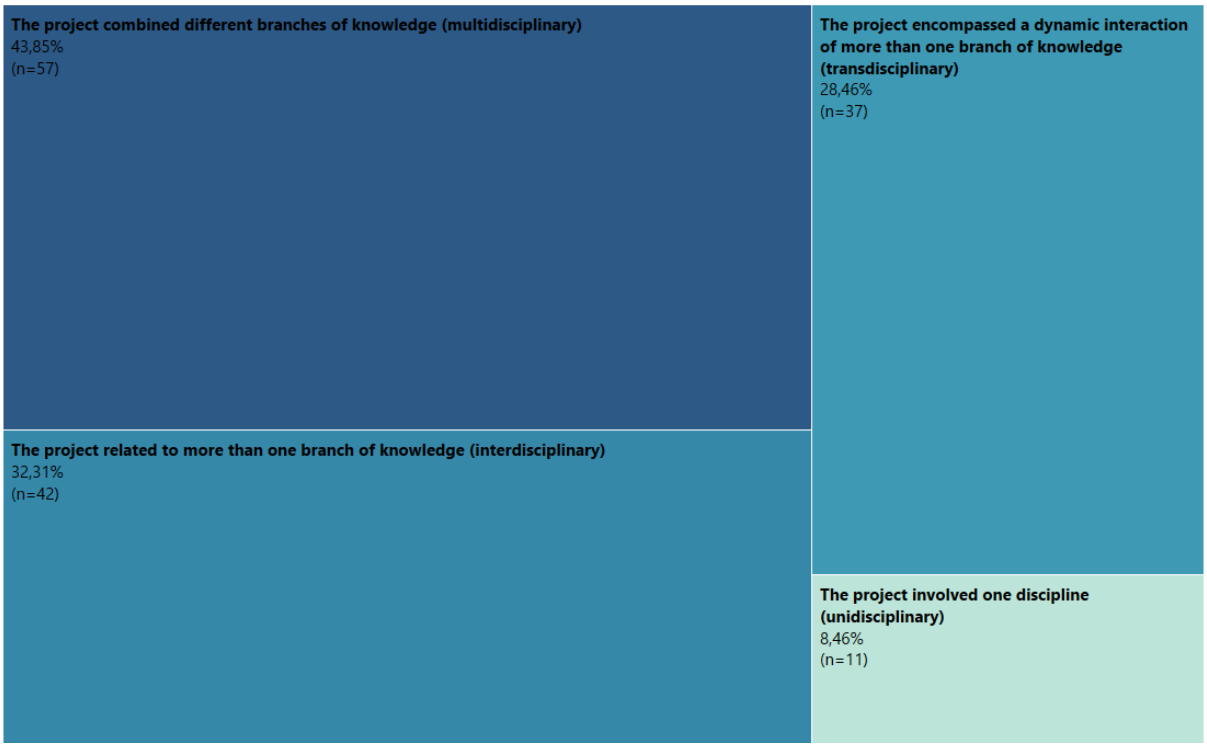
Source: Syspons, 2023

Figure 28: Projects Contributions to Specific Outcomes



Source: Syspons, 2023

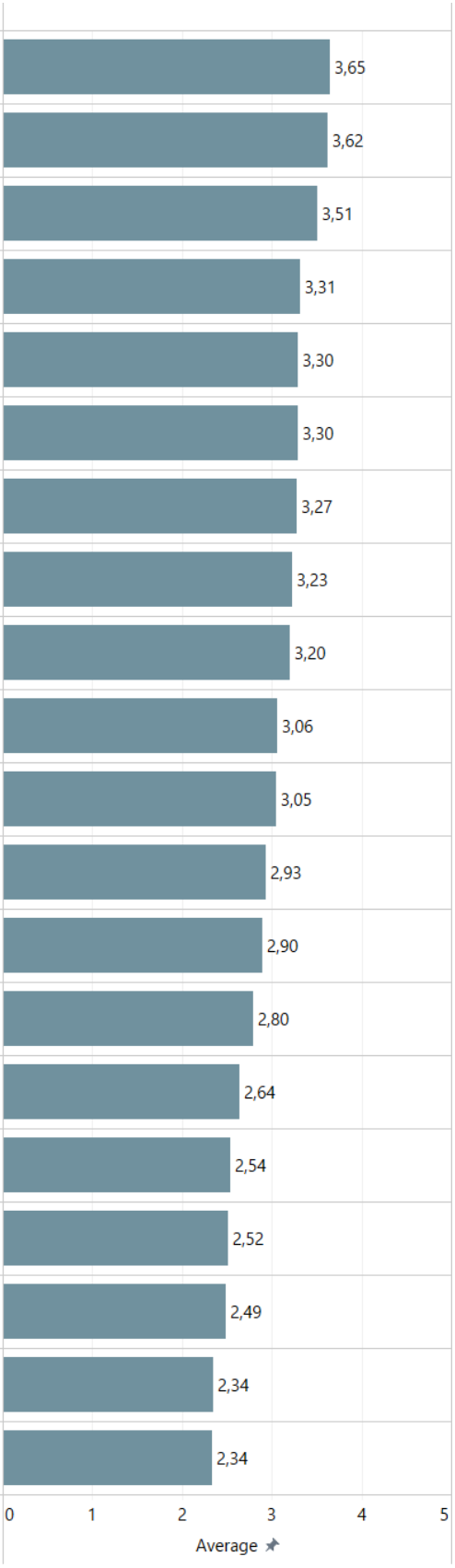
Figure 29: Type of Disciplines the Projects Worked on



Source: Syspons, 2023

Figure 30: Characteristics of Local, Regional and National Governments from the Global South

Stakeholder	Answer	N Projects	Average
Public sector stakeholders (e.g., local/ regional government) from partner country	Unreliable (1) - Reliable (5)	59	3,65
Public sector stakeholders (e.g., national government) from partner country	Unreliable (1) - Reliable (5)	45	3,62
Public sector stakeholders (e.g., local/ regional government) from partner country	Eye-to-eye (1) - Hierarchical (5)	59	3,51
Public sector stakeholders (e.g., national government) from partner country	Ineffective in reaching impact (1) - Effective in reaching impact (5)	45	3,31
Public sector stakeholders (e.g., local/ regional government) from partner country	Proactive (1) - Reactive (5)	59	3,30
Public sector stakeholders (e.g., local/ regional government) from partner country	Low agenda- setting power (1) - High agenda- setting power (5)	59	3,30
Public sector stakeholders (e.g., national government) from partner country	Low agenda- setting power (1) - High agenda- setting power (5)	44	3,27
Public sector stakeholders (e.g., local/ regional government) from partner country	Ineffective in reaching impact (1) - Effective in reaching impact (5)	59	3,23
Public sector stakeholders (e.g., national government) from partner country	Weak in implementation (1) - Strong in implementation (5)	43	3,20
Public sector stakeholders (e.g., local/ regional government) from partner country	Weak in implementation (1) - Strong in implementation (5)	59	3,06
Public sector stakeholders (e.g., national government) from partner country	Eye-to-eye (1) - Hierarchical (5)	44	3,05
Public sector stakeholders (e.g., national government) from partner country	Proactive (1) - Reactive (5)	45	2,93
Public sector stakeholders (e.g., local/ regional government) from partner country	Traditional (1) - Innovative (5)	59	2,90
Public sector stakeholders (e.g., national government) from partner country	Traditional (1) - Innovative (5)	44	2,80
Public sector stakeholders (e.g., national government) from partner country	Financially poor (1) - Financially rich (5)	44	2,64
Public sector stakeholders (e.g., local/ regional government) from partner country	Financially poor (1) - Financially rich (5)	59	2,54
Public sector stakeholders (e.g., local/ regional government) from partner country	Transparent (1) - Untransparent (5)	58	2,52
Public sector stakeholders (e.g., national government) from partner country	Bureaucratic (1) - Unbureaucratic (5)	44	2,49
Public sector stakeholders (e.g., national government) from partner country	Transparent (1) - Untransparent (5)	45	2,34
Public sector stakeholders (e.g., local/ regional government) from partner country	Bureaucratic (1) - Unbureaucratic (5)	59	2,34



