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VLIRUOS

# COST-BENEFIT STUDY VLIRUOS

|

Final Report

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STRUCTURE

COST-BENEFIT STUDY VLIRUOS

## STRUCTURE

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# 1 Introduction

This **cost–benefit study evaluates the domestic value generated by VLIRUOS** (the funding body for scholarships for and partnerships between academics from Flanders and partner institutions in Africa, Latin America, and Asia) during its Five-Year Programme which ran from 2017 to 2021. Although VLIRUOS's main objective is to promote sustainable development in the Global South through academic partnerships, this study highlights the reciprocal advantages that the programme provides to Belgium, particularly to Flemish higher education institutions, researchers, students and other societal stakeholders. The study addresses a growing policy interest in understanding the domestic relevance of international cooperation and demonstrating how public investments in international cooperation can yield tangible value at home.

This is the first time such a broad-based cost–benefit analysis has been applied to a funding organisation of this kind. VLIRUOS's unique model – encompassing research collaborations, mobility schemes, and institutional partnerships across the Global South – makes this a pioneering assessment of how investment in international academic cooperation delivers domestic value. Unlike partial studies of single programmes or cost elements, this study adopts a fully portfolio-wide approach, integrating multiple programme lines and value areas.

VLIRUOS operates at the intersection of higher education, development cooperation, and internationalisation. Its activities range from long-term institutional partnerships and project-based collaborations to international scholarships and capacity-building programmes. These activities are guided by a Theory of Change and are structured across six interrelated domains: research; education; outreach and policy support; systems and infrastructure; people; and networks and partnerships. While the programme's primary beneficiaries are based overseas, many of its initiatives also generate knowledge, skills, partnerships and visibility that benefit academic and societal stakeholders in Belgium.

The study aims to assess these domestic benefits in a structured, evidence-based way, while bearing in mind VLIRUOS's international development mandate. Rather than measuring VLIRUOS's global development impact, the analysis focuses exclusively on the value created within Belgium. This is recognised as an important dimension of a broader **reciprocal cooperation model**, rather than a standalone goal. The analysis uses a **mixed-methods approach**, combining quantitative valuation based on CBA principles with structured qualitative evidence. This allows the monetisable and non-monetisable effects of academic cooperation to be identified, triangulated, and contextualised.

Although this report focuses exclusively on the domestic side of VLIRUOS' activities, it is important to recognise that the programme's most significant impact occurs in the Global South. There, it promotes long-term academic development, institutional growth, and equitable knowledge partnerships. The **benefits to Belgium** examined in this study should therefore be considered **secondary effects**. While these effects are significant and policy-relevant, they ultimately stem from VLIRUOS's broader commitment to global cooperation and sustainable development.

To organise its inquiry, the study is structured around **six benefit areas** that reflect how Belgian academic and societal actors derive value from VLIRUOS's international activities:

1. Contribution to research and education at Flemish HEIs;
2. Academic visibility and international positioning;
3. Contributions to employability of Belgian students;
4. Uptake of knowledge and networks by Belgian stakeholders;
5. Strategic diplomacy and alumni as global connectors; and
6. Economic contributions (direct, indirect, induced).

Four of these areas are assessed using **monetary valuation methods**, two using qualitative evidence, and most using a mixed-methods approach. The monetary analysis draws on programme monitoring data, surveys, stakeholder interviews, national statistics and economic modelling. Where attribution was uncertain, conservative assumptions were applied and tested through sensitivity scenarios. The qualitative component comprises structured success stories that illustrate institutional, relational and reputational effects which cannot be expressed in monetary terms, but which are critical to understanding VLIRUOS's domestic relevance.

Before summarising the numerical results, it is important to emphasise that they are best understood as **conservative lower-bound estimates**. While headline figures may appear straightforward, they rest on **cautious modelling assumptions** and are **supported by qualitative evidence** throughout the report. Furthermore, several significant advantages, such as improved science diplomacy, institutional transformation and the adoption of global knowledge by Belgian stakeholders, cannot be directly quantified. However, the case studies and testimonials presented in the subsequent chapters demonstrate that these effects are indeed real and substantial, and relevant to Belgium's innovation system.

Against this analytical and methodological backdrop, the study estimates that VLIRUOS generated a total of EUR **471.0 million in quantifiable domestic benefits between 2017 and 2021**, compared to programme costs of EUR 220.7 million. This corresponds to a **benefit–cost ratio of 2.1, calculated conservatively**. While the largest share of the calculated benefits is linked to attracting international students, the analysis also reveals significant economic activity in Belgium generated by programme implementation and scholarship spending, effects on student employability, and research-related gains. Additionally, qualitative evidence highlights broader, longer-term impacts, including strengthened institutional capacity, academic leadership, strategic partnerships and enhanced global recognition of Flemish HEIs.

Taken together, these findings confirm that VLIRUOS is a valuable instrument not only for international cooperation, but also for enabling academic excellence, societal engagement and a global presence for Belgium. By fostering long-term, reciprocal partnerships and integrating internationalisation into the Flemish higher education system, VLIRUOS shows how international cooperation can create value both abroad and at home simultaneously.

The remainder of the report is structured as follows. **Chapter 2** outlines the strategic framework of VLIRUOS, including its mission, programme portfolio, and domain-based architecture. **Chapter 3** presents the study design, including the rationale for the cost–benefit approach, the mixed-methods methodology and the scope and limitations of the analysis. **Chapter 4** presents the findings, beginning with the cost structure and continuing with the six benefit areas before concluding with a synthesis of monetised results and scenario-based insights. **Chapter 5** concludes the report by summarising the main implications and positioning VLIRUOS as a forward-looking public investment for Belgium.

## 2 VLIRUOS and its strategic framework

### 2.1 VLIRUOS mission and strategic logic

VLIRUOS is the **central platform for Flemish higher education institutions** to engage in sustainable development through international cooperation. Funded by the Belgian federal government, it functions as the primary channel for financing partnerships and scholarships between academics in Flanders and partner institutions in Africa, Latin America, and Asia. Its ultimate purpose is to strengthen higher education systems and enhance the societal impact of knowledge, thereby contributing to sustainable and equitable development.

To achieve this, VLIRUOS positions its work within the **framework of the 2030 Agenda for Sustainable Development**, with a particular focus on SDG 4 (Quality Education), SDG 9 (Industry, Innovation and Infrastructure), and SDG 17 (Partnerships for the Goals). Its Theory of Change (ToC) (see Figure 1) provides the strategic logic for how activities and programmes contribute to these goals by building institutional capacities, empowering individuals, and fostering reciprocal global partnerships.

The normative framework underpinning this ToC ensures that all programmes are “**SDG-proof**.” It rests on four core principles of the SDGs: the universal nature of development challenges that require global solutions beyond the Global North–South divide; the pledge to leave no one behind; the recognition of interconnectedness and the need for policy coherence; and the importance of multi-stakeholder partnerships for achieving sustainable results. These principles are systematically translated into VLIRUOS’s impact pathways, outcomes, strategies, and programme portfolio, providing a coherent logic for its contribution to sustainable development.

While Flemish HEIs and other actors pursue internationalisation through a wide mix of recruitment, exchange agreements, branding, and EU programmes, VLIRUOS has a distinctive profile:

- **Development mandate and geography:** cooperation primarily with partner institutions in Africa, Asia and Latin America, with development outcomes as the primary objective; Belgian benefits arise as secondary, reciprocal effects.
- **Long-term partnership instruments:** 10-year IUC trajectories and multi-year TEAM/SI instruments create durable institutional relationships and network infrastructure.
- **Co-creation and institutional strengthening:** investments often build research/education systems and governance capacity in partner institutions, which in turn enable long-term joint research, training, and external funding leverage involving Flemish HEIs.
- **Scholarships linked to networks:** ICP/ITP scholarships are embedded in thematic and institutional cooperation, supporting sustained alumni networks and science diplomacy channels (rather than stand-alone recruitment).
- **Portfolio platform function:** VLIRUOS acts as a system-level platform for multiple Flemish HEIs, enabling inter-institutional learning and coordinated engagement (an effect that is only partially captured in single-institution or sector-wide studies).

### 2.2 Programme portfolio and Theory of Change (ToC)

VLIRUOS’s **portfolio**, which is funded by the Belgian Development Cooperation through successive Five-Year Programmes (FYPs), has been designed to be coherent and to foster long-term collaboration, promote research uptake and contribute to sustainable development. This cost-benefit study focuses on programmes and activities

implemented under FYP1 (2017–2021)<sup>1</sup>. During this period, the portfolio included the following key programmes, as well as a number of projects not embedded in a specific programme line (referred to here as 'Other'):

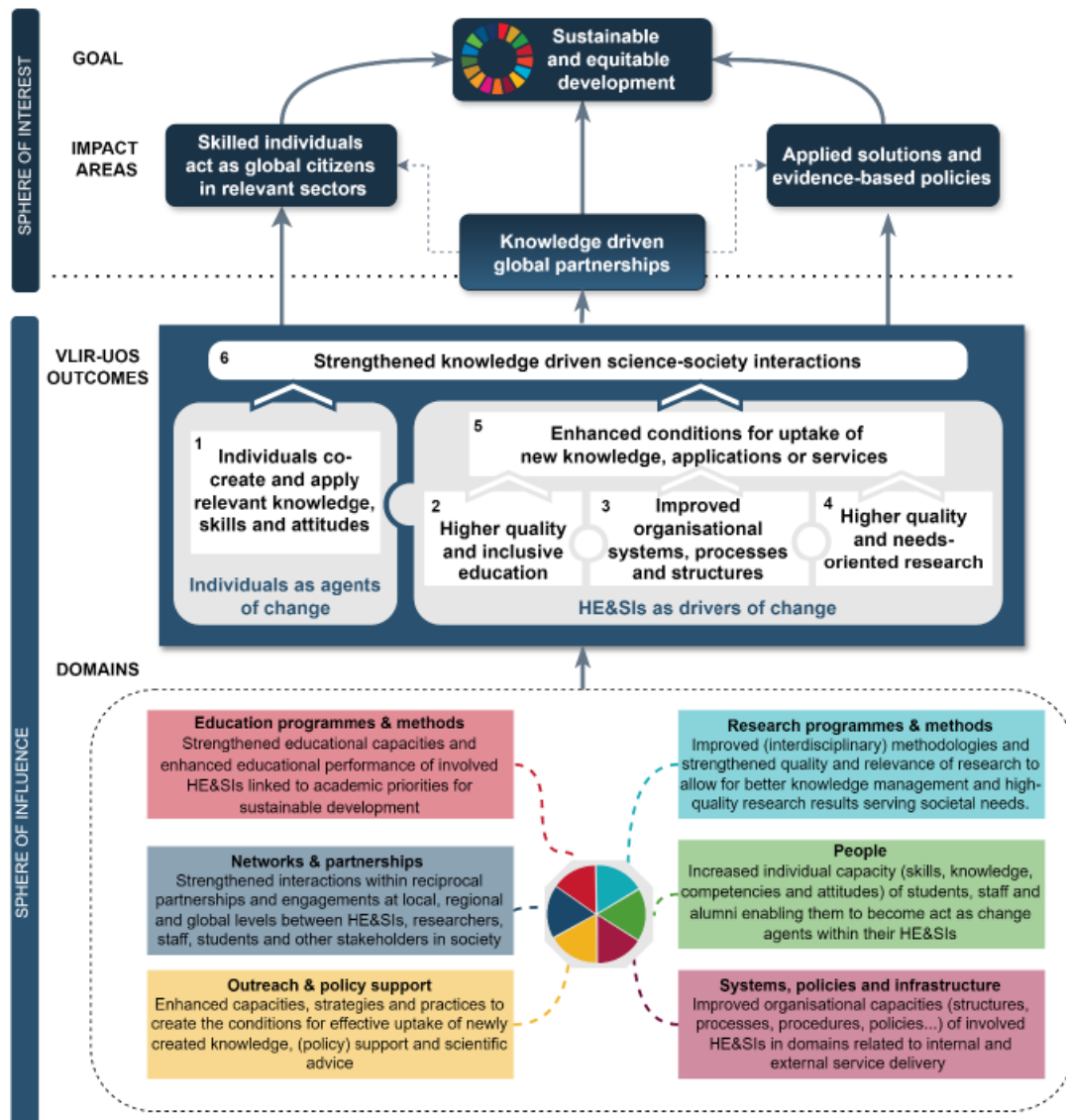
- **South Initiatives (now called Short Initiatives (SI)) and TEAM projects:** SI projects are short-term (2 years), impactful collaborations that allow Flemish and partner institutions to explore, build, and deepen academic partnerships while addressing urgent sustainable development challenges. TEAM projects extend over a medium-term (5 years) and provide more in-depth cooperation between academic teams, combining research and education to strengthen institutional capacity in partner countries. Both instruments support partnerships with 18 partner countries, Belgium, and the wider Global North.
- **Institutional University Cooperation (IUC) and Network programmes:** IUC partnerships are long-term (10 years) collaborations between Flemish universities and universities in 17 partner countries. They aim to empower partner universities as drivers of change for sustainable development at national, regional, and global levels. Each IUC programme integrates academic sub-projects focused on education and research with transversal components on institutional strengthening, enabling both thematic expertise and improved organisational performance. Building on this model, Network programmes (phased out in 2023) harvested and multiplied opportunities that address nation-wide needs in education and research.
- **Global Minds:** A programme that supports Flemish universities in integrating global engagement into their institutional strategies. It strengthens the capacity of staff, students, and structures to address global development challenges, fostering institutional embedding of international cooperation. Examples include mobility for staff and students, thematic networks on sustainable development, awareness-raising events, etc. (see Theory of Change, page 10).
- **Education, Scholarships, and Networks (ICP Connect & ITP):** These programmes integrate global and sustainable development perspectives into higher education through accredited international master's programmes in Flanders (ICP Connect) and practice-oriented international training programmes (ITP). ICP Connect (medium- to long-term) strengthens international education networks and systematically embeds global perspectives into curricula, while ITPs (short- to medium-term) deliver intensive, interactive training courses tailored to professionals working on sustainable development or higher education management. Scholarships enable international students and professionals to participate, creating supportive, inclusive, and networked learning environments in which individuals acquire transversal skills and state-of-the-art knowledge for sustainable development.
- **Joint (Inter)national Academic Networking (JOINT):** This programme was initiated during FYP1 at departmental level and broadened networking opportunities to support local and global development goals. JOINT-projects (maximum duration: three years) capitalised on common ideas and challenges and support (inter)national alliances or tools that could be useful for other forms of university international cooperation.
- **Other programmes:** This category includes programme components that do not form part of the main programme lines listed above, but which still fall within the overall mandate of VLIRUOS. It comprises formally defined, smaller-scale programmes such as the Policy Supporting Programme (PSP), Acropolis, INCO and VLADOC, as well as pilot initiatives, one-off collaborations and legacy activities from earlier funding frameworks. Although these components represent a smaller share of the overall budget and are grouped together for reporting purposes, many of them have a clear thematic or strategic focus, often relating to policy support, academic networking or capacity building. Some have since been integrated into newer programme lines, such as Bridging Science-Society.

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<sup>1</sup> The cost base used for the NPV/BCR calculations comprises only the expenditures incurred during the FYP1 programme (2017–2021); no costs from the FYP2 programme are included. As is standard in cost-benefit analysis, several benefit streams are projected beyond 2021 (e.g. the impact on graduates' subsequent employability; the long-term effect on student inflows of visibility and reputation). Where the analysis draws on information from outside the 2017–2021 period, this is solely for the parameterisation and triangulation of assumptions (e.g. spending location shares or typical participant stay and expenditure patterns) which are then applied to FYP1 expenditure. This expenditure is not considered as additional spending after 2021.

This study does not include two programme components introduced in FYP2 (2022–2027): the Bridging Science-Society programme and the ESN – Partim International Training Programme. This is because they were launched too recently for meaningful inclusion in the benefit-cost analysis.

Figure 1: Schematic representation of the Theory of Change VLIRUOS



Source: VLIRUOS, 2025

The underlying ToC sets out how these programmes collectively contribute to the 2030 Agenda for Sustainable Development and realize impacts for its final beneficiaries (local communities, civil society, governments, private sector or other higher education and science institutions) in three interrelated areas (see Figure 1).<sup>2</sup>

First, higher education institutions act as **engines for the application of solutions and evidence-based policies**. By engaging stakeholders and creating pathways for uptake, they ensure that new knowledge is translated into

<sup>2</sup> Impact is defined as the "significant positive or negative, intended or unintended, higher-level and longer-term effects produced directly or indirectly by a project" (VLIRUOS, 2025a).

practice: policymakers can ground decisions in solid research, communities can adopt approaches that respond to local needs, and businesses can integrate innovative methods into their operations.

Second, VLIRUOS contributes to the development of a **global community of skilled individuals who act as critical global citizens**. Graduates and professionals trained through these partnerships are not only equipped with advanced expertise but also with the capacity to question global power dynamics, work effectively across contexts, and engage civically in pro-social and pro-environmental ways. In this sense, they become multipliers of development impact in their sectors and societies.

Finally, VLIRUOS promotes **knowledge-driven global partnerships** as the foundation for sustainable change. By emphasising reciprocity and co-creation, the programmes strengthen collaboration within and beyond higher education – spanning individuals, institutions, countries, and regions, and extending links to other sectors. In line with SDG 17, these partnerships are designed to be inclusive, effective, and long-lasting, ensuring that knowledge is not only generated but also shared and applied.

To achieve its overarching objectives, VLIRUOS operates along two mutually reinforcing **strategic axes: strengthening higher education and science institutions (HE&SIs) as Drivers of Change, and enabling individuals to act as Agents of Change**. Institutional strengthening enhances the ability of HE&SIs to function as development actors, while individual capacity development ensures that students, researchers, and professionals are equipped with the competencies to effectively apply knowledge within and beyond academia. The interplay between these axes is central, as institutional capacity provides the conditions for individual learning, and individual agency contributes to institutional performance.

Within this framework, six **outcome areas** structure VLIRUOS programmes. At the **individual level**, emphasis is placed on the application of co-created knowledge, skills, and attitudes, including critical thinking, leadership, and global citizenship. At the **institutional level**, outcomes target improved quality and inclusiveness of education, enhanced organisational systems, processes, and structures, and strengthened research capacities to deliver higher quality, needs-oriented, gender-sensitive, and equity-focused research. These outcomes underscore the ambition to professionalise institutional performance while enabling HE&SIs to contribute innovative, evidence-based solutions to development challenges.

A further set of outcomes relates to the **interface between higher education and society**. VLIRUOS prioritises the creation of enabling conditions for knowledge uptake through stakeholder management, dissemination strategies, and capacity strengthening of end-users, alongside knowledge-driven science–society interactions. By promoting platforms, partnerships, and networks at multiple levels, the programmes aim to institutionalise co-creation and valorisation of knowledge across academic and non-academic actors. This reinforces HE&SIs' role within wider development ecosystems and contributes to sustainable, evidence-based change in line with SDG 17.

## 2.3 Project domains and their relevance for the cost-benefit study

The present cost-benefit analysis is grounded in the logic and operational architecture of VLIRUOS's programme framework, which organises its strategic objectives across six interrelated domains: research programmes and methods; education programmes and methods; outreach and policy support; systems, policies, and infrastructure; people; and networks and partnerships (see Table 1). These domains provide a comprehensive structure for understanding the multidimensional effects of academic cooperation and serve as an important conceptual reference point for this study.

In practice, **all six VLIRUOS domains are represented in the six benefit areas that structure this study** (see Chapter 3.2), though with varying degrees of analytical weight and evaluability. Some domains are more directly linked to measurable, monetisable outcomes and are therefore more prominent in the economic valuation component, while

others contribute more strongly to qualitative value dimensions that are captured through structured narratives, stakeholder consultations and success stories.

Table 1: VLIRUOS project domains

| Domain                                       | General description                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Research programmes and methods</b>       | Improved (interdisciplinary) methodologies and strengthened quality and relevance of research to allow better knowledge management and high-quality research results serving societal needs                                                                                                                                                          |
| <b>Education programmes and methods</b>      | Improved, innovative, and inclusive teaching methods, didactics, and digital approaches. Improved curriculum content to support knowledge co-creation and equip students with the necessary skills and knowledge, ensuring employability after graduation and the ability to tackle global challenges from a holistic, interdisciplinary perspective |
| <b>Outreach and policy support</b>           | Enhanced interaction with relevant public, private, and academic stakeholders to share knowledge, create conditions for uptake, and provide policy advice/support                                                                                                                                                                                    |
| <b>Systems, policies, and infrastructure</b> | Better management, information systems, educational and research policies to improve functioning of HE&SIs, including policies on gender and diversity, research integrity and uptake. Improved equipment, laboratories and offices for education and research                                                                                       |
| <b>People</b>                                | Students, alumni, staff, researchers are trained/sensitised in a supportive learning environment to strengthen knowledge, skills & attitudes in diverse domains (e.g. leadership, global citizenship).                                                                                                                                               |
| <b>Networks and partnerships</b>             | Strengthened interactions within reciprocal partnerships and engagements at local, regional, and global levels between HE&SIs, researchers, staff, students, and other stakeholders in society (public actors, private actors, other civil society organisations (CSOs), communities, etcetera) for sustainable development                          |

Source: VLIRUOS, 2025

The **domains of research and education** are reflected most directly and extensively in the benefit areas related to academic performance and institutional development. **Research programmes and methods** are central to analysing increased research capacity and attracting external funding, both of which are included as monetisable subcomponents. These benefits align with the logic of institutional funding in the Flemish higher education system and represent a well-documented area of reciprocal value. Similarly, **education programmes and methods** are reflected in the benefit areas related to employability and the attraction of international students. Due to their relevance for the Belgian labour market and higher education sector, these outcomes are monetised in the study, but they also encompass qualitative dimensions such as improved curricula and the internationalisation of education.

