



UNESCO-Flanders Cooperation in the Field of Science (FUST)

External Evaluation of the Flanders/UNESCO Trust Fund for the Support of UNESCO's Activities in the Field of Science

EVALUATION REPORT

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Contents

Executive Summary	6
Introduction.....	6
Methodology.....	6
Findings.....	7
Recommendations	10
1. Introduction	15
2. Background information on FUST and selected large-scale projects	17
3. Evaluation purpose and methodology	22
3.1 Limitations.....	23
4. Main findings	25
4.1 Relevance	25
4.2 Coherence	27
4.3 Effectiveness and efficiency:	29
4.3.1 Resource deployment	29
4.3.2 Governance, management and coordination mechanisms.....	31
4.3.3 Effectiveness of implementation	32
4.3.4 Equality and inclusion.....	33
4.3.5 Resource efficiency.....	35
4.3.6 Inter-sectoral and project level collaborations	36
4.3.7 COVID-19 effect.....	38
4.3.8 Challenges faced in the implementation.....	39
4.3.9 Effectiveness of monitoring framework	41
4.3.10 Visibility and communication	42
4.3.11 Involvement of Flemish scientific community	45
4.4 Impact and sustainability:.....	47
4.4.1 Signs of impact.....	47
4.4.2 Key enablers of success	50
4.4.3 Longer-term effects of the projects	52
4.4.4 Sustainability and scalability	53
5. Conclusions and recommendations	58
5.1 Conclusions	58
5.2 Recommendations.....	61
5.3 Project-specific recommendations for sustainability.....	64
Annex 1. Terms of reference.....	66
Annex 2. Evaluation Matrix.....	74
Annex 3. Key documents consulted.....	76
Annex 4. List of interviewees	78
Annex 5. Focus group meeting participants	81
Annex 6. Approaches taken for training in the FUST projects	82
Annex 7. Progress as of December 2022 in the finalisation of projects' outputs	85
Annex 8. Summary of project-level findings.....	87
Annex 9. Management of the evaluation and evaluators' biodata.....	94
Annex 10. Survey instrument and in-depth interview guide	96

List of Figures

Figure 1. OECD-DAC evaluation criteria	22
Figure 2. Interviewees by region (n=66).....	24
Figure 3. Interviewees by representation (n=66).....	24
Figure 4. Interviewees by FUST project (n=66).....	24
Figure 5. Survey respondents by FUST project (n=108)	24

Figure 6. Survey respondents by organisation type (n=108)	24
Figure 7. Survey respondents by FUST project (n=108)	24
Figure 8. Survey respondents' assessments of the relevance (n= 108)	25
Figure 9. Survey respondents' assessments of the implementation effectiveness (n=100)	33
Figure 10. Survey respondents' assessments of equality and inclusion (n=108)	35
Figure 11. Channels through which survey participants informed about FUST projects (n=108).....	43
Figure 12. Survey respondents' assessments of visibility of UNESCO and the Government of Flanders (n=85)	44
Figure 13. Survey respondents' assessments of the participation of Flemish scientists (n=85)	46
Figure 14. Survey respondents' assessments of projects' effects (n=95)	50
Figure 15. Survey respondents' assessments of sustainability of results (n=85)	57

List of Boxes

Box 1. Regional coverage in FUST projects	27
Box 2. CliMWar's potential to raise multiple donor funding	30
Box 3. The use of citizen science for inclusivity	34
Box 4. A good practice example on inter-sectoral collaboration in UNESCO	37
Box 5. Examples of involvement of Flemish scientists in the projects	45

List of Tables

Table 1. Recommendations for enhancing FUST's effectiveness, impact and sustainability	10
Table 2. Annual distribution of FUST funds	18
Table 3. Budgets allocated to large-scale FUST projects under the evaluation	19

Acronyms and Abbreviations

AGWA	Alliance for Global Water Adaptation
API	Application Programming Interface
ARMS	Autonomous Reef Monitoring Structures
BAF	Biosecurity Agency of Fiji
Be-Resilient	Biosphere Reserves as Observatories for Climate Change Adaptation in Southern Africa
BIOPAMA	Biodiversity and Protected Areas Management
BR	Biosphere Reserves
BSP	Bureau of Strategic Planning (UNESCO)
CAZALAC	Water Centre for Arid and Semi-Arid Zones of Latin America and the Caribbean
CLIMWaR	Enhancing Climate Services for Improved Water Management
COP	Conference of the Parties
COVID-19	Coronavirus Disease 2019
CRIDA	Climate Resilient Agriculture for Sustainable Development
DNA	Deoxyribonucleic Acid
DRC	Democratic Republic of the Congo
DRR	Disaster Risk Reduction
EC	European Commission
ECOP	Early Career Ocean Professionals
ESD	Education for Sustainable Development
ESPOL	Escuela Superior Politécnica del Litoral (Ecuador)
EU	European Union
EWS	Early Warning System
FAIR	Findable, Accessible, Interoperable, and Reusable
FRDN	Flemish Research Data Network
FRIS	Flanders Research Information Space
FUST	Flanders/UNESCO Trust Fund for the Support of UNESCO's Activities in the Field of Science
FUT	Flanders UNESCO Trust Fund
FWO	Flemish Research Foundation
GEF	Global Environment Facility
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IFI	International Flood Initiative
IGCP	International Geoscience Programme Council
IGGP	International Geoscience and Geoparks Programme
IHP	International Hydrological Programme
IMO	International Maritime Organization
INVEMAR	Instituto de Investigaciones Marinas y Costeras (Colombia)
IOC	Intergovernmental Oceanographic Commission
IODE	International Oceanographic Data and Information Exchange
IOS	Internal Oversight Services
ISO	International Organization for Standardization
IT	Information Technology
LAC	Latin America and the Caribbean
MAB	Man and the Biosphere
MEDIN	Marine Environmental Data and Information Network (UK)
MSAF	Marine Safety Authority of Fiji
MSIL	Marine Situational Information System (Japan)
MWAR-LAC	Managing Water Resources in Arid and Semi-Arid Regions of Latin America and Caribbean
NF-PGO	The Nippon Foundation-POGO Centre of Excellence
NGO	Non-Governmental Organisation
NISSAP	National or Territorial Invasive Species Strategy and Action Plan
NODC	National Oceanographic Data Centre (IODE)

OBIS	Ocean Biodiversity Information System
ODIS	Ocean Data and Information System
OECD DAC	Organisation for Economic Co-operation and Development's Development Assistance Committee
OIH	Ocean InfoHub
OBPS	Ocean Best Practices System
OTGA	Ocean Teacher Global Academy
PacMAN	Pacific Islands Marine Bioinvasions Alert Network
PCR	Polymerase Chain Reaction
RTC	Regional Training Centre
SADC	Southern African Development Community
SC	Natural Sciences Sector (UNESCO)
SCOR	Scientific Committee on Oceanic Research
SDG	Sustainable Development Goal
SHS	Social and Human Sciences Sector (UNESCO)
SPC	Pacific Community
SPINCAM	Southeast Pacific data and information network in support to integrated coastal area management
SPREP	Secretariat of the Pacific Regional Environment Programme
STC	Specialised Training Centre
TOR	Terms of Reference
TTO	Technology Transfer Office
UGGp	UNESCO Global Geoparks Network
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
USP	University of the South Pacific
VITO	Flemish Institute for Technological Research
VLIR-UOS	University Cooperation for Development Bureau of the Flemish Interuniversity Council
VLIZ	Flanders Marine Institute
WMO	World Meteorological Organization
WWF	World Wide Fund for Nature

Executive Summary

Introduction

This report presents the results of the External Evaluation of the Flanders/UNESCO Trust Fund for the Support of UNESCO's Activities in the Field of Science that was commissioned by UNESCO to INOMER. The evaluation was conducted between April and July 2023, and is based on the collection and analysis of primary and secondary data using a mixed-methods approach.

The Flanders/UNESCO Science Trust Fund ([FUST](#)) supports UNESCO's activities in the fields of oceanography, water management, geoscience and geoparks as well as its Man and the Biosphere programme (MAB). The cooperation between the Government of Flanders and UNESCO started in 1998 with the first framework agreement signed during the official visit of the Minister-President of the Flemish Government. It was followed by the first Trust Fund for the Support of Science Agreement signed in September 1999, which was then extended for five rounds covering the following periods: 2004-2008, 2009-2013, 2014-2018 and 2019-2023.¹

This evaluation was conducted in accordance with the Article 2(2) of the FUST Agreement that required a thorough assessment of the fifth round of the Fund and its operation before the end of the period 1999-2023, based on which the Government of Flanders will decide whether to extend the agreement for a further period of five years.²

FUST-covered programmes at UNESCO encompass diverse fields, including water research and management under the International Hydrological Programme (IHP); fostering harmony between humans and their environment via the MAB Programme; studying oceans through the Intergovernmental Oceanographic Commission (IOC); and promoting geological heritage and cooperation under the International Geosciences and Geoparks Programme. Each of these programmes includes various projects funded by FUST, addressing critical global issues such as climate change, biosphere restoration, oceanographic data collection, and the celebration of geological heritage.

This evaluation, in addition to assessing the governance, management and coordination mechanisms developed for FUST by UNESCO and the Flemish Government, focuses on five large-scale projects funded under the fifth round, as required by the Terms of Reference (TOR) given in Annex 1. These projects include the Ocean Teacher Global Academy (OTGA), the Ocean InfoHub (OIH), the Pacific Islands Marine Bioinvasions Alert Network (PacMAN), Enhancing Climate Services for Improved Water Management (CliMWaR) and Biosphere Reserves as Observatories for Climate Change Adaptation in Southern Africa (Be-Resilient).

Methodology

In this study, a mixed-methods approach was used to answer the evaluation questions listed in the TOR. The primary research comprised an online survey, face-to-face and virtual interviews, a focus group meeting and case studies. The survey, which was prepared in English and Spanish, was completed by 108 beneficiaries with a 19% response rate. The interviews (including those implemented during the inception phase) were conducted with 66 stakeholders, exceeding the initially planned number of 40-45 interviewees to ensure broader stakeholder representation, as the survey response rate remained lower than expected despite the efforts made to increase the

¹ Terms of Reference of FUST evaluation (see Annex 1).

² UNESCO (2019) Agreement on the UNESCO/Flanders Trust Fund for the Support of UNESCO's Activities in the Field of Science

number of respondents.³ The focus group meeting involved six stakeholders from the advisory groups⁴ and implementing partners of the projects. Four brief case studies were prepared focusing on themes that reflect prevalent issues across all five projects. The cases were chosen for their potential to offer lessons to the assessed and other comparable FUST projects. The secondary research was based on the review of the documents, such as the FUST Agreement, project documents and the mid-term self-assessment reports prepared by the project teams. The latter aimed to complement the external evaluation findings, and therefore, UNESCO did not request a full and deep evaluation of the selected projects.

The evaluation reference group, formed by the representatives from the UNESCO Bureau of Strategic Planning (BSP), the Natural Science sector (SC), the IOC, the Division of Internal Oversight Services' Evaluation Office and the representative from the Government of Flanders, provided input during the inception meeting, commented on the draft evaluation report and participated in the validation workshop.

This study faced some limitations, including but not limited to the fact that it was conducted while the projects were still ongoing. This not only constrained the retrospective assessment of the projects as a whole but also led to challenges in data collection. However, it was needed to facilitate learning and decision-making for a potential sixth round of FUST. Nonetheless, with the support of UNESCO, UNESCO/IOC and the Government of Flanders, as well as through a rigorous risk management approach, the study was carried out successfully and the evidence collected was sufficient to evaluate FUST in line with the requirements of the TOR.

Findings

Overall, the evaluation found positive results across all six evaluation criteria:⁵ relevance, coherence, efficiency, effectiveness, impact and sustainability. Despite the delays caused by the COVID-19 pandemic, the assessed projects are on track to deliver the planned outputs and generate expected outcomes. The positive results can mainly be attributed to the improvements made based on recommendations of the external evaluation conducted in 2018.⁶ On the other hand, as with all funding instruments, further improvements are needed especially to enhance effectiveness and ensure impact and sustainability of the supported projects. The major areas of improvement are presented under the recommendations made by the evaluation team.

The main findings in relation to the evaluation criteria are summarised below.

Relevance and coherence

- The Government of Flanders, through FUST, is a major contributor to UNESCO's operations in the fields of oceanography, water management, geosciences as well as to its MAB programme. As such, the Fund is highly relevant for the achievement of the Sustainable Development Goals (SDGs) and addressing the environmental sustainability and climate change-related challenges.

³ After the initial survey dissemination email, three reminders were sent and a time extension was given to the potential respondents. The communication with the potential respondents included the endorsement letter provided by the Government of Flanders.

⁴ While the FUST agreement defines project level committees as “advisory groups” they are mostly referred by the projects as “steering groups”. For consistency, they are referred to as “advisory groups” in this report.

⁵ <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

⁶ Technopolis (2018) Independent external evaluation of the Flanders/UNESCO Science Trust Funds (FUST) Phase IV, (2014-2018) Final Report.

- The FUST projects effectively incorporated the needs of the target beneficiaries as well as the challenges facing the regions/countries/basins where they were implemented. This was achieved through the projects' thematic focus and participatory approaches used during design.
- The projects were coherent with and demonstrate strong potential to support UNESCO's and Flemish Government's policies in the context of the 2030 Agenda for Sustainable Development, and aligned well with UNESCO's C/4 (medium-term strategy) and C/5 (programme and budget) as well as with the strategies of IHP, IOC and MAB.
- The FUST-funded projects placed a high emphasis on using scientific and science-based activities as effective enablers of addressing environmental challenges. Although the projects achieved coherence and synergies with similar initiatives of UNESCO as well as the countries and regions where they were implemented, there might be some overlaps with the projects of other multilateral organisations in some regions, and further complementarities and synergies were possible.⁷
- The dependency of UNESCO's activities on the Flemish Government's funding in the fields covered by FUST is a potential challenge which needs to be addressed by the diversification of funding sources. Flanders is a major source of finance for the IOC as well, a situation that represents a risk to the continuation of the IOC's operations.
- The importance of sustaining the FUST funding and the need for diversifying financial resources have increased due to the escalated challenges triggered by climate change. This situation necessitates larger investments in projects aiming to develop and deploy innovative solutions. The Flemish Government being the main donor, the FUST projects could benefit from the support of other donors in the process of scaling up, replicating and sustaining their results. The UN Decade of Ocean Science for Sustainable Development (2021-2030) (Ocean Decade) framework initiative could be used to increase the resources to support projects with high impact and sustainability potential.

Effectiveness and efficiency

- The governance, management and coordination mechanisms of FUST at both UNESCO and Government of Flanders sides are effective and efficient leading to productive collaborations, successful project execution and optimised resource allocation. Communication at all levels of the governance structure is effective and smooth. The management practices under the Fund are flexible and adaptive to the changing needs and conditions.
- The approach taken by the Government of Flanders in the execution of FUST, especially the transparent and impartial project selection through the Open Advisory Committee, whose evaluation reports are made available to applicants, is an important aspect that enhances added-value and credibility of the Fund.
- Dissemination of the FUST project calls within UNESCO after the launch of the process by UNESCO BSP, while improved in the recent years, needs enhancement to ensure that they reach a large number of staff and teams. Clear guidelines and criteria for re-application are required for the previously supported projects to maximise the potential for high-impact

⁷ Some projects that could potentially have overlaps were identified as:

<https://public.wmo.int/en/resources/meteoworld/focus-africa-new-climate-services-initiative-southern-africa>
<https://openknowledge.worldbank.org/bitstreams/19f8b285-7c5b-5312-8acd-d9628bac9e8e/download>
<https://www.gcfprojects-undp.org/tp/project/6639> <https://climatepromise.undp.org/what-we-do/areas-of-work/adaptation-resilience> <https://undp-climate.exposure.co/world-met-day-2020> <https://undp-climate.exposure.co/malawi>

results. In addition, improvement is needed in the project evaluation and selection modalities and regulations within UNESCO.

- FUST projects used human and financial resources efficiently, with an increase in the resource efficiency compared to the previous round, mainly because of the virtual implementation of meetings and training programmes initiated during COVID-19 and continued after the pandemic. Effective partnerships and collaboration with project partners also contributed to the efficient use of resources. Despite the delays caused by COVID-19, the projects are on track to deliver the planned outputs on time, provided that they employ effective risk management frameworks.
- The project teams successfully leveraged their qualifications, technical and administrative support, and strong interpersonal relations to enhance collaboration and communication. This approach improved interactions both internally among staff and externally with partners, beneficiaries, and other stakeholders during the project implementation.
- The potential could not be tapped for intersectoral cooperation between FUST and FUT due to unclear modalities and insufficient incentives facilitating such partnerships within UNESCO. The combination of two different funding sources from the Government of Flanders also contributed to this challenge.
- Although FUST projects comply with UNESCO's programmatic requirements and employ key performance indicators, improvements are needed regarding their results framework and monitoring system. There is a need for better designed indicators and logical frameworks, and more structured reporting templates (including specific templates for self-assessment reports) which could facilitate in-depth analysis of indicator performance, identification of lessons, and definition of clear strategies to tackle identified shortcomings.
- Despite effective gender mainstreaming across the FUST projects, considerations related to disadvantaged groups and indigenous peoples could have been better integrated. Nevertheless, good practices in inclusiveness are found in the adoption of a citizen science approach in three projects (ClimWaR, Be-Resilient and PacMAN).
- Although visibility aspects have improved compared to the previous round of FUST, there is a need to establish a harmonised approach in this area across the projects. Improvements are also needed in communication by optimising underutilised channels, notably media (including social media) to reach larger populations both to attract them to the project activities and to create awareness of the importance of topics covered by the projects.
- Despite the requirement for collaboration with the Flemish scientists in FUST projects, concrete incentives and concerted efforts to involve them have been limited. The absence of formal channels to connect with the scientific community in Flanders has hindered the full exploitation of collaboration potential.

Impact and sustainability

- The FUST projects have showed clear signs of scientific and societal impact, also contributing to policy-making and implementation, and they demonstrate a high potential for sustainability of results. However, there is room for improvement in articulating exit strategies and sustainability measures in the project documentation and putting them in practice timely.
- The FUST projects demonstrate strong potential for scalability and replication. There is a need for developing and implementing sustainability strategies, such as developing self-sustaining financial models for OTGA, ensuring continued functionality and operation of OIH, strengthening connections with international policy instruments such as the

Convention on Biological Diversity for PacMAN, and consolidating government ownership and network reinforcement for CliMWaR and Be-Resilient, among other measures. Furthermore, the Ocean Decade presents a significant opportunity to enhance the sustainability of the ocean science related projects of FUST.

- The absence of a clearly articulated high-level theory of change (ToC) for FUST itself presents a challenge for measuring and communicating its impacts.⁸ Without a clear FUST-level ToC that would strategically guide the Fund's project support activities and future calls, the alignment and coherence of its activities may be compromised in the future. The lack of a ToC could risk FUST's effectiveness, and complicate monitoring and evaluation efforts, including impact assessment, at the Fund level. This issue might also result in inconsistencies in stakeholders' and partners' understanding of key concepts, such as the desired high-level impacts and the notion of sustainability for funded projects. Moreover, without a well-defined ToC, communication regarding FUST's intentions, strategies, and anticipated outcomes could be challenging, and responsibility delineation might be ambiguous, potentially affecting ownership and accountability among project participants. Elements of each of these challenges were observed throughout the evaluation.⁹

Recommendations

In line with the conclusions summarised above and within the context of triangulated evaluation findings, INOMER recommends that the Government of Flanders continues to support UNESCO with a sixth round of FUST.

In this potential new round, it is important to take necessary steps to improve the design and implementation in line with the lessons learnt with the fifth round. The proposed improvements are presented in the following table.

Table 1. Recommendations for enhancing FUST's effectiveness, impact and sustainability

Key recommendation	Rationale	Proposed actions/solutions
1. Develop a Theory of Change (ToC) for FUST without compromising its flexibility	- Strategically guide FUST's project support activities, future calls, and direct resources effectively by aligning with projects that resonate with its overarching ToC. - Increase the effectiveness of FUST, facilitate monitoring and evaluation efforts at the Fund-level and measure the impact of the Fund itself.	- An overall FUST ToC framework is designed that defines the long-term goals to be achieved or contributed to by the Fund (the "impacts") and maps the expected causal chains and necessary preconditions to achieve these goals.¹⁰

⁸ The 2018 FUST evaluation also includes a similar recommendation ("Recommendation 2") which suggested "a high-level FUST theory of change". In the same evaluation, "Recommendation 4" was about project-level "ToC" which was formulated as "project intervention logics".

⁹ Some examples include the discussions related to the sustainability of the projects, involvement of the Flemish scientific community, and attracting additional funds for the scaling up of the project.

¹⁰ This recommendation does not call for a lengthy and rigid ToC document. Instead, it suggests a concise, one-page visual tool to guide the design of future calls and projects, and serve as a reference for measuring outcomes and impact of the Fund itself. It will also be used for internal and external communication, and make clear key requirements and needs from the funded projects (e.g. collaboration with the Flemish scientific community, additional resource mobilisation, fostering open science, intersectoral cooperation between FUST and FUT, etc.).

	- Ensure all stakeholders and partners share a coherent understanding of FUST's objectives, goals and requirements. - Streamline communication processes about FUST's intentions, strategies, and desired outcomes. - Delineate responsibilities clearly, fostering increased ownership and accountability among project teams.	
2. Formulate and execute a strategy and action plan for diversification of funding sources.	- Need for funding for scaling up and replicating the FUST projects, as well as for sustaining their results. - Escalated challenges triggered by climate change making it an emergency to increase the number and scale of innovative projects in the fields covered by FUST. - Need to prioritise projects with high research and innovation content under FUST.	- FUST resources are used to provide seed funds for the first phases of innovative projects with high potential for impact, scalability, replicability and sustainability. - For scaling up, replication and sustainability of FUST projects, additional funding is raised from other sources and donors.¹¹
3. Develop a clear framework for intersectoral cooperation between FUST and FUT.	- Need to maximise the impact of FUST and FUT support by creating strong partnership for clear synergies between these two Funds. - Potential to create larger impact and increase the comparative advantage of UNESCO in the fields covered by FUST in the multilateral system (e.g. the only organisation that can address climate change related risks that have an effect on cultural heritage).	- A clear framework for intersectoral cooperation is developed and implemented within UNESCO. - Appropriate incentives are developed and implemented in the Organisation to encourage and enable this collaboration. - Successful intersectoral cooperation examples are identified and disseminated within UNESCO. - Measures are considered within the Government of Flanders to combine the financial resources available under FUST and FUT.
4. Prioritise impact, scalability, replicability, and sustainability from project outset.	- Ensure scalability, replicability and sustainability of projects funded by FUST. - Further enhance inclusiveness of projects and therefore, increase positive impact on underrepresented populations.	- FUST project proposals as well as evaluation and selection criteria prioritise scalability, replicability and sustainability considerations from the outset. - Mechanisms are put in place to enable that these considerations are not only stated in the

¹¹ This does not mean transforming FUST into a multi-donor fund, but rather, positioning it as a leveraging tool for new funding; a tool that could attract additional sources to finance the follow-up phases of the projects it initially supports.

	- Create further synergies and eliminate potential overlaps with similar projects and programmes of other multilaterals.	proposals as planned actions but also integrated into the project activities themselves in actual implementation. Therefore, they are regularly revisited and strengthened throughout the project lifecycle. - Projects demonstrate a commitment to implementing and adapting strategies for these elements by exploring potential funding sources for the next phases and achieving stakeholder buy-in/government ownership at an early phase, among others. - Sustainability requirements for infrastructure projects include provisions ensuring that outputs stay functional and operational for a period of three to four years after the end of the project without FUST's additional funding. - Project proposals clearly identify inclusiveness strategies for larger impact with a specific focus on integrating the needs of indigenous peoples and other underrepresented groups. - Project proposals include a comprehensive mapping of relevant projects in countries and regions to be covered, as well as a detailed analysis of complementarities and potential overlaps to be addressed.
5. Establish a systematic approach for the involvement of the Flemish scientific community in FUST projects.	- Facilitate the access of projects to Flemish expertise and knowledge. - Create sustainable partnerships between the projects and the Flemish scientific community.	A clear framework including concrete actions are developed and implemented to enable active participation of the Flemish scientists and institutions in the projects. Some of these actions can include: - Design and dissemination of promotional materials for attracting the Flemish scientific community (e.g. by highlighting the strategic importance of FUST project and their results, benefits for participation in FUST projects, etc.); - Introduction of the Flanders Research Information Space

		(FRIS) portal on researchers and their research in Flanders to the FUST proponents/projects; - Use of the networks of Flemish Research Foundation (FWO) and the University Cooperation for Development Bureau of the Flemish Interuniversity Council (VLIR-UOS) through the channels of TTO Flanders, and Flemish Research Data Network (FRDN); - Organisation of physical or virtual brokerage/networking events (e.g. with the participation of, inter alia, the Open Advisory Committee members engaged in the evaluation of FUST projects so far); - Engaging PhD students in the projects through VLIR-UOS; - Tapping on relevant opportunities for the relevant projects, for instance, by facilitating participation of OIH in the Network Days of FRDN.
6. Enhance the FUST programme management cycle by setting clear procedures to streamline processes from calls for project proposals to completion, emphasising result sustainability.	Despite the improvements in the processes with the fifth round, there is a need to address the areas that were identified for improvement; notably, - enhancing call dissemination process across UNESCO after the launch by UNESCO BSP; - strengthening results-based management practices, including project level monitoring, reporting, including self-assessment, at project level.	- Processes and procedures in the FUST implementation cycle are reviewed and improved. - Clear and accessible tools are developed such as a process flow chart from call to project closure. - Capacity building/technical assistance is provided to project teams on various topics, such as results-based management. - Supportive mechanisms are put in place, including but not limited to methods for systematic exchange of knowledge between different project teams and assigning mentors to projects within UNESCO (also those outside FUST projects).
7. Increase the visibility of FUST and its projects through strategic communication.	- Need to enhance both project-specific and overarching FUST-level communication. - Requirement to ensure a cohesive, harmonised approach to visibility across all projects.	- A comprehensive communication strategy to guide the messaging, target audiences, and the ways to share the work and results of FUST-supported projects is developed and implemented. - Guidelines for visibility elements, including examples, are developed and implemented to ensure harmonisation.

		- A communication expert is engaged to support FUST and its projects in these efforts (could be financed collectively across all projects for resource efficiency and harmonise the communication and visibility efforts).
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Recommendations concerning the sustainability of the five large-scale projects covered by the evaluation are presented in Section 0.

UNESCO-Flanders Cooperation in the Field of Science (FUST)

External Evaluation of the Flanders/UNESCO Trust Fund for the Support of UNESCO's Activities in the Field of Science

1. Introduction

This report presents the results of the External Evaluation of the Flanders/UNESCO Trust Fund for the Support of UNESCO's Activities in the Field of Science that was commissioned by UNESCO to INOMER. The evaluation was conducted over a period of three months from April to June 2023, and is based on the collection and analysis of primary and secondary data using a mixed-methods approach.