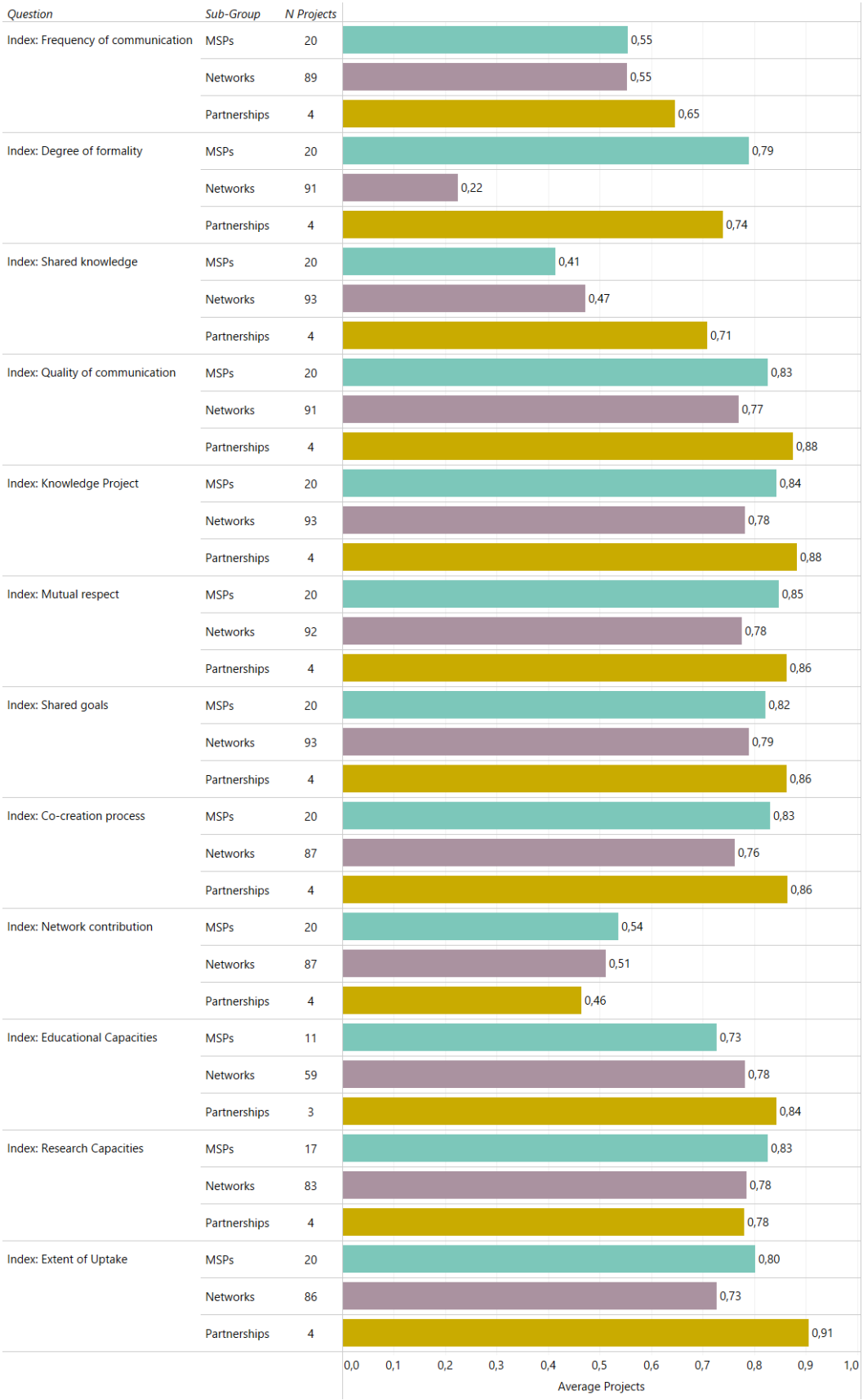
Source: Syspons, 2023

Figure 31: Role of digital communication forms disaggregated by end of project (pre- versus post- Covid-19)

Question	Answer	N Projects	n.a.	Mean	post-Corona		pre-Corona	
18. Role of digital forms of communication and collaboration in the network/ partnership	Digital forms of communication and collaboration were essential for initiating the network/partnership.	130	0	5,11	5,12 125	0,01	4,80 5	-0,31
	Digital forms of communication and collaboration were essential for joint implementation.	130	0	5,24	5,24 125	0,00	5,20 5	-0,04
	Digital forms of communication and collaboration were essential for ongoing collaboration after the project ended.	123	9	5,26	5,25 118	-0,01	5,60 5	0,34