The **people domain** is also substantively incorporated into the study in terms of both measurable outcomes, such as the effects on the employability of directly and indirectly affected students, and qualitative evidence of skills development, intercultural engagement, and the career trajectories of Flemish scholars. This domain is closely linked to the individual and institutional learning processes visible across multiple benefit areas, and is particularly important for understanding the long-term impact of VLIRUOS on the development of academic and professional capacities in Flanders.

**Networks and partnerships** play a key role in the qualitative analysis, particularly with regard to knowledge uptake and strategic diplomacy. While these relational effects cannot be monetised, they are central to the ToC of VLIRUOS. Rich narrative accounts in the form of success stories captured sustained cooperation, institutional synergies, and visibility within global academic networks. These highlight the catalytic role of VLIRUOS in establishing and maintaining meaningful academic connections.

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The analysis also reflects the domains of **outreach, policy support, and systems, policies, and infrastructure**, albeit more indirectly. Although outreach and policy support are not considered a standalone benefit area, they underpin several of the observed outcomes, particularly when academic insights are adopted by Belgian public or private organisations. Similarly, the systems, policies and infrastructure domain is not evaluated using specific indicators, but is present as a foundational enabler of other benefits, such as improved institutional functioning, research capacity, and educational quality. These domains contribute to the effectiveness and visibility of activities supported by VLIRUOS, and their influence is embedded in the cross-cutting mechanisms through which many of the evaluated benefits are realised.

The relative prominence of the domains varies across the six benefit areas, but the domain framework as a whole is well represented in the study. Rather than narrowing the analysis to a few discrete domains, the study aimed to reflect the integrated and systemic nature of the academic cooperation model of VLIRUOS. By combining monetary and qualitative evidence, and adapting the domain structure to empirical realities, the study provides a context-sensitive perspective on how VLIRUOS creates value for Belgium in academic, societal, and strategic domains.

As an orientation, VLIRUOS's ToC and domain model describe how academic cooperation is intended to contribute to sustainable development in partner countries. This cost-benefit study, by contrast, examines a different (secondary) question: what domestic value accrues to Belgium from the same portfolio of activities. For this reason, the report does not attempt a one-to-one mapping between (i) ToC outcomes and (ii) the six Belgian benefit areas, nor does it attribute individual benefits to individual programme lines. Instead, the study uses the ToC/domains as a conceptual lens to identify plausible pathways of value creation, and then applies a portfolio-wide benefit framework to structure the Belgian evidence base (monetised where feasible, complemented by qualitative evidence where monetisation is not credible).

## 3 Analytical framework and study design

### 3.1 Why cost-benefit analysis? Conceptual and evaluative rationale

Cost-benefit analysis (CBA) is a well-established **method of evaluating the economic efficiency of public programmes**. With its roots in welfare economics, the objective of a CBA is to determine whether a given policy or programme generates benefits that outweigh its costs, thereby contributing positively to society (Boardman et al., 2018). By expressing both benefits and costs in monetary terms over a consistent time horizon, CBA provides a structured and transparent framework for understanding the economic value of a project or programme. In the case of a publicly funded platform such as VLIRUOS, this approach supports evidence-based accountability and learning, as well as assessing whether the programme offers value for money and contributes to economic and broader societal value.

While CBA has traditionally been used in infrastructure and environmental policy, it has increasingly been applied in fields where tangible outputs and intangible effects coexist, such as education, health, and international cooperation. In these areas, the methodology must be adapted to account for long-term, diffuse and often non-market effects. In higher education, for example, this includes outcomes such as human capital accumulation, research output, institutional reputation, and social mobility. In international cooperation, it includes contributions to capacity building, policy dialogue, and transnational networks. Applying CBA in these contexts requires a mixed-methods approach that combines monetisation with additional qualitative techniques. To avoid conflating development-impact logic with domestic-return logic, the study uses the ToC as contextual framing, while the Belgian benefit areas serve as the operational structure for the CBA.

Against this methodological backdrop, it is important to contextualise this study in relation to existing evidence on the internationalisation of higher education and the economic role of Flemish universities. Two strands of prior work are particularly relevant for interpreting the present analysis<sup>3</sup>. Firstly, De Witte and Soncin (2021) estimate the net present value (NPV) of international students for Belgium/Flanders, reporting benefit-cost ratios ranging from 2.4 to 3.1 depending on the assumptions made and the characteristics of the students. Their results suggest that international students generate net positive economic returns, largely driven by post-graduation stay rates and subsequent labour market participation. Secondly, BiGGAR Economics (2017) quantified the economic contribution of the five Flemish universities in terms of gross value added (GVA) and jobs. The approach estimates how university activities generate economic activity in the wider economy through several channels. They distinguished between 'incidental' effects (e.g. operational spending, student spending, and tourism) and 'purposeful' effects (e.g. graduate premium and valorisation).

While building on the logic and insights of these publications, the present study addresses a different evaluation question by assessing the domestic value generated by the VLIRUOS portfolio (2017–2021) as an instrument of development-oriented academic cooperation operating at the intersection of internationalisation, higher education, and development cooperation. This implies three key differences that are important for interpretation. Firstly, the unit of analysis and the counterfactual are different: rather than evaluating internationalisation or university activity in general, the analysis determines what proportion of domestic value can be attributed, or more precisely contributed, to VLIRUOS-funded cooperation programmes and scholarships. This is achieved using calibrated attribution factors and conservative assumptions. Second, the underlying value-creation pathways differ. VLIRUOS's core programmes (e.g. IUC, TEAM, SI, Global Minds, ICP/ITP) are designed for long-term reciprocal partnerships with the Global South and institutional strengthening abroad. Therefore, Belgian benefits arise as secondary effects through channels such as sustained partnerships, science diplomacy, long-term network infrastructures, and follow-

<sup>3</sup> In addition to the two strands, recent evidence focusing specifically on government-funded scholarship cohorts suggests that such programmes can generate positive net domestic economic returns during the study period. For example, a policy briefing on the UK-funded Commonwealth Scholarships estimates a benefit-cost ratio of 1.6 for the 2023/24 cohort (394 Scholars), implying a net positive economic impact after accounting for programme costs and public service costs (Ma, 2026).

on opportunities, such as externally leveraged funding, applied innovation, and strategic positioning. Thirdly, the evaluative lens and metrics differ. While BiGGAR Economics (2017) reports economic contribution in GVA/jobs (adopting an 'impact footprint' perspective), this report applies CBA principles (NPV/BCR) to evaluate whether a defined public investment stream (VLIRUOS expenditure in 2017–2021) is associated with domestic benefits that plausibly outweigh costs.

Hence, in this study, CBA is used to evaluate the **domestic advantages and broader reciprocal value of VLIRUOS**, a public organisation that funds and promotes academic collaboration between Flanders and the Global South. VLIRUOS's primary mission is developmental, aiming to improve access to quality higher education and research in partner countries. This CBA, however, is deliberately scoped to Belgium: it systematically identifies, analyses and (where possible) quantifies the outcomes and contributions that materialise in Flanders and Belgium – particularly for Flemish higher education institutions and wider society – as secondary effects of VLIRUOS partnerships. The analysis therefore does not attempt to measure or monetise the primary benefits in partner countries; rather, it assesses whether the domestic benefits generated in Belgium are sufficient to justify the public investment through a structured value-for-money assessment.

This requires a tailored approach to CBA that recognises the specific characteristics of academic cooperation and the public funding model of VLIRUOS, as well as the need to combine monetisable and non-monetisable dimensions of value. Accordingly, the study takes a broad view of CBA. This includes direct and indirect economic effects that can be monetised and qualitative success stories that capture long-term institutional and reputational effects (see Chapter 3.2). This reflects the growing consensus in evaluation literature that CBA should be flexible and responsive to context, particularly in complex policy areas where economic valuation alone may not capture the full spectrum of value (Patton, 2011).

Importantly, this approach suggests that the **actual value** generated by VLIRUOS is **likely to be significantly higher** than can be determined by quantification alone. The non-monetised effects, such as strengthened science diplomacy, global academic positioning and institutional transformation, are central to the programme's broader impact, even if they cannot be valued economically. Therefore, the monetised figures should be interpreted as a deliberately **conservative estimate** of VLIRUOS's domestic contribution.

## 3.2 Methodological approach and mixed-method design

As described, the methodological design of this study was developed to provide a policy-relevant assessment of the domestic value generated by VLIRUOS's international academic cooperation. Due to the complexity and multidimensionality of this cooperation, the study applied a mixed-methods approach, integrating quantitative and qualitative evidence. This approach enabled the monetisable benefits to be estimated rigorously, while also capturing the programme's broader institutional, strategic, and relational effects, which cannot be expressed in monetary terms. The qualitative evidence more accurately reflects the intended benefits of VLIRUOS for Flanders and Belgium, and is therefore essential to understanding its broader value. The study's primary objective was to evaluate and, where feasible, quantify the reciprocal benefits of VLIRUOS activities for Flanders and Belgium.

The study also aimed to shed light on the types of mutual benefit that emerge from international academic cooperation. Many of the benefits arise not only within Belgium, but also through collaborative value creation between Flemish institutions and their partners in the Global South. However, the study disregards all benefits arising purely in the Global South, reflecting its focus on the value arising for Belgium.

**(1) Conceptual and exploratory phase** - The methodological process began with a conceptual and exploratory phase aimed at understanding how value is generated through VLIRUOS's activities and how such value might be evaluated. This phase involved a systematic review of VLIRUOS's strategic documents, such as its Theory of Change and domain framework (see Chapters 2.2 and 2.3). It was complemented by **exploratory interviews and focus**

groups with key stakeholders, including VLIRUOS staff, representatives from Flemish HEIs, and experts in international academic cooperation. Based on this multi-source evidence base, an explorative list of potential domestic benefits was developed. These benefits were derived from the six thematic domains (see Chapter 2.3) and covered a wide spectrum of possible contributions to Belgian society, Flemish higher education institutions, and individual students and researchers.

To make this initial mapping more transparent, the table below presents the full longlist of identified benefits as derived from the conceptual and exploratory phase, structured by the VLIRUOS domains. This list served as the foundation for the prioritisation process that followed.

Table 2: Overview of initially identified benefit areas (longlist)

| Domain                                | General description                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Research programmes and methods       | <ol style="list-style-type: none"> <li>1. Increased external research funding for Belgian institutions</li> <li>2. Enhanced research capacity and output</li> <li>3. Cost savings in research (e.g. higher cost effectiveness for PhD training)</li> </ol>                                                                                                               |
| Education programmes and methods      | <ol style="list-style-type: none"> <li>4. Academic visibility and reputation of Flemish HEIs</li> <li>5. Enhanced curricula and teaching methods</li> </ol>                                                                                                                                                                                                              |
| Outreach and policy support           | <ol style="list-style-type: none"> <li>6. Policy relevance of VLIRUOS research for Belgian institutions</li> <li>7. Use of VLIRUOS research outputs by Belgian actors (e.g. NGOs, private sector)</li> </ol>                                                                                                                                                             |
| Systems, policies, and infrastructure | <ol style="list-style-type: none"> <li>8. Strengthened internationalisation capacity of Flemish HEIs</li> <li>9. Strengthened interuniversity collaboration in Flanders</li> </ol>                                                                                                                                                                                       |
| People                                | <ol style="list-style-type: none"> <li>10. Improved employability of Flemish graduates</li> <li>11. Retention of international students and alumni</li> </ol>                                                                                                                                                                                                            |
| Networks and partnerships             | <ol style="list-style-type: none"> <li>12. Attraction of international students</li> <li>13. Sustained international partnerships and spin-offs</li> <li>14. Alumni networks supporting Belgian diplomacy and partnerships</li> <li>15. Strategic academic presence in partner countries</li> <li>16. Business and trade links emerging from VLIRUOS networks</li> </ol> |
| Direct economic contribution          | <ol style="list-style-type: none"> <li>17. Scholarship spending and associated economic effects</li> <li>18. Visitor effects and induced economic effects</li> </ol>                                                                                                                                                                                                     |

*Source: Syspons, 2025*

The longlist of benefits was then assessed during an internal prioritisation and systematisation process. Each identified benefit was evaluated against five key criteria:

1. Strategic relevance,
2. Data availability,
3. Feasibility of monetisation,
4. Plausibility of attribution to VLIRUOS-supported activities, and
5. Practical feasibility within the scope and timeframe of the study.

This assessment revealed that while many benefits were strategically important, several could not be robustly evaluated due to limitations in available data, challenges in establishing causal attribution, or the absence of reliable benchmarks for valuation. As a result, the longlist was refined to a reduced and structured set of benefit areas that were both analytically feasible and representative of VLIRUOS's most salient domestic contributions.

One potential benefit – post-study retention in Belgium of VLIRUOS-funded scholarship holders and alumni – was deliberately excluded from the CBA model at this stage. While graduate retention can generate sizeable fiscal and economic returns in general analyses of international students (often precisely through labour-market effects after graduation), incorporating it here raises scope and attribution issues: VLIRUOS scholarships are primarily designed to strengthen capacities in partner countries, and the programme does not pursue (nor systematically track) outcomes related to long-term settlement in Belgium. Therefore, including a 'retention' benefit would require additional behavioural assumptions (e.g. counterfactual stay rates, labour-market trajectories and the extent to which VLIRUOS influences the decision to remain) that cannot be robustly supported using the available programme data. Furthermore, as VLIRUOS explicitly emphasises capacity building in the Global South, monetising the retention of scholarship holders in Belgium could be misconstrued as prioritising outcomes that fall outside the programme's intended theory of change, as scholarship holders are expected to contribute to development in their home countries following their studies. For these methodological and interpretive reasons, we exclude retention effects for VLIRUOS scholarship holders from the analytical framework, even though retention-driven impacts are an important mechanism in the wider international-student literature.

It is important to note that the final set of benefit areas is not disconnected from the initial longlist. Rather, the six selected categories were deliberately defined in a way that they encompass or reflect many of the dimensions captured in the broader mapping. This includes, for example, subcomponents such as increased external research funding, improved research capacity, student employability, and academic visibility, which correspond to topics raised during the conceptual phase. Table 4 illustrates how specific subcategories of the six final benefit areas map back to the originally identified benefits.

This mapping exercise contributed to the identification of domestic value and revealed the various levels at which mutual benefits materialise, ranging from individual learning and research experiences to institutional partnerships and strategic national positioning. The benefit areas considered in this study were selected for their potential to reflect the reciprocal nature of VLIRUOS partnerships, where knowledge exchange and capacity development flow in both directions, as well as for their evaluability within Belgium.

**(2) Defining the benefit areas to be assessed** - Building on this work, the study team collaborated closely with VLIRUOS to define a final set of six benefit categories to guide the analysis; for example, through a decision-making workshop. These categories were not simply divided into monetisable and qualitative benefits. Instead, they were formulated as overarching benefit areas that could accommodate either type of evidence, depending on the nature of the available data and whether the benefit could be evaluated. This approach was guided by the principle of methodological complementarity, enabling a more holistic and integrated analysis of the programme's broader value offering. The final selection of benefit categories was the result of an iterative and collaborative process, but was also shaped by empirical constraints. Certain benefit types from the initial list had to be excluded from the core analysis because the available evidence was too limited, fragmented, or anecdotal to support meaningful valuation. This includes benefits such as alumni retention, strategic partnerships in trade and diplomacy, and reputational effects, which – while important – could not be reliably monetised or attributed within the scope of this analysis. In such cases, these contributions are instead acknowledged through qualitative success stories and narrative examples. As a result of the conceptual and empirical groundwork, **six benefit areas** were defined in order to structure the analytical framework of the study. Each benefit area captures a distinct type of value – some are primarily economic, while others are academic, strategic or societal in nature – and each was included based on its evaluability, alignment with VLIRUOS's modes of operation and/or relevance to stakeholders in the Belgian policy and higher education landscape. The analysis format varies accordingly: some benefit areas are assessed using monetary valuation, others through structured qualitative evidence, and several through a combination of both:

1. **Contribution to research and education at Flemish HEIs** is assessed using both monetary and qualitative evidence. The monetary analysis focuses on two subcategories: increased research capacity, measured by VLIRUOS-attributable PhD completions and peer-reviewed publications, and attracted external funding, referring to competitively acquired research grants from non-Belgian sources made possible by prior engagement with VLIRUOS. The qualitative dimension illustrates how VLIRUOS contributes to institutional development, curriculum innovation, interdisciplinary collaboration and the incorporation of Global South perspectives into research and teaching. This emphasises VLIRUOS's pivotal role in bolstering the academic prowess and global significance of Flemish universities.
2. **Academic visibility and international positioning** are assessed using both monetary and qualitative evidence. The monetary component focuses on the attraction of international students to Flemish higher education institutions as an indicator of an enhanced global reputation and greater institutional appeal resulting from VLIRUOS-supported partnerships and projects. The qualitative analysis explores how long-term collaborations, strategic appointments, and participation in international forums have increased the visibility and credibility of Flemish institutions on the global stage. While student recruitment is not a direct or intended outcome of VLIRUOS, this area of benefit captures a substantial and plausible indirect effect that is strategically important for positioning institutions in an increasingly competitive global higher education landscape.
3. **Contribution to employability of Belgian students** is assessed using a combination of monetary and qualitative approaches. The monetary dimension estimates the added value of international exposure for Belgian students who are directly involved (e.g. those participating in VLIRUOS mobility programmes) and those who are indirectly affected (e.g. those benefiting from internationalised curricula or diverse academic environments). The qualitative focus is on developing transversal competencies such as intercultural sensitivity, adaptability, and the ability to apply knowledge in diverse contexts. These competencies are highly valued in the labour market. This area of benefit is included because it reflects a key reciprocal effect of international academic cooperation: contributing to the personal and professional development of Flemish graduates and enhancing their global readiness.
4. **Uptake of knowledge and networks by Belgian stakeholders** is assessed exclusively through qualitative evidence. The analysis focuses on how these are adopted by Belgian actors in and beyond academia, including companies, public institutions and civil society organisations. The analysis focuses on how VLIRUOS programmes have resulted in new forms of inter-institutional collaboration, applied innovation, and the application of insights in domestic contexts. This area of benefit is included to recognise the broader societal relevance of academic cooperation, and its contribution to knowledge-based problem solving and institutional learning within Belgium.
5. **Strategic diplomacy and alumni as global connectors** are assessed exclusively through qualitative evidence, capturing the long-term strategic value generated by sustained engagement with alumni and institutional partnerships. This includes the influence of former VLIRUOS scholars in key roles abroad, ongoing bilateral collaborations and the symbolic value of Belgian institutions being present in international academic and policy networks. While these effects cannot be monetised, they are strategically important for Belgium's visibility, credibility, and influence in global knowledge diplomacy. Their inclusion reflects the long-term relational and reputational benefits of development-oriented academic cooperation.
6. **Economic contributions (direct, indirect, induced)** are assessed solely in monetary terms. This includes the domestic economic effects generated by the implementation of the programmes and spending related to scholarships within Belgium. This includes spending on goods and services, as well as personnel and living expenses, by international students and programme staff. It also encompasses the broader ripple effects that this expenditure creates across the Belgian economy. While these effects do not reflect the core mission of VLIRUOS, they represent a significant and measurable return on public investment, justifying their inclusion as an important dimension of domestic value creation. Other tangible forms of domestic value may arise indirectly from development outcomes in partner countries (e.g. diplomatic or soft power gains), but these are not captured by this metric for monetary economic contribution and are considered qualitatively elsewhere in the framework.

Structuring the analysis through these six benefit categories enabled the integration of qualitative and quantitative findings in a consistent manner. Monetisable benefits could be contextualised through qualitative pathways, while qualitative insights were evaluated against descriptive and performance-based indicators. The inclusion of subcategories within the benefit areas (see Table 5) further allowed for many of the initial benefit types from the broader mapping to be reflected in the final analytical framework, ensuring that the study captures the breadth of VLIRUOS's domestic relevance. This structure enabled meaningful triangulation of the findings and supported a more nuanced interpretation of how value is generated through international academic cooperation. It also allowed the study to capture the layered nature of reciprocal value creation, recognising that VLIRUOS partnerships generate benefits at national, institutional, and individual levels in Belgium.

**(3) Data collection and operationalisation** - For the quantitative component, data were collected from VLIRUOS's internal monitoring systems, project documentation and surveys conducted with participating Flemish institutions and (former) scholarship holders. These data were used to quantify various outputs, including PhD completions, publication records, international scholarship expenditure and follow-on research funding. Where appropriate, a model was developed to estimate the economic contribution of these outputs. This model used input–output multipliers, funding benchmarks, and attribution logic, all of which were adapted for the Flemish context. For instance, the formulas for institutional funding applied within the Flemish Special Research Fund (BOF) were used to monetise research outputs, and follow-on funding was only included if it originated from external sources and could be causally linked to activities supported by VLIRUOS (see Chapter 3.3 for more details). All monetary values were adjusted to 2025 price levels using the Belgian consumer price index, then discounted at a real social discount rate of 2.5%. Where assumptions could not be empirically validated, sensitivity analyses were carried out to assess the robustness of the results under alternative scenarios.