The Flanders/UNESCO Science Trust Fund ([FUST](#)) supports UNESCO's activities in the fields of oceanography, water management, geoscience and geoparks as well as its Man and the Biosphere (MAB) programme. The cooperation between the Government of Flanders and UNESCO started in 1998 with the signature of the first framework agreement during the official visit of the Minister-President of the Flemish Government. It was followed by the first Trust Fund for the Support of Science Agreement signed in September 1999 and then extended for five rounds for the following periods: 2004-2008, 2009-2013, 2014-2018 and 2019-2023.¹²

This study was conducted in line with Article 2(2) of the FUST Agreement, which required a thorough evaluation of the cooperation implemented during the past five years based on which the Government of Flanders will decide whether to extend the agreement for a further period of five years.

UNESCO's programmes in the areas addressed by FUST include the following:

- a) *The International Hydrological Programme ([IHP](#))*: Founded in 1975, IHP is the only intergovernmental programme in the United Nations (UN) system dedicated to water research, water resources management, education, and capacity building. IHP's work aims to support sound, evidence-based water governance and decision-making drawing on transdisciplinary science, technology, and other knowledge systems. Belgium, with an active role for Flanders, has become a member of the IHP Council in 2021. It chairs the IHP working group on Scientific Research and Innovation, and plays a lead role on the topic 'hydrology and citizen science'.
- b) *The Man and the Biosphere ([MAB](#)) Programme*: MAB is an intergovernmental scientific initiative created in 1971 with the aim of enhancing the relationship between people and their environment. It focuses on interdisciplinary research and capacity building to address biodiversity loss and its ecological, social, and economic aspects. The Be-Resilient Project, which is about climate observations in biosphere reserves and a bridge between the IHP and the MAB, is funded by FUST and covered by this evaluation. Another example of a FUST-funded project is related to mangrove restoration in biosphere reserves in the Latin American and Caribbean region; however, it is not included in this study.
- c) *The Intergovernmental Oceanographic Commission ([IOC](#))*: IOC was created in 1960 to promote global cooperation among UN Member States in ocean research. Its mission is to foster international collaboration and coordinate research, services, and capacity building for better management, sustainable development, marine protection, and decision-

¹² Terms of Reference of FUST evaluation

making among its members. It provides the Member States of the UN with an essential mechanism for global cooperation in the study of the oceans. Flanders hosts the IOC's Project Office for the International Oceanographic Data and Information Exchange (IODE) programme on oceanographic data and information, which is also the secretariat of the IOC's capacity development activities. FUST has been a major funder for IOC projects.

- d) *International Geosciences and Geoparks Programme (IGGP)*: IGGP is a global programme implemented by the International Geoscience Programme (IGCP) founded in 1972 and UNESCO Global Geoparks Network (UGGp) created in 2004. These programmes support research and capacity-building in earth sciences, foster international scientific cooperation in the geosciences and promote the interconnection between geological heritage and other forms of heritage. In the fifth phase of FUST (2019-2023), a small-scale activity focusing on (potential) African geoparks was supported.

The evaluation, in addition to assessing the governance, management and coordination mechanism developed by the two sides, focuses on five large-scale FUST projects funded during the period 2019 to 2023: the Ocean Teacher Global Academy project (OTGA), the Ocean InfoHub project (OIH), the Pacific Islands Marine Bioinvasions Alert Network (PacMAN), enhancing Climate Services for Improved Water Management (ClimWaR) and the Be-Resilient project.

The remainder of this report is set out as follows: Section 2 presents brief background information on FUST as well as the large-scale projects covered by this evaluation. Section 3 summarises the purpose and methodology of evaluation. Section 4 presents the main evaluation findings triangulated from the various lines of evidence in response to the evaluation questions. Supporting material, including a summary of answers to the project-level evaluation questions, is provided in annexes at the end of the report.

2. Background information on FUST and selected large-scale projects

In 1999, the Government of Flanders and the United Nations Educational, Scientific and Cultural Organization (UNESCO) established the Flanders-UNESCO Trust Fund for the Support of UNESCO's Activities in the Field of Science (FUST). Since its inception, the Government of Flanders has demonstrated consistent support by renewing FUST with five rounds between 1999 and 2023 with a total amount of funding of around USD32 million.¹³ The continuous funding provided by the Flemish Government under FUST has positioned it as an important subnational donor of UNESCO, representing an average of 92% of all Belgian voluntary contributions. UNESCO's reporting indicates that Belgium, inclusive of Flanders, has consistently ranked among the top 20-25 voluntary donors between 2012 and 2020, and the top 15-20 government donors in the same period. In the period spanning from 2012 to 2018, Flanders contributed over USD19 million, followed by nearly USD11 million in signed agreements from 2018 to 2020.¹⁴

The activities implemented under FUST are required to be strategically aligned with UNESCO's programmatic documents to achieve coherence and synergy. The current agreement between the Government of Flanders and UNESCO for 2019-2023 stipulates that activities conducted under FUST should align with UNESCO's Major Programme II: Science for Peace and Sustainable Development. Particular emphasis should be placed on the following strategic objectives: "(4) Strengthening science, technology, and innovation systems and policies at national, regional, and global levels; (5) Promoting international scientific cooperation to address critical challenges in sustainable development; and (6) Supporting inclusive social development, fostering intercultural dialogue for the rapprochement of cultures, and endorsing ethical principles as stated in the UNESCO Medium Term Strategy (37 C/4, 2014-2021)".¹⁵ Moreover, the agreement states that special focus should be put on the four UNESCO programmes (IOC, IHP, MAB and IGGP) explained in Section 1.

The agreement further delineates that the activities eligible for support under FUST may encompass a variety of concrete projects in the realm of science. These include science-driven collaborations aimed at fostering institutional capacity development, the secondment of experts, and the allocation of funds for consultants to assist with project preparation or evaluation as well as research projects following up on FUST-related activities, to be carried out by trainees at Flemish institutions who return to their home countries.

The governance structure of FUST incorporates a Steering Committee with members from both UNESCO and the Flemish Government. According to the agreement, the Committee includes a representative of the Natural Science Sector and a representative of the Section for Mobilising Government Partner Resources in the Bureau of Strategic Planning from UNESCO. The Flemish Government is represented by an official from the Department of Economy, Science, and Innovation and a representative of the Department of Foreign Affairs. The agreement states that the Committee may invite experts or other relevant persons to assist its work. The Steering Committee typically meets annually and plays an important role in guiding the development of projects eligible for FUST funding and in selecting the large-scale projects that would be proposed by UNESCO to the Government of Flanders for FUST financial support. The Committee also monitors and evaluates the supported projects.¹⁶

¹³ UNESCO 2019. Flanders/UNESCO trust Fund for the Support of UNESCO'S activities in the field of science

¹⁴ <https://www.unesco-vlaanderen.be/media/2770/download/Flanders%20at%20UNESCO.pdf?v=1&inline=1>

¹⁵ <https://unesdoc.unesco.org/ark:/48223/pf0000227860>

¹⁶ UNESCO (2019) Agreement on the UNESCO/Flanders Trust Fund for the Support of UNESCO's Activities in the Field of Science

According to the agreement, project selection criteria include the alignment with the priorities of UNESCO and the Flemish Government in the respective cooperation fields, the potential sustainability of benefits and outcomes in the context of SDGs, the leveraging effect in fostering further support for UNESCO's activities in the same area, and the relevance and availability of scientific support from Flemish institutions.

The current agreement includes some new requirements following the recommendations made by the independent external evaluation of the fourth round of FUST (2014-2018). These include:¹⁷

- “the need for clear project intervention logic and KPIs, and strengthening capacities to measure outcomes (not only outputs);
- consideration of inclusion of a more diverse range of stakeholders (e.g. private sector) in project-level advisory groups;
- the need to establish a project advisory group for any FUST project to which FUST allocated a budget equal to or higher than 500 000 USD;
- scope for intensifying the scientific cooperation between Flanders and beneficiary countries;
- requirements regarding third-party project co-financing (in-cash and/or in-kind) that signals the commitment of other parties to provide support to a project proposal, including the beneficiaries and other project partners;
- scope for project result valorisation (scientific, social, economic) between partners and associated including the involvement of Flemish partners where appropriate;
- articulation with major international (science) initiatives such as:
 - the UN Decade of Ocean Science for Sustainable Development (2021-2030) (IOC),
 - the International Decade for Action 2018 to 2028, “Water for Sustainable Development” (IHP),
 - Aichi Biodiversity Targets 2020, and the post-2020 global biodiversity framework as it related to the activities of UNESCO;
- scope for linkages with other UNESCO programmes;
- scope for inclusion of innovative approaches fostering open science and involvement of citizens and other stakeholders (‘citizen science’).”

Under the fifth round of FUST, two main calls were planned and implemented in 2019 and 2021, and UNESCO received a total of USD 5.6 million under these two calls (Table 2).¹⁸

Table 2. Annual distribution of FUST funds

Year	2019	2020	2021	2022	2023*
Amount disbursed (USD)	1,539,149.17	1,453,282.05	1,572,323.55	1,453,116.88	1,114,346.90

* Up to 30 June 2023

Source: UNESCO Financial Status Report as at 31 December 2022, and data provided by UNESCO in July 2023.

The TOR of this evaluation required an assessment of five large-scale projects from the 2019 call (OTGA, OIH, PacMAN, CliMWaR and Be-Resilient) that are listed in Section 1 above. Initially, the requirement was that these projects would be evaluated during the period 2021-22 as they were launched in 2020. However, due to the COVID-19 pandemic, they faced delays and were granted time extension (Table 3). Therefore, the FUST Steering Committee decided that the projects conduct mid-term self-assessments to provide input for the external evaluation. The self-

¹⁷ UNESCO (2019) Agreement on the UNESCO/Flanders Trust Fund for the Support of UNESCO's Activities in the Field of Science

¹⁸ UNESCO (2022) Financial Status Report as at 31 December 2022, and data provided by UNESCO in July 2023.

assessment reports were submitted by each project by the end of 2022. These reports provide information similar to the progress reports but go into varying levels of detail and breadth, especially concerning exit strategy, impact, and sustainability from the perspectives of the project teams.

The total budget allocated to these five projects was USD4,266,684. The amounts earmarked for each project are given in Table 3. The remaining funds from FUST are allocated to other large- and small-scale projects that fall outside the scope of this evaluation.

Table 3. Budgets allocated to large-scale FUST projects under the evaluation

Project	Start date	Completion date	Extended completion date	Allocated budget (USD)	Share of budget spent*
OTGA	13/03/2020	13/03/2023	30/06/2024	986,853	43.25%
OIH	01/04/2020	01/04/2023	01/06/2024	1,191,915	63.04%
PacMAN	13/03/2020	13/03/2023	31/12/2023	856,620	57.60%
ClimWaR	16/11/2017	16/11/2020	31/12/2023	641,296	74.73%
Be-Resilient	13/03/2020	13/03/2023	31/12/2023	590,000	60.19%

Source: Projects' self-assessment reports, financial reports, FUST Monitoring Table, UNESCO, 2023.

* As of 31/12/2022.

In February 2021, a second call for projects was launched under FUST, accompanied by a joint guidance note. This note, prepared in accordance with the FUST Agreement, was similar the one circulated for the first call in 2019, but included new elements. It notably highlighted that “priority (or a higher criterion weight) will be given to such activities that represent a true and deepened partnership between UNESCO, Flemish institutions and the beneficiary countries, as well as to inter-sectoral project with the Culture Sector”. Under close coordination from both sides, three projects were reviewed and approved by the Steering Committee on 29 October 2021. The TOR did not include these projects in this evaluation since it would be too early to evaluate them at this stage.

Brief information about the large-scale projects from the first call that are covered by this evaluation is given below:

The Ocean Teacher Global Academy (OTGA): OTGA is based on the “Ocean Teacher Academy” project that was first funded by FUST between 2009 and 2013.¹⁹ Then it was formulated as a new project called “Ocean Teacher Global Academy” which received FUST funding between 2015 and 2019.²⁰ The current phase funded under the fifth round of FUST presents an evolution aiming to turn the project into a training platform for all IOC programmes. As such, OTGA provides an internet-based training platform supporting classroom training, blended training, and online learning for staff of marine research institutions and related facilities, staff of government departments involved with marine sciences and services, marine related practitioners (government and private sector), university students (marine sciences and related disciplines) and

¹⁹ <https://fust.iode.org/en/otga#>

²⁰ https://fust.iode.org/sites/fust.iode.org/files/public/images/reviews/fust_evaluation_2013.pdf

policy makers.²¹ The trainings are offered through a global network of 17 regional or specialised training centres. These centres are mainly affiliated to universities and research institutes in their regions. Five of them are found in Asia and the Pacific, four in Latin America and the Caribbean, five in Europe and North America, and three in Africa. The training centres were identified at the outset of the project based on applications received from the Member States and interested organisations.

The Ocean InfoHub (OIH): OIH aims at developing a global network of ocean-related data sources enhancing interoperability among data providers through the Ocean Data and Information System (ODIS) architecture. ODIS strives to create a digital ecosystem for ocean data providers for content discovery and contribution, and accelerate the development and diffusion of digital technologies in ocean sciences. The main beneficiaries of the project are scientists in academia and private sector, government agencies, IOC global and regional programmes, IODE data and information centres and units, international organisations, NGOs and industrial and commercial enterprises.²² The project focuses on three pilot regions: Africa, Latin America and the Caribbean, and the Pacific Small Island Developing States. In each of these regions, the project has nodes to promote the participation of regional data providers and data users, strengthen their data management capacity, and facilitate access to ocean information for sustainable development. In addition to the node operators, the project's partners include the University of Gent, Partnership for Observation of the Global Ocean (POGO), EUROCEAN, EMODNET and other organisations involved in ocean data related fields.²³

The Pacific Islands Marine Bioinvasions Alert Network (PacMAN): PacMAN aims at strengthening marine biosecurity in Fiji. With a co-design approach involving local stakeholders, the project develops a holistic monitoring programme for invasive species as well as a decision support tool to assist environmental managers and policy-makers in protecting marine ecosystems in Fiji and the wider Pacific Islands. The project is implemented with the involvement of several partners, including international organisations such as Secretariat of the Pacific Regional Environment Programme (SPREP), Pacific Community (SPC), International Maritime Organization (IMO); academic institutions like University of the South Pacific (USP) and Flanders Marine Institute (VLIZ); and a variety of scientific programmes and organisations such as GOOS Biology & Ecosystems and the global ARMS project at the US Smithsonian Institution, amongst others.²⁴

Enhancing Climate Services for Improved Water Management (ClimWwR): ClimWwR aims to strengthen climate services and increase climate change resilience. The project promotes the delivery of integrated climate services for proactive drought and flood monitoring and management tools. It also implements capacity building and community outreach activities to enhance resilience to climate variability in Africa, Latin America and the Caribbean. The main beneficiaries of the project are ministries in charge of flood risk management policies and government agencies in charge of hydrometeorological measurements. The project is implemented with the participation of research centres, universities and UNESCO Category II Centres.²⁵

²¹ UNESCO/IOC (2022) Mid-term Self-assessment: Oceans Teacher Global Academy

UNESCO/IOC (2020) Ocean Oceans Teacher Global Academy Project Proposal

²² UNESCO/IOC (2022) Mid-term Self-assessment: Oceans InfoHub

UNESCO/IOC (2020) Ocean InfoHub Project Proposal

²³ Ibid.

²⁴ UNESCO/IOC (2022) Mid-term Self-assessment: PacMAN

UNESCO/IOC (2020) PacMAN Project Proposal

²⁵ UNESCO (2022) Mid-term Self-assessment: ClimWwR

UNESCO (2017) ClimWar Project Proposal

Biosphere Reserves as Observatories for Climate Change Adaptation in Southern Africa ([Be-Resilient](#)): Be-Resilient aims to address climate change related challenges in Southern Africa (Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Zambia, and Zimbabwe) by strengthening UNESCO Biosphere Reserves and their communities. Biosphere reserve managers, and their associated local government as well as local community leaders, are the main partners of the project.²⁶ The project focuses on four key areas: climate change impact assessment, tool development for disaster risk reduction, training on sustainable development and citizen science, and strengthening the Man and Biosphere Programme.

²⁶ UNESCO (2022) Mid-term Self-assessment: Be-Resilient
UNESCO (n.d.) Be-Resilient Project Proposal

3. Evaluation purpose and methodology

The evaluation aimed to provide advice to both the Flemish Government and UNESCO on the future directions of their cooperation under the Trust Fund in line with the Terms of References (Annex 1). It puts a specific focus on the effectiveness, as well as potential impact and sustainability of the five large-scale projects, OTGA, OIH, PacMAN, ClimWaR and Be-Resilient), supported by FUST during the 2019-2023 period.

The evaluation also assesses the efficiency of the governance, management and coordination mechanism developed by the two sides under FUST, and provides a forward-looking perspective on how the collaboration between the Flemish Government and UNESCO within the framework of the Trust Fund can be strengthened.

As noted in Section 2, in line with the decision made by the FUST Steering Committee, the external evaluation uses the ‘mid-term’ self-assessments as an input which also proposed questions to be addressed at this study. The self-assessment reports were made available to the evaluation team at the outset of the assignment in order to complement the evaluation findings. For this reason, a full and deep evaluation of the selected projects was not requested by UNESCO.

The evaluation approach was designed to address a set of evaluation questions under each evaluation criterion in line with the criteria of the OECD Development Assistance Committee (OECD-DAC) namely: Relevance, Coherence, Efficiency, Effectiveness, Impact and Sustainability (Figure 1). The evaluation process was carried out in compliance with the United Nations Evaluation Group’s [Norms and Standards for Evaluation](#) (2016).

Figure 1. OECD-DAC evaluation criteria



Source: <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

Furthermore, the evaluation included a gender equality and an inclusiveness component by assessing, in each FUST project, the extent to which the projects ensured a strong participation of women and other underrepresented groups (see Section 4.3.4).

The evaluation used a mixed-methods approach and took place in three phases: inception, data collection and analysis/reporting. The inception phase included a kick-off meeting, preliminary review of available project documents and scoping interviews. In the second phase, both primary and secondary research activities were carried out using the following methodological instruments:

- Detailed desk research of secondary data and information sources (notably, Flanders/UNESCO Science Trust Fund Agreement; minutes of the meetings of the relevant Steering Committees between the donor agency and UNESCO, as well as those established for individual projects; project documents; progress reports; mid-term self-assessments, among others).
- Online questionnaire survey (in English and Spanish) which was responded by 108 beneficiaries out of the 579 contacted. After the survey dissemination e-mail, three reminders were sent and a time extension was given to the potential respondents. The contact details of these beneficiaries were provided by the project managers, identifying them as individuals who participated in various activities of the large-scale projects covered by this evaluation (
- Figure 5, Figure 6, and Figure 7).
- Semi-structured in-depth interviews (individual and/or group) with 66 key informants at the UNESCO Headquarters (BSP, SC and IOC); the Flemish Government; UNESCO's Field offices, etc. exceeding the initially planned 40-45 interviews to ensure broader stakeholder representation as the survey response rate remained at 19% despite efforts. (Figure 2, Figure 3, and
- Figure 4). Project level interviewees were suggested by the project managers.
- Focus group meeting with the representatives of key stakeholders that included representatives from the project advisory group members and implementing partners.
- Brief case studies focused on themes that reflect prevalent issues across all five projects, chosen for their potential to offer valuable lessons to these and other comparable projects.
- Analysis, triangulation and reporting of findings, conclusions, lessons learnt and recommendations.

The evaluation reference group provided input during the inception meeting, commented on the draft evaluation report and participated in the validation workshop. The group was formed by the representatives from the Bureau of Strategic Planning, the Natural Science sector (including representatives from IHP and MAB also from UNESCO's concerned field offices), the IOC, the Division of Internal Oversight Services' Evaluation Office and the representative from the Government of Flanders.

The evaluation matrix that maps the evaluation with the instruments used is given in Annex 2.

The primary data collection was carried out between 16 May and 23 June 2023.

Key documents consulted, list of interviewees, focus group participants, the evaluation tools and information on the management of the evaluation and the evaluators' biodata are found in the annexes of this report.

3.1 Limitations

The evaluation had to be carried out while the FUST projects were still ongoing. This situation has not only created a constraint in assessing the projects as a whole retrospectively, but also led to challenges in evidence collection. Nevertheless, the timing of the evaluation was relevant and important to ensure learning that could inform a potential next phase of FUST. This evaluation does not cover an in-depth assessment of the five large-scale projects. As noted above, the self-assessment reports were provided to the evaluation team to complement the external evaluation, and therefore, UNESCO did not request a comprehensive evaluation of these projects. However, due to the time gap between the submission of these reports (end of 2022) and the external evaluation period, combined with the varying levels of information on exit strategy, impact and

sustainability provided in each report, their utility as effective inputs to the external evaluation was limited. Despite these limitations, with the support of the UNESCO's concerned services and the Government of Flanders, as well as through a rigorous risk management approach, the evaluation was carried out successfully, and the evidence collected has been sufficient for the evaluation of the FUST in line with the requirements of the Terms of References.

Figure 2. Interviewees by region (n=66)

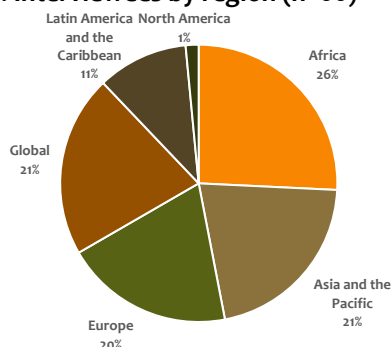


Figure 3. Interviewees by representation (n=66)

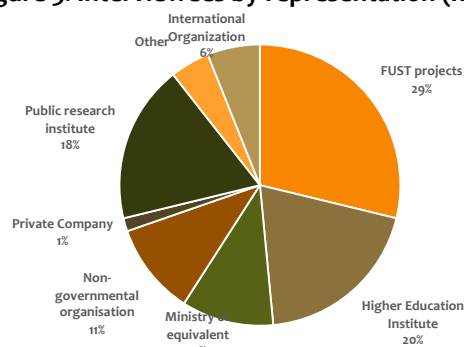


Figure 4. Interviewees by FUST project (n=66)

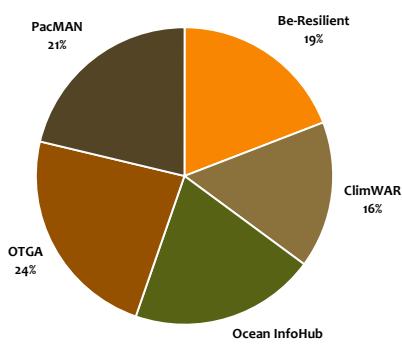


Figure 5. Survey respondents by FUST project (n=108)

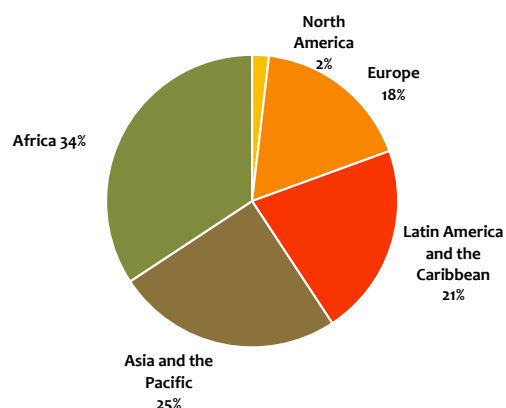


Figure 6. Survey respondents by organisation type (n=108)

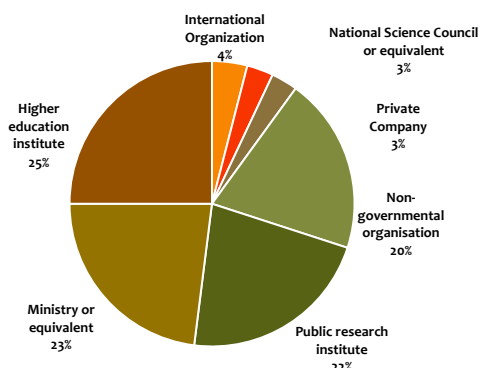
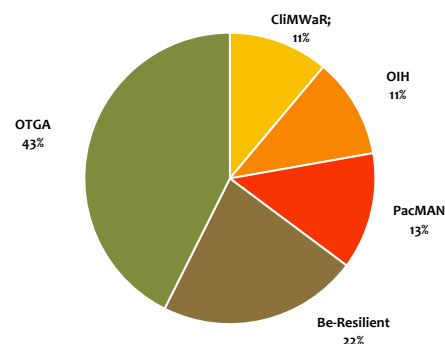


Figure 7. Survey respondents by FUST project (n=108)



4. Main findings

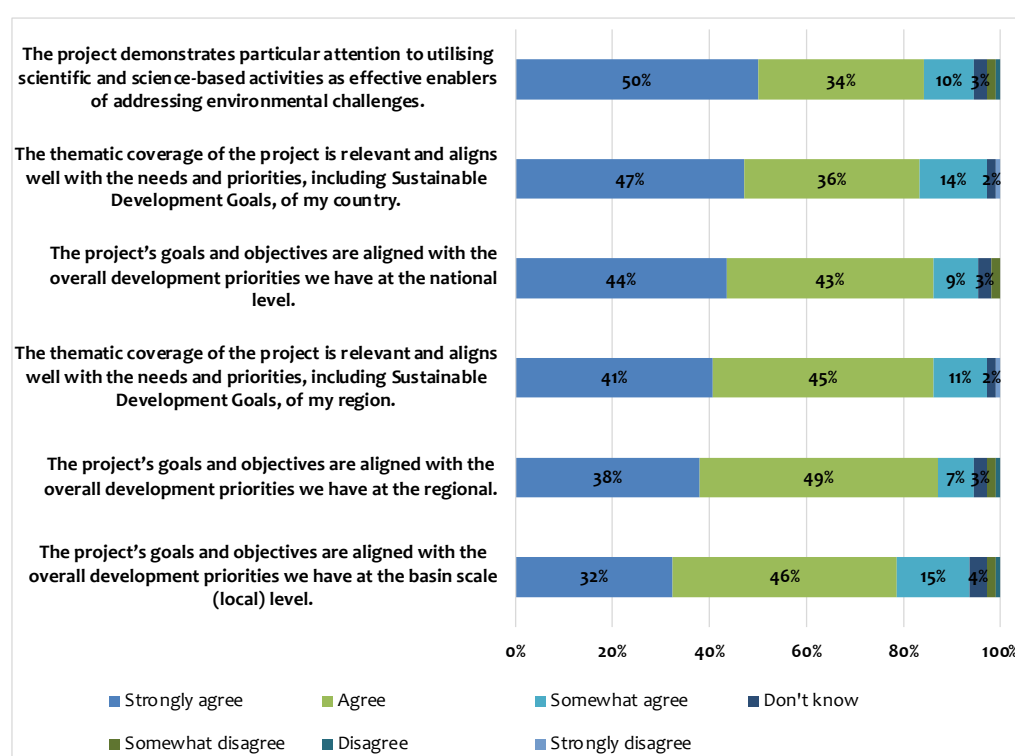
This section presents the findings corresponding to the evaluation questions, which encompass the following aspects of FUST and its large-scale projects: relevance, coherence, efficiency, effectiveness, impact and sustainability. The last two criteria should be interpreted as “signs of impact” and “potential for sustainability” for the assessed five projects, as they were ongoing by the time of evaluation. A summary of answers to the evaluation questions listed for specific projects in the Annex of the TOR is provided in Annex 8, based on the findings provided in the following sections.