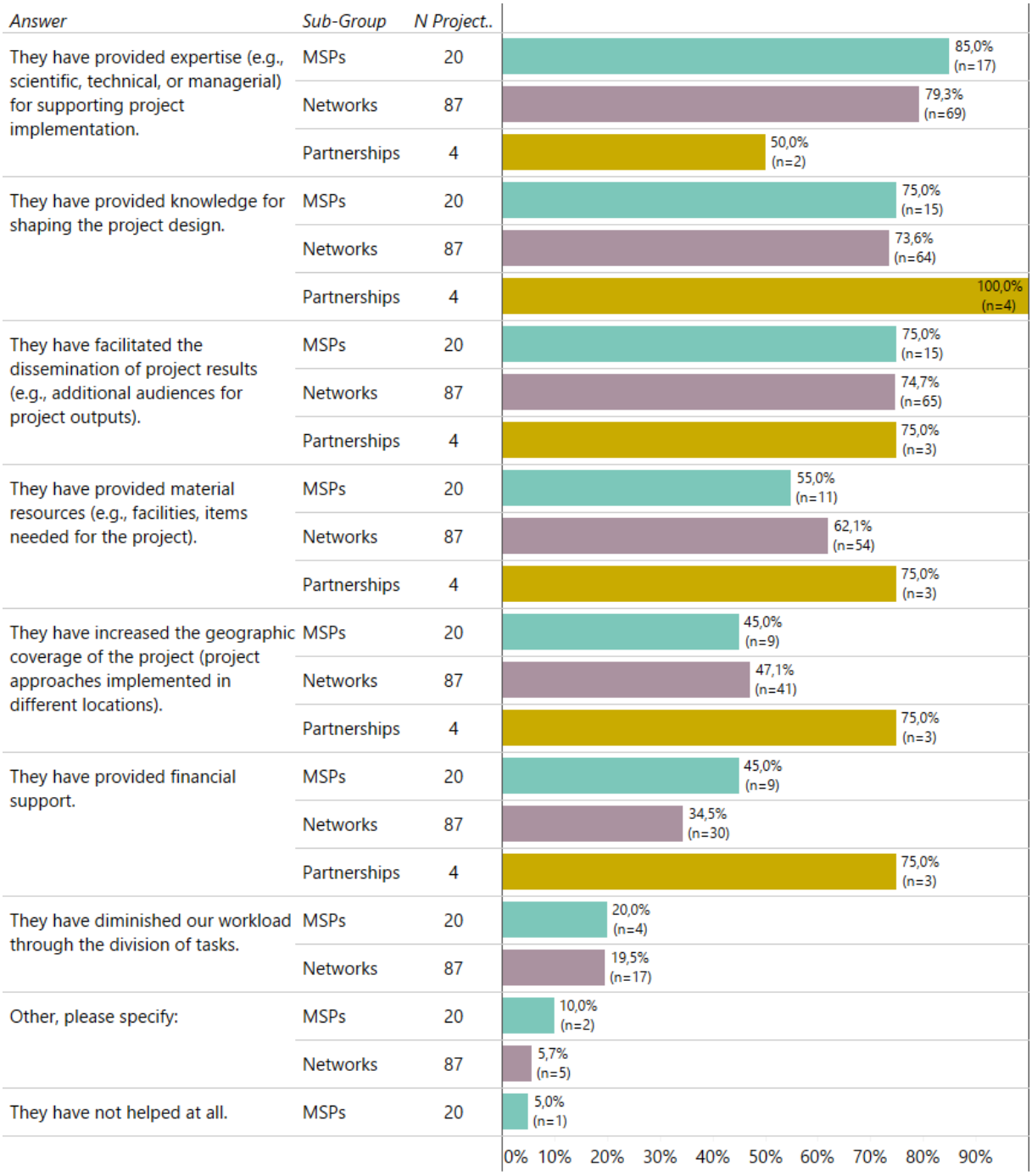
Source: Syspons, 2023

Figure 32: Indices Describing the Features of Cooperation Structures



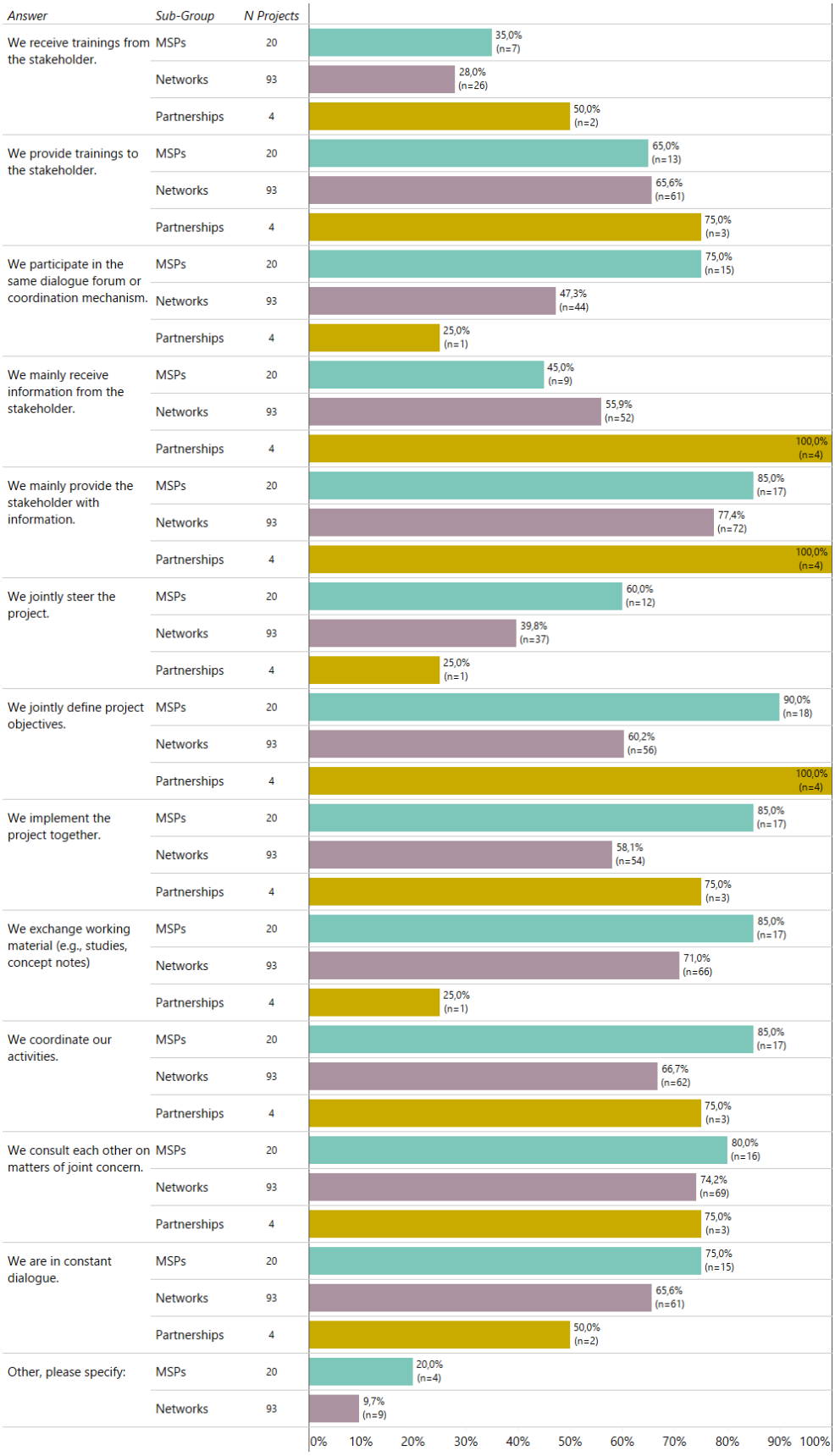
Source: Syspons, 2023

Figure 33: Extent to which networks, partnerships and MSPs helped to achieve project objectives