Alongside the quantitative analysis, a **structured qualitative study component** was conducted to capture non-monetisable forms of domestic value. A key part of this was developing and analysing success stories, which provided narrative accounts of the long-term, strategic or relational benefits generated by VLIRUOS activities, as seen by Flemish institutions and individuals. These narratives cover a variety of themes and participants, ranging from institutional capacity building and student outcomes to multi-actor collaborations. Several stories notably capture how VLIRUOS partnerships have facilitated private sector engagement. For instance, Howest University of Applied Sciences collaborated with local entrepreneurs in Uganda to co-develop digital tools, and worked with social enterprises in Ecuador to shape applied research projects in education and communication. These cases demonstrate that VLIRUOS-supported partnerships are increasingly operating at the intersection of academia, innovation, and enterprise, creating value that extends beyond the traditional boundaries of universities.

The qualitative success stories presented in this report are intended to illustrate non-monetisable effects (e.g. institutional learning, reputation, partnerships and network uptake) and make them more tangible. They were compiled based on information provided by selected respondents and reflect their shared perspectives and evidence. The cases are non-exhaustive and not statistically representative of the full VLIRUOS portfolio. The inclusion of a story should not be interpreted as a judgement on the relative importance or performance of specific programmes, institutions or countries. Rather, the stories provide examples that contextualise the mechanisms through which benefits to Belgium/Flanders can arise.

A dedicated template was designed to guide the collection of these stories. This included a set of guiding questions and thematic categories corresponding to the six benefit types identified in the conceptual phase. The categories covered knowledge and network uptake by Belgian actors, enhanced academic visibility and international positioning, sustained strategic partnerships, integrated multidisciplinary collaboration in Flanders, the career development of Flemish academics, and enriching education and research through Global South perspectives. An additional open category was included to capture any other types of value not covered by these predefined themes (see Table 8 in the annex).

The template was distributed to a select group of respondents, who were identified in collaboration with VLIRUOS. These respondents included project coordinators, senior researchers and academic staff with relevant experience and involvement with VLIRUOS. The sampling strategy aimed to ensure thematic diversity, institutional representation, and analytical depth. Nine success stories were selected for inclusion. Each story was analysed using a structured thematic analysis approach. The narratives were coded against the predefined qualitative benefit types and each case was examined for its intrinsic thematic content and potential to be triangulated with quantitative indicators or monetised benefits. Stories describing the creation of research centres, for example the Global Health Institute at the University of Antwerp and the Data Science Institute at Hasselt University (see Chapter 4.2.2), were cross-referenced with indicators of research output, doctoral completions and follow-on funding. In some instances, these qualitative insights provided empirical support for assumptions used in quantitative modelling, such as attribution rates or indirect exposure effects.

A **sensitivity analysis** was conducted to ensure the robustness and credibility of the findings. This method was used to test how much the results of the cost-benefit analysis might change if some of the underlying assumptions were different. As certain factors, such as the extent to which an observed benefit can be attributed to VLIRUOS and the way in which long-term effects will unfold, are difficult to measure precisely, it was important to understand the impact that these uncertainties could have on the calculated value of the programme. The analysis involved testing alternative scenarios by adjusting key assumptions to help identify those with the greatest influence on the final figures, such as the net present value and the benefit-cost ratio. This enabled a credible range of possible returns on investment to be estimated. The results of this exercise are presented in detail in Chapter 4.3. To validate the assumptions and explore their implications, a **scenario workshop** was held with VLIRUOS and members of the reference group, who supported the interpretation of findings and helped contextualise the results.

Together, the various components of this methodological design reflect the complexity of the VLIRUOS programmes and the need for a proportionate, context-sensitive evaluation approach. By combining monetised estimates with descriptive indicators and qualitative narratives, the study captures the scale and significance of the programme's domestic value. The chosen framework recognises the interdependencies between different kinds of benefits and accommodates multiple forms of evidence. This supports a more informed, evidence-based dialogue on the role of international academic cooperation in strengthening the Belgian higher education system and its contribution to broader societal goals.

### 3.3 Quantitative valuation approach

The goal of the monetised part of the CBA is to **compute a net present value (NPV) and benefit-cost ratio (BCR)** for the VLIRUOS portfolio of completed projects, primarily from 2017-2021. In a first step, the various costs and benefits are monetised for each year using different monetisation strategies as explained in the following subsections. In a second step, the monetised values are summed up to calculate the total costs ( $C_t$ ) and benefits ( $B_t$ ) for each year. In the final step, the NPV and BCR are calculated according to the following formulas:

$$NPV = \sum_t \frac{(B_t - C_t) \times \frac{CPI_{2025}}{CPI_t}}{(1 + r_{real})^{t-2025}}$$

$$BCR = \frac{\sum_t \frac{B_t \times \frac{CPI_{2025}}{CPI_t}}{(1 + r_{real})^{t-2025}}}{\sum_t \frac{C_t \times \frac{CPI_{2025}}{CPI_t}}{(1 + r_{real})^{t-2025}}}$$

To ensure comparability across time, all monetary values are expressed in terms of 2025 euros<sup>4</sup>. This is done through a price adjustment based on the Belgian consumer price index (CPI), applying the ratio  $\frac{CPI_{2025}}{CPI_t}$  where  $CPI_t$  is the index for year  $t$ , and  $CPI_{2025}$  is the index for 2025. This adjustment accounts for inflation and changes in the purchasing power of money<sup>5</sup>.

In addition, a social discount rate is applied to future costs and benefits. Discounting is an essential concept in cost-benefit analysis because it reflects the idea that a euro today is worth more than a euro in the future. This is due to people's preference for immediate benefits, the opportunity cost of capital, and the uncertainty associated with future outcomes. The discount rate reduces the value of future costs and benefits to reflect their present value. In this analysis, a real (inflation-adjusted) social discount rate of 2.5% is used, in line with recent recommendations for public investment evaluations in Belgium<sup>6</sup>. This rate is applied after adjusting monetary values to 2025 prices, ensuring that the final estimates are both inflation-adjusted and time-consistent.

The following two subsections provide a detailed overview of the monetisation of costs and benefits. It is important to note that, unless stated otherwise, all cost figures used in the cost-benefit calculations refer to actual expenditure (spent budget) recorded for FYP1 (2017–2021). Where the analysis uses planned/approved budget breakdowns, this is only done to approximate cost shares (e.g. the proportion of operational expenditure likely to be incurred in Belgium), since the monitoring system does not provide a consistent geographical breakdown by budget line. In such cases, the total amount remains actual expenditure; only the allocation/key applied to that expenditure is informed by the planned budget.

### 3.3.1 Programme costs

The cost base of the VLIRUOS programme between 2017 and 2021 is made up of expenditure<sup>7</sup> across **five categories of budget**: (A) investment costs; (B) operational costs; (C) personnel costs; (D) scholarship costs; and (E) coordination costs. These costs are used to calculate both the total programme cost and the domestic spending that may contribute to the Belgian economy.

Where breakdowns from outside the implementation period are used, they serve only to estimate spending -location shares (i.e., the proportion likely spent in Belgium) that are then applied to FYP1 (2017–2021) expenditures; they are not treated as additional costs.

**For category A (investment costs)**, the share of spending in Belgium is assumed to be 5% for most programmes. This conservative assumption is consistent with the main objective of these investments, which is to support infrastructure and equipment in partner countries.

**The share of spending in Belgium for B. Operational costs** is estimated using (i) observed partner-spending shares from 2020 to 2023 (ii) and planned budget breakdowns for specific programme types (ICP, ITP, IUC, Network, SI and TEAM) from 2021 onwards. The planned breakdowns are used only as a proxy to identify budget subcategories that are unlikely to be spent in Belgium (e.g., international mobility and subsistence). The remaining share is treated as the maximum potential Belgian share of operational expenditure. This proxy is then combined with observed partner-spending patterns (and subsequently adjusted conservatively, see below) to derive the final Belgian-share parameter applied to the spent operational totals in 2017–2021. Importantly, these assumptions affect

<sup>4</sup> As published by the Belgian statistical office StatBel: <https://statbel.fgov.be/nl/themas/consumptieprijindex/consumptieprijindex>

<sup>5</sup> See [https://www.csilmilano.com/docs/WP2022\\_01.pdf](https://www.csilmilano.com/docs/WP2022_01.pdf)

<sup>6</sup> The real social discount rate of 2.5% is based on recent guidelines for public investment appraisals in Belgium and is consistent with European Commission recommendations for long-term evaluations of societal returns. See [https://competition-policy.ec.europa.eu/state-aid/legislation/reference-discount-rates-and-recovery-interest-rates/reference-and-discount-rates\\_en](https://competition-policy.ec.europa.eu/state-aid/legislation/reference-discount-rates-and-recovery-interest-rates/reference-and-discount-rates_en)

<sup>7</sup> In this report, "spent/expenditure/actuals" refers to realised payments recorded for 2017–2021. "Approved/planned budget" refers to authorised amounts that may differ from realised spending. Planned budgets are used only where needed to approximate shares (e.g., domestic share of operational costs) when realised splits are unavailable.

only the domestic-share split, not the total cost base, which is based on spent expenditure in 2017–2021. This approach was chosen for its feasibility and to ensure conservative outcomes. Although a positive correlation between Belgian spending and spending by Flemish institutions could be expected, assuming no correlation is a more cautious approach. To account for additional uncertainty, the resulting share of spending in Belgium for the different programmes is reduced by a further 10%-20% in the base scenario.

**The share of Belgian spending for D. Scholarship costs** is estimated between 50% and 90%. These estimates are based on several factors. Firstly, scholarship allowances paid out in partner countries are excluded based on available budget breakdowns. Secondly, a 2020 survey of VLIRUOS scholarship holders showed that approximately 13% of allowances were sent abroad as remittances, implying that the majority of funds remained in Belgium. Thirdly, many scholarship recipients reported using personal funds or income from employment to supplement their allowance, suggesting that their actual domestic spending exceeded the amount of their scholarship. A robustness check based on estimates of the number of scholarship recipients, average duration of stay, and monthly expenditures yielded different estimates for the various programs, which explains the range of 50% to 90%.

**For C. personnel costs and E. coordination costs**, the share of Belgian spending is derived from the actual spending of Flemish higher education institutions between 2020 and 2023. For partnership programmes such as IUC, Network, SI and TEAM, the personnel costs are often below 6% and frequently close to 0%. As with operational costs, the personnel and coordination cost shares are reduced by 20% in the base scenario to reflect a conservative assumption.

While only the Belgian share of costs contributes to the estimation of domestic economic benefits, the full costs are included in the CBA calculations. All values are first expressed in 2025 prices using CPI adjustments, and then discounted at a rate of 2.5%, as explained in the introduction to this section.

### 3.3.2 Contribution to research and education at Flemish HEIs

Academic cooperation supported by VLIRUOS strengthens institutions and research systems in the Global South and contributes to the research capacity and competitiveness of Flemish HEIs. This section outlines the methodology employed to estimate the monetary value of these two benefits: the production of research outputs, such as PhD completions and peer-reviewed publications, and the attraction of externally funded research projects to Flemish HEIs, which were made possible, at least in part, through prior engagement with VLIRUOS.

In terms of quantifiable research outputs, VLIRUOS-supported projects have generated a significant number of PhDs and scientific publications. These outputs play a critical role in the performance-based funding system for Flemish universities. In particular, the Bijzonder Onderzoeksfonds (BOF) allocates institutional funding based on a combination of structural and bibliometric indicators, including the number of awarded PhDs and documented publications, weighted by quality measures such as citation impact and international co-authorship. Therefore, each PhD and publication directly contributes to the financial position of Flemish universities within the BOF allocation formula.

To monetise these research outputs, the number of doctoral degrees and peer-reviewed publications that could be attributed to projects implemented between 2017 and 2021 was determined using VLIRUOS monitoring data. These outputs were then assigned a monetary value based on their contribution to BOF allocations and confirmed benchmarks in the literature. According to the official BOF distribution key<sup>8</sup>, around 8.25% of the total annual BOF funding – EUR 204 million in 2022 – is linked to doctoral degrees<sup>9</sup>. With around 2,300 PhDs awarded each year

<sup>8</sup> See [https://www.ewi-vlaanderen.be/sites/default/files/bof\\_-\\_besluit\\_van\\_de\\_vlaams\\_regering.pdf](https://www.ewi-vlaanderen.be/sites/default/files/bof_-_besluit_van_de_vlaams_regering.pdf)

<sup>9</sup> The value is from 2022. BOF funding has increased over the years, so this is probably a conservative estimate of the current implicit valuation of research outputs (Source: <https://www.ewi-vlaanderen.be/onz-opdracht/strategisch-beleid/beleidsevaluaties/afgeronde-beleidsevaluaties/beleidsevaluaties-12>).

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across Flemish universities<sup>10</sup>, this equates to an average institutional value of EUR 7,320 per PhD. Similarly, 37.25% of the BOF budget is allocated based on publications indexed in major databases. With around 31,900 publications indexed per year<sup>11</sup>, the average value per publication is EUR 2,380.

As both PhDs and publications contribute to yearly allocations and the calculation of structural base funding over a five-year reference period, each carries an additional medium-term institutional value. Consequently, the implicit valuation of completing a PhD within the Flemish funding system is estimated at EUR 14,640 and of a publication at EUR 4,760. These values are consistent with alternative estimates in the literature. For example, Rousseau et al. (2021) found that the average value of a publication lies between EUR 4,000 and 5,000 when estimated using production cost or discrete choice modelling. In light of this convergence, a base value of EUR 4,500 is used per publication. However, to reflect differences in academic impact, a 50% discount is applied to publications in national journals. The base value for PhDs remains at EUR 14,500, in line with the BOF-based estimate. As part of the sensitivity analysis, both values are varied by  $\pm 50\%$  to account for uncertainty and variation across disciplines and outputs.

It is important to clarify that the BOF values used in this analysis function solely as a proxy for measuring institutional value and do not represent additional financial inflows into the Flemish higher education system. Therefore, valuation based on BOF logic does not represent newly acquired or incremental resources for Belgium as a whole. Rather, it reflects the average institutional value that universities receive from the Flemish government based on their research output performance. These figures are used here to consistently approximate the relative value of VLIRUOS-supported publications and PhDs within the Belgian funding landscape. Therefore, they should be interpreted as proxies for institutional performance rather than as net monetary inflows to the Belgian higher education system.

The total monetary benefit from research output in year  $t$  is calculated as follows:

$$B_{t,Funding} = N_{t,Int. Papers} \times Value_{Paper} + N_{t,Nat. Papers} \times Discount\ factor_{Nat.} \times Value_{Paper} + N_{t,PhD} \times Value_{PhD}$$

Where  $N_{t,\text{Int. Papers}}$ ,  $N_{t,\text{Nat. Papers}}$ , and  $N_{t,\text{PhD}}$  represent, respectively, the number of international peer-reviewed publications, national publications, and PhDs attributable to VLIRUOS in year  $t$  for the period 2017–2025<sup>12</sup>, and the corresponding value parameters are set as described above. This approach ensures that the financial value of research capacity building is captured in a manner that is grounded in the institutional funding logic of the Flemish higher education landscape.

In addition to these research outputs, VLIRUOS-supported activities may also facilitate the acquisition of **external research funding**, particularly from European and other non-Belgian sources, as a result of increased institutional capacity, international partnerships, and enhanced visibility. Although follow-on funding from Belgian public agencies is often catalysed by VLIRUOS engagement, such funding is not included in the monetised benefit calculation, as it constitutes a redistribution of domestic resources rather than a net gain from an international perspective.

To estimate the externally leveraged funding, survey data was collected from former VLIRUOS project participants and Global Minds beneficiaries. The Global Minds survey received 299 responses, with 22 reporting co-funding and 149 reporting additional funding post-project. From these, 27 external grants with a known value exceeding EUR 10,000 were identified, including 5 instances of co-funding and 22 cases of follow-up funding. However, most of the reported

<sup>10</sup> See KU Leuven: <https://research.kuleuven.be/en/policy-figures/facts-figures/research-figures#yount%20talent>; U Antwerpen: <https://www.uantwerpen.be/en/about-uantwerp/organisation/facts-figures-rankings->; U Gent: <https://www.ugent.be/en/ghentuniv/mission/research-policy/research-numbers.htm>; U Hasselt: <https://www.uhasselt.be/en/research/research-management-data-analysis/research-in-numbers>; VUB: <https://max.vub.be/e-commerce/catalog/HzakJ-ZBYVH9KUQJpDQ5vilE6BQOpA-BvOsT0udPijio-e/HzakJ-ZBYVH9KUQJpDQ5viannEGmivfN86CanP-INEs>

<sup>11</sup> KU Leuven: <https://research.kuleuven.be/en/policy-figures/facts-figures/research-figures#yount%20talent> ; U Antwerpen: <https://www.uantwerpen.be/en/about-uantwerp/organisation/facts-figures-rankings/> ; U Gent: [https://biblio.ugent.be/publication/publication\\_status=published](https://biblio.ugent.be/publication/publication_status=published) ; U Hasselt: <https://www.uhasselt.be/en/research/research-management-data-analysis/research-in-numbers> ; VUB: [https://max.vub.be/ecommerce/catalog/Hzakj-ZBYVH9KUQJpDQ5vil6BQOPa\\_BvOsT0udPijo\\_e/Hzakj-ZBYVH9KUQJpDQ5viqnnEGmivfNB6CanP\\_INEs\\_e](https://max.vub.be/ecommerce/catalog/Hzakj-ZBYVH9KUQJpDQ5vil6BQOPa_BvOsT0udPijo_e/Hzakj-ZBYVH9KUQJpDQ5viqnnEGmivfNB6CanP_INEs_e)

<sup>12</sup> These numbers are derived from the data collected by VLIRUOS for monitoring purposes.

grants were from Belgian public sources and were therefore excluded. Only grants from non-Belgian, external sources were considered to ensure the benefit represents new inflows into the Flemish research system.

Each case of external funding was reviewed and assigned an attribution score<sup>13</sup> based on the following two criteria: (i) the extent to which the funding could be attributed to previous involvement with VLIRUOS, and (ii) how likely it was that the funding was indeed external. These scores were derived from qualitative information provided by respondents, with the strength of the score varying depending on the degree of linkage to VLIRUOS activities. For instance, a high attribution score was given when a respondent explicitly stated that the grant would not have been obtained without VLIRUOS's support. Conversely, a low score was given when several enabling factors were cited and VLIRUOS played only an indirect role.

The total monetary benefit from leveraged external funding was calculated using the following formula:

$$B_{Funding} = \sum_p (Attribution\ score_p \times External\ funding_p)$$

Where  $P$  indexes each project or grant case,  $External\ Funding_p$  is the reported funding amount, and  $Attribution\ Score_p$  is the attributed share of that amount linked to VLIRUOS support. The attribution scores are subjected to a **sensitivity analysis**, in which they are adjusted upwards and downwards, and the robustness of the total estimate is tested by excluding the highest-value grants to explore the impact of outliers.

In practice, most funding amounts were not linked to the year in which they were received. For the sake of consistency and to ensure comparability across benefits, therefore, all identified funding was treated as if it had been acquired in 2024. While this approach is conservative in financial terms, as inflation-adjusted values from 2024 are slightly lower than those from earlier years, it ensures consistency and comparability across benefits. However, as large research grants are often disbursed over multiple years, this approach also ensures that the benefit is not overstated in the short term.

Taken together, the two components – research outputs and external funding – capture the most tangible, monetisable contributions of VLIRUOS to the Flemish academic landscape. They represent measurable returns in terms of institutional funding and research income and demonstrate the extent to which VLIRUOS catalyses academic capacity, enabling Flemish universities to generate knowledge, attract resources and enhance their global competitiveness. Although these estimates are inherently conservative and exclude broader institutional, reputational and pedagogical effects, they nonetheless provide a robust lower-bound estimate of the programme's value to the Belgian research system.

### 3.3.3 Academic visibility and international positioning

An important, albeit indirect, contribution that VLIRUOS makes to the Flemish higher education system is its role in enhancing academic visibility and international engagement. Although these outcomes are difficult to quantify directly, it is widely recognised that they influence the attractiveness of Flemish HEIs to international students. This has both immediate and long-term economic implications for Belgium. International students contribute to the economy through tuition fees and living expenditures, and some remain in the Belgian labour market after graduation.

While the VLIRUOS programme is not primarily intended as a recruitment mechanism for international students, its global partnerships and capacity-building efforts – supported by a range of instruments, including scholarships and mobility – enhance the international profile and reputation of Flemish universities. The effects of these efforts can

<sup>13</sup> The attribution score reflects the proportion of a given benefit that can be causally linked to VLIRUOS programmes, as estimated from qualitative and quantitative evidence. Ranging from 0 (no attribution) to 1 (full attribution), it is used to prevent the overestimation of benefits that may have multiple contributing factors.

extend well beyond the direct group of programme beneficiaries or VLIRUOS partner countries. By fostering international collaborations, building institutional networks and enhancing the global profile of Flemish universities, VLIRUOS can contribute to the wider internationalisation of the Flemish higher education system.