4.1 Relevance²⁷

The evaluation found that FUST, as an instrument supporting UNESCO’s activities in the field of oceanography, water management within the framework of IHP programme, MAB programme and geoscience and geoparks, is highly relevant for contributing to the achievement of the Sustainable Development Goals (SDGs) and addressing the environmental sustainability and climate change related challenges. As such, stakeholders believed that the support by the Government of Flanders was highly valuable for UNESCO to fulfil its mandate. They also underlined that the International Decade for Action on Water for Sustainable Development (2018-2028) and UN Decade of Ocean Science for Sustainable Development (2021-2030) (‘the [Ocean Decade](#)’) framework initiative have increased the relevance of FUST and its projects.

When assessed at an individual project level, the survey findings revealed a significant relevance of the FUST projects covered by this evaluation (Figure 8).

Figure 8. Survey respondents’ assessments of the relevance (n= 108)



Source: FUST evaluation survey. Analysis by INOMER.

²⁷ According to the OECD-DAC criteria, relevance assesses “the extent to which the intervention objectives and design respond to beneficiaries, global, country, and partner/institution needs, policies, and priorities, and continue to do so if circumstances change”. <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>.

A majority of survey respondents (94%) agreed²⁸ that the projects they were involved in placed a high emphasis on using scientific and science-based activities as effective enablers of addressing environmental challenges. Furthermore, almost all participants (97%) concurred that the thematic focus of the FUST projects aligned well with the needs and priorities of their countries as well as their regions. They also believed that they aligned well with the Sustainable Development Goals. The vast majority of survey respondents stated that the goals and objectives of FUST projects were in alignment with their development priorities at the national (96%) and basin scale (local) levels (93%).

The interview findings and document review on the pertinence of the FUST projects correlate with the survey results. The participants of the OTGA training programmes found the topics covered relevant for their academic and professional activities. The relevance of OTGA was ensured by engaging regional/specialised training centres in the project design, which actively consulted government representatives and academia during the identification of training topics. The centres were considered as experienced and knowledgeable about the subjects covered by the courses delivered. Once the topics were determined, they were discussed with the relevant regional bodies and IOC to ensure that they were aligned with the regional needs and IOC programmes. When different centres proposed similar topics, these were either merged or the centres collaborated to avoid redundancy in programming. For instance, a course on ocean acidification, initially delivered for Pacific Island countries, was planned to be replicated for Africa in 2023.

In the case of OIH, the evidence indicated that project design process was participatory and comprehensive with the involvement of a variety of stakeholders, including the IOC Members States. During the design phase, the consultation for needs identification found that data and information on oceans were scattered among different partners across the world. While there have been attempts to address this issue at a regional level, solutions for the global south were lacking. As such, the project responds to the imperative for access to oceanic data and provides a more global solution. The technical design considerations of OIH were positively assessed by the stakeholders and aspects related to data interoperability and data exchange were considered of high relevance for the activities of the beneficiaries. The stakeholders of OIH also highlighted the importance of the establishment of regional nodes in Latin America, Africa, and the Pacific. This approach extended the ODIS catalogue of data sources, facilitated the regional outreach to data providers and users, and enhanced regional training activities.

According to the stakeholders, the PacMAN project was pertinent to the needs of Fiji as well as the global sustainable development agenda, particularly given that the 2030 Global Biodiversity Framework under the United Nations Convention on Biological Diversity set targets on invasive alien species. The project design involved local partners. The timing of the project and its ability to address marine invasive species were deemed critical by the stakeholders. Furthermore, the project's approach of working both bottom-up and top-down, involving both communities and national policymakers, enhanced its relevance. As such, the project has united a range of stakeholders that would not have come together without the project's existence.

The CliMWaR project's relevance with the challenges of Latin America and Africa as well as UNESCO's mandate was found high. The project has strong alignment with the 8th Phase of IHP Strategy (IHP VIII, 2014-2021) "Water security: responses to local, regional and global challenges". Its recent activities are aligned towards the current 9th Phase of IHP strategy (IHP IX, 2022-2029) "Science for a Water Secure World in a Changing Environment". CliMWaR also establishes south-south cooperation between two regions. According to the stakeholders, it helped UNESCO

²⁸ Cumulative percentage of respondents answering "Strongly agree", "Agree" and "Somewhat agree".

position itself strategically in the area of climate change within the UN system, and in particular, with the World Meteorological Organization's (WMO) National Frameworks for Climate Services and perform its mandate within this larger international effort, especially regarding floods and droughts.

Be-Resilient was affirmed to be very beneficial for the communities targeted due to their vulnerability to climate change. The project's approach to addressing landscape vulnerabilities and demonstrating actions for climate change risk mitigation and adaptation increased its pertinence. Its emphasis on combining indigenous and scientific knowledge to develop better solutions contributed to its relevance. The stakeholders believed that the project contributed to the SDGs by developing measures towards resilience, especially regarding water and food security, but also would play a vital role in protecting lives and properties from climatic shocks.

In the FUST projects, different approaches were used for regional coverage and relevance (Box 1). These range from creating decentralised structures and using existing networks to delivering on project objectives. The evaluation found that these different methods have provided advantages such as aligning closely with local needs, broadening system coverage, leveraging existing resources and networks as well as creating synergies with similar initiatives.

Box 1. Regional coverage in FUST projects

Three out of the five projects covered by the evaluation have implemented their activities across multiple regions, using differing approaches to project management and stakeholder engagement. OTGA and OIH focused on the creation of decentralised structures. OTGA encouraged the development of training centres worldwide and coordinated a network of these centres to enhance its training initiatives, align more closely with local needs, expand the reach of training dissemination efforts, and gain access to a local pool of experts and participants. Similarly, OIH has established a network of nodes in its pilot regions (namely Africa, Latin America, the Caribbean, the Pacific, and Small Island States) aiming to foster closer relationships with data providers and enhance their capacity to integrate ODIS, thus broadening the coverage of the system.

ClimWaR and Be-Resilient used existing UNESCO networks to fulfil their objectives. ClimWaR taps into the knowledge, expertise, and resources of water-related UNESCO Category II Centres and Centres of Excellence to implement its regional activities. For instance, CAZALAC (a Category II centre in Chile) supports the creation of an African drought atlas, drawing on its experience in Latin America and the Caribbean. Be-Resilient collaborates with existing biosphere reserves, directly involving their managers and reaching their local communities. Furthermore, regional and transborder cooperation among biosphere reserves in Southern Africa is a fundamental aspect of the project, ensuring that these reserves fulfil their role as action learning networks for piloting climate change adaptation in target areas.

4.2 Coherence²⁹

The FUST projects assessed were coherent with UNESCO's and the Flemish Government's policies in the context of the 2030 Agenda for Sustainable Development, and aligned well with UNESCO's C/4 (medium-term strategy) and C/5 (programme and budget) as well as with the strategies of IHP, IOC and MAB.

The projects were well-aligned with the mandates of UNESCO's Natural Science and the IOC. FUST facilitated this alignment by not imposing specific work areas, but allowing proponents the flexibility to shape projects in accordance with UNESCO's programmes. It also encouraged collaboration between the supported projects and different programmes. For instance, a

²⁹ The coherence criterion refers to "the compatibility of the intervention with other interventions in a country, sector or institution". <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

partnership was formed involving shared use of resources between the IHP and the MAB for Be-Resilient. Under this partnership, UNESCO Harare Office was given the responsibility for managing the project and its funds. Then, the implementation of the project involved the Biosphere Reserve managers, the MAB and IHP Committees, and UNESCO National Commissions in Southern Africa.

The design process of the FUST projects involved reflection and discussions aimed at identifying complementarities and avoiding duplications with other projects and programmes. Interviews revealed, for example, that deliberate efforts were made in this regard for both the Be-Resilient and ClimWaR projects, which ultimately resulted in the establishment of synergies between them. Furthermore, synergies were created with the other UN agencies; notably, by making ‘Climate Risk for Informed Decision Analysis’ ([CRIDA](#)) available for climate adaptation initiatives.³⁰ In addition, Be-Resilient created linkages with International Flood Initiative ([IFI](#)) as well as the International Drought Initiative ([IDI](#)), both of which are IHP’s flagship initiatives. Collaborations established with institutions in Chile, the Netherlands and the USA allowed the project to access funding as well as high-quality research (for example, the Princeton Climate Institute provided critical technical contribution to the development of flood and drought monitoring tools).

PacMAN created linkages with the International Maritime Organization (IMO), and OIH with Food and Agriculture Organization to foster synergies and prevent overlaps, for instance, in the development of document repositories. In IODE, OIH maintains collaborative relationships with other initiatives, notably the Ocean Biodiversity Information System ([OBIS](#)), open access repository [AquaDocs](#), [Ocean Expert](#), and the Ocean Best Practices System ([OBPS](#)). All four projects were indexed in the OIH. The UNESCO/IOC [Tsunami Programme](#) uses OTGA for offering training on its warning system and other related topics.

The majority of the survey respondents (89%) agreed that the FUST projects achieved coherence and synergies with similar programmes/projects in their country/region. In OIH, they explained that the project created synergies with the relevant ocean-related initiatives with data components, such as the [BIOPAMA](#) Region Information Hub (Eastern and Southern Africa), [SPINCAM](#) platform (Peru), Marine Situational Information System ([MSIL](#)) (Japan).

In the case of Be-Resilient, the survey participants stated that the project complemented other initiatives carried out in the region, aligned with the drought programmes and climate adaptation programmes; and achieved synergies with the UNESCO Chair on Open Water Science and Education. It was also noted that the project supports the open science ambitions of Flanders.

In PacMAN, survey respondents noted several initiatives that created synergies with the project, such as the [GEF 6](#) Regional Invasive Project, which co-funded the PacMAN training course to enhance capacities in addressing threats posed by invasive alien species. This project enhances the chances of long-term survival for terrestrial endemic and threatened species on Taveuni Island, its surrounding islets, and throughout Fiji. Another initiative is the SPREP guide ‘Develop a national or territorial invasive species strategies and action plan’ ([NISSAP](#)), facilitated by the Biosecurity Authority of Fiji (BAF) and the United Nations Development Programme (UNDP), and deals specifically with marine-introduced species. The GEF funded UNDP/IMO Glo-Fouling Partnerships

³⁰ CRIDA is a step-by-step methodology for water resource management, designed to address uncertainties about future conditions through a bottom-up approach. According to UNESCO, CRIDA has gained worldwide recognition since its publication. The World Bank’s ‘Resilience Rating System: A Methodology for Building and Tracking Resilience to Climate Change’ rates CRIDA as an A+ method for developing resilience projects in the water sector (Hallegatte S, Clement VWC, Siddiqi SN, Winglee MA. Resilience Rating System: A Methodology for Building and Tracking Resilience to Climate Change (Vol. 1): Summary (English) in Washington, D.C: World Bank Group; 2021). Additionally, CRIDA has been acknowledged by the Green Climate Fund (GCF) as one of the methods for addressing uncertainties and fostering adaptive planning in GCF Water Projects design phase through the GCF Water Project Design Guidelines in 2023 (GCF. Technical Annex-Part 1: Water project design guidelines. In: *Sectoral Guide Series*. Yeonsu: Green Climate Fund; 2023).

Project, administered by the Maritime Safety Authority of Fiji (MSAF) and supported regionally by the South Pacific Regional Environment Programme (SPREP) focuses on biofouling on marine infrastructure. This is particularly pertinent to foreign vessels, which serve as conduits for these invasive species. PacMAN included in its advisory group the coordinator of the Glo-Fouling Partnerships Project at IMO as well as the local coordinators of Glo-Fouling at MSAF and SPREP.

According to the stakeholders interviewed, further complementarities and synergies are possible under the Ocean Decade. For instance, two of the nine priorities in the Ocean Decade roadmap developed by the IOC Sub-commission for Africa are closely linked with capacity development and the establishment of an ocean knowledge hub. These priorities align closely with the OTGA and OIH projects. In addition, the sub-commission is in the process of developing a major programme for the Ocean Decade in the region, which, according to interviews, has four components: sustainable ocean management, biodiversity and climate change, marine pollution, and data and information. OTGA and OIH align with these components and contribute to the implementation of this programme.

On the other hand, some stakeholders expressed that there might be potential overlaps with the relevant project of other multilateral organisations, such as the World Bank, UNDP and WMO in Africa as far as Be-Resilient is concerned. A desk review of existing interventions by multilateral organisations identified potential overlaps with Be-Resilient and CliMWaR.³¹ This finding suggests that the project design could benefit from a more systematic approach of identifying complementarities and overlaps by mapping out ongoing initiatives during conceptualisation phase of FUST projects.

Some interviewees believed that further efforts were also needed for increased internal coherence and synergies. For example, some IOC programmes prefer to conduct their own training courses on different platforms, typically spanning two or three days with no subsequent follow-up or online archive for training resources. Steps are being taken to encourage them to use OTGA as a repository for their training materials and provide an online service for course review.

4.3 Effectiveness and efficiency:³²

4.3.1 Resource deployment

The evaluation confirmed the importance of FUST as a funding source for UNESCO to support its activities in the field of oceanography, water management, MAB programme as well as geoscience and geoparks. All stakeholders agreed that the funding provided by the Government of Flanders to UNESCO is crucial for addressing the challenges faced in the areas covered by FUST. The Flemish Government is particularly significant for the IOC, as it is one of the main funding sources for IOC. This situation is perceived by the stakeholders as a major risk to the ongoing sustainability and even the continued existence of the IOC's operations.

Similarly, the dependency of the UNESCO's activities in these fields on the Flemish Government's funding is considered as a potential challenge which needs to be addressed by the diversification of funding sources. According to the interviewees, this approach could help the Government of

³¹ Examples of these interventions include: <https://public.wmo.int/en/resources/meteoworld/focus-africa-new-climate-services-initiative-southern-africa> <https://openknowledge.worldbank.org/bitstreams/19f8b285-7c5b-5312-8acd-d9628bac9e8e/download> <https://www.gcfprojects-undp.org/tp/project/6639> <https://climatepromise.undp.org/what-we-do/areas-of-work/adaptation-resilience> <https://undp-climate.exposure.co/world-met-day-2020> <https://undp-climate.exposure.co/malawi>

³² The effectiveness criterion assesses “the extent to which the intervention achieved, or is expected to achieve, its objectives, and its results, including any differential results across groups”. The efficiency assesses “the extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way”. <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

Flanders prioritise projects with a high research and innovation content that are not part of UNESCO's existing or planned activities.

The stakeholders agreed that the importance of sustaining and diversifying funding has increased due to the escalated challenges triggered by climate change, which necessitates larger resource allocation to the projects developing and deploying innovative solutions. With the Flemish Government as the main donor, there is an opportunity to leverage their accumulated knowledge and experience to play a leading role, in collaboration with UNESCO, in encouraging other donors to support the scaling up, replication, and sustaining of the results of FUST-funded projects (see Box 2 as an example).

Box 2. CliMWaR's potential to raise multiple donor funding

According to interviews, with increased resources that can be attracted from multiple donors, FUST could scale up CliMWaR's outputs to contribute to the UN Secretary General's ambitious goal of equipping every country with an Early Warning Systems (EWS) with a focus on low- and lower-middle-income countries. Evidence indicates that CliMWaR has tested and provided (or improved) floods and droughts EWS in Cameroon, Mozambique, Zimbabwe, and Namibia and at the regional level in the Sahel with the help of FUST. The project also further strengthens the EWS that the previous projects, 'Addressing Water Security: Climate Impacts and adaptation responses in Africa, Asia, Latin America, and the Caribbean and 'Managing Water Resources in Arid and semi-arid Regions of Latin America and the Caribbean (MWAR-LAC), had established in LAC, especially in Peru and Chile. This first phase could serve as a launching pad to attract more resources for dissemination of the solutions developed and initiating new projects in the same area. The stakeholders believed that with the recognition of climate uncertainty and risk, it should be possible to engage more donors and higher resources for the deployment of EWS and CRIDA methodology in countries as well as for the development of country-level tools.

The stakeholders have also highlighted opportunities that could facilitate the engagement of other donors. For instance, at the level of the IODE, the IODE Committee recently decided to refer to ODIS, OTGA and OBIS as "IODE programme components" to highlight the strategic importance of these initiatives for the IODE. According to the stakeholders, this new branding could be used as a leverage to draw additional support for the projects. The interviewees also explained that the Ocean Decade could be used as a framework to augment resources for projects with high impact and sustainability due to the increased attention, awareness and visibility of ocean-related challenges. They considered the Ocean Decade as a significant opportunity for also attracting new project teams and their collaborators.³³

While all five large-scale projects were mainly funded by the FUST, some of them have raised additional finance for various activities. Among them, OIH and OTGA attracted a small amount of funds from the Norwegian Agency for Development Cooperation to finance various activities. In addition, several regional/specialised training centres under OTGA, such as those operating in Colombia, China and Malaysia, raised additional funding for their capacity building programmes. For instance, the training centre operated by INVEMAR in Colombia mobilised resources from UNDP/GEF to implement its training programmes and the University of the South Pacific in Fiji mobilised USD40,000 from UNDP/GEF6 for the PacMAN training course. The training centre in Indonesia collaborated with OTGA to explore funding opportunities from other international organisations. Some of these organisations are already IOC members and the centre has conducted training sessions for them. For instance, it has delivered three courses for UNEP, four courses for WMO, and eight courses for Finnish International Development Agency. According to

³³ The Ocean Decade is considered as providing "a convening framework for scientists and stakeholders from diverse sectors to develop the scientific knowledge and the partnerships needed to accelerate and harness advances in ocean science to achieve a better understanding of the ocean system, and deliver science-based solutions to achieve the 2030 Agenda" (<https://oceandecade.org>).

some stakeholders, a potential opportunity for the implementation of such a funding model could be the organisation of training workshops co-sponsored with WMO. These stakeholders believed that such a collaboration could be successfully carried out, on the condition that there is a clear definition of the process for training co-design and implementation.

4.3.2 Governance, management and coordination mechanisms

All stakeholders consulted expressed their satisfaction with the governance, management and reporting mechanisms of FUST, and found the Steering Committee effective. Management of the financial aspects of the Fund and reporting on financial issues by UNESCO were also positively assessed. The success of the long-term partnership and cooperation under FUST was linked with the continued dialogue and consultation between the main stakeholders involved starting from the prior identification of new projects.

Communication and coordination were found effective and smooth between UNESCO and the Government of Flanders. At the project level, communication effectiveness was commended by the project participants both with the Government of Flanders and the UNESCO BSP. All stakeholders of FUST expressed that they viewed the Government of Flanders as a partner rather than a donor, and found the Government's FUST management processes effective and efficient.

On the other hand, a few stakeholders pointed out instances where, in the initial phases of the project, communication between the project team and beneficiaries was not as effective or timely as it could have been. However, this issue was significantly addressed following the appointment of dedicated project staff.

The stakeholders considered FUST's management practices as flexible and adaptive. There is a perception among the stakeholders that not having a ToC provides FUST with the flexibility to select and fund projects under its overall objectives. However, the absence of a clearly articulated high-level ToC for FUST could risk its effectiveness, and complicate monitoring and evaluation efforts, including impact assessment, among other challenges.³⁴

At the project level, FUST required the formation of advisory groups following the recommendation made by the external evaluation conducted in 2018. According to the stakeholders interviewed, these advisory groups were useful in monitoring project progress, advising on improvements, and fostering collaboration and exchange of experiences between various actors involved in the projects. For example, in the case of PacMAN, the advisory group helped ensure buy-in from local partners as well as facilitated transfer of knowledge to the local stakeholders. The group specifically assisted with the design of the sampling protocols. In OIH, the advisory group created working groups to carry out some important tasks, such as deciding the most relevant types of data for the pilot regions. In OTGA, involvement of training centres in the advisory group facilitated needs identification.

There have been several challenges affecting efficient implementation in some projects. In the case of Be-Resilient, the requirement of having multiple short-term contracts between biosphere reserve management units and UNESCO was a challenge, which was partly addressed after raising this issue by the reserve management at the partners meeting, according to some stakeholders. In addition, initially, the contract signing process was protracted, taking about 2-3 months, but this duration was subsequently reduced. However, there was feedback that the contracts should

³⁴ The 2018 FUST evaluation also includes a similar recommendation ("Recommendation 2") which suggested "a high-level FUST theory of change". In the same evaluation, "Recommendation 4" was about project-level "ToC" which was formulated as "project intervention logics".

specify budget lines and eligible costs, such as salaries of project staff, more explicitly as they were not clearly delineated.

4.3.3 Effectiveness of implementation

The evaluation found mixed results on the effectiveness of the dissemination of FUST project calls across UNESCO. Some stakeholders believed that the announcements of FUST funding opportunities have not been sufficiently disseminated within UNESCO after the launch of the process by UNESCO BSP, and as a result, most of the time the same teams apply to the calls. Similar discrepancies in views were also found in the possibility of applying for FUST funding with different phases of the same project. While some stakeholders believed that permission given by UNESCO to submit the second phase of a project means that the project is of strategic importance to the Organisation, some others were of the opinion that the FUST support should be seen as seed finance for the first phases of innovative projects having high impact potential. This latter group of stakeholders expressed that UNESCO should seek to attract new project ideas for every new call and that the selection criteria at UNESCO should prioritise projects' potential impact.

It was also found that different modalities were applied by UNESCO in the validation process of different projects before submitting the proposals to the Government of Flanders. For instance, in the case of Be-Resilient, UNESCO division directors, who were included in the decision to submit the project to the Government of Flanders, were asked by UNESCO Natural Sciences Sector whether or not the project was a priority of their programme. Although, according to the interviews, they believed the importance of the project idea, they did not identify the project as a priority, and as a result, the proposal was not submitted. However, after receiving a reminder from the Government of Flanders, which was aware of the project, official application was made. The additional step of priority inquiry caused a delay and created challenges in the process.

Project-level interviewees expressed their appreciation for the transparency and impartiality of the project selection process, particularly highlighting the involvement of external reviewers by the Government of Flanders through the Open Advisory Committee. They found the evaluation reports of reviewers useful and appreciated that these reports were made available to applicants of FUST projects.

Some stakeholders pointed out that for increased ownership of the outputs, the projects could engage with a higher number of local partners at the design phase and these partners could continue working with the project teams during implementation.

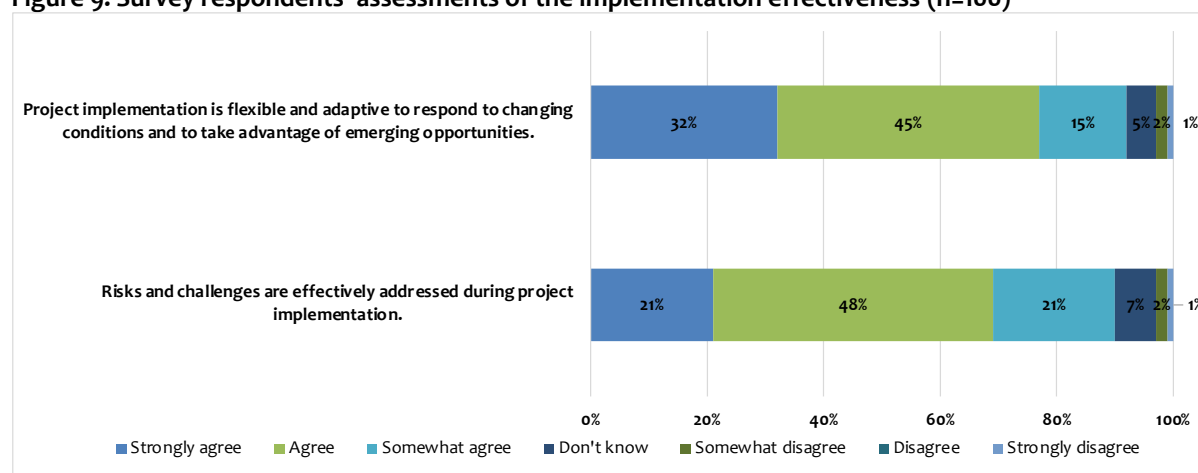
It was found that, in some instances, asymmetry of expectations between beneficiaries and system developers caused ineffectiveness in the project implementation. For instance, the vegetation and crop monitoring system developed for Be-Resilient required significant redesign to be suitable for the unique circumstances of Southern Africa. The initial discussions with the biosphere directors revealed a misalignment between the anticipated system capabilities and technical realities. As understanding among the directors evolved, expectations became better aligned with technical feasibilities. However, the finalisation and delivery of the system took longer than planned.

According to the survey findings (Figure 9), 92% of the respondents agreed that the implementation of the FUST projects was flexible and adaptive to respond to changing conditions and take advantage of emerging opportunities. 90% agreed that risks and challenges were effectively addressed during project implementation.

A detailed analysis of the findings indicated that risk management practices were positively assessed by all respondents for OIH and PacMAN. In the case of CliMWaR, the share of positive responses is 92% indicating that there could be some room for improvement in managing risks.

Another dimension which demonstrates slight differences in the survey answers is the implementation flexibility: for OIH, all respondents agreed that implementation was flexible and adaptive, while in OTGA, 90% believed that the project was implemented flexibly and took the advantage of emerging opportunities to improve effectiveness and results.

Figure 9. Survey respondents' assessments of the implementation effectiveness (n=100)



Source: FUST evaluation survey. Analysis by INOMER.

4.3.4 Equality and inclusion

The FUST projects' design included equality, diversity and inclusiveness aspects by placing an emphasis on the participation of women, youth and other underrepresented groups.

OTGA Course Management Guidelines required integration of gender dimension into its training management practices in alignment with UNESCO's priority to promote gender equality. The guidelines state that female applicants may receive additional 0.5 points if the balance in gender representation is lacking in the initial pool of applications. Stakeholders believed that the gender mainstreaming in OTGA activities was successful. Other elements of inclusion were also considered depending on the course theme; however, they were not explicitly mentioned in the guidelines. For instance, some courses targeted early career professionals from Africa, while others provided training to local stakeholders to strengthen tsunami preparedness of their communities or to assist on coastal monitoring and impact assessment.

In the case of OIH, in line with its overarching goal of facilitating equal access to data by everyone, the inclusion dimension was embedded in the project design. To achieve this goal, OIH emphasised the sharing of data on various factors, such as economic activities and the welfare of coastal communities. Furthermore, training activities implemented by the project were conducted in line with the OTGA Course Management Guidelines which target equal participation of women.

While women were underrepresented in the advisory group of PacMAN, the project had balanced teams formed from research groups of different institutes. This balance was not limited to gender, but also considered religious and ethnic groups. The teams that required more laborious and outdoor work (e.g. collection of water samples of significant volume) involved more men than women. However, efforts were still made to include women in the fieldwork to the extent possible.