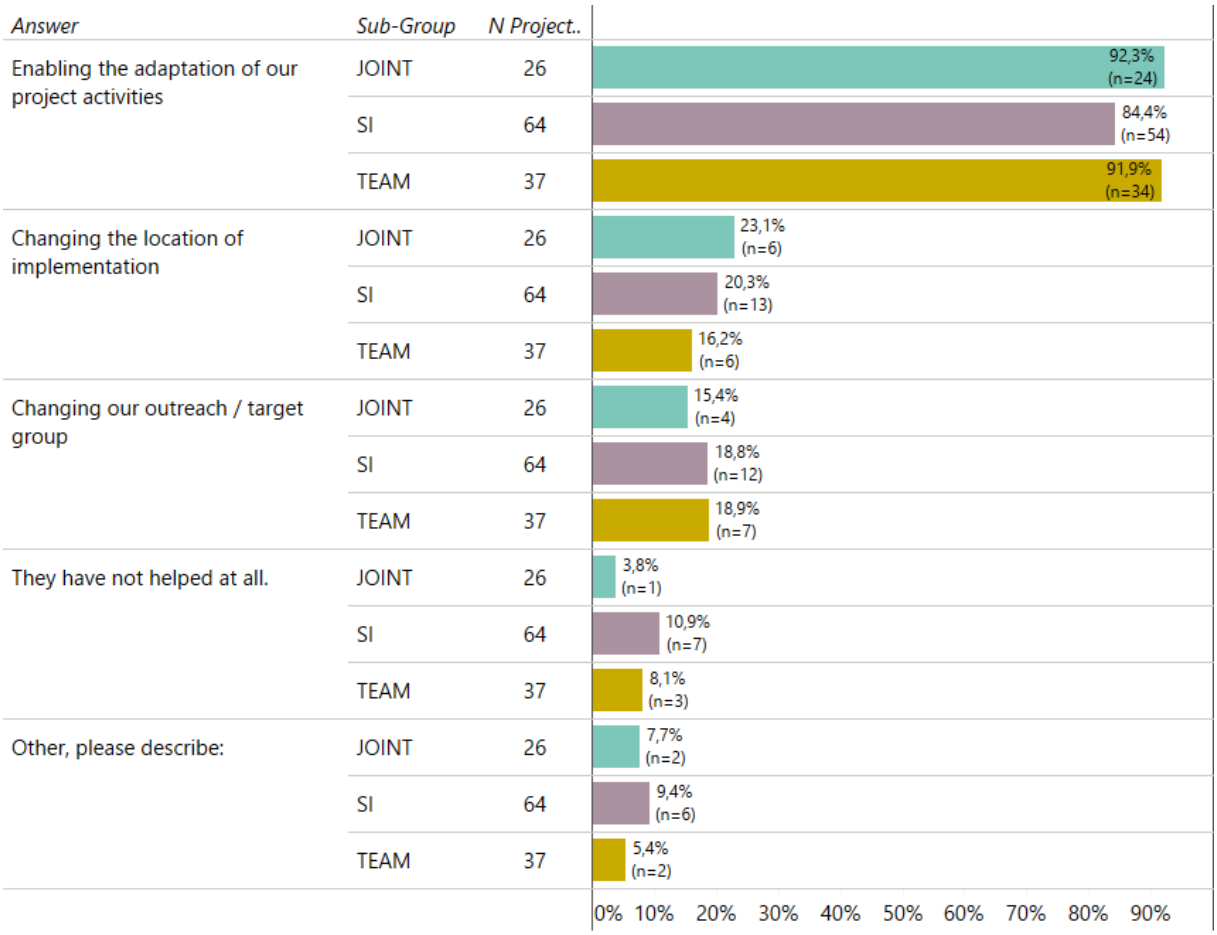
Source: Syspons, 2023

Figure 34: Type of Work within Collaboration by Cooperation Structure



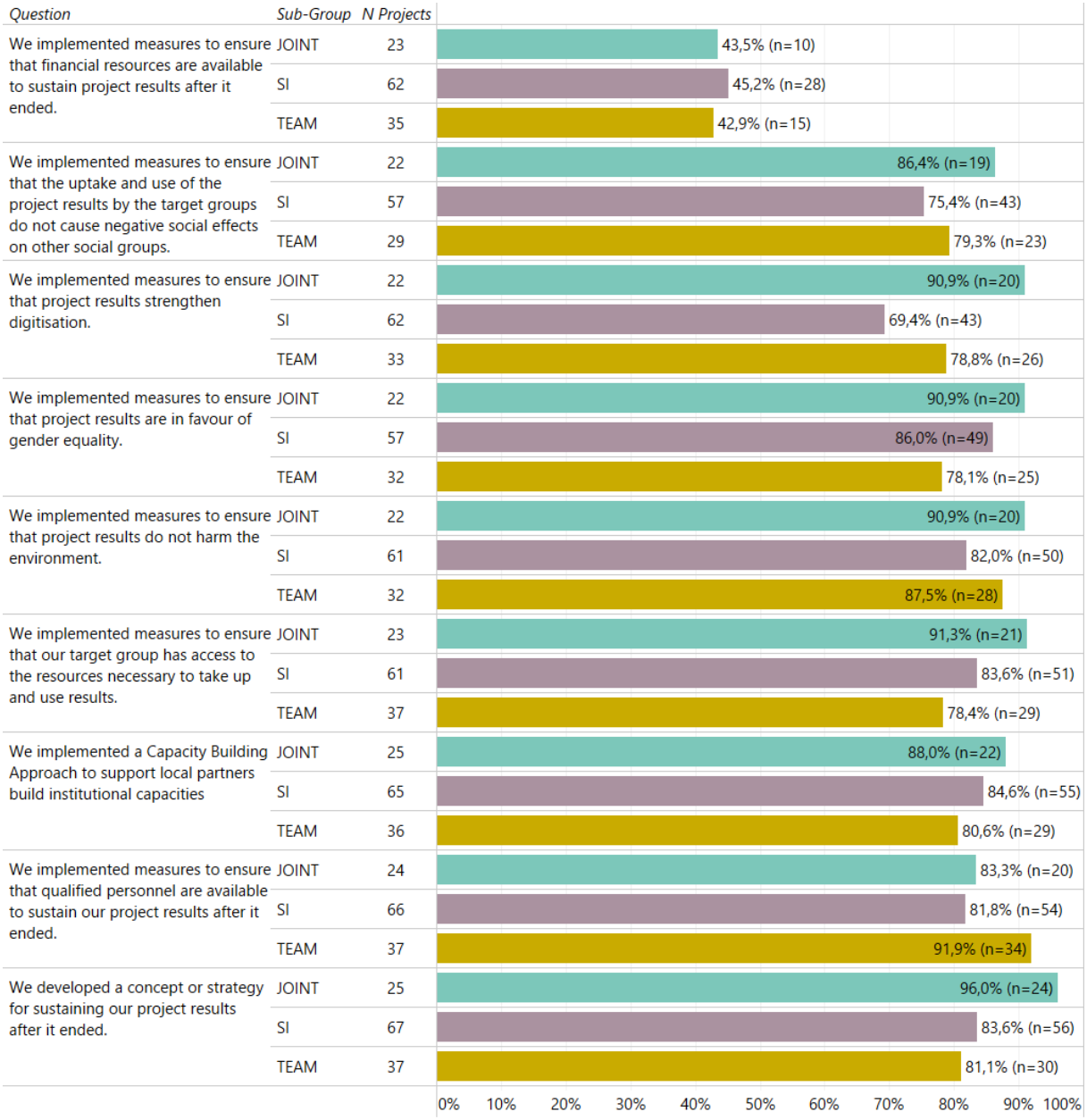
Source: Syspons, 2023

Figure 35: Contribution to Cope with Crises by Project Type



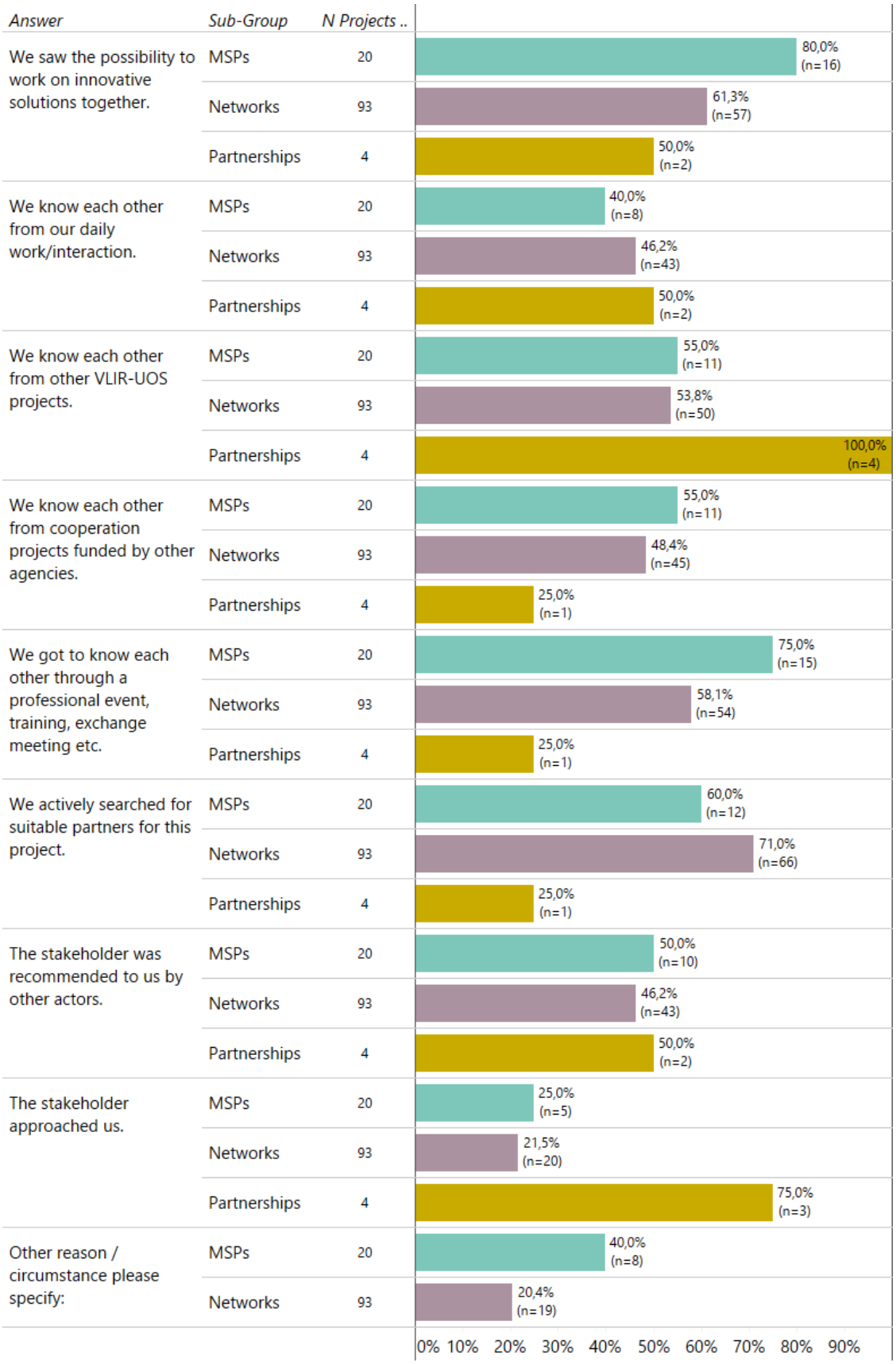
Source: Syspons, 2023

Figure 36: Sustainability Strategies by Project Type



Source: Syspons, 2023

Figure 37: Cooperation came into being by Cooperation Structure



Source: Syspons, 2023

Figure 38: Communication Quality Assessment of Stakeholder Groups

Stakeholder	*N Projects*	*n.a.*	*Mean*	MSPs		Networks		Partnerships	
Private sector stakeholders (e.g., small private companies) from Belgium/Europe	5	0	5,40	**5,25** 4	-0,15	**6,00** 1	0,60		
Private sector stakeholders (e.g., farmers, small private companies) from partner country	15	0	4,53	**2,00** 1	-2,53	**4,71** 14	0,18		
Private sector stakeholders (e.g., medium /large companies, cooperatives) from Belgium/Europe	2	0	6,00	**6,00** 1	0,00	**6,00** 1	0,00		
Private sector stakeholders (e.g., medium /large companies, cooperatives) from partner country	8	0	5,38	**5,50** 4	0,13	**5,33** 3	-0,04	**5,00** 1	-0,38
Public sector stakeholders (e.g., local/ regional government) from Belgium/Europe	4	0	5,50	**6,00** 1	0,50	**5,33** 3	-0,17		
Public sector stakeholders (e.g., local/ regional government) from partner country	31	0	4,58	**4,50** 2	-0,08	**4,54** 28	-0,04	**6,00** 1	1,42
Public sector stakeholders (e.g., national government) from Belgium/Europe	2	0	6,00	**6,00** 1	0,00	**6,00** 1	0,00		
Public sector stakeholders (e.g., national government) from partner country	27	0	4,00	**2,00** 1	-2,00	**4,08** 26	0,08		
National civil society organisations (e.g., NGOs) from Belgium/Europe	3	0	3,67	**6,00** 1	2,33	**2,50** 2	-1,17		
National civil society organisations (e.g., NGOs) from partner country	13	0	5,27	**5,88** 4	0,61	**5,00** 9	-0,27		
Other research institutes/ higher education institutions from Belgium/Europe	24	0	5,75	**6,00** 3	0,25	**5,79** 19	0,04	**5,00** 2	-0,75
Other research institutes/ higher education institutions from partner country	35	0	5,13	**5,70** 10	0,57	**4,94** 24	-0,19	**4,00** 1	-1,13
Regional agencies (e.g., African Union)	2	0	5,50			**5,50** 2	0,00		
International civil society organisations (e.g., NGOs)	2	0	5,25	**5,50** 1	0,25	**5,00** 1	-0,25		
International agencies (e.g., international organizations)	2	0	5,50			**5,50** 2	0,00		
Other VLIR-UOS projects & other projects of Belgian development actors	16	0	5,66	**5,80** 5	0,14	**5,55** 10	-0,11	**6,00** 1	0,34