This analysis draws on the work of De Witte and Soncin (2021)<sup>14</sup> to estimate the potential monetary benefit of this contribution. De Witte and Soncin quantified the net economic benefit of international students to Belgium. Their estimates, based on 2016 data, consider both short-term impacts, such as student spending and housing costs, and longer-term benefits, including the contributions of graduates who remain in Belgium and participate in the labour market. The net benefit is expressed as a NPV, which accounts for the discounted value of future benefits over time.

As it is not possible to determine the exact number of international students who came to Belgium as a result of VLIRUOS-related activities, the benefit is estimated by applying an attribution score to the total NPV of international students. This score reflects the proportion of the overall benefit that can be reasonably attributed to the influence of VLIRUOS through its contributions to institutional visibility, international partnerships and academic reputation.

The benefit to Belgium in year  $t$  from the attraction of international students is calculated as:

$$B_{t,Attraction} = Score_t \times NPV_t$$

Here,  $NPV_t$  represents the net present value of international students in Belgium, adjusted to reflect prices in year  $t$ , while  $Score_t$  is the attribution factor representing the share of this benefit that can be linked to VLIRUOS. The attribution score is inherently **uncertain and therefore treated as a parameter subject to sensitivity analysis**. The base attribution score was defined in consultation with VLIRUOS and reflects a plausible estimate of its influence on the internationalisation of Flemish HEIs.

To account for VLIRUOS's diminishing influence over time, the attribution score is modelled as declining exponentially over a 10-year period beginning in 2022, the first year after the programme period under evaluation. Specifically, the attribution score declines by 10% each year, according to the following formula:

$$Score_t = Score \times 0.9^{(t-2022)} \text{ for } t \in \{2022, \dots, 2030\}$$

This assumption reflects the reasonable expectation that the visibility of VLIRUOS projects will gradually decrease over time, unless new initiatives are introduced to reinforce them<sup>15</sup>.

The range of the NPV is based on estimates by De Witte and Soncin (2021) suggesting that the total NPV of international students in Belgium in 2016 was between EUR 2.99 billion and EUR 4.325 billion. This range is used to define the upper and lower bounds of the estimated benefit in the sensitivity analysis. It is important to note that these figures are aggregate values for all international students in Belgium, rather than being specific to any institution or country of origin. Furthermore, these estimates cannot be projected with precision into the future, but they do provide a plausible basis for approximating the scale of the potential benefit.

It is important to interpret the benefit estimate derived using this approach as an illustrative approximation, rather than a precise forecast. The number of international students fluctuates over time due to various factors, including visa policy, geopolitical trends, and the availability of English-language programmes. Additionally, a student's NPV also depends on their country of origin, field of study, and post-graduation trajectory. This model does not

<sup>14</sup> De Witte & Soncin (2021) estimate the NPV of international students to Belgium/Flanders using micro-administrative and survey data and a comprehensive cost-benefit framework. In this report, we use their results only as an external benchmark for the average NPV of international students (scaled to 2025 prices) to value the potential magnitude of student-attraction benefits. Importantly, we do not assume that VLIRUOS "causes" the overall inflow of international students. Instead, we apply a small attribution share (base case: 1%) and a limited attribution horizon to reflect VLIRUOS's plausible contribution via long-term partnerships, international visibility and institutional positioning. This approach is deliberately conservative and is presented as an illustrative approximation under uncertainty.

<sup>15</sup> The sensitivity analysis assumes different time horizons, such as seven years ( $t \in \{2021, \dots, 2027\}$ ) and 15 years ( $t \in \{2021, \dots, 2035\}$ ).

differentiate according to these characteristics, but instead provides a conservative, average-based estimate of VLIRUOS's contribution to attracting international students.

In summary, although the exact causal relationship between VLIRUOS and the enrolment of international students in Flanders cannot be verified empirically, the programme's role in enhancing the international reputation of Flemish universities is likely to positively impact student enrolment. The modelling approach presented here captures this contribution transparently and conservatively, providing a reasonable estimate of the return on investment for Belgium from the global visibility and institutional reputation effects generated by VLIRUOS.

### 3.3.4 Contribution to employability of Belgian students

The estimation strategy distinguishes between two categories of students: (1) those directly involved in VLIRUOS projects, such as ICP or ITP participants, and (2) the wider student population at supported institutions, who may benefit indirectly through institutional development, enhanced curricula or improved academic environments (e.g. undergraduate and postgraduate students). For each group, the analysis assumes a range of benefits to employability, expressed either as a percentage wage premium or an increase in the probability of finding employment. These effects are not intended as precise predictions. To translate these into monetary terms, the model multiplies the assumed increase in employability by: i) the number of affected students, and ii) a benchmark average annual wage appropriate for the graduate labour market in Belgium. This is then summed over the expected duration of employment in Belgium, during which time the attribution is assumed to be positive.

Due to the inherent uncertainty of attributing long-term employability effects to specific educational programmes, all results are treated as estimates. Using differentiated assumptions for directly and indirectly affected students allows for greater nuance, and key parameters – especially employability scores – are tested through sensitivity analysis. This approach ensures that the final estimates are transparent and robust in the face of a range of plausible conditions.

It should be noted, however, that this estimation captures only some of the broader labour market and social benefits associated with enhanced employability, such as reduced reliance on public services, improved health outcomes and higher tax contributions. Consequently, the estimated monetary values should be interpreted as conservative lower-bound estimates, providing a baseline measure of benefit that complements the other impact dimensions considered in the overall evaluation.

The following represents the **calculation of the benefits of increased employability**:

$$B_{t,Employability} = (1 - SE) \times (N_{Grads,direct} \times Score_{direct} + N_{Grads,indirect} \times Score_{indirect}) \times Employment\ rate \times Income_t$$

Where  $SE$  is an adjustment accounting for displacement<sup>16</sup> or substitution effects<sup>17</sup>,  $N_{Grads,direct}$ , and  $N_{Grads,indirect}$ , are the estimated number of graduates who will stay in Belgium after graduation<sup>18</sup> and whose employability is assumed to be directly or indirectly improved.  $N_{Grads,direct}$ , includes participants in VLIRUOS-supported programmes such as ICP and mobility scholarships. For  $N_{Grads,indirect}$ , an exposure<sup>19</sup> of 30% is assumed among all 63,000 bachelor and master graduates from 2020/21 in Flanders. Note that while the exposure might be large, students who

<sup>16</sup>  $SE$  accounts for the possibility of displacement of other job seekers by some beneficiaries. In the base case,  $SE$  is set to zero, which assumes that there is no significant substitution in the graduate labour market.

<sup>17</sup> See Gambin et al. (2014)

<sup>18</sup> These can be Belgian graduates or other international students but these are graduates of Flemish HEI and not graduates of VLIRUOS programmes.

<sup>19</sup> 'Exposure' refers to the proportion of the total student population that is assumed to have been indirectly affected by institutional improvements supported by VLIRUOS (e.g. improvements to curricula, teaching quality or research engagement). In the base case, it is assumed that 30% of the 2020/21 cohort of 63,000 bachelor's and master's degree graduates were exposed.

graduated earlier or later than 2020/21 might also be exposed and benefit from the VLIRUOS programmes from 2017–2021.  $Score_{direct}$  and  $Score_{indirect}$ <sup>20</sup> represent the improvement in employability expressed in terms of percentage and are set to 3% and 0.1% respectively. This improvement can be interpreted as a wage premium, an increased probability of finding a job, or a combination of both.  $Income_t$  is an average annual wage for the graduate labour market in Belgium of EUR 36,000<sup>21</sup>, and  $Employment\ rate$  is the graduate employment rate of 85%, reflecting recent statistics for Belgium in 2024<sup>22</sup>. The attribution period of 15 years determines the period in which benefits occur ( $t \in \{2021, \dots, 2021 + 15\}$ ) and is assumed to be lower than the average employment period of 35 years in Belgium<sup>23</sup>.

Since the estimation of this benefit is based on several critical assumptions on non-observable information, the different parameters are subjected to sensitivity analyses. Since the exposure of indirectly affected students and the indirect effect are closely related, i.e. the higher the assumption on the exposure, the lower the effect of the exposure must be, only the  $Score_{indirect}$  is varied during the sensitivity analysis, as the two parameters are intrinsically linked and multiplicative in the modelling approach.

### 3.3.5 Economic contributions (direct, indirect, induced)

To evaluate the economic value generated in Belgium by VLIRUOS programme activities, an **input–output modelling** approach is employed. This method is widely used in the evaluation of higher education and public investment programmes. It captures not only the direct effects of spending, such as payments for housing, food and transport, but also the broader indirect and induced effects that ripple through the economy. These ripple effects reflect how initial expenditure triggers further rounds of economic activity by suppliers and consumers. It relies on output multipliers published by the Belgian Federal Planning Bureau (2020).

Direct effects refer to the immediate economic activity generated by VLIRUOS's own spending in Belgium, including payments made to staff, universities, and local service providers. Indirect effects occur when these institutions and suppliers, in turn, increase their purchases from other businesses to meet demand. For instance, a university receiving VLIRUOS funding might hire a local catering company, which then purchases additional ingredients from wholesalers. Induced effects arise when those benefiting from these activities – such as university staff or local suppliers – experience higher income and spend more on goods and services in the wider economy. This chain of effects is a key feature of input-output modelling and helps to capture the full economic footprint of public spending.

To estimate this footprint, VLIRUOS-related expenditure is first disaggregated by year and budget category. The share estimated to have occurred within Belgium is then identified for each category of spending: operational costs, personnel costs, coordination costs and scholarship costs. This domestic share is then multiplied by an output multiplier, which quantifies the total economic activity generated in the Belgian economy for each euro of direct spending. These multipliers, as published by the Belgian Federal Planning Bureau, vary by sector, depending on the structure and interdependencies of the Belgian economy.

The total economic contribution of VLIRUOS-related spending in a given year  $t$  is calculated using the following formula:

<sup>20</sup> 'Score\_direct' refers to the estimated improvement in employability for students who are directly involved in VLIRUOS programmes, such as ICP or ITP participants. This is set at 3%. 'Score\_indirect' reflects the assumed improvement for indirectly affected students and is set at 0.1% in the base case. These scores can be interpreted as approximate wage premiums, increased probabilities of employment, or a combination of both, based on the type of programme and its likely labour market impact.

<sup>21</sup> Based on official labour market statistics from: <https://bestat.statbel.fgov.be/bestat/crosstable.xhtml?view=a7a748a8-15aa-439e-8664-f024950728d7>

<sup>22</sup> Source: <https://bestat.statbel.fgov.be/bestat/crosstable.xhtml?view=4beb6e55-ffd5-471e-a8ba-094d942559ac>

<sup>23</sup> Source : [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Duration\\_of\\_working\\_life\\_-\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Duration_of_working_life_-_statistics)

$$B_{t,Spending} = \sum_L Spending_{t,L} \times Share\ of\ spending\ in\ Belgium_L \times Output\ multiplier_L$$

In this formula,  $L$  denotes the relevant budget categories (operational, personnel, coordination, and scholarship costs), and  $B_{t,Spending}$  denotes the total estimated benefit in year  $t$  across all categories combined. Importantly, investment costs are excluded from this calculation, as their Belgian share is assumed to be zero in the base case, reflecting the fact that such investments typically aim to support infrastructure in partner countries.

The output multipliers applied to each category have been carefully selected to reflect the characteristics of the relevant sector. For operational costs, a multiplier of 1.5 has been used. This is slightly below the average multiplier for the Belgian economy, but aligns with that for scientific research and development services, the sector that matches it most closely. A slightly lower multiplier of 1.3 is applied to personnel and coordination costs, reflecting the structure of the public administration sector, which has fewer intersectoral links and lower marginal consumption effects. A higher multiplier of 1.7 is used for scholarship costs. This is based on detailed survey evidence indicating that scholarship holders primarily spend their allowance in sectors with significant economic linkages, such as accommodation (with estimated multipliers ranging from 1.5 to 1.8), food and beverages (from 1.4 to 2.3), and leisure activities (approximately 1.8). These spending patterns suggest a relatively strong transmission of scholarship allowances into broader economic activity.

The model incorporates initial spending and multiplier effects, i.e. direct, indirect and induced contributions to the Belgian economy. However, to ensure robustness and transparency, a sensitivity analysis was performed. This analysis tests a scenario in which only the direct effects are considered by applying a conservative multiplier of 1.0 to all categories<sup>24</sup>. This isolates the immediate effect of spending, offering a lower-bound estimate of the economic benefit without any assumed spillovers.

These multiplier-based estimates should be interpreted with appropriate caution. Input–output models, such as the one used in this analysis, are designed to estimate how programme spending circulates through the economy, rather than to measure net societal gain. A key assumption of the model is that the related expenditure would not have occurred in Belgium in the absence of VLIRUOS. Based on this assumption, the output multipliers quantify the gross economic activity supported by the presence and spending of VLIRUOS, including direct expenditure and ripple effects through suppliers and households. However, this type of modelling does not track how much of that money flows back to the government or results in broader welfare improvements.

The input–output approach is consistent with established economic contribution studies of higher education in Flanders, such as BiGGAR Economics (2017), which also quantify direct, indirect and induced effects linked to operational spending and student-related expenditures. However, the present analysis differs in scope and attribution: rather than estimating the total economic contribution of Flemish universities, we estimate the domestic economic activity associated with VLIRUOS expenditure and scholarship-holder spending as part of a much broader CBA framework focused on the entire VLIRUOS portfolio.

While this method is widely accepted in policy evaluation, the multiplier-based results should be interpreted as an estimate of economic activity supported (a contribution/footprint concept), not as a full measure of net welfare gains. We include them in the CBA as a policy-relevant monetised benefit stream under the assumption that this domestic activity would not occur in the same form without VLIRUOS-related expenditure; the conservative domestic-share assumptions and sensitivity tests are intended to mitigate overstatement.

Therefore, the estimates presented here should be viewed as part of a broader picture of VLIRUOS's domestic value creation. They provide an insight into how programme- and scholarship-related spending circulates within the

<sup>24</sup> The base case applies differentiated output multipliers by category to reflect sector-specific economic linkages. A conservative scenario applies a uniform multiplier of 1.0 to isolate direct effects and test robustness.

Belgian economy, supporting jobs, services, and business activity. However, they should not be considered a definitive or exhaustive measure of VLIRUOS' total economic impact.

### 3.4 Analytical scope, assumptions and limitations

This study's **analytical scope** is defined by three key dimensions: geography, time and thematic coverage. These dimensions reflect the institutional reality of VLIRUOS and the specific objectives of this study. Together, they define the parameters within which the CBA is conducted and clarify the underlying assumptions.

Based on Syspons' prior experience of evaluating VLIRUOS and similar programmes, it is important to emphasise that the most significant and transformative impacts of VLIRUOS are observed in partner countries in the Global South. These include long-term improvements in institutional capacity, research ecosystems and the policy relevance of higher education. While this report focuses on Belgian benefits due to a specific policy interest, these **domestic effects** should be considered **secondary** or derivative, arising from reciprocal engagement with Southern partners.

**Geographically, the study is confined to Belgium.** Although VLIRUOS is primarily focused on achieving development outcomes in the Global South, this evaluation aims to assess the value of these activities for Belgium solely. Accordingly, the analysis captures only a small fraction of VLIRUOS overall benefits which are expected to mainly occur in the partner countries in the Global South. However, many of the benefits observed in Belgium are the result of successful cooperation with partners abroad (see Chapter 4.2). Therefore, this study recognises that Belgian benefits are not isolated outcomes, but rather part of a broader ecosystem of mutual academic engagement.

**In terms of time, the scope of the study is centred on the period from 2017 to 2021.** This reference period was chosen so that the programmes under review would have reached a sufficient level of maturity to allow meaningful assessment, while also remaining close enough to the present day to ensure data availability and institutional memory. Projects and programmes initiated during this period are likely to have produced short- and medium-term outcomes by now, such as research collaborations, graduate completions and attracting external funding. However, the choice of this timeframe also acknowledges that the benefits of academic cooperation often become apparent over longer time horizons, with some effects – particularly in areas such as institutional learning and career development – only becoming fully visible beyond the scope of the study. Where appropriate, the study draws on evidence of emerging outcomes that originated before or will extend beyond this period, provided they can be plausibly linked to activities supported by VLIRUOS during the 2017–2021 cycle. More specifically, all costs included in the CBA refer to expenditure incurred between 2017 and 2021. Any references to later years relate to either benefit realisation horizons or the parameterisation and triangulation of assumptions applied to the FYP1 cost base.

**Thematically, the study covers all the main modalities of the VLIRUOS programme relating to academic cooperation that are relevant to Belgian stakeholders.** These include core programmes (TEAM, IUC, SI, NETWORK and ICP). These programmes represent the majority of VLIRUOS's academic engagement and offer a variety of benefits as described in Chapter 3.2.

When applying the cost-benefit framework within these parameters, several analytical assumptions and limitations must be recognised. A central challenge concerns **the distinction between attribution and contribution**. VLIRUOS operates in a complex environment of overlapping institutions, funding sources and policy initiatives. Academic outcomes such as increased research output or improved employability rarely result from a single programme. Rather, they emerge from dynamic systems of collaboration and co-investment. The study therefore takes a contribution-based approach, estimating VLIRUOS's likely contribution to observed outcomes based on programme logic, stakeholder testimony and available evidence. Where direct attribution is not feasible, the analysis uses calibrated attribution factors informed by literature and expert judgement to reflect the likely scale of VLIRUOS's catalytic role (see Chapter 3.3 for more details).

Another limitation relates to **data availability and measurement constraints**. Although VLIRUOS has a monitoring system that aligns well with its core mandate and reporting requirements for development-oriented academic cooperation, it was not designed to systematically capture the domestic benefits of Belgium for the purpose of economic valuation. Consequently, some of the data required for the cost–benefit analysis, such as long-term graduate trajectories in Belgium, detailed and comparable follow-on research funding flows, and robust indicators of institutional reputation and international positioning, are not routinely collected by VLIRUOS. Often, such information is also held by HEIs, funders, or other third parties, and is not available in a form suitable for direct modelling. In such cases, the study relied on proxy indicators, attribution estimates (see Chapter 3.3) and, in some instances, qualitative evidence to infer the likely effects (see Chapter 4.2.5 and 4.2.6 as examples). Sensitivity analysis also helped to evaluate the robustness of these assumptions and explore the implications of alternative scenarios (see Chapter 4.3 for the results of the sensitivity analysis).

A further methodological constraint lay in the inherent **difficulty of monetising certain types of academic and institutional value**. Effects such as enhanced academic prestige, strengthened international networks or improved science diplomacy were widely regarded as meaningful by stakeholders yet lack market equivalents that would allow for standard economic valuation. To address this, the study incorporated structured success stories complementary forms of evidence (see Chapter 3.2) to ensure that such benefits are not excluded from the analysis simply because they cannot be monetised. As discussed in Chapter 3.2, the inclusion of non-monetised and qualitative benefits is an integral part of the study's evaluative design, not an ancillary feature.

Finally, the evaluation results must be considered in the context of the political and institutional environment of VLIRUOS. As a publicly funded organisation for international cooperation, VLIRUOS operates within a policy environment in which questions of efficiency, equity, and strategic relevance carry significant weight. Consequently, the results of this study will likely be examined for their methodological quality and implications for public accountability and policy design. In recognition of this, the analysis is presented with full transparency regarding data sources, assumptions, and limitations. However, it is important to emphasise that the results should be interpreted as indicative rather than definitive. This study does not seek to provide a final or exhaustive assessment of value; rather, it aims to inform evidence-based dialogue about the domestic relevance of international academic cooperation.

Overall, the scope and analytical assumptions of the study reflect the specifics of the VLIRUOS model and the broader challenges of evaluating complex, long-term, multidimensional programmes. These provide the necessary framework within which the CBA was conducted, ensuring it remains grounded, credible and policy-relevant.

## 4 Findings

### 4.1 Cost structure

The total actual expenditure (spent budget) for VLIRUOS during FYP1 (2017–2021)<sup>25</sup> amounted to approximately EUR 160 million in nominal terms. This expenditure was distributed relatively evenly across the first three years, with around EUR 30 million spent annually between 2017 and 2019. Spending declined to around EUR 23 million in 2020, before rising significantly to EUR 50 million in 2021. The final year of the Five-Year Programme (FYP1) accounted for the largest proportion of total expenditure, likely due to end-of-cycle disbursements and delayed implementation caused by the pandemic.

To enable comparison over time and ensure consistency with benefit estimations, all spent costs have been converted to 2025 values by applying inflation adjustments and a real social discount rate of 2.5%. The total cost of the VLIRUOS programme over the 2017–2021 period, expressed in 2025 terms, is therefore estimated at EUR 220.7 million.<sup>26</sup>

This total can be broken down into three main cost categories. The largest share, amounting to EUR 105.5 million (48% of the total), was allocated to programme implementation, excluding scholarships. These costs supported various long- and short-term cooperation instruments, including Institutional University Cooperation (IUC), TEAM projects, South Initiatives (SI), network programmes and the Global Minds programme. IUC was the flagship instrument among these, accounting for 20% of total spending, while Global Minds received 14%. TEAM and SI projects received 10% and 5%, respectively, while the remaining programmes and pilot initiatives accounted for a smaller proportion. These programme expenditures reflect VLIRUOS's efforts to strengthen institutional capacity, promote collaborative research and support the internationalisation of Flemish higher education institutions.