In CliMWaR, participation of women was sought in capacity building activities. In addition, since CRIDA involves risk identification, women were included in the process due to the potential variation in risk perception among different gender groups. For instance, women tend to place

greater emphasis on household economics, an aspect often deemed less significant by their male counterparts. The pandemic limited youth involvement in in-person training programmes, and stakeholders felt they could have been better included in the project. CliMWaR had a specific focus on indigenous knowledge. One of the outcomes of the project was to produce a publication in the form of a case study³⁵ on how to bring indigenous knowledge into scientific research on water-related challenges in Bolivia. CliMWaR's experience in this area was used in Be-Resilient. UNESCO plans to involve indigenous knowledge framework in other projects on water. It was also explained that there was a lack of understanding on the subject, the project designed a course to develop a common perspective on indigenous knowledge and its use.

In Be-Resilient, while gender equality had an important focus on the design, in some cases it was difficult to engage women due to cultural issues, and in some others, their participation remained limited since there were only a few women working in the related technical fields. Women were mainly involved in the biosphere reserve management units. The citizen science component involved unemployed youth -the majority of whom were female- in monitoring river catchment. In addition, a gender study was conducted by the Gender Research Alliance, a South African organisation.

Apart from above efforts, several FUST projects integrated the citizen science approach, which enhanced their inclusiveness (Box 3).

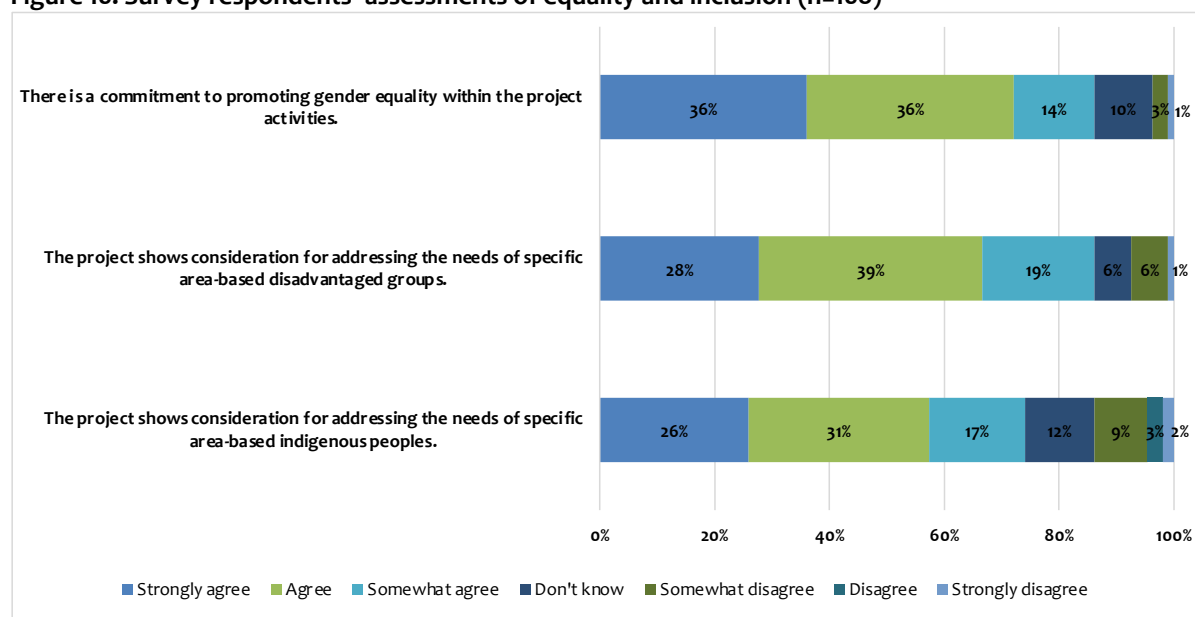
Box 3. The use of citizen science for inclusivity

Citizen science has been incorporated into a number of FUST projects as a mechanism to promote social inclusion, stimulate active involvement from local communities in scientific activities, and enhance their local impact. This approach enabled individuals, irrespective of their educational qualifications or technical expertise, to contribute to scientific research and decision-making processes. For instance, CliMWaR supported the publication of the document “Citizen Science Contribution to Water Security and Sustainable Development”. This study explains the use of low-cost sensors to monitor hydrological metrics as a tool for citizen science-based data collection, including a case study on participatory monitoring of water resources for climate resilience in the Central Andes of Bolivia. Furthermore, PacMAN developed standardised procedures for sampling, handling samples and data analysis in order to monitor marine invasive species. This facilitated the participation of local communities in Fiji in the project by involving them in the collection of samples for environmental DNA analysis. Another example is the involvement of Cape Winelands biosphere reserve in Be-Resilient, where community members were trained in river monitoring methods for key pollution indicators, covering topics such as instrumentation, data recording and reporting.

Survey results indicated that while there was a focus on gender and disadvantaged groups in their respective projects, considerations related to indigenous peoples were somewhat limited (Figure 10). Of the respondents, 86% agreed that the projects demonstrated commitment to promoting gender equality within their activities. On the other hand, 74% of respondents believed that the projects considered the needs of specific area-based indigenous peoples, representing the lowest agreement percentage in the context of the evaluation survey. In relation to the CliMWaR and OTGA projects specifically, a higher share of participants did not agree with the effective integration of indigenous peoples' needs. In these two projects, 25% of CliMWaR and 17% of OTGA participants, respectively, disagreed with this assertion, indicating that there is room for further improvement in this area.

³⁵ “Integration of local and indigenous knowledge into climate-resilient rural water management: lessons learned from the Bolivian Altiplano; Lessons learned from the Bolivian Altiplano” UNESCO, 2023 (<https://unesdoc.unesco.org/ark:/48223/pf0000384719>)

Figure 10. Survey respondents' assessments of equality and inclusion (n=108)



Source: FUST evaluation survey. Analysis by INOMER.

4.3.5 Resource efficiency

Overall, the human and financial resources allocated for the projects were used efficiently. Stakeholders expressed that compared to the previous rounds of FUST, resource efficiency in the projects supported under the current round was higher, mainly because of the virtual implementation of meetings and training programmes.

In the case of OTGA, interviews indicated that the online delivery of training programmes increased efficiency. Courses with practical components were organised as blended training. However, virtual delivery of training sessions created challenges in regions with poor internet connection. Overall, stakeholders believed that online training courses should remain as a common practice. On the other hand, some interviewees noted that the training centres preferred in-person training for pedagogical reasons and to minimise workload by eliminating the need to adapt existing training materials. According to the OTGA's self-assessment report, a professional e-learning instructional designer hired by the project identified a need to assist the training centres in the effective implementation of the learning management system. As a result, OTGA provided instructional support for the development and delivery of online training courses leading to increased efficiency in design and implementation.

OIH used its resources efficiently in spite of the delays in project implementation. According to the stakeholders, it built on existing initiatives as well as data hubs instead of creating a new database, an approach that contributed to efficiency. The project also established partnerships that helped effective use of resources. For example, [EurOcean](#), a scientific organisation established in 2002 to exchange information between European Ocean Science stakeholders, was involved in the design and implementation of the OIH project.

Be-Resilient's collaboration with project partners contributed to efficiency. Its spin-off projects used resources effectively by organising joint capacity building activities for biosphere reserves and ensuring that the climate prediction tools are adapted to each reserve by deploying the same methodology.

Be-Resilient and CliMWaR highlighted that resource efficiency was achieved by allocating a portion of the funds to hire a project manager, who was actively engaged in resource mobilisation activities beside steering the project towards success.

CliMWaR trained approximately 30,000 learners by efficiently using the resources available on the UNESCO Open Learning Platform. It was also noted that the affordability of the equipment provided by UNESCO (such as gauging station) contributed to the efficient allocation of funding. According to CliMWaR's self-assessment report, its online courses had a higher completion rate than the other online courses on the UNESCO platform. This success was attributed to the lessons learned from the CRIDA LAC training that indicated the need for closer communication with those who registered and participated in the courses. Furthermore, CliMWaR leveraged partnerships in delivering capacity building activities. For instance, the University of Western England initiated and financed an online course focused on remote sensing on the Open Learning Platform. In addition, they conducted a hands-on training session, financed with their own resources at the Open Water Symposium in Rabat, an event organised by CliMWaR. This was followed with another training conducted on the platform again without any costs to the project.

On the other hand, the development of the Open Learning Platform under CliMWaR instead of using OTGA platform, which was also developed with the FUST resources, was viewed as a missed opportunity for increased resource efficiency. From a technical point of view, it would have been more efficient to use the already existing platform for the training programmes of both projects, given the multitenancy capability of [Moodle](#) (OTGA's platform) which allows for independent learning environments, without the cost and complexity of maintaining multiple platforms.

An area of improvement highlighted by some of the interviewees was that CliMWaR capacity building programmes should be coordinated well in advance, after verifying the availability of key stakeholders, in order to ensure sufficient level of participation and engagement.

In PacMAN, stakeholders expressed their positive views regarding the level of outputs delivered with limited resources. The Biosecurity Authority of Fiji (BAF) and the University of the South Pacific entered a collaboration agreement, with BAF providing its laboratory facilities, including a qPCR machine, at no cost. Valued at approximately USD 40,000, this in-kind contribution showcased PacMAN's role in fostering resource-sharing among organisations in low-capacity countries. On the other hand, some stakeholders also explained that it would have been more efficient to have a separate role for stakeholder engagement as the project manager's time was mostly spent for managing stakeholder participation and co-development aspects. Another issue of efficiency was raised due to the late involvement of the Department of Environment -within the Ministry of Waterways and Environment- in the project, which could have otherwise facilitated better collaboration and resource use.

4.3.6 Inter-sectoral and project level collaborations

The FUST second call for proposals in 2021 promoted collaboration between FUST and FUT. Based on interviews, so far only one project benefited from this collaboration. The evaluation found that while there is big potential for intersectoral cooperation between FUST and FUT, it has not been possible to fully tap this potential due to unclear modalities for intersectoral cooperation. In addition, the combination of two different funding sources from the side of the Government of Flanders was raised as a challenge for this collaboration. On the other hand, the stakeholders explained that it was mainly because of UNESCO's programmatic structure (including result management and financial practices) that created constraints and raised critical questions such as how the budget would be distributed; how results would be reported, who would coordinate the project, and how responsibilities would be defined. It was also explained that the UNESCO sectors often work in silos, an issue that can make it difficult to manage joint projects under FUST and

FUT. A good practice on intersectoral collaboration was found in a Sida-funded project of UNESCO that can set an example for FUST and FUT collaboration (Box 4).

Box 4. A good practice example on inter-sectoral collaboration in UNESCO

The evaluation of the UNESCO/Sida Project Strengthening Science Technology and Innovation Systems for Sustainable Development in Africa 2020-2022 found good practices in intersectoral collaboration within UNESCO between the Natural Sciences (SC) and Social and Human Sciences (SHS) Sectors in using donor funding. This collaboration can set a starting point in exploring the ways of well-structured and clearly defined collaboration between FUST and FUT: “(...) at the UNESCO Headquarters, the project featured a rare, or maybe even the first and only, collaboration between the SC and SHS Sectors in the sense that it used extrabudgetary funding for a project which required shared resources, authority and reporting. It was explained that while at the early stages it was difficult to balance the distribution of these aspects between two sectors, and after a short time, it became possible to function as a single project team. UNESCO staff believed that the project could serve as a good practice and inspire other teams to follow a similar approach considering that STI-related issues and challenges have become multidisciplinary and hence required a multisectoral approach”.

Source: UNESCO/Sida Project Strengthening Science Technology and Innovation Systems for Sustainable Development in Africa 2020-2022 Evaluation Report, INOMER, 2022

The evaluation found successful collaboration examples at project level between different economic sectors. In Be-Resilient, for example, the project partners attracted private sector companies (such as big wine producers that play an important role in the catchment areas in South Africa) to the project and shared with them data-driven facts on why they should participate in the project and how. The project also partnered with universities in the region which engaged students in research activities on the topic. In addition, according to the md-term self-assessment report of Be-Resilient “the location of the project in a multisectoral regional office has benefited the effectiveness, as can be seen from joint activities with Education (ESD) and Communication (Community Radio) sectors in the UNESCO Harare Office”.

In the case of CliMWaR, it was possible to stimulate cross-sector collaboration between different stakeholders. For example, the Water Management Service of the University of Zambia started to work together with the national water resources management authorities thanks to the project.

In OIH, private enterprises have started to communicate with the ocean science community to explore commercial opportunities. Stakeholders believed that there were opportunities to work with them, for instance, by expanding OIH with collected data that is not proprietary or confidential, as well as integrating catalogues of private sector sensors, technologies, and services. This information is considered important to understand the type of activities the private sector engaged in, and therefore, foster partnerships between the private and public sectors. It was also explained that the industry data coordination group under the Ocean Decade included aquaculture companies, offshore wind farms, and oil and gas companies, who would be looking for ways to make their data interoperable with the public sector. According to the stakeholders, OIH and ODIS could play a role in facilitating data sharing and supporting the ocean environment from a philanthropic point of view.

In PacMAN, collaboration network included various national and regional agencies, non-government organisations, and academia. The project’s work with the University of the South Pacific (USP) proved to be successful, including with regards to the implementation of in-person and virtual capacity building activities. The government agencies collaborated with universities under the project by sharing laboratory equipment since the research infrastructure of the latter was not of sufficient quality. There are plans to expand collaboration to potential partners in the Pacific.

PacMAN also established partnerships with relevant international organisations, most notably with SPREP, which already works on invasive species and brings marine pollution knowledge to the project. It was also indicated that PacMAN helped UNESCO collaborate with organisations like the Smithsonian Institution that contributed to the scientific design.

The evaluation found that there were missed opportunities for creating regional and global networks under FUST projects that could yield new initiatives and partnerships. For instance, the focus group discussions revealed that some key project participants did not have knowledge about the other FUST projects with which, they believed, they could have created synergies and established new partnerships. Some stakeholders stated that they had been working with UNESCO and IOC for a long time and only after their involvement in the projects they learned about FUST. The stakeholders agreed that mechanisms enabling systematic communication and exchange of knowledge and experience between the participants of FUST projects would contribute to creating higher benefits.

In OTGA, due to a lack of systematic collaboration between regional training centres, potential synergies were left unexplored. Less experienced centres indicated that despite their attempts to connect and collaborate with more experienced ones, they found it challenging due to the absence of direct communication channels and systematic opportunities for exchange and collaboration. Interviews revealed that due to inadequate information about the training centres and their services, these centres often operated in isolation under the OTGA project. One of the most active centres in Latin America, INVEMAR, has only collaborated with a centre in Portugal, although there are three other centres in its region. Although the centres were invited to the annual advisory group meetings where they could exchange experience and communicate, independent views from multiple stakeholders indicated that these meetings have not been sufficient to establish and sustain result-oriented collaboration between the centres. The main issue identified was the lack of systematic mechanisms and efforts for interaction, communication and cooperation between the centres, which would have created a network effect, increasing the benefits derived from collaboration and resulting in outcomes greater than if the centres had operated in isolation.

4.3.7 COVID-19 effect

The evaluation found that the projects successfully coped with the COVID-19 related challenges although the pandemic led to delays in implementation. Based on the interviews, the flexibility of the Government of Flanders during the pandemic allowed for the adaptation to challenges and the capitalisation on emerging opportunities. The focus shifted towards maintaining a clear vision and a robust implementation strategy, reducing the pressure of rigid timelines.

On the other hand, due to the delays in the project implementation caused by the pandemic, the final project outputs could not be obtained, and early outcomes and impacts of the projects could not be observed by the time of this evaluation. The mid-term self-assessments of the projects provided a limited input to the external evaluation, as noted in Section 3. Apart from these overall challenge, project-level impacts of COVID as identified under this study are summarised below.

OTGA was extended until June 2024 due to the delays occurred in the project implementation due to the pandemic.

The shift to virtual training was accelerated and the project provided the possibility for other scientific entities to continue with their training activities under OTGA's "affiliate programme". For instance, the data related training courses of the Flanders Marine Institute (VLIZ) were delivered using the OTGA platform as a part of the programme. In this process, VLIZ trainers were provided with necessary support for adapting their materials to online delivery. Virtual capacity

building activities were found useful and efficient by stakeholders and beneficiaries, especially when carried out in the form of asynchronous learning that can allow participants to learn on their own schedule within a specific timeframe. In some cases, asynchronous courses were followed by short sessions enabling discussions enhancing learning opportunities. The stakeholders believed that this approach could be used in the capacity building activities of other projects too, where participants face challenges in allocating sufficient time from their daily obligations.

Because of the pandemic-related delays, the PacMAN project has been extended until June 2024. While it was not possible to assign local lab technicians in the project during the pandemic, attracting highly qualified local and international experts was possible. COVID-19 also caused issues in effective communication and understanding of the beneficiary needs in Fiji during the development of the procedures for sample collection and processing, since travel was not possible for on-site meetings. Nevertheless, the project overcame these challenges through weekly online meetings outside of working hours due to time differences, and delivered required results.

Initiated in April 2020, OIH was severely affected by the pandemic and received a no-cost extension until June 2024. The project activities that mainly include developing tools and resources for end users, improving documentation and front-end systems, and expanding partnerships are planned to be completed within this period.

CliMWaR was severely affected due to the COVID-19 limitations and the development of CRIDA had to be delayed. The project was given an extension until December 2023. In spite of the delays, the project delivered its planned results. Be-Resilient and CliMWaR carried out their capacity building activities online using a virtual training platform developed with the resources of CliMWaR. The pandemic prompted the development of an organisation-wide online Open Learning Platform, a concept that had been considered in UNESCO for several years, as explained by interviewees. The platform offers a common system for the Organisation, replacing approximately 30 separate platforms and serving all sectors. The existence of this platform also stimulated the creation of additional online courses in UNESCO, further enhancing its utility and reach.

4.3.8 Challenges faced in the implementation

The evaluation found various challenges at the project level, apart from COVID-19, that affected implementation.

In the case of OTGA, as the project staff was mainly concentrated on developing the tools and supporting the trainers in the adaptation of their training contents for the platform, they could not allocate enough time for outreach activities. For this purpose, VLIZ, with its own initiative, contributed to outreach activities by inviting participants of the Scientific Committee on Oceanic Research ([SCOR](#)) meetings to use the platform. Another challenge was the fulfilment of the requirements of the ISO standard by some training centres, which wanted to implement the process faster. Resource scarcity at the centres was also a challenge since their host organisations provided minimal financial support, with the majority of their contributions given in-kind, predominantly through provision of trainers' time and training rooms for face-to-face sessions.

From the perspective of the regional training centres, the project's main challenge was related to the difficulties in raising additional funding by the centres. While some centres (such as those in Indonesia and Argentina) managed to secure local and international funding to support their in-person training activities, this was not the case for all centres. Another challenge was that centre managers could not communicate effectively the value of OTGA courses to the managers of their host institutions and the institutions could not prioritise the training activities of the centres. A

clear need was identified regarding the further harmonisation between post-course statistics and reporting (such as course satisfaction and demographic data) and the key performance indicators of their host institutions. Additionally, technical issues with the Big Blue Button video conference programme on the OTGA platform affected the smooth implementation of the courses, and they used Zoom platform. Another challenge was related to the alignment of the pre-existing methodologies and materials available at the training centres with the requirements set forth by OTGA for online course delivery, considering the limited resources available within the centres for this task.

In OIH, the challenge of duplication while consolidating data from multiple sources was a persistent issue that needed technical solutions to address the clear provenance of all data sources. While the first version of OIH addressed this as effectively as possible, there is still room for improvement. Cultural variations in data sharing across the Latin America, Pacific, and Africa were an issue. Latin America and Pacific regions were more advanced in using OIH compared to Africa. Coordinating a global project, particularly with regional nodes, posed significant complexities for the team. However, this challenge was managed through effective communication. From the perspective of the private sector, two major challenges persist, both related to data provision: First, there are legal concerns regarding the potential misuse of data, requiring the establishment of contractual terms for data sharing; second, there is a need for a system that interprets data formats, metadata, and terminologies used in the private sector into a format that is readily understandable and accessible in public sector.

For the beneficiaries of the capacity-building activities of OIH, the provided content was highly specialised and predominantly tailored to experts, limiting its practicality for audiences from both the private and public sectors. Moreover, the insufficiency of real-life examples within the training could potentially impede the application of learned concepts.

In PacMAN, there were financial management issues at USP, leading to delayed equipment orders, which in turn required the postponement of some activities. To navigate these delays, the project team borrowed equipment from other research groups at USP. Staff recruitment was another significant issue due to a hiring freeze for non-academic staff at USP at that time. Moreover, logistical challenges were encountered concerning the implementation of the Autonomous Reef Monitoring Structures (ARMS). This was due to both the scarcity of necessary materials in Fiji and potential high shipping costs. As a result, a leaner version of ARMS was deployed.

Other issues in the implementation of PacMAN included communication difficulties and cultural differences, frequent leadership changes in government organisations requiring repeated explanations of the project, and occasionally, disagreements among stakeholders. The project demonstrated adaptability and was able to bring everyone on board despite these challenges. The monitoring plan developed was helpful to achieve the project's adaptability. This document, refined over time, allowed useful contributions from all parties. The project also initially underestimated the scientific equipment required and there were no provisions in the budget for necessary reference materials and specialised containers for long-term storage, which future projects should address. In addition, there were some overlaps in the roles and responsibilities of different government organisations participating in the project. Overall, coordination was complex due to diverse partners, with UNESCO based in Europe and the implementing partner in the Pacific.

In the case of CliMWar, the use of the EWS platform has been hindered by high staff turnover at the ministries in Zimbabwe as well as the difficulties in IT equipment availability and connectivity. This issue has been exacerbated by the degradation of the country's hydrological stations over the years due to damage and lack of resources for restoration. While UNESCO and its project

partners have provided electronic data collection instruments and piloted new technologies, maintaining these systems could be challenging from a sustainability perspective, especially when government resources were scarce.

CliMWaR also faced limitations in its ability to influence or manage the actions taken by actors on the ground, despite sharing information with relevant agencies in the region. The main challenge was the unavailability of some stakeholders to be trained on the project's tools, due to their busy schedules. Even those who participated in the training courses, either in-person or online, might not be fully attentive, as they often got distracted by other tasks. There was a need for organising more training sessions and ensuring that right individuals from national institutions were present.

In CRIDA's hands-on training activities under CliMWaR, the practical component's effectiveness was narrowed since the participants needed to have an existing model of their water systems to be able to apply the tools to their own case. The lesson learnt by the project was to either make this a requirement for the participants of hands-on training or use more generic cases.

CRIDA has certain limitations as well. Firstly, it is a time-intensive process, requiring a significant allocation of time and consequently a sizable budget. Secondly, the approach is heavily focused on the water sector, resulting in a less holistic perspective. The objectives and metrics used within the framework may not fully encapsulate other critical environmental and economic aspects. Efforts are underway to develop a 'light' version of the methodology, which would use a preconditioned, generic hydrological model, removing the barriers for its uptake, and reducing the high upfront time allocation to develop a model.

In the case of Be-Resilient, building trust among all those involved in the project was crucial throughout the project. Another concern was associated with the integration of partners who were not connected to biosphere reserves. Specifically, in contrast to the reserves, their roles and responsibilities were not clearly defined. Differences in the maturity levels of reserves were also an issue as it was not possible to replicate the approach between them and each case required specific tailoring.

Similar to CliMWaR, a significant challenge was the dependence of data collection methods on reliable phone signals. In mountainous regions, where such signals were often poor or unavailable, this presented a considerable obstacle. Efforts were made to identify areas with better signal to be able to send data; however, this solution did not allow real-time updates. The use of a satellite-based signal solution could have addressed the problem but this alternative was too expensive. As a result, the project used a satellite-based signal solution to address the problem but it was very expensive. A further challenge was bridging the gap between complex scientific models and their practical implementation. Even stakeholders with a strong grasp of these models struggled to convert them into actionable insights, a difficulty they believe discourage municipalities from adopting these tools. Finally, while private sector companies were interested in investing in community-based climate adaptation initiatives, the actual flow of investment has yet not fully materialised. According to the project partners, the engagement of the private sector is an ongoing process, and tools like CRIDA and the development of solid business cases are essential in this context, as companies need to see concrete figures and outcomes to guide their investment decisions.

4.3.9 Effectiveness of monitoring framework

Each FUST project included a result framework in its proposal, aligned with the result frameworks of UNESCO and UNESCO/IIOC. This compliance was mandatory due to UNESCO's programmatic requirements. The monitoring framework of the projects used key performance indicators for tracking progress and aligning activities with overall project objectives. However, the

stakeholders agreed that the current monitoring and evaluation system could be improved. For the FUST projects, defining and measuring these indicators presented challenges. Furthermore, a review of monitoring reports and interviews indicated the need for a clearer guidance and expectations in the reporting template, requiring project teams to elaborate on the success or failure in meeting indicators, share lessons learnt, and outline strategies or actions implemented, or planned, to address any shortcomings.

The FUST Steering Committee typically convenes on an annual basis in order to provide oversight, guidance, and decision-making support to the supported projects. During these meetings, committee members were engaged in dialogue with project managers, ensuring that the project's trajectory aligned with the objectives and results framework outlined in each project proposal. One of the decisions taken by the Committee was to launch a mid-term self-evaluation process with the aim to generate detailed data which could be used by the Flemish Government in their assessment for the continuation of FUST. A review of the self-assessment documents by the evaluation team as well as findings from some interviews indicated that the expectations from self-assessments as well as the distinctions between these assessments and the progress reports required by UNESCO were not sufficiently clear to the project teams. Some projects provided the progress reports with minimal changes as self-assessments, placing more emphasis on providing updates on the project status, rather than reflecting on project performance and their learnings over time as well as the actions for sustainability.

In OTGA, during the project design phase, the criteria for evaluation were not clear, resulting in a framework that was vague and challenging to measure. Due to administrative issues, like the need for donor approval, alterations to the framework were not possible.

In the case of OIH, despite occasional ambiguities around target definitions, these issues could be resolved through discussions. While some targets were only measurable towards the end of the project, interim targets provided early benchmarks, including the establishment of a steering committee and technical working group. Although the framework originally outlined did not always delineate a clear route to project completion, it was often perceived more as a list of end-stage objectives.

PacMAN also encountered challenges related to data collection and regular monitoring. However, the project put into practice a comprehensive risk analysis along with a risk mitigation matrix. In addition to PacMAN, OIH was the only other project funded by FUST that included a similar matrix in its proposal.

In CliMWaR and Be-Resilient, the reporting and feedback structure was efficient. Interviewees believed that biannual reports and comprehensive annual reviews provided an effective approach for monitoring progress and receiving feedback.

4.3.10 Visibility and communication

The evaluation found that the visibility aspects of FUST have improved over the last five years compared to the previous round with the specific efforts made by the projects to highlight the Government of Flanders as the donor.