Source: Syspons, 2023

Figure 39: Frequency of Communication with other Stakeholder Groups

Stakeholder	*N Projects*	*n.a.*	*Mean*	MSPs		Networks		Partnerships	
Private sector stakeholders (e.g., small private companies) from Belgium/Europe	5	0	4,20	**4,50** 4	0,30	**3,00** 1	-1,20		
Private sector stakeholders (e.g., farmers, small private companies) from partner country	41	0	3,13	**3,17** 6	0,03	**3,10** 34	-0,03	**4,00** 1	0,87
Private sector stakeholders (e.g., medium /large companies, cooperatives) from Belgium/Europe	2	0	3,50	**3,00** 1	-0,50	**4,00** 1	0,50		
Private sector stakeholders (e.g., medium /large companies, cooperatives) from partner country	12	1	3,04	**3,30** 5	0,26	**2,67** 6	-0,38	**4,00** 1	0,96
Public sector stakeholders (e.g., local/ regional government) from Belgium/Europe	6	0	3,33	**4,00** 1	0,67	**3,25** 4	-0,08	**3,00** 1	-0,33
Public sector stakeholders (e.g., local/ regional government) from partner country	53	3	2,93	**1,67** 3	-1,27	**2,99** 49	0,06	**4,00** 1	1,07
Public sector stakeholders (e.g., national government) from Belgium/Europe	2	0	4,00	**4,00** 1	0,00	**4,00** 1	0,00		
Public sector stakeholders (e.g., national government) from partner country	37	1	2,88	**2,00** 2	-0,88	**2,93** 35	0,05		
National civil society organisations (e.g., NGOs) from Belgium/Europe	2	0	4,00	**4,00** 1	0,00	**4,00** 1	0,00		
National civil society organisations (e.g., NGOs) from partner country	20	2	3,60	**3,36** 7	-0,24	**3,73** 13	0,13		
Other research institutes/ higher education institutions from Belgium/Europe	29	2	3,72	**3,50** 6	-0,22	**3,75** 20	0,03	**4,00** 3	0,28
Other research institutes/ higher education institutions from partner country	47	0	3,70	**3,73** 11	0,03	**3,70** 35	0,00	**3,50** 1	-0,20
Regional agencies (e.g., African Union)	2	0	2,00			**2,00** 2	0,00		
International civil society organisations (e.g., NGOs)	3	0	3,33	**3,00** 1	-0,33	**3,50** 2	0,17		
International agencies (e.g., international organizations)	5	0	4,00			**4,00** 5	0,00		
Other VLIR-UOS projects & other projects of Belgian development actors	23	0	3,54	**3,75** 4	0,21	**3,50** 17	-0,04	**3,50** 2	-0,04

Source: Syspons, 2023

Figure 40: Online - Survey Partner's knowledge about the work of the project

Stakeholder	*N Projects*	*n.a.*	*Mean*	MSPs		Networks		Partnerships	
Private sector stakeholders (e.g., small private companies) from Belgium/Europe	5	0	4,40	**4,50** 4	0,10	**4,00** 1	-0,40		
Private sector stakeholders (e.g., farmers, small private companies) from partner country	43	0	3,55	**3,67** 6	0,12	**3,51** 36	-0,03	**4,00** 1	0,45
Private sector stakeholders (e.g., medium /large companies, cooperatives) from Belgium/Europe	2	0	5,00	**5,00** 1	0,00	**5,00** 1	0,00		
Private sector stakeholders (e.g., medium /large companies, cooperatives) from partner country	13	0	3,92	**3,92** 6	-0,01	**3,92** 6	-0,01	**4,00** 1	0,08
Public sector stakeholders (e.g., local/ regional government) from Belgium/Europe	6	0	4,67	**5,00** 1	0,33	**4,50** 4	-0,17	**5,00** 1	0,33
Public sector stakeholders (e.g., local/ regional government) from partner country	58	0	3,69	**3,50** 4	-0,19	**3,68** 53	-0,01	**5,00** 1	1,31
Public sector stakeholders (e.g., national government) from Belgium/Europe	1	1	5,00	**5,00** 1	0,00				
Public sector stakeholders (e.g., national government) from partner country	43	0	3,95	**4,00** 3	0,05	**3,95** 40	0,00		
National civil society organisations (e.g., NGOs) from Belgium/Europe	3	0	4,33	**5,00** 1	0,67	**4,00** 2	-0,33		
National civil society organisations (e.g., NGOs) from partner country	24	0	4,15	**4,21** 7	0,07	**4,12** 17	-0,03		
Other research institutes/ higher education institutions from Belgium/Europe	33	0	4,62	**4,50** 6	-0,12	**4,69** 24	0,07	**4,33** 3	-0,29
Other research institutes/ higher education institutions from partner country	51	0	4,24	**4,50** 11	0,26	**4,14** 39	-0,09	**5,00** 1	0,76
Regional agencies (e.g., African Union)	2	0	3,00			**3,00** 2	0,00		
International civil society organisations (e.g., NGOs)	4	0	3,88	**4,50** 1	0,63	**3,67** 3	-0,21		
International agencies (e.g., international organizations)	6	0	4,00			**4,00** 6	0,00		
Other VLIR-UOS projects & other projects of Belgian development actors	25	0	4,06	**4,50** 5	0,44	**3,95** 19	-0,11	**4,00** 1	-0,06

Source: Syspons, 2023

Figure 41: Knowledge co-creation process with stakeholder groups

Question	Stakeholder	N Projects	n.a.	Mean	MSPs		Networks		Partnerships	
16. Please assess the following statements about the knowledge co-creation process with <stakeholder group>	International agencies (e.g., international organizations)	6	0	4,37			4,37 6	0,00		
	International civil society organisations (e.g., NGOs)	4	0	5,02	4,92 1	-0,10	5,06 3	0,03		
	National civil society organisations (e.g., NGOs) from [project country]	22	0	5,06	4,98 7	-0,08	5,10 15	0,04		
	National civil society organisations (e.g., NGOs) from Belgium/Europe	3	0	3,89	4,83 1	0,94	3,42 2	-0,47		
	Other research institutes/ higher education institutions from [project country]	52	0	4,65	5,44 11	0,78	4,45 40	-0,21	4,38 1	-0,28
	Other research institutes/ higher education institutions from Belgium/Europe	33	0	5,16	5,36 6	0,19	5,17 24	0,00	4,74 3	-0,42
	Other VLIR-UOS projects & other projects of Belgian development actors	26	0	4,88	5,69 6	0,81	4,66 19	-0,22	4,18 1	-0,70
	Private sector stakeholders (e.g., farmers, small private companies) from [project country]	41	0	4,64	4,72 6	0,08	4,61 34	-0,03	5,29 1	0,65
	Private sector stakeholders (e.g., medium /large companies, cooperatives) from [project country]	13	0	4,75	4,83 6	0,08	4,68 6	-0,07	4,73 1	-0,02
	Private sector stakeholders (e.g., medium /large companies, cooperatives) from Belgium/Europe	2	0	5,63	5,92 1	0,29	5,33 1	-0,29		
	Private sector stakeholders (e.g., small private companies) from Belgium/Europe	4	0	5,55	5,55 4	0,00				
	Public sector stakeholders (e.g., local/ regional government) from [project country]	55	0	4,38	3,79 4	-0,58	4,39 50	0,01	6,00 1	1,62
	Public sector stakeholders (e.g., local/ regional government) from Belgium/Europe	5	0	5,38	6,00 1	0,62	5,08 3	-0,29	5,64 1	0,26
	Public sector stakeholders (e.g., national government) from [project country]	42	0	4,44	3,44 3	-0,99	4,51 39	0,08		
	Public sector stakeholders (e.g., national government) from Belgium/Europe	2	0	6,00	6,00 1	0,00	6,00 1	0,00		
	Regional agencies (e.g., African Union)	2	0	4,63			4,63 2	0,00		