Scholarships were the second largest cost category, accounting for EUR 87 million (39% of the total) based on spent scholarship expenditure. These funds enabled students and professionals from partner countries to study or undertake training in Belgium via various programmes, such as ICP Connect and ITP. The scholarship costs covered allowances and tuition, as well as mobility and support services. These scholarships are a key component of VLIRUOS's contribution to capacity building in the Global South, while also generating reciprocal value for the Belgian higher education system.

The remaining EUR 28.2 million, or 13% of the total, was spent on organisation and coordination. This includes costs incurred by the VLIRUOS secretariat (EUR 12 million), coordination activities at Flemish higher education institution level (EUR 7.9 million), and other institutional costs, such as monitoring, evaluation and audits (EUR 2.1 million). Personnel costs make up the majority of this category, reflecting the human capital required to manage complex international partnerships and ensure programme compliance and quality. Although these coordination-related costs are indirect, they are essential to the delivery and effectiveness of the VLIRUOS programme portfolio.

Table 3 presents a detailed breakdown of the net present values of the three main cost categories. Together, these show that, although the majority of investments supported direct programme activities and scholarships, a significant proportion was also allocated to coordination and support functions that are vital to the long-term viability and strategic coherence of the VLIRUOS model.

<sup>25</sup> The final year included an eight-month extension.

<sup>26</sup> See also 6.2 for a detailed explanation of the cost base and cost assumptions

Table 3: Net-present value of VLIRUOS costs (2017–2021)<sup>27</sup>

| Category                                                 | Costs (EUR) <sup>28</sup> | % of total  |
|----------------------------------------------------------|---------------------------|-------------|
| VLIRUOS programmes (excl. scholarships)                  | 105.469.544               | 48%         |
| VLIRUOS scholarships                                     | 87.039.525                | 39%         |
| Organisation and coordination (not linked to programmes) | 28.168.305                | 13%         |
| <b>VLIRUOS total</b>                                     | <b>220.677.373</b>        | <b>100%</b> |

Taken together, VLIRUOS's cost structure reveals a balanced allocation of resources across programme implementation, individual mobility and institutional coordination. This reflects the organisation's dual mission: to meaningfully contribute to sustainable development in the Global South while strengthening the academic and societal relevance of the Flemish higher education system through international cooperation.

## 4.2 Key benefits for Belgium

Although VLIRUOS is primarily an international cooperation organisation, its activities generate a variety of mutual benefits for Flanders and Belgium as described in Chapter 3.2. While these benefits are not the organisation's primary objective, they are nonetheless significant, particularly in a context where public investments in international cooperation are increasingly assessed through a domestic value lens. This section explores and summarises the various ways in which partnerships, programmes and mobility flows supported by VLIRUOS have contributed to the Belgian higher education system, the research landscape, the labour market, and broader societal engagement with global challenges.

Table 4 below summarises the key domestic benefits generated by VLIRUOS, providing a concise overview to support navigation and highlight the different types of benefit discussed in Chapter 4. These benefits are categorised according to the structure of Section 4.2, distinguishing between monetised effects, for which quantitative estimates are available, and broader non-monetised contributions that reflect qualitative, institutional or strategic value provided by success stories. Together, these categories demonstrate the various ways in which VLIRUOS contributes to Belgium's academic, economic and societal landscape.

Table 4: Summary of VLIRUOS's benefits to Belgium by category<sup>29</sup>

| Benefit Area                                                | Monetised Subcategory                | Monetised Value (EUR, NPV) | Non-Monetised Contributions                                                                      |
|-------------------------------------------------------------|--------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------|
| 1. Contribution to research and education at Flemish HEIs   | Increased research capacity          | 15.2 million               | Improved research capacity, teaching quality, curriculum innovation, and institutional learning  |
|                                                             | Attracted external funding           | 6.1 million                |                                                                                                  |
| 2. Academic visibility and international positioning        | Attraction of international students | 207.4 million              | Enhanced global reputation of Flemish HEIs; strengthened partnerships; increased competitiveness |
| 3. Contribution to employability of Belgian students        |                                      | 72.7 million               | Improved global competences and soft skills; reflexive, intercultural and applied learning       |
| 4. Update of knowledge and networks by Belgian stakeholders |                                      | Not monetised              | Applied innovation; use of tools, methods, and partnerships by Belgian firms and institutions    |

<sup>27</sup> Cost figures reflect actual expenditure (spent budget) for 2017–2021, expressed as NPV in 2025 euros (CPI-adjusted and discounted at 2.5%).

<sup>28</sup> In terms of value in the year 2025 adjusted for inflation and accounting for a 2.5% real social discount factor.

<sup>29</sup> Monetary values are based on NPV in 2025 euros and reflect base case estimates from the cost–benefit model.

|                                                        |               |                                                                                  |
|--------------------------------------------------------|---------------|----------------------------------------------------------------------------------|
| 5. Strategic diplomacy and alumni as global connectors | Not monetised | Long-term relationships, science diplomacy, and bilateral/multilateral influence |
| 6. Economic contributions (direct, indirect, induced)  | 171.0 million | Strengthened local economies via spending by HEIs and international students     |

The following subsections provide in-depth discussions of each of these benefit areas. The analysis combines quantitative findings from the cost-benefit model with qualitative evidence from case studies<sup>30</sup>. This highlights the interdependencies between international cooperation and domestic academic performance. Where possible, benefits are monetised to enable comparison with programme costs. In other cases, the analysis focuses on strategic and institutional outcomes that cannot be valued directly but are closely aligned with key policy objectives in higher education and science.

Adopting this structured approach enables the study to reveal the often-overlooked domestic returns of development-oriented academic cooperation. In doing so, it contributes to a more nuanced, evidence-based debate about the role of internationalisation in strengthening the Belgian knowledge ecosystem.

## 4.2.1 Contribution to research and education at Flemish HEIs

VLIRUOS's contribution to the research and education landscape of Flemish higher education institutions is substantial and multifaceted. Although the organisation's primary mandate is to foster sustainable development through academic cooperation with the Global South, its reciprocal effects on Belgian academic environments are significant and multifaceted. Through long-term partnerships, targeted capacity building and embedded internationalisation, VLIRUOS has demonstrably enhanced the research output, educational quality and institutional learning of Flemish universities and universities of applied sciences and arts. This is the result of sustained engagement with international partners, which has enabled Flemish institutions to develop new expertise, build interdisciplinary networks, and incorporate global perspectives into their core academic activities.

### Case – Turning cooperation into a research powerhouse: Global Health Institute (South Africa and beyond)

The evolution of the Global Health Institute (GHI) at the University of Antwerp offers a compelling illustration of how support from VLIRUOS can catalyse the emergence of a vibrant, interdisciplinary research ecosystem. What started in 2009 with the recruitment of a postdoctoral researcher to oversee an IUC programme with the University of Limpopo in South Africa has grown into a significant academic hub, employing over 50 individuals from over 20 different countries. A decade of support from VLIRUOS made this transformation possible, enabling the university to build expertise in critical areas such as non-communicable diseases, maternal health, antimicrobial resistance, and health economics. Partnerships initiated through the IUC and complementary projects in Peru, the Democratic Republic of the Congo, Tanzania, South Sudan and beyond have paved the way for the successful acquisition of over EUR 30 million in competitive research funding, including three prestigious ERC grants. The GHI has produced over 1,000 peer-reviewed publications, 80% of which have been published in top-quartile journals, and over 100 PhDs have been awarded or are currently in progress. Beyond these metrics, the institute has incorporated global health content into teaching materials, developed educational tools for internships and facilitated long-term collaborations between research groups in Belgium and internationally. The GHI is a prime example of how VLIRUOS funding can act as true seed money, supporting international capacity building and enriching the research and teaching environments domestically.

<sup>30</sup> The qualitative cases are presented as illustrative and non-exhaustive examples drawn from stakeholder inputs; they are not intended to be representative of the overall VLIRUOS portfolio, nor do they constitute a value judgement of individual projects or partners.

**Case – Methodological leadership through long-term partnerships: Biostatistics at UHasselt (Uganda and beyond)**

A similar dynamic can be seen at Hasselt University, where the long-standing collaboration between the Centre for Statistics (CenStat, now part of the Data Science Institute) and partners in Africa, Latin America, and Asia has had a dual impact: it has increased scientific capacity abroad and advanced methodology in Belgium. Through the ICP programme in Statistics, more than 40 Ugandan students have earned master's degrees at UHasselt alone, forming a strong alumni network that has facilitated further joint research and training. This network culminated in the co-organisation of the 2025 IBS Uganda Conference in Kampala. The collaboration has also resulted in joint publications in high-impact journals on subjects including malaria modelling in Rwanda, surveillance of the SARS-CoV-2 virus in Cuba and South Africa, and transmission of the Ebola virus in Sierra Leone. These research outputs – many of which were co-authored by and driven through VLIRUOS scholarships – have directly benefited the scientific standing of UHasselt. Furthermore, the ongoing VLIRUOS ITP initiative, the eR-BioStat project, is developing open-access e-learning platforms in (bio)statistics for partner institutions in Kenya, Ethiopia and South Africa. These platforms are used not only by partner universities, but also by students and researchers at UHasselt itself, demonstrating how tools designed for capacity abroad can generate tangible benefits for Flemish institutions. This feedback loop is emblematic of the way in which VLIRUOS projects enrich both sides of the partnership: Belgian academics gain new tools, insights and co-authorship networks.

**Case – Curriculum innovation through co-creation: Multi-country teaching and training collaborations (Cuba/Vietnam/Kenya/Southern Africa)**

The same principle applies to collaborative teaching and training programmes spanning multiple VLIRUOS modalities. Across institutions in Cuba, Vietnam, Kenya, South Africa and Zimbabwe, Flemish academics have contributed to long-terms teaching initiatives in molecular biology, protein chemistry, and biotechnology. Coordinated through ICPs, IUCs, short initiatives and ITPs, these efforts have led to dozens of MSc and PhD completions, the development of new curricula and the formation of alumni chapters in Kenya, Tanzania and Uganda. The sustained engagement of Flemish academics in laboratory training and doctoral supervision has reinforced their pedagogical competencies and expanded their disciplinary reach. For example, IUC partnerships with UCLV in Cuba, Can Tho University in Vietnam and the University of Limpopo in South Africa have significantly improved the global positioning of these institutions, while also creating reciprocal opportunities for Belgian researchers to engage with South-led research agendas, cross-cultural teaching practices and interdisciplinary projects. The academic benefits are measurable not only in terms of publications or degrees, but also in the way these experiences shape academic careers and broaden institutional identities within Flemish HEIs.

**Case – Institutional learning that sticks: PXL's internationalisation pathway (Global Minds)**

At PXL University of Applied Sciences and Arts, engagement through Global Minds and other programmes has helped catalyse new international initiatives, including student internships and intercultural teaching methods. Rather than elaborating on institutional transformations here, which are discussed in Chapter 4.2.4, it is sufficient to note that these initiatives have also contributed to broader strategic shifts in the way that PXL structures its international engagement. This impact is also evident in the career paths of participating staff. For example, a former member of project staff at PXL has since become Director of Research. Other PXL colleagues involved in VLIRUOS-supported activities have progressed to leadership roles within their institutions or pursued doctoral studies. These professional developments demonstrate how VLIRUOS projects can promote institutional growth and academic careers.

**Case – Better teaching at home from collaboration abroad: Laboratory pedagogy spillovers (Cuba / Zimbabwe / Vietnam / South Africa)**

Another example involves long-term collaboration in the fields of molecular biology and protein chemistry between institutions in Cuba, Zimbabwe, Vietnam and South Africa. KU Leuven and other Flemish universities supported the development of curricula and laboratory teaching through a combination of IUC, ICP and ITP programmes. This has led to numerous MSc and PhD graduates. Several of these alumni now hold academic positions in East and Southern Africa. These activities also contributed to academic learning processes within Flemish institutions, such as refining lab-based pedagogy and integrating interdisciplinary teaching content.

These cases demonstrate that, rather than supporting research and education in terms of isolated outputs, VLIRUOS fosters the conditions under which transformative academic work can flourish. Through long-term partnerships, co-creation and mutual learning, the programme has enabled Flemish HEIs to grow academically, structurally and strategically.

In order to estimate the monetary value of VLIRUOS's contribution to research and education in Belgium, the analysis focuses on two quantifiable aspects: tangible research outputs, such as publications and PhDs; and additional research funding from non-Belgian sources made possible through VLIRUOS-supported initiatives. While these elements are important, they represent only a subset of the programme's broader contributions and should therefore be interpreted as conservative, lower-bound estimates of VLIRUOS's value to the Flemish higher education system.

Based on monitoring data from 2017 to 2021, projects supported by VLIRUOS resulted in 3,247 peer-reviewed publications and contributed to the graduation of 288 PhD students in collaboration with partner institutions. To estimate the monetary value of these outputs, performance-based benchmarks reflecting the Flemish Special Research Fund's (BOF) funding allocation logic were applied. The value of a PhD was set at an average of EUR 14,500, while the value of a publication in an international peer-reviewed journal was set at an average of EUR 4,500. Publications in national journals were discounted by 50% due to their lower academic impact. However, these values reflect institutional funding incentives rather than the full societal impact of research. In the context of the Flemish higher education system, these outputs contribute directly to core funding streams via the BOF allocation mechanism, a key driver of institutional budgets and performance-based resource distribution. Therefore, the additional publications and PhD completions enabled by VLIRUOS represent more than just academic outputs; they also translate into tangible financial value for Flemish universities within an established and highly competitive funding landscape. After adjusting for inflation and time, the estimated value of all PhD completions amounts to EUR 4.9 million, while the estimated value of publications amounts to EUR 10.3 million. The total value of research outputs is therefore EUR 15.2 million, representing approximately 7% of the total programme costs. To reflect the uncertainty in these estimations, a sensitivity analysis was conducted. Under the low-value scenario, PhDs were valued at EUR 7,250 and publications at EUR 2,250; under the high-value scenario, the respective values were EUR 21,750 and EUR 6,250. Based on these scenarios, the total benefit of VLIRUOS-supported research outputs lies between EUR 7.6 million and EUR 22.8 million.

In addition to producing research outputs, VLIRUOS projects have increased the visibility and credibility of researchers and institutions. Stakeholders have consistently linked this to improved access to follow-on funding. This was reported in exploratory interviews and corroborated by the Global Minds survey and an additional survey conducted for this study. Respondents frequently cited concrete examples of additional funding secured, either partly or wholly, due to engagement with VLIRUOS. Similar views are reflected in the qualitative success stories above.

For valuation purposes, only follow-on funding from non-Belgian sources was included, as this constitutes an external inflow of resources into the Flemish higher education system. Follow-on funding from Belgian sources – while often catalysed by VLIRUOS – was excluded from the financial estimates because it represents a reallocation of domestic public funds rather than a net economic gain from a national perspective. This yields a conservative estimate of externally leveraged value.

A total of 48 cases of additional research funding linked to activities supported by VLIRUOS were identified across several sources of evidence. Of these, 27 involved non-Belgian funding sources and were included in the monetised analysis. These 27 cases, with a combined reported value of around EUR 16 million, were mainly drawn from the Global Minds survey, which was based on responses from 299 people. Five of the respondents reported instances of co-funding linked to their VLIRUOS project, while 22 indicated that they had secured follow-up funding after the initial VLIRUOS-supported activity. In this context, 'external funding' specifically refers to competitive research or project grants obtained by Flemish HEIs from sources outside Belgium, such as the European Union, international organisations, or foreign foundations, based on initiatives originally made possible through VLIRUOS support. These follow-on funds represent a key form of added value. By strengthening institutional and research capacity, VLIRUOS played a catalytic role in enabling Flemish HEIs to attract new resources from international sources.

Additional data from the ICP Connect alumni dataset (intake 2007–2018) also indicated instances of follow-on funding. However, most of this was acquired from Belgian public sources and was therefore excluded from the monetised analysis. Furthermore, the ICP Connect data did not specify the number or proportion of alumni who had secured non-Belgian funding, which limits its applicability for quantification.

In order to strengthen the evidence base, the evaluation team and VLIRUOS conducted a short follow-up survey across the SI, TEAM and IUC programmes. Of the 17 respondents, 11 said that their VLIRUOS project had helped them secure extra funding. However, only seven provided further details on the amount and origin of this funding, all of which came from Belgian public sources. These were likewise excluded from the monetised analysis.

The cost–benefit model only includes non-Belgian external funding across all sources, under the assumption that such funding represents net new financial inflows into the Belgian research system. By contrast, Belgian public funds are considered domestic reallocations and thus do not represent additional economic inflows from an external perspective. This approach ensures that the estimated economic contribution reflects value added to the Belgian economy rather than redistributed public expenditure.

To estimate the proportion of non-Belgian funding identified that could reasonably be attributed to VLIRUOS, an attribution score was assigned to each case. This score was based on two main criteria: (1) the number of potential sources that could have contributed to acquiring the funding; and (2) the strength of the qualitative justification provided by the respondent regarding VLIRUOS's enabling role. For example, if VLIRUOS was unequivocally recognised as the key enabler and no other significant sources were mentioned, a high attribution score of 90% was given. Conversely, if multiple enabling factors were cited with limited reference to VLIRUOS, a score as low as 5% was given. Across the 27 included cases, the average attribution score was 44%. Applying these scores to the respective funding amounts resulted in an estimated externally leveraged benefit of EUR 6.1 million. This figure highlights the strategic role of VLIRUOS in enhancing the competitiveness of Flemish institutions in securing international research support, beyond providing direct funding.

However, this estimate should be interpreted with caution. It is reasonable to assume that the actual scale of externally leveraged funding is significantly higher, as many potentially large follow-on grants have likely gone unreported or been inadequately documented. Additionally, the current estimate only reflects a limited, well-documented subset of potential follow-on funding. The monetized figures are primarily based on data from the Global Minds program, for which more detailed and reliable information was available. Many relevant cases, particularly from other programs, were excluded due to incomplete data, unclear funding sources, or insufficient evidence to confidently attribute the funding to activities supported by VLIRUOS. Consequently, the estimated benefit of EUR 6.1 million is a conservative approximation of VLIRUOS's true lower-bound contribution in this area. It also reflects the early stage of systematic follow-up data collection. A more structured mechanism to track follow-on funding across the entire VLIRUOS portfolio is essential to capture these indirect benefits fully in future assessments.

Combining the value of research outputs and additional external funding, the total monetised benefit from VLIRUOS's contribution to research and education at Belgian higher education institutions is conservatively estimated at EUR 21.3 million. This includes EUR 15.2 million for research outputs and EUR 6.1 million for externally leveraged funding. However, as the preceding qualitative analysis has shown, this monetised figure only captures a small part of VLIRUOS's full academic, institutional, and strategic contributions to the Flemish higher education system.

VLIRUOS has generated a monetised benefit of EUR 21.3 million for Flemish HEIs. This figure combines EUR 15.2 million in research outputs, including 3,247 peer-reviewed publications and 288 PhDs that contribute directly to performance-based funding through the BOF system, and EUR 6.1 million in competitive research funding attracted from non-Belgian sources. These figures demonstrate how VLIRUOS strengthens the international competitiveness of Flemish universities by producing measurable academic outputs and enabling institutions to leverage seed funding into substantial external resources. Although these estimates are deliberately conservative, they demonstrate that VLIRUOS acts as a strategic enabler of academic excellence, financial sustainability, and global engagement within the Belgian higher education system.

## 4.2.2 Academic visibility and international positioning

The international reputation and visibility of Flemish HEIs is increasingly shaped by their ability to address urgent global issues through research, education and collaboration with partners in the Global South. VLIRUOS has played a pivotal role in facilitating this trajectory. By supporting long-term partnerships, enabling institutional transformation abroad and integrating Flemish expertise into global academic and policy dialogues, VLIRUOS has boosted the academic credibility, strategic positioning and international profile of Flemish HEIs in a visible and lasting manner. Building on Section 4.2, this chapter further explores the various ways in which these institutions have been elevated on the international stage through support from VLIRUOS, not only in terms of rankings and recognition, but also in terms of influence, trust and their differentiated positioning within global knowledge ecosystems.

### Case – From long-term partnership to global reputation: UGent–Can Tho University (Vietnam)

A striking example of this enhanced visibility is the long-standing collaboration between Ghent University (UGent) and Can Tho University (CTU) in Vietnam. What started in the 1980s as a small project to improve Artemia production among salt farmers in the Mekong Delta has grown into a wide-ranging IUC programme that has transformed the academic landscape at CTU and simultaneously strengthened UGent's global reputation in aquaculture and agricultural sciences. Through joint Master's and PhD training, collaborative research and the establishment of English-medium Master's programmes in Food Technology and Aquaculture, CTU has become one of Vietnam's leading universities. Its international university ranking has improved significantly, and it has emerged as a regional hub, attracting students from Southeast Asia and beyond. For Ghent University, this partnership has increased its visibility not only in Vietnam, but also across the region, establishing it as a leading player in sustainable food systems and knowledge diplomacy. Several other Belgian universities, including UAntwerpen, KU Leuven, and UCLouvain have joined this network, further amplifying the visibility of the Flemish academic model. The results are tangible: Belgian companies now collaborate with Vietnamese partner institutions; former CTU staff who were trained in Belgium now lead influential research projects and business ventures; and UGent graduates have taken up leadership roles in Vietnam's agro-industrial sectors. This partnership has become a prime example of how academic cooperation can serve as a vehicle for development and reputation-building.