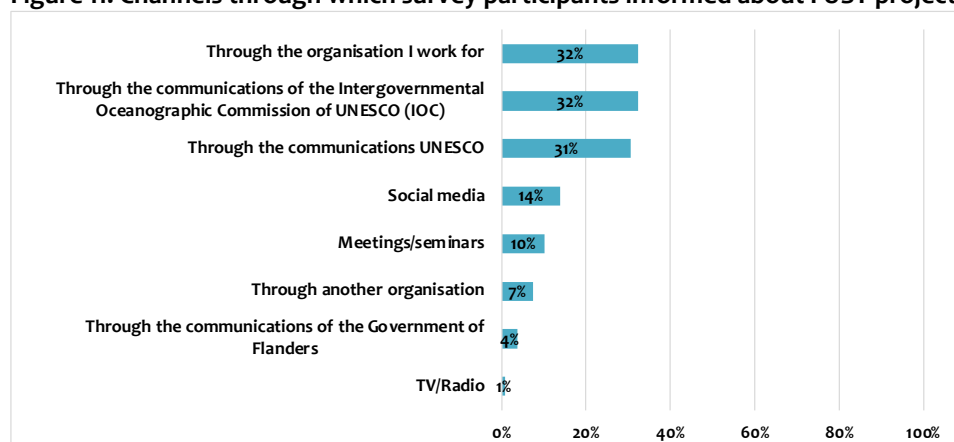
UNESCO considers the Government of Flanders' support crucial for its activities in the field of science and views it as a catalyst for attracting other donors. The Flemish Government representatives were invited to speak at UNESCO events, including COP, to showcase the FUST funding.

Flemish scientists interviewed believed that FUST has given a good image and exposure of Flanders as a region of innovation, and helped Flemish scientists to develop international cooperation opportunities and networks.

FUST-funded projects highlighted the donor's support in the project materials, websites and social media outlets. The stakeholders stated that FUST was well known by the project partners. On the other hand, some beneficiaries interviewed stated that they had not heard about the trust fund before they became involved in the projects.

According to the survey findings, the participants of FUST projects were usually informed about the projects through institutional communication channels, mainly via the organisations they work with, or through UNESCO or UNESCO/IOC (Figure 11). Other channels of communication, notably news media, remain untapped with potential to reach larger groups of target populations both to attract them to the project activities and to create awareness of the importance of the topics covered by the projects. Survey participants stated that the projects could be better publicised using various channels.

Figure 11. Channels through which survey participants informed about FUST projects (n=108)



Source: FUST evaluation survey. Analysis by INOMER.

There was a common understanding among the stakeholders that the visibility of FUST should be further improved by engaging a communication expert. In addition, some stakeholders stated that the approaches taken by the projects could be harmonised and support of the Government of Flanders as the donor could be more visible on project websites, documents and YouTube channels.³⁶ It was also explained that the FUST projects would achieve higher recognition if they could be initiated with a kick-off/launch event and end with a closing event with the participation of all relevant stakeholders including the representatives of the Government of Flanders. Stakeholders also noted that it would be useful to create concise and visually engaging videos to communicate the objectives and impacts of the FUST projects with wider society across the world to raise awareness and increase visibility.

When the communication aspects were assessed, the stakeholders expressed that there was a need to improve communication at all levels in the FUST projects, including sharing updates about the progress with the communities. Some stakeholders also explained that the projects should make more efforts to promote their activities and outputs, such as the tools and methodologies throughout the process using various channels including but not limited to conferences, publications, policy briefs, and reports. For example, the Intergovernmental Panel on Climate

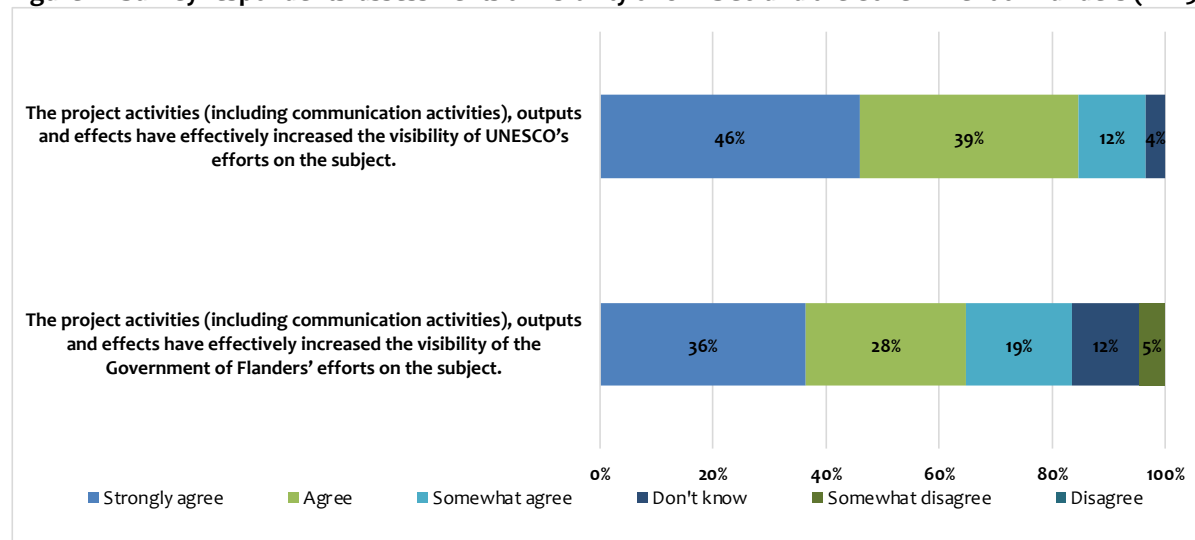
³⁶ Some examples include: <https://unesdoc.unesco.org/ark:/48223/pf0000384719/PDF/384719eng.pdf.multi>, <https://unesdoc.unesco.org/ark:/48223/pf0000367735.locale=en>, https://en.unesco.org/sites/default/files/brochure_be-resilient_double.pdf, <https://book.oceaninfohub.org/index.html>, <https://unesdoc.unesco.org/ark:/48223/pf0000379204?posInSet=1&queryId=b279e2a1-ff0e-414d-b73e-of45896b273e>, <https://pacman.obis.org/about/brochures/>, <https://www.youtube.com/@be-resilient3825>

Change, the World Science Forum and UNESCO Science Report could provide effective platforms for these communication and promotion activities. It was believed that this approach would enhance visibility and awareness, and create debate, interaction and synergies around the themes covered by FUST. Linked with this topic, Be-Resilient plans to organise a dedicated conference on resilience in biosphere reserves and produce policy briefs to better inform key stakeholders about the project's objectives and outcomes. PacMAN envisages publishing a scientific publication to disseminate knowledge about the project outputs.

Some stakeholders noted that FUST could enhance its communication by collaborating with organisations experienced in targeted communication. In addition, more effective use of various communication channels, such as social media, was highlighted as a means to amplify outreach efforts, for instance with the involvement of UNESCO Goodwill Ambassadors and the use of influential figures. Stakeholders also underlined the potential benefit of targeting children and youth in communication to foster early environmental consciousness as well as awareness of ocean and water-related topics.

The survey results revealed that a vast majority of participants (97%) agreed that the FUST projects, including communication efforts, effectively enhanced the visibility of UNESCO's efforts in the fields of oceanography, water management, MAB programme and geoscience and geoparks. Furthermore, 83% of participants believed that the visibility of the Government of Flanders' efforts in these areas has increased thanks to the FUST projects supported (Figure 12).

Figure 12. Survey respondents' assessments of visibility of UNESCO and the Government of Flanders (n=85)



Source: FUST evaluation survey. Analysis by INOMER.

Several good practices were found in project level communication activities. For instance, in PacMAN, scientific language was tailored for effective communication with local communities, such as those around a harbour field site. It used a targeted approach for its media output, producing materials for scientists, administrative authorities, and the general public. The project team established direct networking channels with authorities and shared new methodologies with the scientific community. It also prepared a two-minute animated [video](#) to convey the purpose of the project by paying special attention to the selection of images and other aspects to ensure the video resonates well with the community. In CliMWaR, the project focused on the consolidation of knowledge and case studies from community water management providers or associations, aiming to identify best practices and challenges in community water management.

It also documented this knowledge and experience to create a reference for future initiatives. On the other hand, some interviewees explained that in spite of the efforts made to promote CRIDA, more cases should be made available and training videos in Spanish should be produced instead of those with Spanish subtitles.

4.3.11 Involvement of Flemish scientific community

According to the interviews, although it is a requirement of the FUST agreement, the projects did not have specific incentives for the participation of Flemish scientists and there were limited concerted efforts to involve them. It was also explained that there were no formal channels to reach Flemish institutions or scientists, and the project teams did not have sufficient knowledge of the scientific community in Flanders. In the field of oceanography, VLIZ, to the extent possible, made efforts for the identification and involvement of relevant scientists in the projects.

The Flemish experts were mainly involved in the projects by participating in the advisory groups and through the Open Advisory Committee. The evaluation that the Committee, which supported the Government of Flanders in FUST project selection, served as an effective mechanism for cooperation. This process facilitated knowledge transfer by offering advice on the evaluation and improvement of projects to be funded by FUST. However, the full potential of this mechanism has not yet been tapped in creating collaborative linkages between Flemish scientists and the project teams. Nevertheless, the projects involved several scientists and institutions from Flanders (see Box 5).

Box 5. Examples of involvement of Flemish scientists in the projects

The evaluation identified notable collaborations between the FUST projects and the scientific community in Flanders. These mainly include the involvement of VLIZ in OTGA, OIH and PacMAN, University of Ghent in OIH, and VITO and FLUVES in CliMWaR and Be-Resilient. In addition, CliMWaR has included University of Antwerp and Vrije Universiteit of Brussels whereas Be-Resilient involved Africamuseum in their project activities.

Among them, Be-Resilient benefited from the transfer of knowledge and technology from Flanders by using the Flemish technologies developed by companies such as [FLUVES](#), which monitors the rivers in Flanders with an internet-based application. UNESCO piloted their sensors in Zimbabwe. VITO, an independent Flemish research organization, developed a vegetation and crops monitoring system for the Southern African biosphere reserves involved in Be-Resilient. Moreover, VITO developed a drought monitoring tool, particularly focusing on biosphere reserves. In the case of OIH, stakeholders believed that collaboration could be enhanced around the theme of open science, since Flanders is very strong in adopting and promoting the concept.

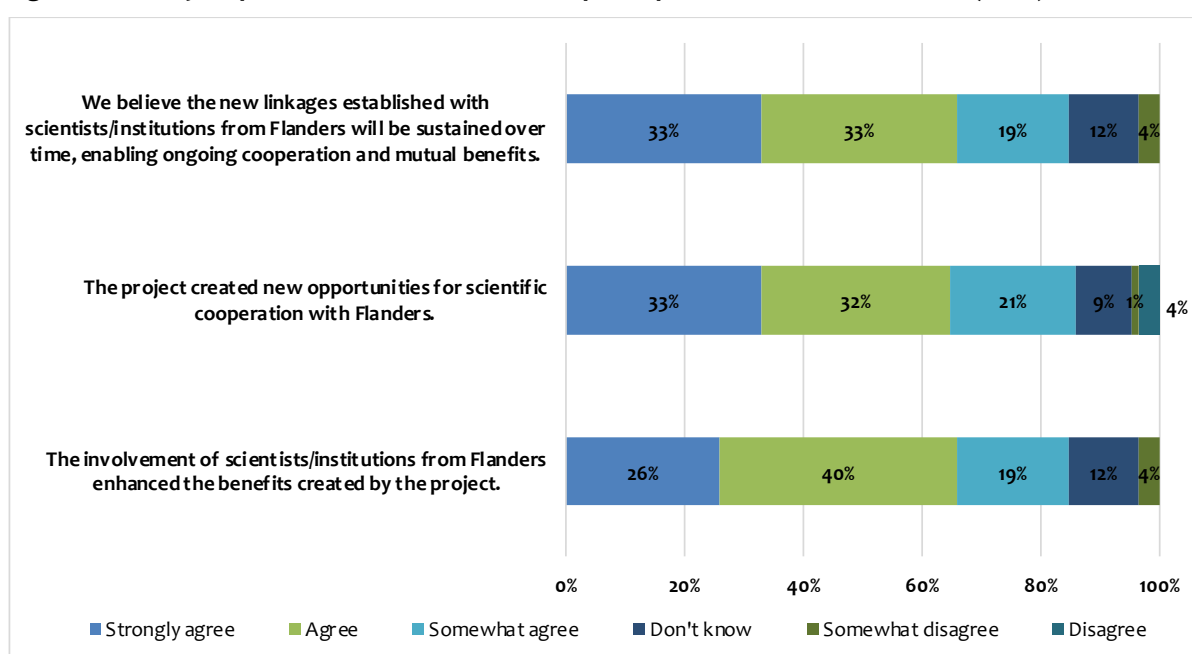
The stakeholders mentioned that international co-publications might serve as an incentive for attracting Flemish research performers to collaborate on the FUST projects. It was also explained that brokerage events could be organised with the scientific community in Flanders to foster collaboration opportunities (similar to a meeting held in 2015 where the projects discussed cooperation with Flemish scientists). Another suggestion was to establish a short-term mobility programme or use the existing ones to facilitate engagement of Flemish scientists in the FUST projects.

The stakeholders believed that improving the engagement of Flemish institutions and scientists through enhanced communication was important. For this purpose, it is possible to collaborate with the Flemish Research Foundation ([FWO](#)) and the University Cooperation for Development Bureau of the Flemish Interuniversity Council ([VLIR-UOS](#)) that promotes partnerships between Flemish universities. At the initiative of scientists in a Flemish university, a network support project funded by the FWO established collaboration with the FUST project [MangRes](#) -that is outside the scope of this evaluation. In addition, the appointment of the FWO Secretary-General as a member of the Flanders Committee for UNESCO could serve as an opportunity to increase the visibility of

FUST to the FWO. A potential opportunity with VLIR-UOS could involve securing matching funds for PhD students. Considering that past efforts to engage with VLIR-UOS were unsuccessful, a clearer and more focused approach to collaboration is needed.

Survey results indicated that the projects facilitated establishment of linkages with the Flemish scientific community, demonstrating high potential for sustainability: nearly 86% of the participants agreed that their involvement in the FUST projects helped them initiate collaborations with Flemish scientists, which they believed would be maintained over time, enabling ongoing cooperation and mutual benefits (Figure 13). A similar proportion of respondents (85%) concurred that the involvement of scientists and scientific institutions from Flanders enhanced the benefits yielded by the project. On the other hand, 12% remained neutral, expressing that they did not know because their participation in the project activities or their interaction with Flemish scientists was limited.

Figure 13. Survey respondents' assessments of the participation of Flemish scientists (n=85)



Source: FUST evaluation survey. Analysis by INOMER.

Several survey respondents answered the open-ended question on how they used or could use the new linkages established with the scientists and institutes from Flanders. In the case of Be-Resilient, one respondent explained, for example, that they could collaborate in the areas of evidence generation for the nature-based solutions they are implementing and in flood risk monitoring for Disaster Risk Management. Another one expressed that Flanders has strong technical knowledge in drought-monitoring, while local researchers have the thematic and local knowledge on how to use this knowledge, and therefore, increased collaboration will be mutually beneficial and desirable. For CliMWaR, one respondent stated that the new linkages with the Flemish scientists were used to further assess drought in Africa and develop drought atlas for Southern Africa.

In OIH, one of the survey participants expressed that the linkages with VLIZ have been essential in promoting oceanographic data and information management. Another respondent stated that the continued support from VLIZ was key for the success of the project. One of the OIH stakeholders explained that leveraging new linkages established was important to bring

expertise, resources, and collaboration opportunities to enhance the project's impact, credibility and relevance within the scientific community in the Western Indian Ocean, especially on data management.

In the case of OTGA, a survey respondent mentioned the project helped Malaysia establish research partnerships with Flanders and another one indicated the collaboration with VLIZ has been beneficial in gaining new knowledge. One of the survey participants noted that they established close collaboration with Flanders on capacity development of early career ocean professionals. Another participant stated that collaboration was expected in the future on Physical Oceanography, possibly on a research project in South China Sea.

According to a survey respondent involved in PacMAN, since VLIZ is the leading actor in Europe in assembling ocean biodiversity data, it will be possible to obtain and compare data from the Pacific Ocean, which will help them understand the global pattern of species migrations. One respondent stated that the linkages with Flemish scientists would be used to access new knowledge and receive assistance in molecular diagnosis. Another stakeholder of PacMAN explained the collaboration with Flanders should be pursued to develop capacities, share information and strengthen biosecurity and border control efforts. A survey respondent stated that collaboration with Flemish scientists was critical for technology development and securing reliable data, which can support the amendment or formulation of conventions focused on marine ecosystems. It was also added that at Fiji ports, transfer of knowledge and technology from Flanders could significantly improve operational efficiency while minimising impact on the natural environment and preserving marine biodiversity. Other respondents expressed their willingness to create new collaboration opportunities by sending students to Flanders to study on the topic, and by establishing Fiji's own data analysis unit collaboratively.

PacMAN stands out as the only FUST project among the five evaluated, where all respondents expressed that the involvement of Flemish scientific community enhanced the benefits created by the project, and CliMWaR is the only project where all respondents agreed that new opportunities for scientific cooperation with Flanders were created. On the other hand, similar to interviewees, several survey respondents emphasised the need for improved engagement and clearer communication regarding collaboration with the Flemish scientific community.

4.4 Impact and sustainability³⁷:

4.4.1 *Signs of impact*

The evaluation identified, through interviews, focus group discussions and survey, several areas where signs of impact were visible in the FUST projects covered by the study. These are summarised below and specific results indicators reported by each project are synthesised in Annex 7. Documentation review indicated that the projects could better articulate their exit strategies, expected impacts and sustainability measures in the project documents, progress reports and self-evaluations.

In the case of OTGA, during 2022, the online platform helped develop capacities of approximately 1,300³⁸ ocean professionals worldwide. However, the representation of regions was uneven. According to a list of beneficiaries provided by the project management, during the same year 2% of them were from Arab States, 8% from Africa, 26% from Europe and North America, 30% from

³⁷ The impact criterion assesses “the extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects”. “The sustainable criterion assesses “the extent to which the net benefits of the intervention continue, or are likely to continue”. <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

³⁸ Number of enrolled learners from more than 2,000 applicants.

Latin America and the Caribbean, and 34% from Asia and the Pacific. With the shift to online training, course material has become available for future learners, and resource requirement for running training activities has decreased. Participants of OTGA training programmes stated that they developed both hard and soft skills on the areas such as ocean data analysis, early warning models, problem solving, scientific research processes, cooperation, time management, creativity and scientific research communication. While the OTGA certificate is an important feature of the courses, its impact was considered as limited by the stakeholders who stated that awareness of OTGA in general was low. Another issue highlighted was that OTGA training programmes could not sufficiently introduce new subjects and themes of global relevance which could have generated larger impact and outreach. On the other hand, the project team highlighted that new subjects were introduced each year, and for example, for courses delivered in the first semester of 2023, half of the subjects were new, covering topics such as Ocean Literacy and implementing ODIS. This contradictory finding indicates the need for better communication with the stakeholders. Lastly, as also noted above, the regional and specialised training centres could not work as an interconnected network, and as a result, could not obtain tangible benefits of being part of a global training network, for example, in terms of collaboration or reuse of training content developed by other training centres.

OIH exceeded its targets in all aspects, including partners, interoperability, and content items shared. Currently, 19 partners are indexed, with an initial objective of only four. The system involves around 100,000 content items, including 24,000 experts, 13,000 institutions, 42,000 documents, 19,000 training courses, 238 vessels, 3,000 projects, 5,000 data sets, and 8,000 spatial data records. The stakeholders believed that OIH's features and outputs would create desired impacts and become sustainable.

According to the interviews, PacMAN has had an impact on local scientific and technical capacity by enabling in-country molecular analysis capabilities, particularly regarding real-time polymerase chain reaction (PCR). This has not only allowed the application of cutting-edge science to address key biodiversity and pathogen issues but also has far-reaching implications for various scientific fields, from agriculture to soil analysis. Through the implementation of DNA-based monitoring systems similar to forensic investigations, invasive species can be tracked and their impact on Fiji's diverse and vulnerable ecosystem can be assessed and mitigated. The project also has a critical policy aspect, leading to meaningful interactions with decision-makers. PacMAN's self-assessment report supports this by stating that the collaborative network approach contributed to "bring marine biosecurity to the forefront of policy discussions in Fiji, where it previously was dormant". According to a project partner, the strategic partnership created by PacMAN with the University of the South Pacific, is expected to trigger a cascading effect across the region. This collaboration was viewed as beneficial due to University's extensive network. Interviews indicated that the project not only provided a proof of concept for data sharing and access, but also aimed to create a data system that enables meta-analysis. Further, the project is working alongside OBIS and other partners to ensure that data are appropriately formatted and available through an interoperability tool, contributing to accessibility and useability. Evaluation also found that PacMAN facilitated dialogue and collaboration between organisations that traditionally were operating in silos. For instance, it initiated interaction between coastal marine biologists and the port authority that previously had limited opportunities for communication.

The CliMWaR project creates impact in strategic targeting and capacity building in areas of drought and flood management. Particularly in Central America and Southern Africa, it has not only increased institutional skills for water management and policy-making, but also enhanced responsiveness to societal needs. Its focus on midsummer drought in Central America and the delivery of essential insights on climate change adaptation options in Southern Africa have been

widely acknowledged by stakeholders. While the project has provided the technical backing that many countries lacked for their climate change adaptation plans, its long-term impacts will require more time, further efforts, and increased buy-in from policy-makers.

Significant contribution of CliMWaR to disaster risk management was underlined by the stakeholders, with a reference to its role during the disastrous floods in Zimbabwe in 2019. It was during this crisis that the improvements to the EWS, brought about by the project, proved essential in safeguarding people and property. Furthermore, the project facilitated extensive stakeholder engagement and local community involvement, thus building a solid foundation for future work. It was also successful in enhancing the capabilities of countries in forecasting floods and droughts. However, for the sustainability of the platform developed, it is important to ensure adequate training of government staff and establish proper onboarding and handover processes, according to the interviews.

CliMWaR used tools like Regional Frequency Analysis and critically supported the roll-out of Climate Risk Informed Decision Analysis (CRIDA), which have improved the efficiency of water resource management, especially in contexts with limited data availability. The World Bank's "Resilience Rating System: A Methodology for Building and Tracking Resilience to Climate Change" rates CRIDA as an A+ method for developing resilience projects in the water sector.³⁹ Additionally, CRIDA has been acknowledged by the Green Climate Fund (GCF) as one of the methods for addressing uncertainties and fostering adaptive planning in GCF Water Projects design phase through the GCF Water Project Design Guidelines in 2023.⁴⁰ The information generated by these tools has been used by various ministries and NGOs, influencing decision-making processes. In addition to this, CliMWaR has strengthened regional collaborations and networks, stimulating south-south cooperation. It has facilitated professional relationships within the region and internationally, playing a key role in reinforcing partnerships and initiating collaborative work on various projects.

According to the stakeholders, Be-Resilient has made an impact on specific biosphere reserves, contributing to the development of climate adaptation strategies. The project capitalised on previous efforts, particularly regarding the monitoring of waste impact in rivers, water quality and supply, and the reliance of local communities on rivers for agriculture, irrigation, and consumption. Moreover, the recognition of the importance of indigenous knowledge and practices for water security and conservation was a notable element of the project, adding value to its data collection. The performance of the project in engaging communities, identifying key issues, and finding potential solutions is expected to contribute to disaster risk reduction planning among policy-makers and communities. The project also enabled collaboration among different reserves, setting them up as role models for climate change adaptation. This led to the creation of three spin-off projects, Be-Resilient South Africa, Be-Resilient Zimbabwe (in Chimanimani and Chipinge districts), and BuPuSa (Zimbabwe-Mozambique), and mobilisation of funds from new donors, such as UNOPS, the World Bank and the Austrian Development Agency. The 'biosphere reserve model' helped expand the project to include seven countries and attract cross-border interest between Zimbabwe and Mozambique, a first for Southern Africa. According to the interviews, recognition of the project by other UNESCO regional offices and the interest from our Regional Office in Nairobi further validate its impact. However, challenges remain in measuring the long-term impact on the biosphere reserves. Nonetheless, the project has heightened local awareness about environmental challenges, fostering a sense of shared responsibility for finding solutions to

³⁹ Hallegatte S, Clement VWC, Siddiqi SN, Winglee MA. Resilience Rating System: A Methodology for Building and Tracking Resilience to Climate Change (Vol. 1): Summary (English). In. Washington, D.C: World Bank Group; 2021.

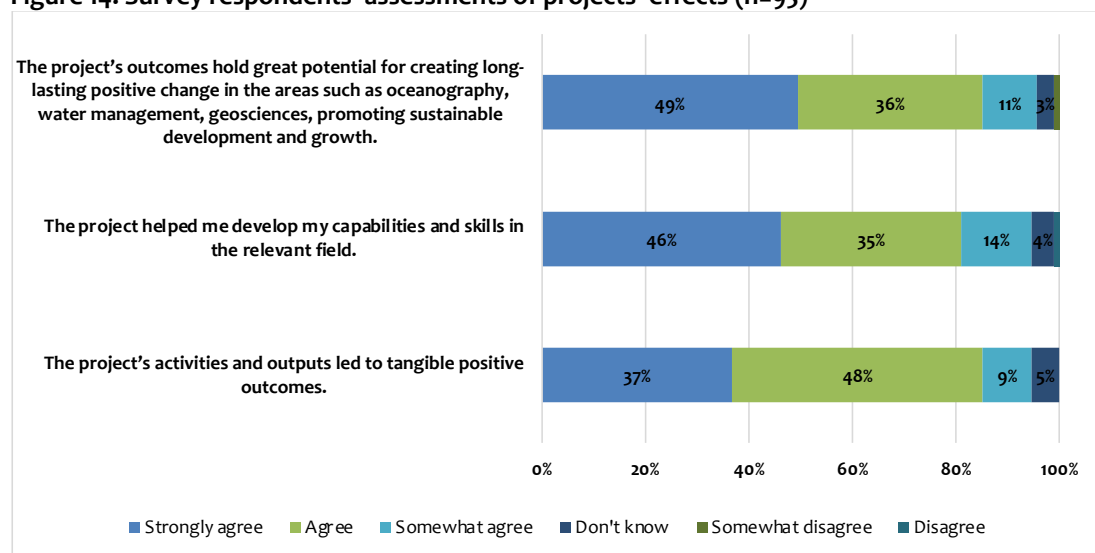
⁴⁰ GCF. Technical Annex-Part 1: Water project design guidelines. In: *Sectoral Guide Series*. Yeonsu: Green Climate Fund; 2023.

these challenges among local communities. CliMWaR produced a [document](#) on the best practices on flood and drought risk management. This publication forms the basis for training delivered to policy-makers.