Source: Syspons, 2023

Figure 42: Partner's recognition of the work of the project

Stakeholder	*N Projects*	*n.a.*	*Mean*	MSPs		Networks		Partnerships	
Private sector stakeholders (e.g., small private companies) from Belgium/Europe	5	0	4,00	**4,00** 4	0,00	**4,00** 1	0,00		
Private sector stakeholders (e.g., farmers, small private companies) from partner country	43	0	3,69	**3,83** 6	0,15	**3,63** 36	-0,06	**5,00** 1	1,31
Private sector stakeholders (e.g., medium /large companies, cooperatives) from Belgium/Europe	2	0	5,00	**5,00** 1	0,00	**5,00** 1	0,00		
Private sector stakeholders (e.g., medium /large companies, cooperatives) from partner country	12	1	3,92	**4,00** 5	0,08	**3,67** 6	-0,25	**5,00** 1	1,08
Public sector stakeholders (e.g., local/ regional government) from Belgium/Europe	6	0	4,50	**5,00** 1	0,50	**4,25** 4	-0,25	**5,00** 1	0,50
Public sector stakeholders (e.g., local/ regional government) from partner country	58	0	3,76	**3,75** 4	-0,01	**3,74** 53	-0,02	**5,00** 1	1,24
Public sector stakeholders (e.g., national government) from Belgium/Europe	1	1	5,00	**5,00** 1	0,00				
Public sector stakeholders (e.g., national government) from partner country	43	0	4,05	**4,33** 3	0,29	**4,03** 40	-0,02		
National civil society organisations (e.g., NGOs) from Belgium/Europe	3	0	4,00	**5,00** 1	1,00	**3,50** 2	-0,50		
National civil society organisations (e.g., NGOs) from partner country	23	1	4,24	**4,43** 7	0,19	**4,16** 16	-0,08		
Other research institutes/ higher education institutions from Belgium/Europe	33	1	4,38	**4,17** 6	-0,21	**4,52** 24	0,14	**3,67** 3	-0,71
Other research institutes/ higher education institutions from partner country	51	0	4,14	**4,41** 11	0,27	**4,06** 39	-0,07	**4,00** 1	-0,14
Regional agencies (e.g., African Union)	2	0	3,00			**3,00** 2	0,00		
International civil society organisations (e.g., NGOs)	4	0	4,13	**4,50** 1	0,38	**4,00** 3	-0,13		
International agencies (e.g., international organizations)	6	0	4,00			**4,00** 6	0,00		
Other VLIR-UOS projects & other projects of Belgian development actors	25	0	3,98	**4,50** 5	0,52	**3,89** 19	-0,09	**3,00** 1	-0,98

Source: Syspons, 2023

Figure 43: Partner sharing the same goals the project pursues

Stakeholder	*N Projects*	*n.a.*	*Mean*	MSPs		Networks		Partnerships	
Private sector stakeholders (e.g., small private companies) from Belgium/Europe	5	0	4,00	**4,00** 4	0,00	**4,00** 1	0,00		
Private sector stakeholders (e.g., farmers, small private companies) from partner country	42	1	3,68	**3,83** 6	0,15	**3,64** 35	-0,04	**4,00** 1	0,32
Private sector stakeholders (e.g., medium /large companies, cooperatives) from Belgium/Europe	2	0	4,50	**5,00** 1	0,50	**4,00** 1	-0,50		
Private sector stakeholders (e.g., medium /large companies, cooperatives) from partner country	13	0	4,08	**4,00** 6	-0,08	**4,17** 6	0,09	**4,00** 1	-0,08
Public sector stakeholders (e.g., local/ regional government) from Belgium/Europe	6	0	4,67	**5,00** 1	0,33	**4,50** 4	-0,17	**5,00** 1	0,33
Public sector stakeholders (e.g., local/ regional government) from partner country	56	2	3,86	**3,50** 4	-0,36	**3,86** 51	0,01	**5,00** 1	1,14
Public sector stakeholders (e.g., national government) from Belgium/Europe	1	1	5,00	**5,00** 1	0,00				
Public sector stakeholders (e.g., national government) from partner country	43	0	4,07	**4,00** 3	-0,07	**4,08** 40	0,01		
National civil society organisations (e.g., NGOs) from Belgium/Europe	3	0	4,00	**4,00** 1	0,00	**4,00** 2	0,00		
National civil society organisations (e.g., NGOs) from partner country	24	0	4,27	**4,14** 7	-0,13	**4,32** 17	0,05		
Other research institutes/ higher education institutions from Belgium/Europe	33	1	4,36	**4,00** 6	-0,36	**4,50** 24	0,14	**4,00** 3	-0,36
Other research institutes/ higher education institutions from partner country	51	0	4,01	**4,27** 11	0,26	**3,91** 39	-0,10	**5,00** 1	0,99
Regional agencies (e.g., African Union)	2	0	3,00			**3,00** 2	0,00		
International civil society organisations (e.g., NGOs)	3	0	4,33	**5,00** 1	0,67	**4,00** 2	-0,33		
International agencies (e.g., international organizations)	6	0	4,17			**4,17** 6	0,00		
Other VLIR-UOS projects & other projects of Belgian development actors	24	0	3,92	**4,60** 5	0,68	**3,78** 18	-0,14	**3,00** 1	-0,92

Source: Syspons, 2023

Figure 44: Regression Output: Features on Education Capacities (Networks)

Coefficients								
		Non-standardised coefficients		Standardised coefficients			95.0% confidence intervals for B	
Model		Regression coefficientsB	Std. error	Beta	T	Sig.	lower limit	upper limit
1	(constant)	0,712	0,216		3,293	0,002	0,276	1,148
	08. Index: Frequency of communication	-0,528	0,181	-0,376	-2,910	0,006	-0,893	-0,162
	11. Index: Quality of communication	0,240	0,236	0,153	1,016	0,315	-0,235	0,715
	12. Index: Knowledge Project	-0,407	0,293	-0,309	-1,390	0,171	-0,998	0,183
	13. Index: Mutual respect	0,316	0,314	0,246	1,006	0,320	-0,317	0,949
	14. Index: Shared goals	-0,242	0,280	-0,153	-0,863	0,393	-0,806	0,323
	16. Index: Co-creation process	0,586	0,225	0,431	2,606	0,012	0,133	1,038
a. nw_type = Networks								
b. Dependent variable: 23. Index: Educational Capacities								

Source: Syspons, 2023

Figure 45: Regression Output: Features on Research Capacities (Networks)

Coefficients[a,b]								
		Non-standardised coefficients		Standardised coefficients			95.0% confidence intervals for B	
Model		Regression coefficient B	Std.-Error	Beta	T	Sig.	lower limit	upper limit
1	(constant)	0,462	0,144		3,214	0,002	0,175	0,749
	08. Index: Frequency of communication	-0,257	0,119	-0,215	-2,155	0,035	-0,495	-0,019
	11. Index: Quality of communication	0,393	0,143	0,322	2,745	0,008	0,107	0,679
	12. Index: Knowledge Project	0,469	0,217	0,339	2,162	0,034	0,036	0,903
	13. Index: Mutual respect	-0,377	0,210	-0,272	-1,794	0,078	-0,797	0,043
	14. Index: Shared goals	-0,359	0,194	-0,255	-1,851	0,069	-0,746	0,028
	16. Index: Co-creation process	0,495	0,154	0,393	3,214	0,002	0,187	0,802
a. nw_type = Networks								
b.Dependent variable: 23. Index: Research Capacities								

Source: Syspons, 2023

Figure 46: Regression Output: Features on Educational Capacities (MSP)

Coefficients[a,b]

Model		Non-standardised coefficients		Standardised coefficients	T	Sig.	95.0% confidence intervals for B	
		Regression coefficients B	Std. error	Beta			lower limit	upper limit
1	(constant)	-0,082	1,013		-0,081	0,939	-2,894	2,730
	08. Index: Frequency of communication	0,500	0,710	0,447	0,703	0,521	-1,473	2,472
	11. Index: Quality of communication	-1,314	3,049	-1,258	-0,431	0,689	-9,781	7,152
	12. Index: Knowledge Project	-1,726	2,482	-0,793	-0,695	0,525	-8,616	5,164
	13. Index: Mutual respect	0,704	1,668	0,296	0,422	0,695	-3,928	5,336
	14. Index: Shared goals	1,422	0,899	0,784	1,581	0,189	-1,075	3,920
	16. Index: Co-creation process	1,582	3,006	1,477	0,526	0,627	-6,764	9,928

a. nw_type = MSPs

b. Dependent variable: 23. Index: Educational Capacities

Source: Syspons, 2023

Figure 47: Regression Output: Features on Research Capacities (MSP)