### Case – Visibility through education reform support: Flemish HEIs' engagement (Ecuador)

A similar dynamic unfolded in Ecuador during a period of major educational reform between 2008 and 2014, when various Flemish institutions, including Artevelde University of Applied Sciences, Ghent University, Hogeschool PXL and KU Leuven played key roles. Through VLIRUOS-supported internships and knowledge exchanges, Artevelde students and lecturers contributed to innovations in mathematics education and quality assurance. This engagement elevated the visibility of the institutions involved and enhanced the reputation of Flemish higher education as a reliable, context-sensitive partner in global education reform. The trust built during this period paved the way for subsequent agreements, including the memoranda of understanding signed in 2017 between Hogeschool PXL, Hasselt University (UHasselt) and Universidad Técnica del Norte in Ecuador, as well as engagements in Cambodia. Hogeschool PXL's trajectory toward greater international engagement was notably supported by VLIRUOS.

#### **Case – International recognition as a visibility multiplier: UNESCO/AXA Chairs in water science (global network)**

However, visibility is not solely dependent on institutional partnerships. It also emerges through the global recognition of individual researchers and academic leaders. A professor at Vrije Universiteit Brussel (VUB) is an illustrative example of this, as her long-standing involvement in water research through VLIRUOS partnerships with institutions in Kenya, Tanzania, Bolivia, Cuba and Ethiopia resulted in her being appointed the AXA Research Chair in Water Quality and Global Change, as well as the UNESCO Chair in Open Water Science and Education. These prestigious appointments reflect her individual excellence, as well as VUB's institutional credibility and visibility in water-related fields. The chairs have led to international workshops in Rabat, Cape Town, Arusha and beyond, as well as collaborations with globally recognised partners such as Bahir Dar University and the University of Cape Town. These initiatives, which are deeply rooted in VLIRUOS collaboration, have given VUB a global footprint and positioned it as a strategic actor in global water governance and environmental science. Furthermore, projects such as Digitwater and the e-Master in Water Resources Engineering (in collaboration with Gaza and various East African institutions) have reinforced this image, demonstrating that visibility can be achieved through transdisciplinary, cross-continental collaboration.

#### **Case – Flagship applied innovation that travels: MMU Radio partnership (Uganda)**

Developed by Howest and Thomas More in partnership with Mountains of the Moon University (MMU) in Uganda, MMU Radio demonstrates how targeted initiatives can raise the international profile of Flemish universities of applied sciences and arts, while facilitating longer-term collaboration. Built in 2014 as a mobile radio station housed in a 40-foot container, the station was developed through a combination of multidisciplinary design, manufacturing, and electronics-ICT. It has remained operational for over a decade and has become a recognisable symbol of Flemish–Ugandan cooperation. Significantly, the partnership initiated through this project has continued beyond the initial activity, contributing to subsequent cooperation among Flemish institutions and partners in the region. This includes participation in Erasmus+ capacity-building projects (ACTEA and AHUMAIN), as well as subsequent VLIRUOS-supported collaboration, such as a TEAM project on early flash-flood detection involving multiple European and Ugandan partners. This demonstrates how VLIRUOS-supported engagement can strengthen the visibility, credibility, and partnership footprint of Flemish HEIs in international cooperation networks, even when direct societal outreach takes place in the partner country.

In each of these cases, the generated visibility is strategic, not just reputational. VLIRUOS has enabled Flemish institutions and researchers to establish themselves as trusted leaders in international networks, shaping global academic agendas and co-creating solutions to shared challenges. This visibility is not accidental, but the result of sustained engagement, mutual respect and a commitment to reciprocity. It is manifested in the form of higher rankings, prestigious appointments, invitations to global policy forums and the ability to attract international students and funding. Crucially, it also establishes Flemish HEIs as credible partners in science diplomacy, demonstrating that they produce excellent research in collaboration with and through the voices of their partners in the Global South.

In an increasingly competitive global higher education landscape, the VLIRUOS model offers a distinctive pathway. It enables Flemish institutions to stand out not just through scale or branding, but through the depth, integrity and impact of their international collaborations. In this context, academic visibility becomes a matter of substance, as well as optics, and of sustained contribution to global knowledge production.

Overall, VLIRUOS supports Flemish HEIs in strengthening their academic visibility and international positioning by contributing to research excellence, educational quality, and international collaboration. This enhanced reputation, together with improved internationalisation processes, is expected to attract international students from both VLIRUOS partner countries and other countries and regions.

A number of studies have examined the economic benefits that international students bring to their host countries. One notable example is the study by De Witte and Soncin (2021), which focused specifically on Belgium. These benefits include both immediate and long-term effects. De Witte and Soncin (2021) estimated the benefit of the 2016 cohort of international students to be between EUR 3.0 billion and EUR 4.3 billion.

Of course, the extent to which VLIRUOS contributes to attracting international students is unknown. As illustrated above, there is ample evidence that VLIRUOS has made a positive contribution, indicated by project beneficiaries and other stakeholders from HEIs. However, it should be noted that VLIRUOS's contribution to attracting international students is fundamentally unknowable. Students have numerous reasons for coming to Belgium, which extend well beyond the efforts of HEIs or the Belgian government, such as family ties or career prospects. Therefore, our aim is to derive a reasonable estimate of the benefit that VLIRUOS receives from attracting international students, based on conservative assumptions about its contribution. We propose a minimal attribution score of 1%, starting in 2022, and assume that the contribution will be positive, but will diminish over an attribution horizon of five years (see Section 3.3.3 for details). Under these assumptions, VLIRUOS's contribution to attracting international amounts to EUR 207.4 million. While the five-year attribution horizon is reasonable, given that the programme lasts five years and may therefore have effects lasting five years, one could similarly expect the contribution to last longer. As previously discussed, VLIRUOS projects can provide seed funding to support researchers, resulting in long-term strategic partnerships that can have a lasting effect on the reputation and international positioning of Flemish HEIs, and therefore their attractiveness to international students. With a ten-year attribution horizon<sup>31</sup>, the estimated benefit of VLIRUOS's contribution to attracting international students totals EUR 349.2 million, already surpassing VLIRUOS's total costs between 2017 and 2021.

Due to the uncertainty surrounding the total benefits that international students bring to Belgium and the contribution of VLIRUOS, we varied both parameters to derive a reasonable range of benefits attributable to VLIRUOS (see Table 7). For total benefits, we used the upper and lower bound estimates provided by De Witte and Soncin (2021). For the contribution of VLIRUOS, we considered 0.5% the pessimistic scenario and 1.5% the optimistic scenario. Our sensitivity analysis suggests that Belgium's benefit from attracting international students is valued at between EUR 103.7 million and EUR 523.9 million for VLIRUOS.

VLIRUOS funding has enhanced the global visibility, credibility, and strategic positioning of Flemish higher education institutions (HEIs), making them more competitive in attracting international students. This is a key source of long-term economic and academic benefit for Belgium. Based on conservative estimates, VLIRUOS is believed to have enabled benefits totalling EUR 207.4 million (base case) linked to international student enrolment. These benefits reflect VLIRUOS's role in strengthening institutional reputations, building trusted international partnerships, and showcasing Flemish academic excellence on the global stage. These benefits are not only financial but also reinforce Belgium's position in international science diplomacy and global knowledge networks..

<sup>31</sup> The 10-year attribution horizon reflects a conservative estimate of the time during which VLIRUOS visibility effects are expected to remain influential, based on precedent in programme evaluation literature.

### 4.2.3 Contribution to employability of Belgian students

Participation in VLIRUOS-supported initiatives has offered Belgian students distinctive forms of educational enrichment that contribute meaningfully to their employability, beyond measurable employment outcomes. Engagement with Global South contexts has enabled students to develop critical competencies such as intercultural sensitivity, adaptability, and the ability to work in complex, real-world environments, which are increasingly valued across professional domains.

These benefits have not only emerged from academic content, but also from immersive and diverse learning environments in which students encounter alternative educational models, forms of expertise and societal priorities. This competence pathway is also reflected in VLIRUOS-related alumni survey evidence from ICP graduates: across open responses, intercultural awareness/multicultural competence and the ability to work with people from different backgrounds are repeatedly highlighted alongside communication, teamwork, and increased confidence. While these findings reflect ICP alumni (and are therefore not direct measures of Belgian students' skill gains), they provide supportive evidence for the role that internationally diverse cohorts and intercultural collaboration – conditions that Belgian students can also experience – play in developing transferable competences. Exposure to such perspectives and collaboration settings can enhance students' ability to think reflexively, collaborate across cultural boundaries, and apply academic knowledge in practice, all of which strengthen their readiness for the global job market.

#### **Case – Employability via intercultural practice: Teacher training collaboration (Ecuador)**

For example, in the context of teacher training collaborations in Ecuador (see Chapter 4.2.2), Flemish students worked with educational institutions undergoing systemic reform. Their involvement in developing didactic approaches and participating in intercultural classrooms offered them insights into education as a situated and value-laden process. Students gained first-hand experience of adapting teaching models to local realities, engaging in dialogue with diverse stakeholders and reflecting on their own assumptions. Such experiences sharpen students' pedagogical awareness and professional resilience.

#### **Case – Employability via real-world co-creation: Communication initiatives and MMU Radio (Uganda)**

Similarly, the collaborative communication initiatives in Uganda, including those associated with the MMU Radio project (see Chapter 4.2.2), offered Flemish students the chance to co-create content with local partners and engage with community-based dissemination strategies. These experiences required students to navigate unfamiliar media environments, consider the ethical dimensions of knowledge sharing and establish reciprocal working relationships in a cross-cultural setting. In doing so, they developed transferable skills such as cross-sector collaboration, audience sensitivity, and contextual communication.

While these forms of enrichment do not replace technical training, they complement it by equipping students with the relational and reflective skills that are essential for navigating diverse professional environments. Global South perspectives therefore broaden academic horizons and contribute directly to the employability of Belgian students by fostering a graduate profile that is more globally attuned, socially responsive and professionally versatile.

Importantly, many of these effects on employability are likely to be mediated by transferable competencies rather than occupation-specific technical skills. Periods of study, training or collaboration in unfamiliar settings, for example, can strengthen students' flexibility and adaptability, as well as their ability to navigate new institutional and cultural contexts. They can also boost students' confidence in working with ambiguity and diverse teams. Employers frequently cite these competencies as being relevant across sectors, even if they do not result in immediate or easily observable differences in wages. In this evaluation, we therefore treat these pathways as plausible mechanisms that could improve employability, while recognising that we do not have programme-specific causal evidence to quantify each competency gain separately.

Therefore, when considering the contribution of VLIRUOS to the employability of Belgian students, two potential categories of effect must be considered: i) the effect on direct beneficiaries, and ii) the indirect effect on other students who are not directly affected by VLIRUOS projects.

For the monetised employability estimate, 'directly affected' refers to graduates who participated in VLIRUOS-supported education and mobility activities during the programme period (primarily ICP/ITP-related training and mobility), amounting to an estimated 2,239 directly affected graduates (1,949 mobility scholarships + 290 Belgian ICP Connect participants). Evidence on the effect of participating in specific master's programmes beyond general degree effects is scarce, but the characteristics of the programme, such as its field, international orientation and interdisciplinarity, might affect graduate outcomes. Internationally oriented master's programmes may strengthen graduates' employability by providing broader networks, international exposure and transferable skills (e.g., adaptability and the ability to operate in new contexts). However, we are not aware of any credible data on wage differences or improved employment rates. VLIRUOS-related survey evidence among ICP alumni provides indicative insights into self-reported competence development (including intercultural awareness), but it was used in this report as contextual qualitative support rather than as a parameter source for Belgian students' wage/employment effects, because it reflects a different beneficiary group and does not directly translate into labour-market premia. Assuming that Belgian graduates chose to self-finance their participation in ICP master's programmes in expectation of improved employability, we would expect to see a positive effect.

Another considerably larger group of students directly affected at Flemish HEIs are those receiving mobility scholarships under various programmes, primarily Global Minds. Roughly 570 such scholarships were granted by VLIRUOS annually during 2017–2019, compared to only 231 in 2020 and none in 2021, due to the impact of the Covid-19 pandemic. While there is evidence to suggest that students benefit from international mobility, the impact on labour market outcomes is highly variable and the findings are mixed (Giorgio, 2021). For example, one study of Erasmus students in Italy estimated the wage premium to be 7–9%, having accounted for some endogeneity (Favero & Fucci, 2017). In Germany, Kratz and Netz (2018) found that students who had participated in international mobility programmes earned 7.7% more five years after graduation, and experienced greater wage growth than their peers. However, they also found that approximately one-third of this difference could be explained by selection effects; that is to say, students who participate in international mobility programmes differ from those who do not. Similarly, a study in the Netherlands found that, while there were observed differences in labour market outcomes between students who went abroad during their studies and those who did not, these differences disappeared when other differences between these students were taken into account (Van Mol et al., 2020). In a meta-analysis of the effects of studying abroad, Giorgio (2021) found an overall effect size of around 0.05, which corresponds to an average wage premium of around 5%, across various models.

The average annual income for master's graduates in Belgium is estimated at EUR 78,557 (adjusted to 2025 prices), with an employment rate of around 85%. To estimate the benefit of increased employability among those directly affected, a substitution adjustment of 20% is applied, meaning that 80% of the observed benefit is considered additional. This accounts for the possibility that some students may have experienced similar improvements in employability without VLIRUOS support, or that some of the benefit may have been gained at the expense of other Belgian graduates. Assuming an average employability effect of 5% – interpreted as a combined increase in wages and/or employment rate over the 15 years following graduation<sup>32</sup> – the total estimated benefit amounts to approximately EUR 72.7 million. Since almost all of the direct beneficiaries received support for international mobility, this 5% effect aligns with findings from literature on the wage premium of studying abroad. However, it should be noted that this effect includes both wage and employment improvements, so it may be conservative. To account for uncertainty, we also calculate lower and upper bounds of 3% and 6% respectively, resulting in benefits of EUR 47.7 million and EUR 85.3 million. In this sense, ICP alumni's strong emphasis on intercultural competence should be interpreted as evidence for what such internationalised environments can generate, rather than as a

<sup>32</sup> Note that this refers to the period during which there is an assumed positive effect from graduation, rather than the employment period, which is on average 35 years in Belgium.

distribution that can be directly transferred to Belgian cohorts; for Belgian students, the relevant question is the extent and intensity of exposure to these conditions.

VLIRUOS may also have indirect effects on the employability of a broader group of students at Flemish HEIs beyond those directly affected. These potential effects stem from exposure to a more diverse student body, interaction with international peers and enhanced teaching methods or curricula introduced by staff involved in VLIRUOS-funded projects (see above for specific examples). While these effects are difficult to quantify and the causal pathways are less direct, they are an important part of the programme's wider impact on the learning environment. To develop a conservative estimate of this potential indirect benefit, we focus on the cohort of approximately 63,000 students who graduated from Flemish HEIs in 2020/21, assuming that their studies overlapped most closely with the 2017–2021 VLIRUOS programme period. Not all of these students would have been exposed to changes related to VLIRUOS. Therefore, we apply an exposure assumption of 30%, based on the presence of international students in classrooms, the integration of global content into curricula and the anecdotal evidence received from Flemish HEI stakeholders during the study. While there is no direct data to validate this rate, it serves as a plausible estimate for the proportion of students who may have been indirectly affected, whether through peer interaction, classroom experience or institutional changes. As with the direct beneficiaries, we apply a substitution effect of 20%, assuming that 80% of the observed benefit is additional. The employability effect itself is set at 0.1%, reflecting a marginal but positive increase in employment probability or wage outcomes over a 15-year period. This very small effect reflects the indirect and diffuse nature of the benefit, while also acknowledging the potential for system-level gains. In the base case, we assume a modest 0.1% increase in employability over a 15-year period for 30% of the 2020/21 graduate cohort, adjusted for substitution. This yields an estimated benefit of EUR 10.2 million. In the pessimistic scenario, we assume that there is no indirect employability effect. In the optimistic scenario, we retain the base case assumptions. Due to the uncertainty of this estimate and the lack of robust empirical evidence, this figure should be treated as indicative and interpreted with caution.

By facilitating international mobility and exposure to contexts in the Global South, VLIRUOS has enhanced the employability of Belgian students by developing their intercultural, adaptive and practical skills. These competencies are in high demand across professional fields and have a positive impact on long-term wage and employment outcomes. Based on conservative assumptions and international evidence, **the total benefit of VLIRUOS' contribution to graduate employability is estimated to be EUR 67 million (base case).** This includes direct effects on mobility beneficiaries and smaller indirect effects on the wider student population. These benefits reflect VLIRUOS's role in preparing graduates with an awareness of global issues for an internationally connected labour market.

#### 4.2.4 Uptake of knowledge and networks by Belgian stakeholders

The uptake of knowledge, networks and practices originating from VLIRUOS collaborations does not flow in one direction, from Global North to Global South. In fact, the partnerships often function as reciprocal ecosystems in which Belgian actors – both academic and non-academic – absorb, adapt and implement lessons learned through their engagement with partners in the Global South. This uptake takes three main forms: using knowledge and research insights generated through Global South-North collaborations; strengthening inter-Belgian networks and institutional synergies; and consolidating long-term non-research partnerships extending into civil society, the private sector, and policy arenas. VLIRUOS has proven to be a critical enabler of these exchanges, creating trusted platforms, brokering access and funding long-term cooperation to allow meaningful learning and sustained impact.

##### Case – Research uptake with innovation spillovers: UGent–Jimma partnership (Ethiopia)

One of the most compelling examples of knowledge uptake by Belgian organisations is the research partnership between Ghent University and Jimma University in Ethiopia. Initially anchored in an IUC programme, the collaboration focused on field-based research into soil-transmitted helminths – a group of parasitic worms that

disproportionately affect children in low-income regions – before evolving into a globally recognised platform for drug efficacy testing and diagnostic innovation. What distinguishes this case is the way in which knowledge generated in Ethiopia through VLIRUOS-supported trials was subsequently utilised by Belgian stakeholders in academia and industry. For instance, Johnson & Johnson, a multinational pharmaceutical company with strong ties to Belgium, collaborated directly with Ghent University to co-develop and evaluate new diagnostic tools for monitoring drug resistance. The scientific and logistical infrastructure developed through the VLIRUOS partnership was crucial in facilitating this collaboration. The impact here is not just academic, but also commercial and strategic. It shows how long-term, trust-based research ecosystems can reduce the risks associated with pharmaceutical innovation and attract industry interest in Belgian expertise. Furthermore, it illustrates how research conducted in and with the Global South can support Belgian objectives in terms of innovation, competitiveness and reputation.

#### **Case – De-risking business expansion through trusted academic networks: De Roose Plants (Uganda)**

Another significant example of this can be seen with De Roose Plants, a Belgian horticultural company that expanded its operations into Uganda through an academic partnership facilitated by VLIRUOS. By collaborating with Ghent University and a Ugandan academic institution, the company gained access to a trusted local network. This enabled the planning and construction of a state-of-the-art, climate-resilient agricultural laboratory. Designed for research and commercial use, this facility was co-developed with academic partners who also provided training for local professionals. For De Roose Plants, the partnership initiated by VLIRUOS served as a de-risking mechanism, reducing transaction costs and ensuring local credibility while aligning business expansion with development goals. The company is now planning its fourth global production site, and its first in Africa. According to senior members of this collaboration, VLIRUOS can be credited with enabling this strategic move. This story is not only about the uptake of knowledge, but also about the uptake of academic networks as a form of social capital. This has allowed a Flemish firm to enter a complex market with confidence, legitimacy and local support. The fact that other Belgian agritech and biotech companies have expressed interest in replicating this model further highlights the catalytic potential of VLIRUOS in connecting different sectors.

#### **Case – Collaboration abroad, cooperation at home: New inter-Flemish synergies (Uganda-linked partnership)**

One underappreciated form of uptake occurs when collaboration with Southern partners fosters new forms of cooperation among Flemish institutions themselves. A case in point is the long-standing collaboration between Thomas More, Howest and AP University of Applied Sciences and Arts with a Ugandan partner. While the MMU Radio project itself is discussed in Chapter 4.2.2, equally significant is its domestic impact in Flanders. It catalysed new patterns of inter-institutional learning, with joint project development, shared intercultural training tools, and co-supervision of students across campuses becoming commonplace. These practices did not exist prior to engagement supported by VLIRUOS. Importantly, these practices have endured and now inform how these institutions approach internationalisation, applied research and community outreach within their own regional contexts. The uptake is horizontal and domestic: the Global South-South-North triangle has catalysed new Global North-North exchanges, creating a collaborative culture among Flemish universities of applied sciences that previously operated in relative isolation.

#### **Case – Global data, local policy value: Epidemiological modelling used in Belgium (Cuba/Rwanda/South Africa)**

The Data Science Institute at Hasselt University is another example of how VLIRUOS collaborations can inform Belgian policy, research and institutional learning directly. During the pandemic, statistical models developed in partnership with researchers from Cuba, Rwanda and South Africa were used to inform policy decisions in Belgium. Grounded in collaborative PhD research and supported through VLIRUOS scholarships, these models provided valuable insights into disease spread, epidemiological forecasting, and public health responses. The knowledge flow was bidirectional. While Flemish expertise supported capacity building in the Global South, the reverse was also true: methodological innovations and real-time data from partner countries directly influenced Belgian thinking and action during the global crisis.