Despite initial delays, Be-Resilient has delivered its planned outputs, facilitating engagement and communication among key stakeholders. The impact of indigenous knowledge has been particularly significant, with plans for a dedicated workshop on this subject in the near future, according to interviews. The project also helped develop a problem-solving mindset among stakeholders, leading to the development of localised solutions. Increased knowledge among policy-makers is expected to lead to better decision-making processes, particularly with regards to water scarcity. Potential future impacts include forging partnerships with commercial agriculture and water security sectors, establishing an EWS for droughts and floods in vulnerable areas, and implementing strategies for monitoring water quality. Despite the challenges, stakeholders remain optimistic about achieving the project's objectives and generating impact in the future.

The survey findings demonstrated strong support by the project participants for the effects, with 94% of participants agreed that the project activities and outputs yielded tangible, positive results, and 96% acknowledging the potential for creating long-lasting positive change in the areas such as oceanography, water management, geosciences, promoting sustainable development and growth (Figure 14). Furthermore, 95% of respondents affirmed that their involvement in the FUST projects significantly enhanced their skills and capabilities in the relevant field. Despite the different approaches to training, which was a common activity across all five large-scale FUST projects (see Annex 6), there were no discernible differences in the effects on the end beneficiaries of training programmes.

Figure 14. Survey respondents' assessments of projects' effects (n=95)



Source: FUST evaluation survey. Analysis by INOMER.

4.4.2 Key enablers of success

According to the stakeholders, the common key enablers of success for the FUST projects were the quality of project management and partnerships established with various stakeholders.

In the case of OTGA, the stakeholders expressed that the networks available to reach potential learners, and the UNESCO/IOC brand were the most important factors for success. The ISO 29993

certification received by IODE has also been instrumental as it improved the quality of training delivered on the OTGA platform, according to the stakeholders. From the beneficiary perspective, the free nature of the courses, the user-friendly pace of learning, certification and the quality of teaching and the platform itself were considered as the main advantages of OTGA courses. Furthermore, the existence and quality of the training platform that provides free access to the learning materials as well as its connection with the Ocean Expert system were considered as the contributors to the success.

In the case of OIH, the architecture and technological features of the system, its geographic and thematic coverage, as well as its open source and open access nature were recognised as the main success factors. OIH's self-assessment report states that "the project's open-source philosophy ensures its software and extensive documentation is available online, promoting reuse and adaptation by any institution, whether or not they are an OIH project partner". Several other elements have also emerged as enablers of OIH's success. First, the project's approach to data, which includes redirecting users to the original source rather than harvesting data, is considered as vital since these sources continually evolve, improve, and grow. Second, the system's ability to search for specific information and provide pertinent results, such as data on mangroves in Mozambique, enhances its usability. Third, the provision for both existing and potential partners to access open resources online at any time, even without detailed knowledge of OIH, broadens the project's reach. The partners' ability to incorporate small code snippets into their systems also expands visibility through both the OIH and the Ocean Data and Information System. The requirement from various systems or funders for organisations to develop APIs or metadata that are discoverable and adhere to FAIR⁴¹ standards was also expressed as an enabling factor by the stakeholders. The inclusion of ODIS specifications is believed to further boost organizations' discoverability through prominent data search engines like Google Dataset Search, thus elevating their visibility. Lastly, the attractive architecture, featuring mature data management practices, has been perceived positively by data organizations, consolidating OIH's position in the field.

For PacMAN, key drivers of the achievement included the project's focus on a previously overlooked area and its capacity-building efforts in Fiji to manage invasive species. Stakeholders interviewed also highlighted that the project proactively engaged ministries, keeping them informed about all activities, laying the groundwork for impactful improvements in policies over time, a factor that contributed to the project's success.

CliMWaR's mandate that supports the call of the UN Secretary General of March 2022 on Early Warning Systems is considered by the stakeholders as a key enabler that would contribute to the impact and sustainability. As such, the project is viewed as having a critical importance for UNESCO's strategies. In addition, a key strength of CliMWaR is expressed as its ability to promote international cooperation and its generation of new knowledge while reinforcing existing understanding.

For CliMWaR and Be-Resilient, key enablers also included its expansion from the previous project (MWaRLAC) which allowed for the continuation and amplification of the project's reach. This expansion enabled the transfer of successful initiatives from other regions to Southern Africa, such as the drought vulnerability atlas from South America, thus enabling south-south cooperation. A factor that contributed to it was the fact that the UNESCO staff responsible for CliMWaR was the project manager of MWaRLAC in Chile, leveraging the specific knowledge, skills, and network developed in previous projects can significantly contribute to the new initiatives. The stakeholders believed that the involvement of community leaders in the project and a strong relationship with the farming community, which facilitated extensive data collection on

⁴¹ Findability, Accessibility, Interoperability, and Reuse of digital assets.

indigenous knowledge, were also important factors for success. It was also explained that the project's success was significantly driven by the strong relationships established with project liaisons, who possessed a deep understanding of on-the-ground realities.

4.4.3 Longer-term effects of the projects

Based on the evaluation findings, FUST is expected to yield both scientific and societal impacts. Scientific impact is anticipated through the outputs of the projects, such as the methodologies, tools and publications developed, as well as their outcomes, for instance collaborations established and networks built. On the other hand, societal impact could potentially be achieved through the insights derived from the supported projects, contributing to policy formulation and implementation.

The evaluation found a number of effects that were expected or observed within the respective institutional, country, regional, and international contexts under the FUST projects. These are summarised below.

OTGA's main long-term effect was expressed as being the key enabler for capacity development in ocean sciences in the UNESCO/IOC Member States. However, OTGA's project proposal did not include detailed description of sustainability strategies that would allow the realisation of this long-term effect. The proposal only stated that "Host institutes and Member States will need to ensure appropriate resources and initiatives, including the development of operational, strategic and business plans, are made available for the continued operation of the OTGA Training Centres beyond the timeframe for the project". Furthermore, the mid-term self-assessment and the reports from the advisory group meetings showed limited reflection on actions to ensure the networks sustainability throughout the implementation of OTGA project. The self-assessment report also highlights the role of OTGA in the implementation of the IOC Capacity Development Strategy which in turn is a "catalyst to achieve the four high level objectives IOC set itself in its 2014-21 Medium Term Strategy".

Having an open learning platform which can be used by training centres to reach end beneficiaries outside their host institutions was a valuable enabler for capacity building in ocean sciences. Through this platform, training materials could extend the reach and enhance the impact of the project. However, there appears to be a disparity in the points of views of the project team and some training centres regarding the value that OTGA provides as an incentive for sustaining these centres. Some interviewees explained that the achievement of OTGA's outcomes could be measured by aligning post-training metrics such as course satisfaction and participant demographics with the key performance indicators of the host institutions of the centres. This alignment could provide a clear representation of OTGA's value and promote deeper commitment from the institutions, potentially yielding a positive impact on the project's sustainability.

In OIH, the anticipated long-term effects were expressed as mutual learning with partners and advancement of data management practices. An example given was EurOcean, which has not only contributed with its domain expertise to the process of designing the OIH's open interface but also provided insights about data governance, technology, and project management.

The OIH project has been instrumental in establishing the concept of FAIR data within private sector organisations, helping them change the way they view and handle data internally. Their exposure to public sector efforts in creating a cohesive digital data ecosystem has enhanced their understanding of different metadata standards, terminology libraries, and the overall FAIR concept.

Continuous exchanges and collaborations (e.g. between OIH and WMO) are expected to lead to a more efficient sharing of experiences and concurrent development of technologies such as ODIS and WMO Information Systems 2.0.

According to stakeholders, the long-term effects of the project are expected to be enhanced interoperability and the development of convergent technology, both of which are highlighted by the ongoing exchange of advancements in ocean data and information systems. It was also explained that for increased outreach and impact, OIH should put focus on user engagement and communication and promote the rich sources of information it provides.

In the case of PacMAN, the expected long-term effects were expressed as the creation of a culture of knowledge transfer and collaboration by involving local partners in monitoring and sampling protocol design and sharing methodologies across regions. The stakeholders expect that the centralised data infrastructure will ensure standardised and up-to-date data management. The project's contributions to the development of rapid DNA-based detection tools for invasive species and biofouling management guidelines are expected to continue influencing policies and practices at the national and international levels. Collaborations established under the project, such as the service letter signed between the Biosecurity Authority of Fiji and the USP, are expected to lead to shared use of technical resources as well as enhanced long-term collaborations in the field. The project's inputs to the Fiji's Marine Invasive Species Policy and the National Invasive Species Framework Action Plan are also expected to yield long-term positive results in line with the project's targets.

For CliMWaR, positive effects on the improved policies in Africa are expected in the long-term. The stakeholders believed that with the increased intensity and frequency of floods and droughts, policy-makers would take necessary steps to improve countries' EWS. It was also explained that for these changes to happen, the importance of measuring river flows in saving local economic assets and lives should be demonstrated to the governments with facts and figures. The stakeholders expressed that to enable the generation of long-term positive impacts, UNESCO could lead a project aimed at updating the national infrastructure policies. This would ensure that construction standards (for buildings, roads, and bridges) are based on updated hydroclimatic data, which is essential for proper disaster risk assessment.

In Be-Resilient, it was explained that UNESCO was working with the Southern Africa Development Community (SADC) on a common action plan to be able to jointly influence national policies. It is expected that, with the help of this initiative, the governance of landscapes would be transferred to the communities. At the country level, the project has initiated policy debate and helped integrate climate change in national policies (e.g. in Zimbabwe). The countries expressed the need to put in place actions plans with budget allocation and adapt the policy instruments to accommodate climate adaptation and resilience. The stakeholders believed that Be-Resilient has the potential to influence the decisions of the private sector as well and enable small farms to adopt necessary measures such as the selection of more drought-resistant crops and innovative irrigation techniques.

4.4.4 Sustainability and scalability

In the case of OTGA, the evidence suggests that the project has not been able to develop or test components of a self-sustaining financial model. The stakeholders believed that the sustainability of OTGA was strongly linked to the availability of sufficient level of co-financing from the training centres. Without matching funds from the centres, the sustainability of the project results would be at risk despite the seed funding provided by FUST. Moreover, so far, the OTGA's affiliate programme has not required any payments to be made by other participating organisations, such as NF-PGO, ECOP, IALA and MEDIN that used the platform. Some stakeholders explained that

sustainability could also be achieved by increasing the number of training centres and institutions using OTGA platform. For this purpose, it was suggested that systematic collaboration could be achieved with universities and develop a strong network of academic institutions working on the topics covered by OTGA courses. It was also stated that specific actions could be taken to reach university students and postgraduates, and target some in-person training for them in their campuses.

Stakeholders believed that OTGA's business model has evolved positively with the use of virtual and hybrid training sessions. It was suggested that, as an area for improvement, only those who successfully completed online training could be allowed to attend in-person sessions. Including audio-visual content tailored for non-specialists and organising webinars on the platform to attract them were also considered as sustainability measures.

Based on the evaluation findings, the sustainability of the training activities conducted by regional and specialised training centres does not depend on OTGA as their mandate is to offer training courses under the umbrella of their host institutes, and as such, their training services are already integral to their ongoing operations. They, therefore, believed that their viability would continue beyond the project duration.

Making payments to trainers for their time was expressed as a need since the workload of preparing and delivering the content is substantial. It was also stated that more staff would be needed to support tasks related to the organisation of training programmes. However, both of these actions require additional funding, which could further risk financial sustainability of the platform, according to interviews. Some stakeholders pointed out that workload issues could be improved by not adding the preparation and delivery of training materials to existing commitments, but by planning these tasks into the annual schedule as additional activities.

Several stakeholders identified the scarcity of trainers as a constraint limiting the project's scalability. They recommended implementing a 'train-the-trainer' approach as a possible solution.

Although OTGA was initially intended to be a platform for all relevant training programmes, the approach that it needs to use in line with the ISO standard requirements and that was defined in the Course Management Guidelines shy away some potential users. This factor led some IOC programmes to choose not to use the platform.

Stakeholders recommended FUST mandate all infrastructure projects, such as OIH, to ensure that project outputs stay functional and operational for a period of three to four years after the end of the project, without necessitating additional funding (similar to the modalities applied in the European Union funded projects). In addition, they explained that the sustainability of OIH involves three aspects: (a) the platform's maintenance which is not a complex process but has some specific technical and operational requirements, such as hosting servers and maintenance personnel; (b) sustainability of the existing systems/databases it uses, which are mostly well maintained and consolidated, and (c) Data models, semantics and standards on which the community should continue working (e.g. new data additions and changes to standards) after the completion of the project. It was explained that the IODE was already working on some of these activities; for example, the hosting of the platform. However, a clear framework and organisational aspects should be put in place and commitment from partners should be achieved by communicating with them the benefits and positive effects of the project and the importance of their continued involvement in its development. It was also explained that the system has been designed to dynamically accommodate changes, such as the addition or withdrawal of a data partner, without the need for manual intervention. If a partner leaves, it will not impact the entire system. The aim is for the platform to continually grow as a digital ecosystem. For those who are to be added, the system provides technical guides and examples.

Another area of improvement on the platform could be allowing researchers to share publications and research reports to turn it into a knowledge hub. These publications could primarily be produced by using OIH data.

Furthermore, a programme called Ocean Data 2030 was registered under the Ocean Decade, inviting National Oceanographic Data Centres (NODCs) to join and engage with OIH, which is expected to contribute to the sustainability of the system. On the other hand, some stakeholders stated that OIH was not presented as a priority within the Ocean Decade despite the IOC's position as the lead agency, and this could have a negative effect on its impact and sustainability. Nevertheless, a strategic opportunity for OIH's sustainability was explained as a key role it could play within the anticipated Ocean Decade coordination office for data sharing, which is hosted by IODE. This possibility could position OIH strategically by giving it the opportunity to support the UN organisations and Member States in the Decade.

Stakeholders suggested that the scope of OIH could be broadened by involving more systems, organisations, nodes and regions. They stated that the OIH could increase collaboration with oceanographic and polar data communities to address the sustainability issue as these communities share similar challenges, are informally organised through various initiatives and use similar technological frameworks. According to interviews, one potential area for increased impact and sustainability involves transforming raw data into actionable knowledge via business intelligence, which could help policy-makers take informed decisions. It was also added that the application of artificial intelligence could uncover hidden patterns and insights related to data, further highlighting potential gaps and areas for development.

According to the stakeholders, PacMAN has a big potential for scalability and replicability in other regions. Efforts are made to connect the project with high level international policy instruments, such as the Convention on Biological Diversity and the International Maritime Organization (Biofouling and Ballast water). This linkage is expected to increase the project's impact and sustainability since the Convention has raised the relevance of invasive species creating more opportunities for projects similar to PacMAN. Some stakeholders explained that although the project achieved its major milestones, its success would depend on the ownership of the government of the tools and monitoring plan developed. However, some interviewees believed that the selection of a university (USP) instead of a government agency as the implementing partner was a limitation and potential challenge for ownership, and therefore, sustainability. At the later phases of the project, PacMAN established linkages with the Biosecurity Authority of Fiji, however, it does not have the status of implementing partner. In addition, the Ministry of Health and Medical Services was invited to participate in the project as a key stakeholder due to indirect effects of invasive alien species on food security, and its involvement would be vital for the success and sustainability of the project.

The continuity of the monitoring plan depends on making data rapidly accessible. Therefore, finding effective ways to accelerate this process was identified as a necessary step, a task that OBIS is currently undertaking, according to the interviews. It was also mentioned that UNESCO communicated with international organisations or NGOs implementing long-term programmes to secure funds for the project after 2024. At the regional level, organisations like the Pacific Community (SPC) expressed interest in collaboration and there are discussions with SPREP to expand PacMAN in Tuvalu. The interviewees stated that the potential for scalability lies in the applicability of the protocols, specifically tailored for Fiji, to other regions. Although it remains to be seen if these protocols can be adapted elsewhere, the acquired capacity to implement such methodologies is a lasting benefit.

According to the stakeholders, the spin-off projects of Be-Resilient are sustainable and the knowledge produced from these projects are leading to new initiatives which indicate that they are relevant in the long-term. Interviewees highlighted that some of the project components, such as EWS, have sustainability issues, but there are examples of systems in operation without additional funding from UNESCO for 7 years (such as the national monitoring systems in Chile and Peru), which indicate that it could be possible to maintain these components. Nonetheless, securing government ownership and strengthening regional networks were viewed as the pre-conditions for sustainability, and these were achieved by the projects (notably through the transfer of affordable technological solutions to the relevant government entities).

Another sustainability issue is related with data for CliMWaR and Be-Resilient. UNESCO explained that efforts were being made to achieve sustainable data management and accessibility by setting up long-term repository on the platform to be developed by IHP. In the case of CliMWaR, collaboration is being established with UNESCO Chairs and Centres (such as those in Kenya and Namibia) to achieve sustainability.

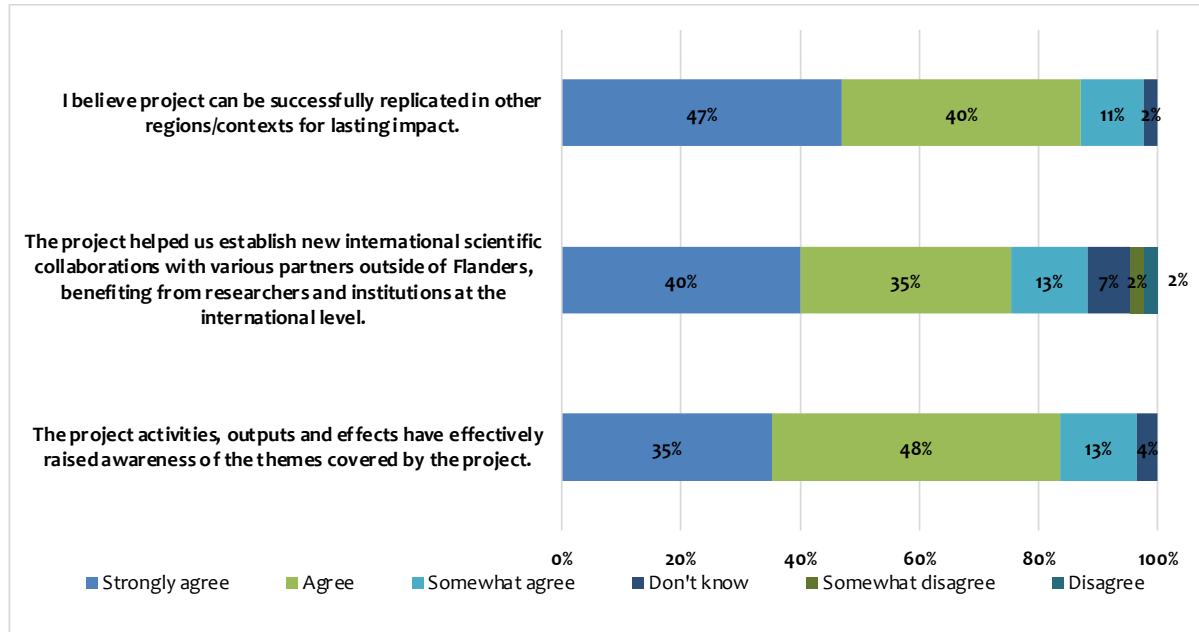
In Be-Resilient, an important step in the CRIDA case studies includes developing “adaptation strategies” in the biosphere reserves. For this purpose, UNESCO conducted an economic analysis and aims to raise additional finance as the funding of the implementation of the adaptation strategies is not included in the project. It was explained that sustainability would be at risk without raising sufficient funds to implement the adaptation activities planned. On the other hand, the scientific tools developed were handed over to the regional universities involved in the project (e.g. Stellenbosch University in South Africa and the University of Venda in Zimbabwe), and capacity building activities were delivered on how to develop similar tools. According to stakeholders, securing buy-in from national bodies is critical for CRIDA’s sustainability. Initial engagement should target local governments and municipalities, ensuring CRIDA’s principles are embedded at the grassroots level, setting the stage for broader adoption.

From the perspective of the Be-Resilient partners, not having enough time and resources to implement the actions identified is an important constraint to achieve the sustainability of the results. Nevertheless, they make efforts to use monitoring data to show the private sector the importance of investing in nature-based solutions to secure sources of water. The partners explained since they have developed necessary capabilities, they would continue using the tools after the project. It was noted that capacity building activities should be intensified and reach more people in target institutions. Some of them suggested that ‘train-the-trainers’ approach should be adopted to increase the number of people trained. Beneficiaries of capacity development activities expressed that training should also cover community members, such as beekeepers.

Interviews found that in the FUST projects, flexibility given by the donor to the project teams to contextualise the methodology taking into account the country/region specific conditions is an important contributor to future sustainability. Several stakeholders underlined that in order for the projects to become sustainable and scalable, institutional capacities of IOC sub-commissions (such as IOC Africa, IOC Caribbean) should also be strengthened, and knowledge and experience sharing between them should be facilitated.

According to the survey findings, almost all respondents (98%) agreed that the FUST projects could be successfully replicated in other regions/contexts for lasting impact (Figure 15). A large majority (96%) stated that the project activities, outputs and effects have effectively raised awareness of the themes covered by the projects. For 88% of the respondents, the projects helped establish new international scientific collaborations with various partners outside of Flanders, benefiting from researchers and institutions at the international level.

Figure 15. Survey respondents' assessments of sustainability of results (n=85)



Source: FUST evaluation survey. Analysis by INOMER.

5. Conclusions and recommendations

5.1 Conclusions

Overall, the evaluation found positive results across all six evaluation criteria:⁴² relevance, coherence, efficiency, effectiveness, impact and sustainability. Despite the delays caused by the COVID-19 pandemic, the assessed projects are on track to deliver the planned outputs and generate expected outcomes. The positive results can mainly be attributed to the improvements made based on recommendations of the external evaluation conducted in 2018.⁴³ On the other hand, as with all funding instruments, further improvements are needed especially to enhance effectiveness and ensure impact and sustainability of the projects. The major areas of improvement are presented under the recommendations made by the evaluation team.

The main findings in relation to the evaluation criteria are summarised below.

Relevance and coherence

- The Government of Flanders, through FUST, is a major contributor to UNESCO's operations in the fields of oceanography, water management, geosciences as well as to its MAB programme. As such, the Fund is highly relevant for the achievement of the Sustainable Development Goals (SDGs) and addressing the environmental sustainability and climate change-related challenges.
- The FUST projects effectively incorporated the needs of the target beneficiaries as well as the challenges facing the regions/countries/basins where they were implemented. This was achieved through the projects' thematic focus and participatory approaches used during design.
- The projects were coherent with and demonstrate strong potential to support UNESCO's and Flemish Government's policies in the context of the 2030 Agenda for Sustainable Development, and aligned well with UNESCO's C/4 (medium-term strategy) and C/5 (programme and budget) as well as with the strategies of IHP, IOC and MAB.
- The FUST-funded projects placed a high emphasis on using scientific and science-based activities as effective enablers of addressing environmental challenges. Although the projects achieved coherence and synergies with similar initiatives of UNESCO as well as the countries and regions where they were implemented, there might be some overlaps with the projects of other multilateral organisations in some regions, and further complementarities and synergies were possible.⁴⁴
- The dependency of UNESCO's activities on the Flemish Government's funding in the fields covered by FUST is a potential challenge which needs to be addressed by the diversification of funding sources. Flanders is a major source of finance for the IOC as well, a situation that represents a risk to the continuation of the IOC's operations.
- The importance of sustaining the FUST funding and the need for diversifying financial resources have increased due to the escalated challenges triggered by climate change.

⁴² <https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

⁴³ Technopolis (2018) Independent external evaluation of the Flanders/UNESCO Science Trust Funds (FUST) Phase IV, (2014-2018) Final Report.

⁴⁴ Some projects that could potentially have overlaps were identified as:

<https://public.wmo.int/en/resources/meteoworld/focus-africa-new-climate-services-initiative-southern-africa>
<https://openknowledge.worldbank.org/bitstreams/19f8b285-7c5b-5312-8acd-d9628bac9e8e/download>
<https://www.gcfprojects-undp.org/tp/project/6639> <https://climatepromise.undp.org/what-we-do/areas-of-work/adaptation-resilience> <https://undp-climate.exposure.co/world-met-day-2020> <https://undp-climate.exposure.co/malawi>

This situation necessitates larger investments in projects aiming to develop and deploy innovative solutions. The Flemish Government being the main donor, the FUST projects could benefit from the support of other donors in the process of scaling up, replicating and sustaining their results. The UN Decade of Ocean Science for Sustainable Development (2021-2030) (Ocean Decade) framework initiative could be used to increase the resources to support projects with high impact and sustainability potential.

Effectiveness and efficiency

- The governance, management and coordination mechanisms of FUST at both UNESCO and Government of Flanders sides are effective and efficient leading to productive collaborations, successful project execution and optimised resource allocation. Communication at all levels of the governance structure is effective and smooth. The management practices under the Fund are flexible and adaptive to the changing needs and conditions.
- The approach taken by the Government of Flanders in the execution of FUST, especially the transparent and impartial project selection through the Open Advisory Committee, whose evaluation reports are made available to applicants, is an important aspect that enhances added-value and credibility of the Fund.
- Dissemination of the FUST project calls within UNESCO after the launch of the process by UNESCO BSP, while improved in the recent years, needs enhancement to ensure that they reach a large number of staff and teams. Clear guidelines and criteria for re-application are required for the previously supported projects to maximise the potential for high-impact results. In addition, improvement is needed in the project evaluation and selection modalities and regulations within UNESCO.
- FUST projects used human and financial resources efficiently, with an increase in the resource efficiency compared to the previous round, mainly because of the virtual implementation of meetings and training programmes initiated during COVID-19 and continued after the pandemic. Effective partnerships and collaboration with project partners also contributed to the efficient use of resources. Despite the delays caused by COVID-19, the projects are on track to deliver the planned outputs on time, provided that they employ effective risk management frameworks.
- The project teams successfully leveraged their qualifications, technical and administrative support, and strong interpersonal relations to enhance collaboration and communication. This approach improved interactions both internally among staff and externally with partners, beneficiaries, and other stakeholders during the project implementation.
- The potential could not be tapped for intersectoral cooperation between FUST and FUT due to unclear modalities and insufficient incentives facilitating such partnerships within UNESCO. The combination of two different funding sources from the Government of Flanders also contributed to this challenge.
- Although FUST projects comply with UNESCO's programmatic requirements and employ key performance indicators, improvements are needed regarding their results framework and monitoring system. There is a need for better designed indicators and logical frameworks, and more structured reporting templates (including specific templates for self-assessment reports) which could facilitate in-depth analysis of indicator performance, identification of lessons, and definition of clear strategies to tackle identified shortcomings.
- Despite effective gender mainstreaming across the FUST projects, considerations related to disadvantaged groups and indigenous peoples could have been better integrated.

Nevertheless, good practices in inclusiveness are found in the adoption of a citizen science approach in three projects (ClimWaR, Be-Resilient and PacMAN).

- Although visibility aspects have improved compared to the previous round of FUST, there is a need to establish a harmonised approach in this area across the projects. Improvements are also needed in communication by optimising underutilised channels, notably media (including social media) to reach larger populations both to attract them to the project activities and to create awareness of the importance of topics covered by the projects.
- Despite the requirement for collaboration with the Flemish scientists in FUST projects, concrete incentives and concerted efforts to involve them have been limited. The absence of formal channels to connect with the scientific community in Flanders has hindered the full exploitation of collaboration potential.