Coefficients[a,b]

Model		Non-standardised coefficients		Standardised coefficients	T	Sig.	95.0% confidence intervals for B	
		Regressionskoeffizient B	Std.-Error	Beta			lower limit	upper limit
1	(constant)	0,422	0,267		1,581	0,145	-0,173	1,018
	08. Index: Frequency of communication	0,030	0,286	0,043	0,106	0,917	-0,608	0,669
	11. Index: Quality of communication	-0,636	0,624	-0,821	-1,018	0,333	-2,027	0,756
	12. Index: Knowledge Project	-0,206	0,645	-0,158	-0,319	0,756	-1,642	1,231
	13. Index: Mutual respect	-0,137	0,585	-0,120	-0,235	0,819	-1,441	1,166
	14. Index: Shared goals	0,355	0,398	0,350	0,894	0,393	-0,531	1,241
	16. Index: Co-creation process	1,091	0,663	1,398	1,646	0,131	-0,386	2,569

a. nw_type = MSPs

b.Dependent variable: 23. Index: Research Capacities

Source: Syspons, 2023

Figure 48: Correlation Matrix – Educational Capacities (MSPs)

		23. Index: Educational Capacities	08. Index: Frequency of communication	11. Index: Quality of communication	12. Index: Knowledge Project	13. Index: Mutual respect	14. Index: Shared goals	16. Index: Co-creation process
Pearson correlation	23. Index: Educational Capacities	1,000	0,358	0,501	0,104	0,320	0,404	0,580
	08. Index: Frequency of communication	0,358	1,000	0,631	0,534	0,455	-0,001	0,673
	11. Index: Quality of communication	0,501	0,631	1,000	0,619	0,561	0,466	0,972
	12. Index: Knowledge Project	0,104	0,534	0,619	1,000	0,870	0,619	0,470
	13. Index: Mutual respect	0,320	0,455	0,561	0,870	1,000	0,687	0,459
	14. Index: Shared goals	0,404	-0,001	0,466	0,619	0,687	1,000	0,334
	16. Index: Co-creation process	0,580	0,673	0,972	0,470	0,459	0,334	1,000
Sig. (1-sided)	23. Index: Educational Capacities		0,140	0,058	0,381	0,168	0,109	0,031
	08. Index: Frequency of communication	0,140		0,019	0,045	0,080	0,499	0,012
	11. Index: Quality of communication	0,058	0,019		0,021	0,036	0,074	0,000
	12. Index: Knowledge Project	0,381	0,045	0,021		0,000	0,021	0,072
	13. Index: Mutual respect	0,168	0,080	0,036	0,000		0,010	0,078
	14. Index: Shared goals	0,109	0,499	0,074	0,021	0,010		0,157
	16. Index: Co-creation process	0,031	0,012	0,000	0,072	0,078	0,157	
N	23. Index: Educational Capacities	11	11	11	11	11	11	11
	08. Index: Frequency of communication	11	11	11	11	11	11	11
	11. Index: Quality of communication	11	11	11	11	11	11	11
	12. Index: Knowledge Project	11	11	11	11	11	11	11
	13. Index: Mutual respect	11	11	11	11	11	11	11
	14. Index: Shared goals	11	11	11	11	11	11	11
	16. Index: Co-creation process	11	11	11	11	11	11	11

Source: Syspons, 2023

Figure 49: Correlation Matrix – Research Capacities (MSPs)

Correlationen								
		23. Index: Research Capacities	08. Index: Frequency of communication	11. Index: Quality of communication	12. Index: Knowledge Project	13. Index: Mutual respect	14. Index: Shared goals	16. Index: Co-creation process
Pearson Correlation	23. Index: Research Capacities	1,000	0,355	0,490	0,174	0,231	0,260	0,614
	08. Index: Frequency of communication	0,355	1,000	0,587	0,424	0,385	-0,078	0,668
	11. Index: Quality of communication	0,490	0,587	1,000	0,382	0,214	0,150	0,944
	12. Index: Knowledge Project	0,174	0,424	0,382	1,000	0,829	0,630	0,362
	13. Index: Mutual respect	0,231	0,385	0,214	0,829	1,000	0,674	0,290
	14. Index: Shared goals	0,260	-0,078	0,150	0,630	0,674	1,000	0,155
	16. Index: Co-creation process	0,614	0,668	0,944	0,362	0,290	0,155	1,000
Sig. (1-sided)	23. Index: Research Capacities		0,081	0,023	0,252	0,186	0,157	0,004
	08. Index: Frequency of communication	0,081		0,007	0,045	0,063	0,383	0,002
	11. Index: Quality of communication	0,023	0,007		0,065	0,205	0,283	0,000
	12. Index: Knowledge Project	0,252	0,045	0,065		0,000	0,003	0,077
	13. Index: Mutual respect	0,186	0,063	0,205	0,000		0,002	0,130
	14. Index: Shared goals	0,157	0,383	0,283	0,003	0,002		0,277
	16. Index: Co-creation process	0,004	0,002	0,000	0,077	0,130	0,277	
N	23. Index: Research Capacities	17	17	17	17	17	17	17
	08. Index:	17	17	17	17	17	17	17
	11. Index: Quality of communication	17	17	17	17	17	17	17
	12. Index: Knowledge Project	17	17	17	17	17	17	17
	13. Index:	17	17	17	17	17	17	17
	14. Index:	17	17	17	17	17	17	17
	16. Index: Co-creation process	17	17	17	17	17	17	17

Source: Syspons, 2023

Figure 50: Correlation Matrix - Sustainability (MSPs)

Correlations								
		network_sustainability	08. Index: Frequency of communication	11. Index: Quality of communication	12. Index: Knowledge Project	13. Index: Mutual respect	14. Index: Shared goals	16. Index: Co-creation process
Pearson Correlation	network_sustainability	1,000	0,128	0,506	0,149	0,132	0,071	0,539
	08. Index: Frequency of communication	0,128	1,000	0,610	0,519	0,486	0,101	0,678
	11. Index: Quality of communication	0,506	0,610	1,000	0,555	0,429	0,365	0,962
	12. Index: Knowledge Project	0,149	0,519	0,555	1,000	0,885	0,736	0,534
	13. Index: Mutual respect	0,132	0,486	0,429	0,885	1,000	0,762	0,470
	14. Index: Shared goals	0,071	0,101	0,365	0,736	0,762	1,000	0,359
	16. Index: Co-creation process	0,539	0,678	0,962	0,534	0,470	0,359	1,000
Sig. (1-sided)	network_sustainability_count_mean_proj		0,295	0,011	0,266	0,289	0,383	0,007
	08. Index: Frequency of communication	0,295		0,002	0,009	0,015	0,336	0,001
	11. Index: Quality of communication	0,011	0,002		0,006	0,029	0,057	0,000
	12. Index: Knowledge Project	0,266	0,009	0,006		0,000	0,000	0,008
	13. Index: Mutual respect	0,289	0,015	0,029	0,000		0,000	0,018
	14. Index: Shared goals	0,383	0,336	0,057	0,000	0,000		0,060
	16. Index: Co-creation process	0,007	0,001	0,000	0,008	0,018	0,060	
N	network_sustainability_count_mean_proj	20	20	20	20	20	20	20
	08. Index: Frequency of communication	20	20	20	20	20	20	20
	11. Index: Quality of communication	20	20	20	20	20	20	20
	12. Index: Knowledge Project	20	20	20	20	20	20	20
	13. Index: Mutual respect	20	20	20	20	20	20	20
	14. Index: Shared goals	20	20	20	20	20	20	20
	16. Index: Co-creation process	20	20	20	20	20	20	20

a. nw_type = MSPs

Source: Syspons, 2023

Figure 51: Correlation Matrix - Sustainability (Networks)