### **Case – Tools developed abroad, teaching improved at home: KU Leuven lab-course adaptation (Cuba)**

Similarly, materials and training formats developed within KU Leuven's collaborative molecular biology teaching activities with institutions such as UCLV in Cuba were later adapted for use in Flemish laboratory courses. In these cases, pedagogical models developed in collaboration with partner institutions were used again in Belgian teaching environments, contributing to curriculum design and academic staff development.

Furthermore, the fact that former VLIRUOS scholars now hold leading policy positions in Cuba, Rwanda and South Africa, further emphasises the value of these networks for Belgian diplomacy and global engagement (see Section 4.2.5). These individuals are not just success stories of capacity building; they are also acting as bridges between regions, facilitating ongoing knowledge exchange and strategic collaboration.

A consistent pattern emerges from these diverse cases: VLIRUOS does more than fund projects abroad; it cultivates ecosystems of knowledge and trust that Belgian actors – including universities, companies and policymakers – actively draw upon in meaningful and often transformative ways. These ecosystems produce knowledge, generate networks and create platforms for experimentation, which would be difficult to replicate through unilateral or short-term initiatives. The uptake of this knowledge and these networks is not always immediate or linear, but when it occurs, it often reshapes the institutions that initiated the partnerships. Through their engagement with the Global South, Belgian actors learn new methods, access new communities, and discover new strategic opportunities, made possible by the long-term, embedded, and reciprocal nature of VLIRUOS collaborations.

In an era when academic institutions and companies alike are seeking trusted entry points into global knowledge economies, VLIRUOS serves as enabling infrastructure. It offers funding and the social architecture through which Belgian actors can participate in and benefit from complex international engagements. Whether the outcomes are commercial, institutional or epistemic, the uptake of knowledge and networks fostered by VLIRUOS is a powerful testament to the programme's added value for Belgium. These partnerships strengthen not only the Global South, but Belgium too.

## **4.2.5 Strategic diplomacy and alumni as global connectors**

Although the main advantages of VLIRUOS collaborations are usually explained in terms of research, education and institutional uptake, several initiatives have also created strategic value in the area of international diplomacy and academic statecraft. These benefits are inherently difficult to quantify and to attribute within a cost-benefit framework. An exploratory study commissioned by VLIRUOS, ARES and ITM (2025) – based on a targeted literature review and 27 interviews with alumni, diplomats, policymakers and experts – nevertheless suggests that scholarship alumni and alumni networks can be a valuable, but currently underused, asset for Belgian diplomatic relations, while also noting that the broader evidence base on diplomatic impacts of scholarship schemes remains limited.

The study frames scholarship alumni engagement primarily as a form of soft power and 'people-to-people diplomacy': alumni who have studied in Belgium may carry enduring familiarity with Belgian society and professional norms (e.g., openness, pluralism, cooperation and evidence-based approaches), which can translate into goodwill and trust-based channels of communication. In practical terms, the study highlights three recurrent functions that alumni can perform in support of diplomatic engagement: (i) operational reach and expertise (acting as local 'entry points' and a de facto roster of expertise), (ii) contextualisation and policy intelligence (helping diplomatic actors interpret sensitive local dynamics), and (iii) network convening and visibility (providing credible platforms for dialogue, partnership formation and public-facing engagement). Importantly, the study also stresses that, across Belgian posts, engagement remains uneven and often ad hoc due to staff capacity constraints, rotations and data-protection barriers, meaning that these functions should be framed as potential pathways rather than systematic outcomes.

These pathways are also consistent with qualitative insights from the stakeholder interviews conducted for this CBA. Across Flemish HEIs, respondents described alumni and long-term partners as providing practical entry points into institutions and ministries, helping Belgian actors navigate local contexts and opening doors for subsequent cooperation. Interviewees further noted that the strategic value often lies less in formalised structures than in the continuity of trusted personal relationships that can be activated when opportunities arise, including in contexts where diplomatic engagement benefits from additional non-governmental channels of communication.

Often, individuals who have received support from VLIRUOS have gone on to occupy influential positions in their home countries, facilitating ongoing collaboration with Flemish institutions. Having often completed long-term ICP, IUC or PhD programmes, these alumni have strengthened capacity in the Global South, acting as trusted intermediaries in bilateral and multilateral engagement. Interviewees provided illustrative examples of alumni moving into senior roles in government and public administrations, as well as leadership positions in academia and sector institutions, and subsequently serving as credible counterparts for Belgian research groups and international offices. In addition, stakeholders highlighted that some alumni remain professionally active in Belgium (including within higher education partnership and internationalisation functions), thereby supporting continuity of cooperation from the Belgian side as well. Their roles in government, academia and international organisations therefore constitute an additional layer of long-term connection that supports the visibility and cooperation of Flemish HEIs abroad, even when these effects are difficult to measure directly.

#### **Case – Soft power through alumni continuity: Jimma–UGent network effects (Ethiopia)**

One example is the continued engagement of alumni from the Jimma University–Ghent University partnership in Ethiopia (see Chapter 4.2.4). Several former VLIRUOS scholars now hold leadership positions in health research and policy, contributing to regional and international platforms. Their institutional memory and personal connections with Belgian counterparts have helped to sustain cooperation beyond project timelines, providing easy access for new research, policy dialogue and innovation partnerships.

#### **Case – Science diplomacy through policy leadership: UHasselt alumni shaping health systems (Rwanda/South Africa)**

Similarly, the influence of former Data Science Institute scholarship holders at UHasselt extends well beyond academic output (see Chapters 4.2.1 and 4.2.4). Graduates are now shaping national health policy in countries such as Rwanda and South Africa. Their ongoing collaboration with Belgian researchers has established a two-way exchange of expertise and policy insights, facilitating continuous engagement in epidemiological modelling, public health planning and regional capacity development. In doing so, they strengthen Global South–South and Global North–South ties, thereby establishing Belgium as a reliable partner in data-driven policy innovation.

#### **Case – Symbolic leadership with diplomatic reach: UNESCO/AXA Chairs as global connectors (water science)**

Meanwhile, the UNESCO Chair in Open Water Science and Education and the AXA Research Chair in Water Quality and Global Change (see Chapter 4.2.2) demonstrates how VLIRUOS-supported academic careers can result in symbolic leadership roles with diplomatic influence. These positions are not merely academic honours; they facilitate participation in high-level policy forums, international standard-setting processes, and multilateral initiatives, often involving the formal representation of institutional or national interests. Through such appointments, the reputational capital of Flemish HEIs is amplified within global governance structures.

Beyond these individual cases, several stakeholders also identified the practical interface with embassies as a key area where alumni networks can convert academic cooperation into wider Belgian engagement. In such situations, alumni and long-term partners can support diplomatic actors by providing contextual advice, informal introductions and opportunities to bring people together. This logic is also reflected in scholarship policy discussions that frame

international alumni networks as a component of long-term soft power, alongside economic effects during scholars' studies (Ma, 2026). These effects are often relationship-based and not easily captured in monitoring data.

Apart from these success stories received directly in the course of the CBA, the aforementioned exploratory study by VLIRUOS, ARES and ITM also provides concrete examples of how alumni networks can be mobilised at the level of Belgian embassies. This is particularly evident when engagement moves beyond one-off social events to more structured, yet still low-cost, forms of relationship building.

#### **Micro-case – Uganda: embassy-supported alumni mobilisation for dialogue and contextual insights**

In Uganda, the study describes how an existing alumni group was proactively engaged by the Belgian embassy and further mobilised through practical, lightweight mechanisms (e.g., a WhatsApp group for outreach and invitations). The embassy organised thematic academic talks on development topics and convened periodic receptions where alumni could meet each other and embassy staff. Interviewees reported that this network offered the embassy independent perspectives when preparing new cooperation programmes and provided entry points into ministries through alumni working in the government. The network also helped to contextualise politically sensitive issues, for example by providing insights into local cultural dynamics during debates surrounding the anti-homosexuality law. The case illustrates how alumni engagement can complement formal diplomacy by improving situational understanding and widening trusted channels of communication.

#### **Micro-case – Côte d'Ivoire: convening power and economic connections through an alumni reception**

In Côte d'Ivoire, the study describes an initiative launched by the Belgian ambassador in 2022, based on the observation that a number of professionals in key sectors (including high administration and the medical field) had studied in Belgium. The embassy convened a first reception that reportedly attracted around one hundred participants, including high-ranking officials with Belgian study experience. The stated objectives were to publicly signal the importance of bilateral relations, enable alumni to connect with one another, and create useful contacts for the embassy, including for economic engagement. The involvement of the Belgian Chamber of Commerce was highlighted as particularly useful for business-oriented networking. At the same time, the study notes a practical constraint: identifying and reaching alumni was difficult due to the absence of a central, structured alumni database, underlining why such embassy initiatives often depend on ad hoc identification efforts.

Stakeholders also emphasised the broader 'knowledge diplomacy' function of long-term academic partnerships and alumni networks in interviews conducted as part of the inception phase. From this perspective, sustained academic cooperation can generate soft power benefits for Belgium, such as fostering goodwill, long-term familiarity and trusted personal and institutional relationships, which can complement formal diplomatic channels. However, the study commissioned by VLIRUOS, ARES and ITM (2025) also highlights several key barriers to the systematic use of these partnerships, including embassy staffing constraints and rotation, fragmented coordination across actors, and limitations on sharing alumni contact information due to GDPR regulations. This often necessitates institutions acting as intermediaries rather than transferring lists directly.

Similarly, interviews for this CBA highlighted why the potential of alumni is not always realised in systematic practice. Respondents pointed to fragmented data ownership (for example, alumni are primarily tracked by individual programmes or institutions rather than across the system) and the fact that incentives and competition among HEIs can discourage the sharing of alumni contacts or access channels beyond immediate institutional networks. In this context, engagement with alumni often depends on motivated individuals (such as researchers, coordinators, partnership managers or embassy staff) rather than being established as a routine inter-institutional activity.

Together, these cases and practices suggest that VLIRUOS collaborations can contribute to more than academic outputs or institutional reform; they may also cultivate durable strategic relationships that support Belgium's wider engagement. The success stories, micro-cases and exploratory evidence suggests that, rather than

guaranteeing diplomatic 'impact', VLIRUOS-supported alumni and networks can reinforce long-term international partnerships and dialogue through identifiable mechanisms, such as trusted connectors, contextual expertise and convening capacity, in certain contexts.

## 4.2.6 Economic contributions (direct, indirect, induced)

The most immediate and easily quantifiable benefits of the VLIRUOS programmes for Belgium stem from the economic effects generated by implementing the programmes and spending on scholarships within the country. These effects occur when programme funds are spent on salaries, services and goods in Belgium, and when scholarship holders from partner countries live and spend money locally during their stay. The analysis captures both the direct effects of this spending and the wider economic activity triggered throughout the Belgian economy. Comparable evidence from other publicly funded scholarship schemes indicates that scholarship cohorts can yield positive net domestic economic impacts during their study period, even after accounting for associated public costs (Ma, 2026).

Even though the primary focus of the programme lies in international academic cooperation, substantial spending by VLIRUOS took place in Belgium during the 2017–2021 period. Based on detailed programme-level expenditure data and budget-line information, it is estimated that 40% of all non-scholarship spending was executed in Belgium. This includes personnel and operational costs incurred by Flemish HEIs, as well as coordination expenses. These expenditures directly contributed an estimated EUR 56.4 million to the Belgian economy.

To account for the broader ripple effects of this spending, an input–output modelling approach was applied using output multipliers published by the Belgian Federal Planning Bureau. These multipliers capture both indirect effects, such as increased demand for goods and services by suppliers, and induced effects, which arise when additional household income leads to further consumption. When these effects are included, the total immediate economic contribution from non-scholarship spending rises to EUR 75.6 million which amounts to approximately 34% of the total programme cost (adjusted to 2025 prices).

The estimation is based on a conservative methodology. For instance, the economic impact of investment costs in Belgium was disregarded, despite the potential for upstream purchases from Belgian suppliers. Similarly, only half of the maximum possible Belgian share of operational expenditure was considered (a proxy derived from planned budget breakdowns), and this figure was then reduced by a further 10%-20% in the base scenario. Nevertheless, even under these cautious assumptions, the economic footprint within Belgium is significant.

In addition to programme-related spending, around 40% of the total VLIRUOS expenditure for the FYP1 period (2017–2021) was allocated to scholarships for international students and professionals. Scholarship expenditure has an immediate economic impact in Belgium while the scholarship holders are in the country and spending money on everyday items. To estimate these short-term effects, the analysis is based on the working assumption, derived from monitoring data, that approximately 1,250 scholarship holders remain in Belgium for an average of four months per year. This reflects the typical presence of scholarship holders in the country. It is also assumed that 80% of scholarship costs are spent in Belgium (including items such as travel costs and money transfers that may be intermediary in Belgium). Under these assumptions, scholarship spending results in a direct economic contribution of EUR 56.2 million. Using a higher output multiplier to reflect scholarship holders' consumption patterns (notably housing, food, and leisure), an additional EUR 39.2 million in indirect and induced effects is estimated. Therefore, the total immediate contribution associated with scholarships is estimated at EUR 95.5 million, which corresponds to around 43% of the total VLIRUOS costs.

Taken together, the economic benefits generated by VLIRUOS through the direct, indirect and induced effects of domestic spending are estimated to be worth EUR 171.0 million in present value terms. This includes EUR 75.6 million from programme and coordination spending and EUR 95.5 million from scholarship-related consumption. Although the primary objective of VLIRUOS is to support capacity development in the Global South, these figures demonstrate that a significant proportion of the programme's investment circulates within the Belgian economy, generating tangible and quantifiable returns.

Despite its outward-facing mission, VLIRUOS has generated a substantial and measurable economic return within Belgium. Between 2017 and 2021, the direct, indirect and induced effects of VLIRUOS's activities are estimated to have contributed EUR 171.0 million to the Belgian economy through programme implementation and scholarship-related spending in Flanders. This includes EUR 75.6 million from institutional and coordination expenditure and EUR 95.5 million from local spending by international scholarship recipients. These figures represent around three-quarters of the total programme costs, demonstrating that international cooperation not only supports development abroad, but also delivers significant domestic economic value.

### 4.3 Quantifying VLIRUOS's overall return to Belgium: cost–benefit results and scenario insights

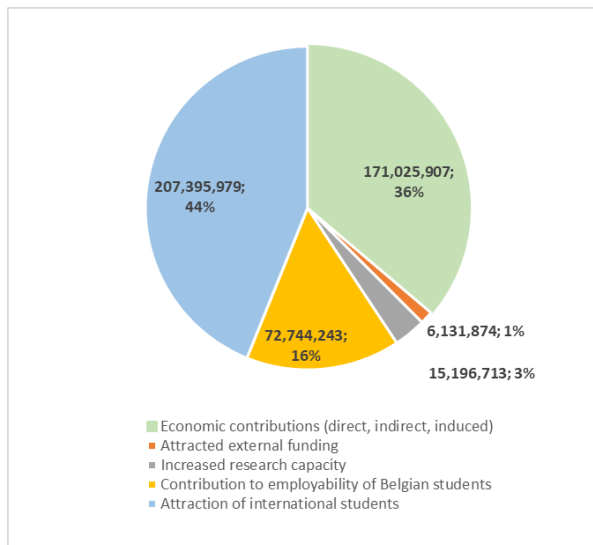
This section summarises the monetised costs and benefits discussed in the previous chapters, assessing the overall value of the VLIRUOS programme for Belgium. Although VLIRUOS is primarily intended to promote sustainable development in the Global South, it also yields significant intended and unintended benefits for Belgium. Some of these domestic effects can be monetised, providing an alternative view of the programme's value from a Belgian perspective.

As detailed in Chapter 4.1, the total cost of VLIRUOS over the 2017–2021 period, adjusted to 2025 prices with a social discount rate of 2.5%, amounts to EUR 220.7 million<sup>33</sup>. This comprises EUR 105.5 million for programme implementation (excluding scholarships), EUR 87.0 million for scholarships granted to students and professionals from partner countries and EUR 28.2 million for organisation and coordination. These costs reflect balanced investments in cooperation instruments, academic mobility, and institutional support.

On the benefits side, the immediate economic effects are estimated at EUR 171.0 million. This includes EUR 75.6 million from programme and coordination spending in Belgium, as well as EUR 95.5 million from the living expenses of international students and professionals funded through VLIRUOS scholarships. These immediate contributions may be complemented by longer-term effects, most notably through portfolio-wide visibility and institutional positioning that can help attract international students to Flemish HEIs. Although attribution is difficult to isolate, a conservative estimate assuming 1% attribution over five years yields an estimated benefit of EUR 207.4 million. The employability effects for Belgian students, enhanced through exposure to international and development-oriented learning environments, are valued at EUR 72.7 million, including both direct and indirect effects. Finally, the monetised value of research outputs and externally leveraged funding attributable to VLIRUOS is estimated at EUR 21.3 million. Altogether, this results in a total monetised benefit of EUR 472.5 million under the main scenario. As shown in Figure 2, approximately 44% of these benefits are derived from the long-term contribution of attracting international students. Immediate domestic economic effects account for 36%, while employability gains represent 15%. Research-related benefits make up the remaining 5%. Although these contribute relatively little in monetary terms, they are significant in strengthening Belgian academic capacity and international visibility, albeit largely captured through qualitative analysis (see Chapter 4.2.2).

<sup>33</sup> Again, cost figures reflect actual expenditure (spent budget) for 2017–2021, expressed as NPV in 2025 euros (CPI-adjusted and discounted at 2.5%).

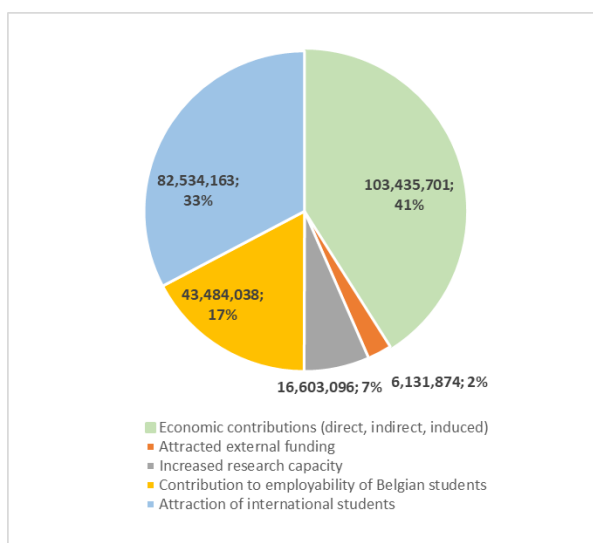
Figure 2: Breakdown of benefits – main scenario (EUR million, NPV)



Compared to the total programme cost of EUR 220.7 million, the main scenario yields a NPV of EUR 251.8 million and a BCR of 2.1. In other words, **for every euro invested in VLIRUOS, Belgium receives EUR 2.1 in quantifiable domestic benefits in return**. These figures reflect conservative estimates and do not include broader strategic, diplomatic, or institutional benefits that cannot easily be monetised.

To assess the robustness of these results, two alternative scenarios were developed. The **pessimistic scenario** assumes a lower contribution to attracting international students (0.5%) and excludes indirect employability benefits. Under these assumptions, total benefits decrease to EUR 252.2 million, resulting in an NPV of EUR 11.9 million and a BCR of 1.1. As illustrated in Figure 3, the structure of benefits shifts significantly in this scenario: immediate economic contributions become the dominant source, while the relative weight of long-term benefits decreases.

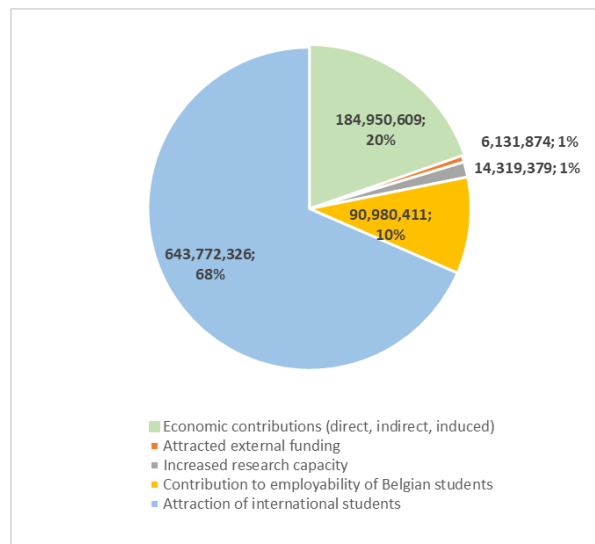
Figure 3: Breakdown of benefits – pessimistic scenario (EUR million, NPV)



In the **optimistic scenario**, a higher attribution share of 1.5% and a longer attribution horizon of ten years are assumed for attracting international students. Under these more favourable assumptions, the total monetised benefit rises to EUR 940.2 million, resulting in a net present value of EUR 731.8 million and a benefit–cost ratio of

4.5. In this scenario, the benefits to Belgium exceed the programme's costs by a substantial margin. The vast majority of these benefits are generated through the attraction of international students, while immediate economic contributions and employability effects remain important complementary benefit streams. Figure 4 illustrates the breakdown of these benefits in the optimistic scenario.

Figure 4: Breakdown of benefits – optimistic scenario (EUR million, NPV)



The three scenarios – base, pessimistic and optimistic – are summarised in Table 5 below. Each scenario is based on a consistent set of assumptions and demonstrates the potential range of returns in different circumstances.