Impact and sustainability

- The FUST projects have showed clear signs of scientific and societal impact, also contributing to policy-making and implementation, and they demonstrate a high potential for sustainability of results. However, there is room for improvement in articulating exit strategies and sustainability measures in the project documentation and putting them in practice timely.
- The FUST projects demonstrate strong potential for scalability and replication. There is a need for developing and implementing sustainability strategies, such as developing self-sustaining financial models for OTGA, ensuring continued functionality and operation of OIH, strengthening connections with international policy instruments such as the Convention on Biological Diversity for PacMAN, and consolidating government ownership and network reinforcement for ClimWaR and Be-Resilient, among other measures. Furthermore, the Ocean Decade presents a significant opportunity to enhance the sustainability of the ocean science related projects of FUST.
- The absence of a clearly articulated high-level theory of change (ToC) for FUST itself presents a challenge for measuring and communicating its impacts.⁴⁵ Without a clear FUST-level ToC that would strategically guide the Fund's project support activities and future calls, the alignment and coherence of its activities may be compromised in the future. The lack of a ToC could risk FUST's effectiveness, and complicate monitoring and evaluation efforts, including impact assessment, at the Fund level. This issue might also result in inconsistencies in stakeholders' and partners' understanding of key concepts, such as the desired high-level impacts and the notion of sustainability for funded projects. Moreover, without a well-defined ToC, communication regarding FUST's intentions, strategies, and anticipated outcomes could be challenging, and responsibility delineation might be ambiguous, potentially affecting ownership and accountability among project participants. Elements of each of these challenges were observed throughout the evaluation.⁴⁶

⁴⁵ The 2018 FUST evaluation also includes a similar recommendation ("Recommendation 2") which suggested "a high-level FUST theory of change". In the same evaluation, "Recommendation 4" was about project-level "ToC" which was formulated as "project intervention logics".

⁴⁶ Some examples include the discussions related to the sustainability of the projects, involvement of the Flemish scientific community, and attracting additional funds for the scaling up of the project.

5.2 Recommendations

In line with the conclusions summarised above and within the context of triangulated evaluation findings, INOMER recommends that the Government of Flanders continues to support UNESCO with a sixth round of FUST.

In this potential new round, it is important to take necessary steps to improve the design and implementation in line with the lessons learnt with the fifth round. The proposed improvements are presented in the following table.

Table 4. Recommendations for enhancing FUST's effectiveness, impact and sustainability

Key recommendation	Rationale	Proposed actions/solutions
1. Develop a Theory of Change (ToC) for FUST without compromising its flexibility	- Strategically guide FUST's project support activities, future calls, and direct resources effectively by aligning with projects that resonate with its overarching ToC. - Increase the effectiveness of FUST, facilitate monitoring and evaluation efforts at the Fund-level and measure the impact of the Fund itself. - Ensure all stakeholders and partners share a coherent understanding of FUST's objectives, goals and requirements. - Streamline communication processes about FUST's intentions, strategies, and desired outcomes. - Delineate responsibilities clearly, fostering increased ownership and accountability among project teams.	- An overall FUST ToC framework is designed that defines the long-term goals to be achieved or contributed to by the Fund (the "impacts") and maps the expected causal chains and necessary preconditions to achieve these goals.⁴⁷
2. Formulate and execute a strategy and action plan for diversification of funding sources.	- Need for funding for scaling up and replicating the FUST projects, as well as for sustaining their results. - Escalated challenges triggered by climate change making it an emergency to increase the number and scale of innovative projects in the fields covered by FUST.	- FUST resources are used to provide seed funds for the first phases of innovative projects with high potential for impact, scalability, replicability and sustainability. - For scaling up, replication and sustainability of FUST projects,

⁴⁷ This recommendation does not call for a lengthy and rigid ToC document. Instead, it suggests a concise, one-page visual tool to guide the design of future calls and projects, and serve as a reference for measuring outcomes and impact of the Fund itself. It will also be used for internal and external communication, and make clear key requirements and needs from the funded projects (e.g. collaboration with the Flemish scientific community, additional resource mobilisation, fostering open science, intersectoral cooperation between FUST and FUT, etc.).

	- Need to prioritise projects with high research and innovation content under FUST.	additional funding is raised from other sources and donors. ⁴⁸
3. Develop a clear framework for intersectoral cooperation between FUST and FUT.	- Need to maximise the impact of FUST and FUT support by creating strong partnership for clear synergies between these two Funds. - Potential to create larger impact and increase the comparative advantage of UNESCO in the fields covered by FUST in the multilateral system (e.g. the only organisation that can address climate change related risks that have an effect on cultural heritage).	- A clear framework for intersectoral cooperation is developed and implemented within UNESCO. - Appropriate incentives are developed and implemented in the Organisation to encourage and enable this collaboration. - Successful intersectoral cooperation examples are identified and disseminated within UNESCO. - Measures are considered within the Government of Flanders to combine the financial resources available under FUST and FUT.
4. Prioritise impact, scalability, replicability, and sustainability from project outset.	- Ensure scalability, replicability and sustainability of projects funded by FUST. - Further enhance inclusiveness of projects and therefore, increase positive impact on underrepresented populations. - Create further synergies and eliminate potential overlaps with similar projects and programmes of other multilaterals.	- FUST project proposals as well as evaluation and selection criteria prioritise scalability, replicability and sustainability considerations from the outset. - Mechanisms are put in place to enable that these considerations are not only stated in the proposals as planned actions but also integrated into the project activities themselves in actual implementation. Therefore, they are regularly revisited and strengthened throughout the project lifecycle. - Projects demonstrate a commitment to implementing and adapting strategies for these elements by exploring potential funding sources for the next phases and achieving stakeholder buy-in/government ownership at an early phase, among others. - Sustainability requirements for infrastructure projects include provisions ensuring that outputs stay functional and operational for a period of three to four years after the end of the project without FUST's additional funding.

⁴⁸ This does not mean transforming FUST into a multi-donor fund, but rather, positioning it as a leveraging tool for new funding; a tool that could attract additional sources to finance the follow-up phases of the projects it initially supports.

		- Project proposals clearly identify inclusiveness strategies for larger impact with a specific focus on integrating the needs of indigenous peoples and other underrepresented groups. - Project proposals include a comprehensive mapping of relevant projects in countries and regions to be covered, as well as a detailed analysis of complementarities and potential overlaps to be addressed.
5. Establish a systematic approach for the involvement of the Flemish scientific community in FUST projects.	- Facilitate the access of projects to Flemish expertise and knowledge. - Create sustainable partnerships between the projects and the Flemish scientific community.	A clear framework including concrete actions are developed and implemented to enable active participation of the Flemish scientists and institutions in the projects. Some of these actions can include: - Design and dissemination of promotional materials for attracting the Flemish scientific community (e.g. by highlighting the strategic importance of FUST project and their results, benefits for participation in FUST projects, etc.); - Introduction of the Flanders Research Information Space (FRIS) portal on researchers and their research in Flanders to the FUST proponents/projects; - Use of the networks of Flemish Research Foundation (FWO) and the University Cooperation for Development Bureau of the Flemish Interuniversity Council (VLIR-UOS) through the channels of TTO Flanders, and Flemish Research Data Network (FRDN); - Organisation of physical or virtual brokerage/networking events (e.g. with the participation of, inter alia, the Open Advisory Committee members engaged in the evaluation of FUST projects so far); - Engaging PhD students in the projects through VLIR-UOS; - Tapping on relevant opportunities for the relevant projects, for instance, by facilitating

		participation of OIH in the Network Days of FRDN.
6. Enhance the FUST programme management cycle by setting clear procedures to streamline processes from calls for project proposals to completion, emphasising result sustainability.	Despite the improvements in the processes with the fifth round, there is a need to address the areas that were identified for improvement; notably, - enhancing call dissemination process across UNESCO after the launch by UNESCO BSP; - strengthening results-based management practices, including project level monitoring, reporting, including self-assessment, at project level.	- Processes and procedures in the FUST implementation cycle are reviewed and improved. - Clear and accessible tools are developed such as a process flow chart from call to project closure. - Capacity building/technical assistance is provided to project teams on various topics, such as results-based management. - Supportive mechanisms are put in place, including but not limited to methods for systematic exchange of knowledge between different project teams and assigning mentors to projects within UNESCO (also those outside FUST projects).
7. Increase the visibility of FUST and its projects through strategic communication.	- Need to enhance both project-specific and overarching FUST-level communication. - Requirement to ensure a cohesive, harmonised approach to visibility across all projects.	- A comprehensive communication strategy to guide the messaging, target audiences, and the ways to share the work and results of FUST-supported projects is developed and implemented. - Guidelines for visibility elements, including examples, are developed and implemented to ensure harmonisation. - A communication expert is engaged to support FUST and its projects in these efforts (could be financed collectively across all projects for resource efficiency and harmonise the communication and visibility efforts).

5.3 Project-specific recommendations for sustainability

- A sustainable financial strategy for OTGA should be developed, taking into account multiple sources of funding and potentially introducing a paid model for certain services or collaborations (e.g. full payment by the organisations under the affiliation programme and full or co-funding by training centres). Other models could also be considered such as inviting trainers to offer certified courses on a paid basis using the platform (similar to the Udemy model). To increase the added value of the courses and attract new learners and trainers, innovative training programmes on new topics of high relevance could be introduced. For this, an online survey could be implemented to identify potential learners' needs and demands as areas of training. Organising short virtual webinars delivered by renowned specialists and UNESCO Goodwill Ambassadors on less technical topics that can still be linked to the FUST fields targeting various groups including general public, youth

and children can help attract a broader audience to the platform. Moreover, implementing a ‘train-the-trainer’ approach could address the trainer shortage and enhance scalability. Train-the-trainers programmes are also important to ensure that knowledge and best teaching practices are transferred in an effective manner from experienced trainers to the others. Lastly, assessing and adjusting the adherence to ISO standards (e.g. not requiring ISO compliance for specific training offers/workshops or for specific organisations based on the purpose of training/workshop) could broaden OTGA’s appeal and utility to a more diverse set of users, strengthening it as a comprehensive platform for relevant capacity building and awareness raising activities.

- To ensure OIH’s sustainability, it is recommended to broaden its reach to incorporate more systems, organisations, nodes, and regions, with special emphasis on the oceanographic and polar data communities. In addition, strategies to transform raw data into actionable knowledge should be established through business intelligence and the application of artificial intelligence. OIH should also explore opportunities to align more closely with the goals of the Ocean Decade, potentially leveraging its coordination office for data sharing. At the same time, UNESCO could ensure that OIH is defined as a priority within the Ocean Decade. In the future calls, it is recommended that FUST mandates at the outset infrastructure projects such as OIH to ensure functionality and operation for a period of three to four years post-project, without necessitating additional funding.
- It is recommended that PacMAN takes steps to solidify government ownership, possibly by strengthening the role of governmental agencies in the project implementation process. Accelerating data accessibility, which is a key factor for the continuity of the monitoring plan, should be a priority. Exploring potential collaborations with regional and international organisations, NGOs, and long-term programmes can secure post-2024 funding. Furthermore, efforts should be made to adapt and implement the project’s protocols in other regions, leveraging the capacity and knowledge gained through PacMAN to extend its impact.
- To secure the sustainability of Be-Resilient, efforts should focus on securing government ownership, strengthening regional networks, and establishing sustainable data management practices. Raising additional finance for the implementation of adaptation strategies is a critical step forward. Engaging local governments and municipalities at the can help to embed CRIDA’s principles at grassroots level, paving the way for broader adoption. Capacity building should be expanded and intensified, using a ‘train-the-trainers’ approach to increase reach. Finally, targeted training for community members associated with the project can enhance long-term impact.
- The ClIMWaR project should continue and expand its collaborations, specifically with UNESCO Chairs and Centres, to ensure the continued use and relevance of its results. A robust and sustainable data management system should be put in place, ideally in conjunction with other efforts to establish long-term repositories for project data.
- To enhance the scalability and sustainability of all projects, it is recommended to focus on strengthening the institutional capacities of IOC sub-commissions, such as IOC Africa and IOC Caribbean and UNESCO field offices in the areas covered by FUST. Facilitating the exchange of knowledge and experiences between them can lead to mutual learning and more effective project implementation. Furthermore, each project should develop a well-designed exit and sustainability strategy including funding possibilities from multiple donors for the next phases and scaling up.

Annex 1. Terms of reference

1. UNESCO/Flanders Trust Fund

A. Background

The cooperation between Flanders and UNESCO started in 1998 when both parties signed a first framework agreement during the official visit of the Minister-President of the Flemish Government. This was soon followed by an agreement on a first Trust Fund for the Support of Science, signed in September 1999 and subsequently extended for a second, third, fourth and fifth period of 5 years each as follow periods: 2004-2008, 2009-2013, 2014-2018 and recently 2019-2023. Through this Science Trust Fund, also known as FUST, the Flemish Government has supported UNESCO's activities in the field of oceanography, water management, geosciences and the Man and the Biosphere (MAB) programme. A selection of information and materials about the previous phases and the ongoing projects is available through <https://fust.iode.org>.

According to Article 2(2) of the Agreement on the UNESCO Trust Fund for the support of UNESCO's activities in the field of Science (FUST), a thorough evaluation is to be performed before the end of 2023 on the cooperation implemented during the past 5 years and reported to the Government of Flanders with a view to deciding whether to extend the agreement for a further period of five years.

Thus, the present terms of reference (ToRs) shall address the evaluation of the Flanders/UNESCO Science Trust Fund (FUST), including the coordination and the strategic implementation of the trust fund, in relation to the focus of the cooperation as stated in Article 3 of the Agreement to support:

- the programme of the Intergovernmental Oceanographic Commission (IOC);
- the International Hydrological Programme (IHP);
- the Man and the Biosphere Programme (MAB)
- The International Geoscience and Geoparks Programme (IGGP)

B. Supported programmes

As indicated above, through FUST, the Flemish Government has supported UNESCO's activities in the field of oceanography, water management, MAB programme and Geoscience and Geoparks. Below is a brief description of the purpose of UNESCO's programmes in these areas.

IHP

The International Hydrological Programme (IHP) is the only intergovernmental programme of the UN system devoted to water research, water resources management, and education and capacity building. The programme, tailored to Member States' needs, is implemented in multi-year phases, the new IHP IX programme will run 2022-2029 and focuses on water in a rapidly changing world. International and regional co-operation in water resources issues is actively pursued in IHP activities. Particular attention is paid to reflecting the needs of developing countries in the IHP plans. Belgium (with an active role for Flanders) has become a member of the IHP Council in 2021, chairs the IHP working group on Scientific Research and Innovation and has a lead role regarding the topic of 'hydrology and citizen science', linking with an ongoing FUST project.

MAB

The Man and the Biosphere (MAB) Programme is an intergovernmental scientific programme aiming to set a scientific basis for the improvement of the relationships between people and their environment globally. The MAB Programme proposes an interdisciplinary research agenda and capacity building that target the ecological, social and economic dimensions of biodiversity loss and the reduction of this loss. It's World Network of Biosphere Reserves currently counts more than 700 biosphere reserves in 130+countries. Concerned with problems at the interface of scientific, environmental, societal and development issues, MAB combines natural and social sciences, economics and education to improve human livelihoods and safeguard natural ecosystems, thus promoting innovative approaches to economic development that is socially and culturally appropriate and environmentally sustainable. FUST currently supports a project on mangrove restauration in biosphere reserves in the LAC region. Another example is the Be-Resilient Project, which is about climate observations in biosphere reserves and a bridge between the IHP and the MAB.

IOC

The Intergovernmental Oceanographic Commission (IOC) was established to provide the Member States of the United Nations (UN) with an essential mechanism for global co-operation in the study of the oceans. In order to perform its vital cross- sectoral and cross-agency responsibilities and provide an efficient and effective mechanism for drawing on the expertise of the non-governmental scientific community, the Twenty-fourth Session of the General Conference in 1987 provided the IOC with functional autonomy within UNESCO. The basic mission of the IOC is defined in Article 2 of its statutes which states that 'The purpose of the Commission is to promote international co-operation and to co-ordinate programmes in research, services and capacity building, in order to learn more about the nature and resources of the ocean and coastal areas and to apply that knowledge for the improvement of management, sustainable development, the protection of the marine environment, and the decision making processes of its Member States.' Flanders hosts the IOC's project office for the IODE programme on oceanographic data and information. That office is also the global hub for IOC's capacity development activities. FUST has been a major funder for IOC projects.

Geosciences and Geoparks

The scope of FUST was enlarged in the renewal to its fifth phase 2019-2023, and a small-scale activity focusing on (potential) African geoparks was granted. So far, no large-scale project has been funded by FUST in this field of science.

2. Purpose and scope of the Evaluation

A. General

The primary purpose for this evaluation is to provide advice to the Flemish Government and UNESCO concerning the future directions of cooperation under the Trust fund. More specifically, the evaluation will:

- Examine the governance, management and coordination mechanism developed by the two sides within the trust fund during the period 2019 to end of 2022;
- examine at a general level how UNESCO science programme management, in responding to a FUST call, have positioned the role of proposed FUST projects in relation to UNESCO general and

programmatic priorities, and what significance effectively selected FUST projects attained in relation to those general and programmatic priorities; determine ‘lessons learnt’ in this aspect of FUST management with regard to call preparation;

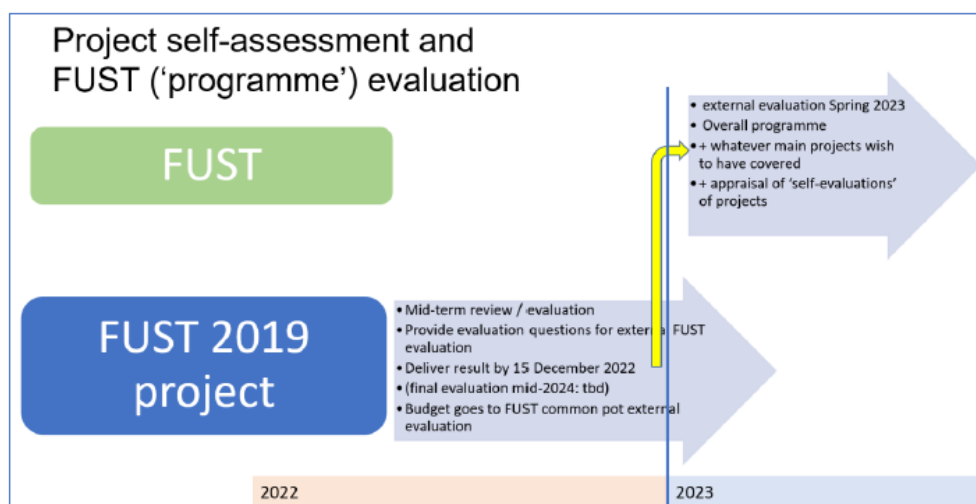
- Assess the implementation of the following five Large Scale Projects supported under FUST during the period 2019 to 2023, including their impact and sustainability:
 - o The Ocean Teacher Global Academy project (OTGA)
 - o The Ocean InfoHub project (OIH)
 - o The Pacific Islands Marine Bioinvasions Alert Network (PacMAN)
 - o Enhancing Climate Services for Improved Water Management (ClimWaR)
 - o The Be-Resilient project
- A brief description of the selected projects is attached to the present ToRs;
- Provide a forward-looking perspective on how the collaboration between the Flemish Government and UNESCO within the framework of the Trust Fund can further be strengthened.

B. COVID delays mitigation: combination of project self-assessment with the external evaluation

The four Large-Scale FUST projects which were approved for funding by the Flemish Government in December 2019, which were officially started in 2020 during the COVID-19 pandemic, all suffered implementation delays due to the pandemic. This means that, despite their initial plans for a 36-month implementation period, the actual implementation of these projects has not yet finished. As a result, the FUST Steering Committee agreed that the planning of the overall FUST evaluation should consist of:

- ‘mid-term’ self-assessments of these projects, with an opportunity to provide evaluation questions to be addressed in the overall external FUST evaluation;
- an external FUST evaluation that would complement the ‘mid-term’ self-assessments.

The results of these four main project ‘mid-term’ self-assessments are available at the start of the external evaluation.



C. Evaluation questions

The following is a list of indicative and generic evaluation questions. A more specific set of evaluation questions shall be drafted and validated during the inception phase of the evaluation, especially taking account of the results described in ‘COVID delays mitigation’ above, so that the external evaluation efforts are complementary to those already evident from the project progress reports produced in December 2022. The CLIMWAR project (started 2017) also provided an extensive report, including self-assessment, at the end of 2022.

In line with the main purpose presented above, the evaluation will focus on the following two main aspects.

➤ **Adequacy of FUST Governance, Management, and Coordination Mechanisms:**

Coherence:

- In what ways could the deployment of resources under FUST be optimized to enhance the potential impacts of the invested financial resources (e.g., ensuring complementarities with other UNESCO donors in order to multiply effects and avoid duplications)? (Question AC-1)

Efficiency:

- How effective and efficient are the governance, coordination, advisory, management frameworks established under the trust fund by the two sides? This includes the meetings of the Steering Committee and bilateral consultations between UNESCO’s relevant services and the Flemish Government (in particular with BSP, the Natural Science Sector, IOC and concerned field offices) and the project selection process in Flanders. (Question AE-1)

➤ **Assessment of projects funded under the Trust Fund, in particular the following selected Large-Scale projects: OTGA 2, OIH, PACMAN, CLIMWAR and BE-RESILIENT**

- Relevance:

- To what extent was the timeframe, the geographic coverage and thematic coverage of the projects adequate within the context of the overall programmes? (Question R-1)
- What is the current and future potential of the projects to contribute to relevant UNESCO’s/ the Flemish government policies in the light of the 2030 Agenda? (Question R-2)
- To what extent did the selected projects meet stakeholder and beneficiaries’ needs in consideration of regional, national and basin scale (local) priorities? (Question R-3) Has there been particular attention to consideration of how scientific and science-based activities can be true enablers, how the projects related to specific area-based disadvantaged groups, indigenous peoples, and any social and environmental concerns specific to the project and, more generally, of gender equality? (Question R-4)

Coherence:

- How has the support provided through FUST complemented/reinforced UNESCO’s programmes, in connection with the contribution of these programmes to strengthening UNESCO’s C/4 (medium term strategy) and C/5 (programme and budget)? (Question C-1)

- Efficiency:

- Have the selected projects produced the outputs in the project documents in a timely manner (considering delays due to the COVID-19 pandemic)? (Question E-1)
- Were the human and financial resources used efficiently? (Question E-2)

- Were opportunities seized to develop potential synergies with relevant networks and partners? (Question E-3)
- To what extent have partnerships and cooperation with implementing partners been effective? (Question E-4)

- Effectiveness/Signs of Impact:

- To what extent have expected results for the selected projects been achieved? (Question I-1) What were the key enablers and key challenges for such achievements? (Question I-2)
- Was an adequate monitoring framework/methodology put in place in order to achieve the expected results and maximize the success of the projects? (Question I-3)
- If there were differences between the real and the expected outputs, were these discussed between UNESCO and the Government of Flanders? (Question I-4)
- What have been the longer-term effects of the projects within the respective institutional, country, regional and international contexts (including potential for replication and multiplier effects)? (Question I-5)

- Sustainability:

- What mechanisms (including in terms of communication) have been put in place to ensure that the projects and/or their effects are sustainable over time and or scaled up/ replicated elsewhere? (Question S-1)
- In what ways have the project activities (and their outputs and effects) contributed to the visibility of the selected projects, of Flanders and of UNESCO? (Question S-2)

Did the project lead to new opportunities for international scientific cooperation, and if so, did this involve scientists from Flanders? (Question S-3)

Specific questions related to the selected large-scale projects to be examined by the evaluators are included as annex of the present ToRs. In responding to the main evaluation questions presented in this chapter, the evaluation team will need to consider the indicative list of questions in the annex (as sub-evaluation questions or suggested questions to be included in their data collection tools).

D. Evaluation Methodology

a. **Desk study** to review all relevant documents and literature, including:

- Flanders/UNESCO Science Trust Fund agreement;
- Minutes of the meetings of the relevant Steering Committees between the donor agency and UNESCO, as well as those established for individual projects;
- Project documents;
- Progress reports;
- Mid-term self-assessments;

vi. Other related documents to the extent relevant (including national, regional, brochures, posters, multimedia products, media coverage, ...);

b. **Interviews** (conducted in person or with videoconferencing facilities) with representatives from relevant stakeholders, including from:

c. Up to five **missions** (three to UNESCO Headquarters, one or two to Belgium). No field missions are foreseen to the countries of implementation of the selected FUST projects under review.

d. **Other relevant data collection** method as proposed by the bidder.

We suggest that the evaluation team undertake the evaluation using the following evaluation methods:

- i UNESCO Headquarters, Paris (BSP, SC and IOC);
- ii Flemish Government, Brussels;
- iii UNESCO's Field offices strongly involved in FUST projects
- iv Selected constituencies associated with a particular FUST project

The findings, conclusions and recommendations resulting from the evaluation shall be expressed in a report to be drafted by the evaluation team and to be submitted to UNESCO and the Government of Flanders.

E. Evaluation Team composition

The recommended composition of the evaluation team will be of **at least two senior consultants**: an evaluation expert and a scientific expert. The evaluation team members should **collectively demonstrate experience in all the thematic areas** to be covered by the evaluation and should have **no previous involvement in the design and implementation of activities under review**.

The consultants should possess the following **mandatory qualifications and experience**:

Senior evaluator (team leader):

- An advanced university degree in social sciences, economics, political science or one or more of the relevant fields related to the evaluation; (Master level or above)
- At least 10 years of professional experience in designing and leading programme or policy evaluations at the international level;
- Demonstrated experience in applying quantitative and qualitative data collection methods;
- Excellent oral communication and writing skills in English;
- Excellent analytical skills and skills in producing succinct, clear materials.

Scientific expert:

- An advanced university degree in hydrology, geoscience, oceanography or other relevant fields related to the evaluation; (Master level or above)
- At least 10 years of professional experience in designing and leading programme and policy in one or more of the thematic fields related to the evaluation;
- Excellent oral communication and writing skills in English;
- Excellent analytical skills and skills in producing succinct, clear materials.

Moreover, it is **desirable** that the evaluation team collectively demonstrates the following qualifications and characteristics:

- Knowledge of the UN system and in particular of UNESCO's programmes in the fields of Natural Science, notably IHP, MAB and IOC activities;
- Experience with assignments for the UN
- Understanding and application of UN mandates in Human Rights and Gender Equality;
- Experience in designing and conducting programme and policy evaluations in one or several of the fields covered by this evaluation.

Preference will be given to evaluation teams that are gender-balanced and of geographically and culturally diverse backgrounds.

Verification of these qualifications will be based on the provided technical proposals and CVs. Moreover, references, web links or electronic copies of two recently completed assignments should be provided (preferably evaluations in relation to programmes in the field of science). The evaluation assignment is estimated to require approximately 50 - 60 professional working days (to be distributed among the evaluation team).