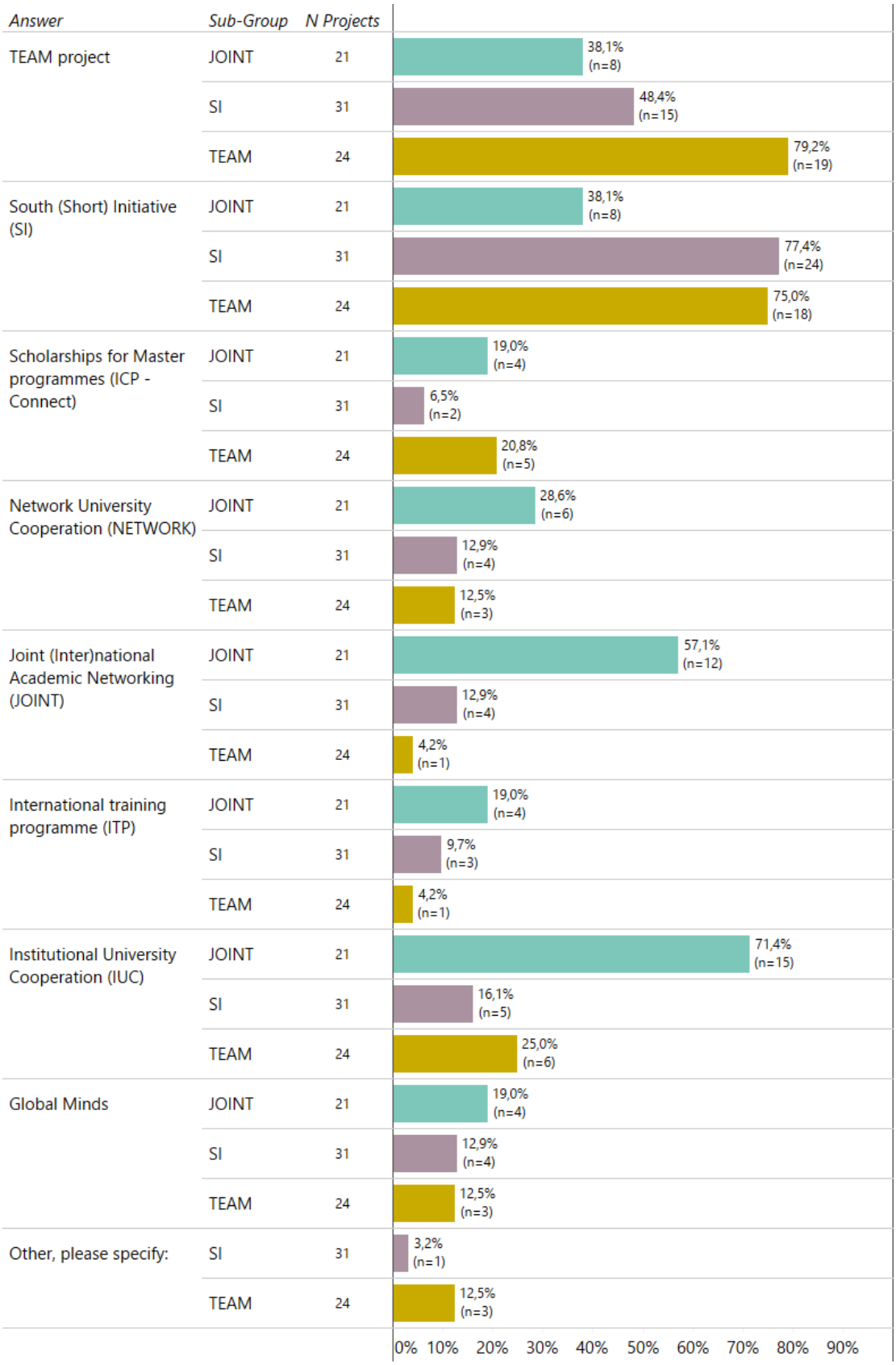
Correlations

		network_sustainability	08. Index: Frequency of communication	11. Index: Quality of communication	12. Index: Knowledge Project	13. Index: Mutual respect	14. Index: Shared goals	16. Index: Co-creation process
Pearson Correlation	network_sustainability	1,000	-0,014	0,181	0,133	0,222	0,180	0,219
	08. Index: Frequency of communication	-0,014	1,000	0,245	0,250	0,223	0,059	0,275
	11. Index: Quality of communication	0,181	0,245	1,000	0,296	0,249	0,126	0,568
	12. Index: Knowledge Project	0,133	0,250	0,296	1,000	0,806	0,643	0,427
	13. Index: Mutual respect	0,222	0,223	0,249	0,806	1,000	0,632	0,438
	14. Index: Shared goals	0,180	0,059	0,126	0,643	0,632	1,000	0,332
	16. Index: Co-creation process	0,219	0,275	0,568	0,427	0,438	0,332	1,000
Sig. (1-sided)	network_sustainability_count_mean_proj		0,452	0,062	0,129	0,029	0,063	0,031
	08. Index: Frequency of communication	0,452		0,018	0,016	0,028	0,310	0,009
	11. Index: Quality of communication	0,062	0,018		0,005	0,016	0,143	0,000
	12. Index: Knowledge Project	0,129	0,016	0,005		0,000	0,000	0,000
	13. Index: Mutual respect	0,029	0,028	0,016	0,000		0,000	0,000
	14. Index: Shared goals	0,063	0,310	0,143	0,000	0,000		0,002
	16. Index: Co-creation process	0,031	0,009	0,000	0,000	0,000	0,002	
N	network_sustainability_count_mean_proj	74	74	74	74	74	74	74
	08. Index: Frequency of communication	74	74	74	74	74	74	74
	11. Index: Quality of communication	74	74	74	74	74	74	74
	12. Index: Knowledge Project	74	74	74	74	74	74	74
	13. Index: Mutual respect	74	74	74	74	74	74	74
	14. Index: Shared goals	74	74	74	74	74	74	74
	16. Index: Co-creation process	74	74	74	74	74	74	74

a. nw_type = Networks

Source: Syspons, 2023

Figure 52: Stakeholder constellation: Type of VLIR – UOS project by project type



Source: Syspons, 2023

Table 3: Case Study – Indicator Achievements

Project	Type	Start Year of the Project	End Year of the Project	Overall Assessment (fully, partially, not achieved)	Overall Assessment (description)	Year of most recent values	Most recent data available
Territorial development planning and urban management by street/avenue managers (grassroots managers) in the city of Lubumbashi (DR Congo)	SI	2020	2022	Partially achieved	3 out of 6 indicators (over-) achieved	2020	No
Strengthening the practical dimension and improving the quality of computer science training at the Catholic University of Bukavu	SI	2018	2019	Partially achieved	4 out 6 indicators (over-) achieved	2019	Yes
Incorporating sustainability concepts to management models of textile Micro, Small and Medium Enterprises (SUMA)	SI	2020	2022	Completely achieved	9 out of 9 indicators (over-)achieved	2022	Yes
Consolidating a long-term forest monitoring network in a human modified landscape in Northern Ecuador (COFOREC)	SI	2018	2020	Partially achieved	1 out of 3 indicators (over-) achieved	2020	Yes
Building capacity for disaster management for the mountainous region of Da Bac district, Hoa Binh Province, Vietnam	SI	2020	2022	Not achieved	1 out of 6 indicators achieved	2021	No
Understanding responses and resilience of central Congo basin forests to a changing environment –FORMONCO II	TEAM	2018	2022	Not achieved	0 out of 6 indicators (over-)achieved	2021	No
Innovative governance systems for built cultural heritage, based on traditional Andean organisational principles in Ecuador.	TEAM	2019	2023	Partially achieved	7 out of 9 indicators (over-)achieved	2021	No
Impact of saltwater intrusion on water resources and irrigation in the Southern Central region of Vietnam under climate change	TEAM	2019	2023	Partially achieved	4 out of 8 indicators (over-)achieved	2022 (project is still running)	No
A Network for research and multidisciplinary medical care for oculocutaneous albinism in the DR Congo	JOINT	2020	2022	Partially achieved	4 out of 6 indicators (over-)achieved	2022	Yes
Statistics for Development	JOINT	2018	2022	Not achieved	0 of 5 indicators achieved	2022	Yes
Joint endeavour to enhance dairy and beef production in Vietnam, Uganda & Ethiopia	JOINT	2019	2021	Partially achieved	2 out of 3 indicators (over-)achieved	2020	No

Source: Syspons, 2023

Table 4: Number of Networks, Partnerships and MSPs per Country

	MSPs	Networks	Partnerships
Bolivia	-	3	-
Cambodia	-	1	-
Cuba	2	11	-
DR Congo	2	8	2
Ecuador	3	15	-
Ethiopia	1	7	1
Indonesia	1	1	-
Kenya	1	8	-
Morocco	1	7	-
Nicaragua	1	-	-
Peru	-	9	-
Philippines	2	2	1
Rwanda	3	2	-
South Africa	3	8	1
Suriname	-	1	-
Tanzania	-	9	-
Uganda	1	10	-
Vietnam	1	9	-

Source: Syspons, 2023

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