Table 5: Scenario analysis – combined parameter changes

| Scenario         | (Changes to) Key Parameters                                                                                                                                                   | VLIRUOS Costs<br>(EUR million,<br>NPV) | Total Benefits<br>(EUR million,<br>NPV) | Net Present<br>Value<br>(EUR million) | Benefit-Cost<br>Ratio<br>(BCR) |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------|---------------------------------------|--------------------------------|
| Base Case        | Attraction of international students – Attribution score: 1.0%; attribution horizon: 5 years; employability effect: 5% (indirect effects included); discount rate: 2.5%       | 220.7                                  | 472.5                                   | 251.8                                 | 2.1                            |
| Pessimistic Case | Attraction of international students – Attribution score: 0.5%; attribution horizon: 5 years; employability effect: 3% (without indirect effects included); discount rate: 4% | 240.3                                  | 252.2                                   | 11.9                                  | 1.1                            |
| Optimistic Case  | Attraction of international students – attribution score: 1.5%; attribution horizon: 10 years; employability effect: 6% (with indirect effects included); discount rate: 1.5% | 208.4                                  | 940.2                                   | 731.8                                 | 4.5                            |

Although the scenario analysis provides insight into the overall range of outcomes, it does not isolate the influence of individual assumptions. To better understand how sensitive the results are to specific variables, a univariate sensitivity analysis was conducted. In this process, each parameter was varied independently while all other assumptions remained at base case levels. The results are presented in the Table 6.

Table 6: Sensitivity analysis – single parameter variations

| Parameter Tested                                           | Scenario    | Tested Value(s)                 | Total Benefits (EUR million) | Net Present Value (EUR million) | Benefit-Cost Ratio (BCR) |
|------------------------------------------------------------|-------------|---------------------------------|------------------------------|---------------------------------|--------------------------|
| Attraction of international students (attribution score)   | Pessimistic | 0.5%                            | 368.8                        | 148.1                           | 1.7                      |
|                                                            | Base        | 1%                              | 472.5                        | 251.8                           | 2.1                      |
|                                                            | Optimistic  | 1.5%                            | 576.2                        | 355.5                           | 2.6                      |
| Attraction of international students (attribution horizon) | Base        | 5 years                         | 472.5                        | 251.8                           | 2.1                      |
|                                                            | Optimistic  | 10 years                        | 614.3                        | 393.7                           | 2.8                      |
| Employability effect of Belgian students                   | Pessimistic | 3%                              | 447.5                        | 226.8                           | 2.0                      |
|                                                            | Base        | 5%                              | 472.5                        | 251.8                           | 2.1                      |
|                                                            | Optimistic  | 6%                              | 485.0                        | 264.3                           | 2.2                      |
| Indirect employability effect                              | Pessimistic | No indirect effect              | 462.3                        | 241.6                           | 2.1                      |
|                                                            | Base        | 0.1% effect                     | 472.5                        | 251.8                           | 2.1                      |
| Research output valuation                                  | Pessimistic | EUR 7.6 million                 | 464.9                        | 244.2                           | 2.1                      |
|                                                            | Base        | EUR 15.2 million                | 472.5                        | 251.8                           | 2.1                      |
|                                                            | Optimistic  | EUR 22.8 million                | 480.1                        | 259.4                           | 2.2                      |
| Discount rate                                              | Pessimistic | 4%                              | 477.3                        | 237.0                           | 2.0                      |
|                                                            | Base        | 2.5%                            | 472.5                        | 251.8                           | 2.1                      |
|                                                            | Optimistic  | 1.5%                            | 470.8                        | 262.3                           | 2.3                      |
| Indirect and induced effects (economic effects)            | Pessimistic | Excluded (all multiplier = 1.0) | 414.0                        | 193.4                           | 1.9                      |
|                                                            | Base        | Included (full multiplier)      | 472.5                        | 251.8                           | 2.1                      |

## S Y S P O N S

The sensitivity analysis confirms that the results are most sensitive to assumptions about the attribution rate and the time horizon for attracting international students. A small change in the attribution rate – from 1.0% to 1.5%, for example – increases the NPV by EUR 103.2 million. The employability effect for Belgian students also has a measurable impact, with each percentage point change producing a corresponding shift in benefits of approximately EUR 20–25 million. In contrast, changes to the valuation of research outputs, the discount rate and indirect effects have a smaller influence on the total results, though they still contribute to the overall picture. Notably, the BCR remains at or above 1.7 in all tested variations, indicating that VLIRUOS programmes and activities yield positive returns under a wide range of assumptions.

Taken together, these findings reinforce the conclusion that **VLIRUOS offers good value for money from a Belgian perspective**. Even when conservative assumptions are applied regarding attribution and indirect effects, the programme's domestic return exceeds its cost. Under more optimistic yet still plausible assumptions, the return is significantly higher. It is important to note that these results are based only on monetisable effects. They do not capture the broader strategic, academic, or diplomatic value that VLIRUOS generates through long-term partnerships, alumni networks, and institutional collaboration. Consequently, the figures presented here should be considered a conservative minimum estimate. The actual impact of VLIRUOS is expected to be significantly greater, given the wide range of strategic, institutional and reputational benefits that cannot be quantified in monetary terms. These include long-term partnerships, a strengthened global presence for Flemish HEIs and enhanced science diplomacy. These are real and significant effects, even if they cannot be expressed in monetary terms.

## 5 Conclusion

A cost–benefit analysis of VLIRUOS programmes implemented between 2017 and 2021 confirms that the investment yields a substantial return for Belgium, even when focusing narrowly on domestic and monetisable effects. Based on conservative assumptions, the study estimates the total quantifiable benefits at approximately EUR 472.5 million, compared to total costs of EUR 220.7 million. This results in a **net present value of EUR 251.8 million, giving a benefit–cost ratio of 2.1**. In practical terms, this means that for every euro invested in VLIRUOS, Belgium receives EUR 2.1 in domestic returns. This is an impressive return on investment, particularly given that VLIRUOS is primarily an international cooperation organisation aimed at strengthening higher education systems and knowledge ecosystems in the Global South, rather than a domestic economic development programme.

These results are based on a rigorous assessment of four monetisable benefit areas<sup>34</sup>. The economic impact of programme and scholarship spending in Belgium is estimated to be EUR 171.0 million, reflecting the direct and indirect effects of investment in Flemish institutions and local economies. The contribution to attracting international students (i.e., the broader inflow to Flemish HEIs linked to VLIRUOS-supported visibility and partnerships) is valued at EUR 207.4 million. The estimated value of the employability gains for Belgian students engaging directly or indirectly with VLIRUOS-supported activities is EUR 72.7 million. Finally, the measurable returns from increased research capacity and leveraged external funding amount to EUR 21.3 million. Taken together, these figures show that even programmes with a global development mandate can generate meaningful domestic value.

However, the study acknowledges that the full value of VLIRUOS cannot be captured by economic metrics alone. While significant, the monetised effects reflect the often indirect and secondary outcomes of development-focused programmes. Insights into areas such as institutional learning, science diplomacy and policy engagement require qualitative investigation. The challenges of monetising certain benefits were exacerbated by a lack of monitoring data, which impeded the quantification of benefits that could in fact be monetised. This is particularly true of benefits such as attracting external follow-up funding, where the current estimate only reflects a fraction of the actual outcome due to limitations in the available data. Therefore, the reported figures should be considered a gross underestimation. To address this, the study employs a mixed-methods design that captures non-monetisable outcomes through structured narratives and success stories. These illustrate VLIRUOS' wider impact across institutional, pedagogical and relational dimensions.

These success stories demonstrate how VLIRUOS strengthens research ecosystems, catalyses curriculum innovation, and nurtures academic leadership. Examples include the evolution of the Global Health Institute at the University of Antwerp, the long-standing collaboration between Hasselt University and its African partners in biostatistics, and the internationalisation of PXL University of Applied Sciences through the Global Minds programme. In each case, VLIRUOS has acted as seed funding, enabler, and strategic partner, facilitating career development, academic excellence, and global visibility.

Additionally, several cases demonstrate collaboration between Flemish academia and the private sector. These collaborations have transformed academic knowledge into practical research and business innovation, ranging from climate-resilient agriculture to public health diagnostics. This has established VLIRUOS as a key player in Belgium's wider innovation ecosystem. While these benefits defy precise valuation, they are fundamental to the development of an internationally engaged, high-performing higher education sector.

<sup>34</sup> Note that the benefit area 'contribution to research and education at Flemish HEIs' is divided into two monetised subcategories ('increased research capacity' and 'attracted external funding')

Qualitative evidence also demonstrates how VLIRUOS promotes the development of co-created knowledge and global competencies. Students and staff report that engaging in VLIRUOS projects has helped them to gain intercultural skills and broader professional maturity; this is consistent with survey evidence from ICP alumni, in which intercultural awareness and multicultural competence are frequently cited as key learning outcomes (see Chapter 4.2.3). While these outcomes are often categorised as 'soft', they translate into enhanced employability, openness to international collaboration and improved academic performance. While the modelled employability effects reflect some of this, the full transformative value is more vividly illustrated by the lived experiences documented in the study. Alumni and institutional partners also contribute to Belgium's science diplomacy by establishing international networks based on trust that advance academic and foreign policy objectives.

The findings thus make a strong case for continued strategic investment in VLIRUOS. Even when assessed through a strictly domestic lens, the monetised returns justify the investment. Yet it is the combination of economic value, institutional transformation, and long-term global partnerships that ultimately reinforces VLIRUOS's relevance. This is achieved through a diverse and coherent portfolio of programmes built on reciprocity and long-term engagement, and aligned with both international cooperation and higher education policy priorities.

While the reported benefits are substantial, they represent a lower-bound estimate of the VLIRUOS's full contribution. Important value dimensions – such as global reputation, academic positioning, and alumni networks – cannot be expressed in monetary terms. As such, the strategic and **societal value of VLIRUOS extends far beyond what the benefit–cost ratio can convey.**

This study offers a novel model for evaluating public investments in global cooperation by analysing the domestic returns of VLIRUOS's programmes through an integrated, portfolio-wide lens. It is the first study of its kind to assess the effects of a funding architecture of this nature – combining scholarships, collaborative research and institutional partnerships – on the home country. This breadth renders the analysis both methodologically unique and policy-relevant.

Moreover, the study confirms that VLIRUOS is not only a worthwhile investment, but also a strategic model for achieving mutual benefit through international cooperation. Although this report focuses on domestic value, it remains essential to stress that VLIRUOS's greatest and most direct impact occurs in the Global South, in pursuit of its mission to promote sustainable development. The benefits to Belgium should thus be seen as important, yet secondary and complementary outcomes of globally oriented partnerships.

In this context, VLIRUOS is not merely a cost to be justified; it is a forward-looking public investment that strengthens communities, institutions and innovation systems in both the Global South and Belgium. In a world where knowledge, partnerships and mobility are key to competitiveness, VLIRUOS demonstrates how shared academic engagement can be beneficial in many ways.

## 6 Annex

### 6.1 Literature

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## 6.2 Legend on the cost base and cost assumptions

This annex summarises which costs were included in the CBA and which assumptions were applied when estimating the share of expenditure spent in Belgium. It is intended to support internal traceability and external justification of the cost figures and domestic spending shares used in the model.

### Cost base used in the CBA (what was included)

The cost base of the CBA comprises only actual expenditure (spent budget) incurred during FYP1 (2017–2021). Expenditure from FYP2 is not included in the cost base. Total nominal spending over 2017–2021 amounted to EUR 159.9 million. For the CBA calculations, annual expenditures were converted to a common price and time base by (i) adjusting values to 2025 euros using the Belgian consumer price index (CPI) and (ii) applying a real social discount rate of 2.5%. On this basis, the total programme cost amounts to EUR 220.7 million in net present value (NPV) terms (2025 euros) for the base case.

Consistent with Chapter 4.1, this total cost base is presented in three overarching cost categories: programme implementation excluding scholarships (EUR 105.5 million), scholarships (EUR 87.0 million) and organisation and coordination not linked to programmes (EUR 28.2 million). These totals constitute the full cost base used as the denominator in the benefit–cost ratio (BCR) and net present value (NPV) calculations.

### Budget categories used and how costs enter the model

For modelling purposes, expenditure was structured into five budget categories: (A) investment costs, (B) operational costs, (C) personnel costs, (D) scholarship costs and (E) coordination costs. All five categories are included in full in the total cost base, because they reflect real expenditure during 2017–2021.

However, not all costs translate into domestic economic activity in Belgium. Therefore, the model distinguishes between (i) the full cost base used for the NPV/BCR calculations and (ii) the share of expenditure estimated to have been spent in Belgium, which is used only for the “economic contributions” benefit area (direct, indirect and induced effects). This distinction is critical: the Belgium-spent shares affect the estimate of domestic economic contributions, but do not affect the total cost base.

### How the “share spent in Belgium” was estimated (general approach)

The study estimated the share of expenditure spent in Belgium using a conservative approach that combines several sources. Where available, observed spending–location patterns were used as empirical reference points. Where consistent geographic splits were not available in the monitoring system, planned/approved budget breakdowns were used as proxies to identify cost components that are unlikely to be spent in Belgium (e.g. international mobility and subsistence). Importantly, these planned breakdowns were used only to estimate shares, while the amounts to which the shares were applied always remained actual FYP1 expenditure.

To account for residual uncertainty, the resulting Belgium-spent shares were reduced by a further 10–20% in the base scenario, depending on the programme and category. This conservative adjustment was intended to avoid overstating domestic spending effects.

### Category-specific assumptions (why percentages differ)

Investment costs (A). Investment expenditure was included in the total cost base. For domestic spending estimation, a low Belgium-spent share was applied (typically around 5% for most programmes), reflecting that investments

primarily finance infrastructure and equipment in partner countries and only a limited proportion is plausibly associated with Belgium-based procurement, administration, or related services.

Operational costs (B). Operational costs cover day-to-day implementation expenditures and vary substantially across programme types. Their Belgium-spent shares were estimated by combining (i) observed partner-spending patterns and (ii) proxy splits derived from planned budgets to isolate operational components unlikely to be spent in Belgium. The resulting shares were then reduced by an additional 10–20% in the base scenario.

Personnel costs (C) and coordination costs (E). Personnel and coordination costs were included in the total cost base and were also considered for domestic spending effects to the extent that staff and coordination expenditure occurred in Belgium. Belgium-spent shares were derived from observed HEI spending patterns (2020–2023) and programme implementation logic. In partnership programmes with substantial partner-led implementation, Belgium-spent shares can be low. As with operational costs, a conservative reduction (up to 20% in the base scenario) was applied.

Scholarship costs (D). Scholarship expenditure is included in full in the cost base. For domestic spending estimation, the Belgium-spent share was estimated programme by programme, resulting in a range of approximately 50% to 90% in the final cost sheet used for calculations. This variation reflects differences in scholarship structures and the extent to which costs are incurred in Belgium (e.g. allowances and other expenditures during scholars' presence in Belgium versus components disbursed or spent elsewhere). Estimates were triangulated using available scholarship budget breakdowns, and then applied conservatively.

#### **Input–output multipliers (domestic economic contribution only)**

For the estimation of domestic economic contributions (direct, indirect and induced effects), the model multiplies the Belgium-spent share of relevant expenditure by output multipliers. The base-case multipliers applied are 1.5 for operational costs, 1.3 for personnel and coordination costs, and 1.7 for scholarship-related expenditure. A conservative sensitivity test applies a uniform multiplier of 1.0 to all categories to isolate direct effects only. These multipliers are applied only to the estimated Belgium-spent shares and do not affect the total cost base.

#### **Traceability of cost assumptions**

All programme-level spending totals (2017–2021), applied Belgium-spent shares (base case), and multipliers used for the domestic economic contribution estimates are documented in the final cost-estimation overview used for the calculations. This ensures that the cost side of the CBA is transparent, replicable and externally justifiable.

### 6.3 List of interview participants in the inception phase

| Name                 | Organisation/position                                              | Date       | Type of interview    |
|----------------------|--------------------------------------------------------------------|------------|----------------------|
| Kristien Verbrugghen | VLIRUOS, Director                                                  | 23.06.2025 | Group interview      |
| Koen De Koster       | VLIRUOS, Head of Strategy & Operations                             | 23.06.2025 | Group interview      |
| Peter De Lannoy      | VLIRUOS, Global Partnerships Coordinator                           | 23.06.2025 | Group interview      |
| Kathelijne Houben    | VLIRUOS, Global Networks Coordinator                               | 23.06.2025 | Group interview      |
| Roeland Janssen      | KU Leuven, Global Minds Coordinator                                | 11.06.2025 | Individual interview |
| Steven Schoofs       | Ghent University, Global Minds Fund Coordinator                    | 26.06.2025 | Individual interview |
| Kathleen Van Heule   | Hogeschool Gent, Senior Staff Member International Office          | 14.07.2025 | Individual interview |
| Stijn Janssen        | Associatie Universiteit Hogescholen, Coordinator                   | 17.06.2025 | Individual interview |
| Kirsten Schraeyen    | Thomas More University, Coordinator                                | 23.06.2025 | Individual interview |
| Steven Van Passel    | University of Antwerp, Vice-Rector Valorisation and Sustainability | 12.06.2025 | Individual interview |
| Stijn Coenen         | Thomas More University, CEO                                        | 26.06.2025 | Individual interview |

# S Y S P O N S

|                       |                                                                            |            |                      |
|-----------------------|----------------------------------------------------------------------------|------------|----------------------|
| Chris Van Geet        | KU Leuven, Vicerector<br>Biomedical Sciences and<br>Global Development     | 18.06.2025 | Individual interview |
| Pascal Boeckx         | Ghent University, Head of<br>the Isotope Bioscience<br>laboratory          | 25.06.2025 | Individual interview |
| Ann Cuypers           | Hasselt University, Full<br>professor at the Faculty<br>of Sciences        | 13.06.2025 | Individual interview |
| Niko Koedam           | Free University of<br>Brussels (VUB), emeritus<br>professor                | 26.06.2025 | Individual interview |
| Xavier Gellynck       | Ghent University,<br>Professor at the Faculty<br>of Bioscience Engineering | 18.06.2025 | Individual interview |
| Constanza Parra Novoa | KU Leuven, Professor at<br>the Faculty of Science                          | 16.06.2025 | Individual interview |
| Niel Hens             | Hasselt University,<br>Professor at the Faculty<br>of Science              | 30.06.2025 | Individual interview |

## 6.4 Additional Figures and Tables

Table 7: Success story template

| SECTION                                       | DETAILS TO PROVIDE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. TITLE OF THE STORY                         | <i>A short, compelling title (max. 12 words) that highlights the benefit (e.g. "PhD Collaboration Led to EU Grant and New Vaccine Lab")</i>                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. ASSOCIATED (QUALITATIVE) BENEFIT           | <p><i>Select one or more:</i></p> <p><i>S1 – Use of VLIRUOS knowledge and networks by Belgian actors</i></p> <p><i>S2 – Academic visibility and international positioning of Flemish HEIs</i></p> <p><i>S3 – Sustained strategic partnerships initiated through VLIRUOS</i></p> <p><i>S4 – Integrated and multidisciplinary collaboration in Flanders</i></p> <p><i>S5 – Career development of Flemish academics through VLIRUOS</i></p> <p><i>S6 – Enrichment of education and research through Global South perspectives</i></p> <p><i>S7 – Others</i></p> |
| 3. SUMMARY PARAGRAPH                          | <i>Please provide a short summary of the story and why it is relevant for Belgian HEIs or Flemish society.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 4. BACKGROUND AND CONTEXT                     | <i>What was the original project/programme? What were the goals and who were the partners (Flemish and international)? When and where did it take place?</i>                                                                                                                                                                                                                                                                                                                                                                                                 |
| 5. WHAT CHANGED / WHAT WAS ACHIEVED?          | <p><i>Describe the concrete results:</i></p> <ol style="list-style-type: none"> <li><i>Was a new partnership or network created?</i></li> <li><i>Was research taken up by policy or business?</i></li> <li><i>Did a researcher's career progress?</i></li> <li><i>Did this contribute to visibility or rankings?</i></li> <li><i>Any follow-up funding or spin-offs?</i></li> <li><i>Others</i></li> </ol>                                                                                                                                                   |
| 6. QUANTITATIVE INDICATORS (IF AVAILABLE)     | <p><i>Include relevant data that supports the story, e.g.:</i></p> <ul style="list-style-type: none"> <li><i>Number of PhDs involved</i></li> <li><i>Number of publications</i></li> <li><i>Number of partners or countries engaged</i></li> <li><i>Number of alumni involved</i></li> <li><i>Links to outputs (e.g. policy briefs, media coverage)</i></li> </ul>                                                                                                                                                                                           |
| 7. WHY IS THIS RELEVANT FOR BELGIUM/FLANDERS? | <i>Explain the added value for Belgian institutions, researchers, or society. Why does this matter from a national or institutional perspective?</i>                                                                                                                                                                                                                                                                                                                                                                                                         |
| 8. SUPPORTING DOCUMENTS OR LINKS              | <i>Include any project website, publication, news article, report, or video</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 9. CONTACT PERSON(S) FOR FOLLOW-UP            | <i>Name, email, and institution of someone who can provide more details if needed. This can be the story author or someone directly involved in the case.</i>                                                                                                                                                                                                                                                                                                                                                                                                |

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