3. Planning and implementation arrangements

Evaluation Reference Group

A reference group will be established to oversee and ensure transparency of the evaluation process, as well as to quality assure the evaluation methodology and the deliverables. The reference group will be composed of representatives from the Bureau of Strategic Planning (BSP), the Natural Science sector (including representatives from IHP and MAB also from UNESCO's concerned field offices), the Intergovernmental Oceanographic Commission (IOC); the Division of Internal Oversight Services' (IOS) Evaluation Office and the representative from the Government of Flanders. The group will accompany the evaluation process by advising on the composition of the external evaluation team, providing inputs to the development of the evaluation questions, feedback on the inception report and draft evaluation report, and guidance on the appropriate actions to be taken in response to the evaluation recommendations.

Management Arrangements:

- Relevant programme officers from the Science Sector and IOC will provide the evaluation team with all relevant documentation and access to relevant key stakeholders;
- BSP and the relevant Science Sector and IOC programme officers will identify UNESCO staff, Flemish Government officials and national officials to meet with during the field interviews/visits as well as the dates for the interviews/visits;
- The relevant Science sector and IOC programme officers and BSP will inform UNESCO staff, Flemish Government officials and national officials of the objectives of the evaluation and of the field visits in advance.

Logistics:

The evaluation team will commonly be responsible for their own logistics: office space, administrative and secretarial support, telecommunications, printing of documentation, travel, etc. They will also be responsible for administering and disseminating all methodological tools such as surveys, and logistics related to travel. UNESCO will facilitate access to relevant stakeholders, including UNESCO staff at Headquarters, Field Offices and beneficiaries and partners engaged in the project delivery.

4. Deliverables and schedule

The evaluation will consist of three main deliverables: (i) inception report, (ii) draft report and (iii) final report.

The Draft and Final Evaluation reports should be written in English and structured as follows:

- 1/ An executive summary (maximum 3 pages)
- 2/ Report (maximum 30 pages excluding 3 pages of executive summary and the annexes) taking into consideration the scope of the evaluation (see above):
 - Background information on the FUST;
 - Purpose of evaluation and Methodology;

- Major findings, including achievements and challenges that impacted the project delivery (including on UNESCO's programmes – IOC, MAB, IGGP and IHP) and the wider aspects of cooperation developed under FUST;
- Lessons learnt (from both positive and negative experiences);
- Conclusions
- Recommendations
- Annexes

Annex 2. Evaluation Matrix

Evaluation dimensions and questions	Desk review	In-depth Interviews	Beneficiary Survey	Focus groups	Case studies
A. Adequacy of FUST Governance, management and coordination mechanisms:					
i. Ways in which deployment of resources under FUST could be optimized to enhance the potential impacts of the invested financial resources (Question AC-1)	***	***	*	**	*
ii. Extent to which governance, coordination, advisory, management frameworks established under the trust fund by the two sides are effective and efficient (Question AE-1)	***	***	*	**	*
B. Assessment of projects funded under the Trust Fund (notably OTGA 2, OIH, PACMAN, CLIMWAR and BE-RESILIENT)					
a. Relevance					
i. Extent to which the timeframe, the geographic coverage and thematic coverage of the projects are adequate within the context of the overall programmes (Question R-1)	***	***	**	***	**
ii. Current and future potential of the projects to contribute to relevant UNESCO's/the Flemish government policies in the light of the 2030 Agenda (Question R-2)	**	***	**	***	***
iii. Extent to which the selected projects meet stakeholder and beneficiaries' needs in consideration of regional, national and basin scale (local) priorities (Question R-3)	**	***	***	**	***
iv. Whether or not there has been particular attention to consideration of how scientific and science-based activities can be true enablers (Question R-4-1)	***	***	***	**	**
v. Mainstreaming of the gender equality dimension and environmental considerations in the projects (Question R-4-2)	***	***	***	***	***
vi. Considerations related to specific area-based disadvantaged groups and indigenous peoples in the projects (Question R-4-2)	***	***	***	***	***
b. Coherence					
i. Ways in which support provided through FUST complemented/reinforced UNESCO's programmes, in connection with the contribution of these programmes to strengthening UNESCO's C/4 (medium term strategy) and C/5 (programme and budget) (Question C-1)	***	***	*	**	**
c. Efficiency					
i. Whether or not the selected projects produced the outputs in the project documents in a timely manner (considering delays due to the COVID-19 pandemic) (Question E-1)	***	***	*	***	*

Evaluation dimensions and questions	Desk review	In-depth Interviews	Beneficiary Survey	Focus groups	Case studies
ii. Whether or not the human and financial resources have been used efficiently (Question E-2)	***	***	*	**	*
iii. Whether or not opportunities have been seized to develop potential synergies with relevant networks and partners (Question E-3)	**	***	***	***	***
iv. Extent to which partnerships and cooperation with implementing partners were effective (Question E-4)	**	***	***	***	***
d. Effectiveness/Signs of Impact					
i. Extent to which expected results for the selected projects have been achieved? (Question I-1)	***	***	**	***	***
ii. Key enablers and key challenges for achievement of results (Question I-2)	**	***	**	***	***
iii. Adequacy of monitoring framework/methodology put in place in order to achieve the expected results and maximize the success of the projects (Question I-3)	***	***	*	***	***
iv. Whether or not there were differences between the real and the expected outputs (Question I-4)	***	***	**	***	***
v. Longer-term effects of the projects within the respective institutional, country, regional and international contexts (including potential for replication and multiplier effects) (Question I-5)	**	***	**	***	***
e. Sustainability					
i. Mechanisms (including in terms of communication) put in place to ensure that the projects and/or their effects are sustainable over time and or scaled up/replicated elsewhere (Question S-1)	***	***	**	***	***
ii. Ways in which the project activities (and their outputs and effects) contributed to the visibility of the selected projects, of Flanders and of UNESCO (Question S-2)	**	***	***	***	***
iii. Whether or not the project led to new opportunities for international scientific cooperation, and if so, if this involved scientists from Flanders (Question S-3)	**	***	***	***	***

Annex 3. Key documents consulted

CertUp (2023) UNESCO/IOC Project Office for IODE - ISO 29993 Visit Report

Technopolis (2018) Independent external evaluation of the Flanders/UNESCO Science Trust Funds (FUST) Phase IV, (2014-2018): Final Report

UNESCO (2017) ClimWar Project Proposal

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UNESCO (2022) Mid-term Self-assessment: Be-Resilient

UNESCO (2022) Mid-term Self-assessment: ClimWaR

UNESCO (2022) UNESCO/Flanders Funds-in-Trust for the Support of UNESCO's activities in the Field of Science: 30th Meeting of the Steering Committee

UNESCO (2023) Be-Resilient Financial Report 31 December 2022

UNESCO (2023) ClimWaR Accomplishment Report

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UNESCO (n.d.) Be-Resilient Project Proposal

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<https://en.unesco.org/be-resilient>

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UNESCO/IOC (2020) Ocean InfoHub Project Proposal

UNESCO/IOC (2020) Ocean Oceans Teacher Global Academy Project Proposal

UNESCO/IOC (2020) PacMAN Project Proposal

UNESCO/IOC (2021) IODE Steering Group for the Ocean Teacher Global Academy project

UNESCO/IOC (2021) Ocean InfoHub Progress Report

UNESCO/IOC (2021) Ocean Oceans Teacher Global Academy Progress Report

UNESCO/IOC (2021) PacMAN Progress Report

UNESCO/IOC (2022) IODE Steering Group for the Ocean Teacher Global Academy project

UNESCO/IOC (2022) Ocean InfoHub Progress Report

UNESCO/IOC (2022) Ocean Oceans Teacher Global Academy Progress Report

UNESCO/IOC (2022) PacMAN Progress Report

UNESCO/IOC (2022) Mid-term Self-assessment: Oceans InfoHub

UNESCO/IOC (2022) Mid-term Self-assessment: Oceans Teacher Global Academy

UNESCO/IOC (2022) Mid-term Self-assessment: PacMAN

UNESCO/IOC (2023) IODE Steering Group for the Ocean Teacher Global Academy project

UNESCO/IOC (2023) Ocean InfoHub Financial Report 31 December 2022

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UNESCO/IOC (2023) Ocean Teacher Global Academy Financial Report 31 December 2022

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VLIZ (n.d.) UNESCO/Flanders Fund-in-Trust for the support of UNESCO's activities in the field of Science (FUST). <https://fust.iode.org/>

Annex 4. List of interviewees

Name	Gender	Region	Organisation	Representation	Project
Gert Verreet	Male	Europe	Flemish Government Department of Economy, Science & Innovation	FUST projects	All
Jessica Evans	Female	Global	UNESCO - BSP	FUST projects	All
Philip Van Avermaet	Male	Europe	Flemish Government Department of Economy, Science & Innovation	FUST projects	All
Salvatore Mineo	Male	Global	UNESCO - BSP	FUST projects	All
Cathie Lewis	Female	Africa	Earth Energy Ltd/CoGo	Non-governmental organisation	Be-Resilient
Charon Marais	Male	Africa	Collaborative Governance (CoGo, South Africa)	Non-governmental organisation	Be-Resilient
Guy Brouke	Male	Global	UNESCO - Field Office – Harare	FUST projects	Be-Resilient
Makoni Tonderai	Male	Africa	Beneficiary of Capacity Building Activities	Non-governmental organisation	Be-Resilient
Marie-Tinka Uys	Female	Africa	Kruger to Canyons	Non-governmental organisation	Be-Resilient
Mercy Chikwanha	Female	Africa	Beneficiary of Capacity Building Activities	Ministry or equivalent	Be-Resilient
Nick Theron	Male	Africa	Kruger to Canyons	Non-governmental organisation	Be-Resilient
Paulina Mufeti	Female	Africa	Ministry of Agriculture Water and Land Reform	Ministry or equivalent	Be-Resilient
Tawanda Gijma	Male	Global	UNESCO - Field Office – Harare	FUST projects	Be-Resilient
Vongani Maringa	Male	Africa	Department of Forestry, Fisheries and the Environment	Ministry or equivalent	Be-Resilient
Webster Gumindoga	Male	Africa	University of Zimbabwe	Higher Education Institute	Be-Resilient
Abdou Ali	Male	Africa	Permanent Inter-State Committee for Drought Control in the Sahel	International Organization	ClimWaR
Anil Mishra	Male	Global	UNESCO – IHP	FUST projects	ClimWaR
Ann Van Griensven	Female	Europe	Vrije Universiteit of Brussels, Belgium	Higher Education Institute	ClimWaR
Gerald Tapuwa Mundondwa	Male	Africa	Ministry of Lands, Agriculture, Fisheries, Water and Rural Development	Ministry or equivalent	ClimWaR
Kawawa Banda	Male	Africa	University of Zambia	Higher Education Institute	ClimWaR
Magali Garcia	Female	LAC	Universidad Mayor de San Andres, Bolivia	Higher Education Institute	ClimWaR
Miguel Doria	Male	LAC	UNESCO - Field Office – Montevideo	FUST projects	ClimWaR
Piet Kenabatho	Male	Africa	University of Botswana	Higher Education Institute	ClimWaR
Jayakumar Ramasamy	Male	Global	UNESCO – Natural Sciences	FUST projects	ClimWaR Be-Resilient
Koen Verbist	Male	Global	UNESCO – IHP	FUST projects	ClimWaR Be-Resilient
Reinaldo Peñailillo	Male	Europe	Deltares, The Netherlands	Public research institute	ClimWaR Be-Resilient
Caroline Garcia	Female	LAC	INVEMAR - Caribbean Marine Atlas	Public research institute	Ocean InfoHub

Lucy Scott	Female	Global	UNESCO - IOC – IODE	FUST projects	Ocean InfoHub
Marc Portier	Male	Europe	Flanders Marine Institute	Public research institute	Ocean InfoHub
Martina Gaglioti	Female	Europe	Beneficiary of Capacity Building Activities	Other	Ocean InfoHub
Sandra Sa	Female	Europe	EuroOcean	Non-governmental organisation	Ocean InfoHub
Sérgio Bryton	Male	Europe	EuroOcean	Non-governmental organisation	Ocean InfoHub
Sioeli Tonga	Male	Asia and the Pacific	Pacific Community (SPC)	International Organization	Ocean InfoHub
Taco De Bruin	Male	Europe	NIOZ Royal Netherlands Institute for Sea Research	Public research institute	Ocean InfoHub
Terry McConnell	Male	Global	Fugro	Private Company	Ocean InfoHub
Yutaka Michida	Male	Asia and the Pacific	The University of Tokyo	Higher Education Institute	Ocean InfoHub
Aidy Muslim	Male	Asia and the Pacific	Institute of Oceanography and Environment (INOS)	Public research institute	OTGA
Amy Mumo	Female	Africa	Beneficiary of Capacity Building Activities	Other	OTGA
Clousa MAUEUA	Female	Africa	Centre for Marine Research and Technology (UEM)	Public research institute	OTGA
Daniel Conde	Male	LAC	University of Uruguay (UdelaR)	Higher Education Institute	OTGA
Décio Maoze	Male	Africa	Beneficiary of Capacity Building Activities	Other	OTGA
Dian XU	Female	Asia and the Pacific	National Center of Ocean Standards and Metrology (NCOSM)	Public research institute	OTGA
Gregory Reed	Male	Global	UNESCO - IOC – IODE	FUST projects	OTGA
Jonathan CEDEÑO	Male	LAC	Escuela Superior Politécnica del Litoral (ESPOL)	Higher Education Institute	OTGA
Leen Vandepitte	Female	Europe	Flanders Marine Institute	Public research institute	OTGA
Marinez SCHERER	Female	LAC	University of Santa Catarina (UFSC)	Higher Education Institute	OTGA
Noer NURHAYATI	Female	Asia and the Pacific	Indonesia Agency for Meteorology, Climatology and Geophysics (BMKG)	Ministry or equivalent	OTGA
Uday BHASKAR	Male	Asia and the Pacific	International Training Centre for Operational Oceanography (ITCOOcean)	Public research institute	OTGA
Wan Fangfang	Female	Asia and the Pacific	National Marine Data and Information Service (NMDIS)	Public research institute	OTGA
Ariel Troisi	Male	LAC	Escuela de Ciencias del Mar	Higher Education Institute	OTGA Ocean InfoHub
Ann-Katrien Lescrauwaet	Female	Europe	Flanders Marine Institute	Public research institute	OTGA Ocean InfoHub PacMAN

Ksenia Yvinec	Female	Global	UNESCO - IOC	FUST projects	OTGA Ocean InfoHub PacMAN
Mika Odido	Male	Africa	UNESCO - IOC Africa	FUST projects	OTGA Ocean InfoHub PacMAN
Peter Pissierssens	Male	Global	UNESCO - IOC – IODE	FUST projects	OTGA Ocean InfoHub PacMAN
Adi Miriama (Miri) Vuiyasawa	Female	Asia and the Pacific	PacMAN Assistant to Project Manager	FUST projects	PacMAN
Anthony Talouli	Male	Asia and the Pacific	Secretariat of the Pacific Regional Environment Programme (SPREP)	International Organization	PacMAN
Apolosi Waqalevu	Male	Asia and the Pacific	Environmental Health, Ministry of Health and Medical Services (Fiji)	Ministry or equivalent	PacMAN
Chaminda Dissayanake	Male	Asia and the Pacific	Biosecurity Authority of Fiji (BAF)	Ministry or equivalent	PacMAN
Christopher Meyer	Male	North America	National Museum of Natural History, Smithsonian Institution	Public research institute	PacMAN
Gilianne Brodie	Female	Asia and the Pacific	University of South Pacific - Institute Of Applied Sciences	Higher Education Institute	PacMAN
Hugo Gante	Male	Europe	KULeuven (Catholic University Leuven)	Higher Education Institute	PacMAN
Joape Ginigini	Male	Asia and the Pacific	Local Project Manager (PacMAN)	FUST projects	PacMAN
Katy Soapi	Female	Asia and the Pacific	Pacific Community (SPC)	International Organization	PacMAN
Matthias Obst	Male	Europe	University of Gothenburg	Higher Education Institute	PacMAN
Saara Suominen	Female	Global	UNESCO - IOC – IODE	FUST projects	PacMAN
Ward Appeltans	Male	Global	UNESCO - IOC – IODE	FUST projects	PacMAN

Annex 5. Focus group meeting participants

Sérgio Bryton	EurOcean
Gabriel Mancilla	Water Centre for Drylands in Latin America and the Caribbean
Frank Muller-Karger	University of South Florida
Paula Sierra	INVEMAR - Head of Marine Research and Information
Nick Theron	Kruger to Canyons
Marie-Tinka Uys	Kruger to Canyons

Annex 6. Approaches taken for training in the FUST projects

OTGA delivers its training programmes through a network of Regional and Specialised Training Centres (RTC/STC), which are selected based on applications made by IOC Member States and interested organisations, primarily universities, research institutes and government agencies. OTGA also collaborates with other IOC projects, for instance, OIH and PacMAN as well as with external organisations, such as VLIZ, to host their training programmes in its platform (“affiliate programme”).

In 2022, UNESCO/IOC Project Office for IODE received the ISO 29993 certification, an international standard for non-formal education and training services. It then developed “Course Management Guidelines” to structure its capacity-building approach based on this standard. Each RTC/STC develops an annual work, which is discussed and approved by OTGA’s advisory group. All OTGA programmes are reviewed and scored annually by the OTGA Secretariat against course design criteria defined in the guidelines. These criteria include aspects such as learning objectives, learning activities, learner interaction and assessment, amongst others.

The topic of a training course is primarily determined by the training centre, based on the centre’s expertise. RTC/STC coordinators rely on their knowledge of the region and their networks when identifying regional needs and therefore, the relevant training topics. However, they do not employ any systematic approaches to this process. Furthermore, each IOC or external organisation has a focus within its training curriculum, aimed at strengthening the capabilities of their target groups. For instance, OIH seeks to enhance capacity in data management, while PacMAN aims at developing capabilities to detect marine invasive species using innovative technologies.

Trainers are typically recruited from the institution that hosts the RTC/STC (e.g. a university or a research institute), mainly using the network of the centre’s coordinator. In the cases of OIH and PacMAN, trainers are some members of the project team. Trainers are not paid, and their work is considered as a part of their professional responsibility. They usually use the content they already have as part of their regular teaching activities and are required to adapt their training materials in line with the OTGA platform requirements. For this purpose, they develop slides, upload them on the OTGA platform, and create quizzes and evaluations, among other tasks. The IODE Office provides support to trainers to fulfil these actions.

Training programmes are primarily announced through IODE and IOC communication channels, including, [Ocean Experts](#) platform and social media. Similarly, each RTC/STC and related FUST project using the platform advertise their programmes through their own means. The training programmes could be delivered in-person (differs according to the demand and capacity of the course), online, or as a blend of both. While the OTGA platform can support a large number of participants for each training course, the number of participants usually ranges between 20 to 40 individuals.

The target audience of OTGA’s own programmes is mainly ocean experts aiming to strengthen their technical skills. Participants apply online and go through a pre-selection process implemented by IODE which mainly assesses the completeness of the application form and other basic eligibility requirements, such as language skills. The selection process is conducted by the RTC/STC using criteria that include course-specific requirements and endorsements from participants’ institutes, technical qualifications, and motivation of the participants. In the case of the OIH, priority is given to participants from partnering institutions, while in the case of PacMAN, applicants from Fiji are prioritised.

Many OTGA Training Programmes, as well as the programmes of OIH and PacMAN, remain accessible online to the participants after the completion. They are also available to other potential trainees as self-paced programmes and are accessed with an Ocean Expert account.

OTGA training participants receive either a 'Certificate of Participation' (given to all participants who complete more than 90% of a course) or a 'Certificate of Completion' (given to all participants who successfully pass assessment under a course). All training programmes are evaluated using a standardised, anonymous online feedback survey to gather trainees' opinions. A wrap-up meeting is scheduled between the RTC/STC coordinator and the OTGA Secretariat following the course to discuss the course evaluation results.

The CliMWaR and Be-Resilient projects did not use OTGA platform and developed another platform ([Open Learning Platform](#)) for their capacity building activities. This platform was developed as part of the CliMWaR project, in response to the COVID-19 pandemic.

Both CliMWaR and Be-Resilient also provide capacity building on the Climate Risk Informed Decision Analysis (CRIDA), a key tool that offers an innovative methodology to climate-related risk assessments using a bottom-up approach. CliMWaR's training focused on the CRIDA methodology, whereas Be-Resilient supported the development of CRIDA case studies in Southern Africa. For this purpose, training courses using three approaches were carried out: a) webinars to engage with actors to present the methodology and cases; b) self-paced online course through the Open Learning Platform; c) practical training with some selected participants, working on cases to learn on specific approaches, using their country-specific water system models.

An example of webinar implemented under the framework of CRIDA, was the one organised about integrated water resources management focusing on case studies from the Dominican Republic, Ecuador and Chile. They were opened to anyone, disseminated through UNESCO's social media channels as well as IHP's email distribution lists, and was attended by more than 700 participants. Another example, not related to CRIDA and implemented by CliMWaR, was the "Indigenous Knowledge and Climate Risk Management" course in 2020, which presented some studies demonstrating the synergies between Indigenous and Local Knowledge systems and climate services and adaptation.

An example of self-paced programmes was the training organised on the CRIDA methodology which included team- and project-based learning using a diverse set of collaboration tools like discussion forums, video conferencing and file sharing. It was opened to anyone without the need for application and received approximately 369 enrolments. Other similar training programmes were hosted by CliMWaR on remote sensing for catchment and water resource management. In addition, Be-Resilient designed an online training programme on climate information, climate forecasting and climate services.

A hands-on training course example is the one implemented in the framework of CRIDA which included practical capacity building and knowledge transfer on the use of available tools and methodologies to address climate change impact on water resources. This training gathered 31 professionals. The CliMWaR project also conducted face-to-face CRIDA training that was held at Stellenbosch University in South Africa. The lectures delivered by scientists from global research and development organisations (such as Deltares, AGWA and US Army Corps of Engineers) were recorded and used as a part of the online training programmes hosted in the Open Learning Platform. Be-Resilient also included hands-on training programmes in the context of citizen science where unemployed youth were trained in monitoring river water and undertaking awareness campaigns. Be-Resilient aimed at engaging schools and their teachers to use the Biosphere Concept in their teaching. The project strengthened Education for Sustainable

Development (ESD) and DRR to ensure that the lessons learnt from the biosphere reserves could be shared in schools located in biosphere reserves communities. ESD teacher trainer materials were developed in biosphere reserves in Zimbabwe, Botswana, Namibia and South Africa.

Annex 7. Progress as of December 2022 in the finalisation of projects' outputs

OTGA	Outcome N° 1: Increased capacity and skills by ocean specialists to use standards and best practices tools towards achieving SDG 14.	The number of learners registered on OTGA e-learning platform is at 9,000, above the 7,000 targetted. Target achieved of 80% of learners agree or strongly agree on influencing decision processes in my organization (2021 Survey) Target achieved of 80% of learners agree or strongly agree on the use of best practices (2021 Survey)
	Outcome N° 2: Regional and Specialized Training Centres efficiently develop and manage the training programme	Number of training courses delivered by Training Centres is 29, almost reaching the target of 30. 65% of training centre efficiently managed the training programme. The target is 100% Some level of external funding was achieved. One face-to-face/blended course held where 5 trainees self-funded, 20 trainees funded by the RTC and only 5 were funded by OTGA.
OIH	Outcome N° 1: Number of partners who are contributing and sharing continuously content to the Ocean InfoHub	Content items shared through the system over the 1,000 target, reaching 527,724 Engagement with nodes and partners above the target of 4; 18 active nodes and 57 active partners overall. Tracking of system's users not available yet Trainees slightly below the target of 100. 16 trained formally in the first online OTGA course; bilateral training with 20-35 technical /development partners is ongoing. 40 participants in the Geo Blue Planet Symposium (Ghana 23-28 October 2022).
PacMAN	Outcome N° 1: An early warning and detection system of marine invasive species for Pacific Islands	In-situ monitoring and early warning system is not yet in place. There is a monitoring plan fully developed and supported by all stakeholders. 21 Scientists, a number above the target of 10, have been trained to use the monitoring plan. 4 surveys have been conducted out of the target of 24
ClimWaR	Outcome N° 1: Improved climate services for flood and drought risk management	National flood/drought monitors are available for end-users in countries where they were not available The African and LAC Flood and Drought Monitor provide calibrated forecasts New tools available to evaluate the climate change impact in vulnerable watersheds (CRIDA Tool available) Capacity building of national stakeholders on climate

		services to enhance resilience to climate hazards. New insights developed on the pathway towards proactive flood and drought management strategies
Be-Resilient	Outcome N° 1: Climate change impacts in South-African BRs and their communities are understood and adaptation options explored	Fully achieved with a desktop study on climate change impacts was conducted with in-depth climate change risk assessments in 15 Biosphere Reserves in Southern Africa
	Outcome N° 2: Capacities for Disaster Risk Reduction are established and communities in BRs engage with co-developed DRR tools	Fully achieved having produced a large set of DRR tools and activities covering several Biosphere Reserves and will be further expanded in 2023.
	Outcome N° 3: New impetus for the MAB programme in Southern Africa	Biosphere Reserves in Southern Africa are now meeting regularly to discuss collaboration and funding opportunities. A regional meeting was held in eSwatini. A regional MAB youth network was established and a regional youth forum organised. Visibility has been strengthened with participation in 3 conferences and other events.

Sources: INOMER's adaptation from Projects' self-evaluation reports.

Annex 8. Summary of project-level findings

A brief summary of evaluation findings corresponding to the questions raised by the projects as a result of the mid-term self-evaluations and included in the Annex of the TOR is given below (this information can be found in the Section 4. of this report as a part of the overall evaluation findings).

The Ocean Teacher Global Academy (OTGA)

- *Has the OTGA 2 project contributed, and if so in what way, to the viability of the training centres beyond the duration of the project (end planned for mid-2024)?*

Overall, the OTGA project contributed to the viability of its training centres through various measures taken under FUST V. OTGA provides a comprehensive online learning platform in addition to the methodological and technical support concerning its use. Moreover, the project introduced the requirement for centres to secure co-financing from governments and host institutions at the point of application as a measure for long-term sustainability. During the project implementation, OTGA continued to encourage the centres to secure additional financing. However, the centres faced challenges in raising funding. While some centres (such as those in Indonesia and Argentina) managed to secure local funding to support their in-person training activities, this was not the case for all centres. The shift of OTGA's business model towards virtual and hybrid training sessions has helped to mitigate this issue.

An additional difficulty noted by stakeholders was that centre managers struggled to effectively communicate the value of OTGA to the managers of their host institutions. As a result, the training activities could not be prioritised by the institutions, potentially affecting institutional support.

Finally, stakeholders mentioned that the sustainability of the training activities conducted by the training centres do not depend on OTGA as their mandate is to offer training courses under the umbrella of their host institutes, and as such, their training services were already integral to their ongoing operations. They, therefore, believed that their viability would continue beyond the OTGA's duration.

- *What are the tangible benefits from being part of a global training network, for example, in terms of collaboration or reuse of training content developed by other training centres?*

The evaluation found that the regional and specialised training centres could not work as an interconnected network, and as a result, could not obtain tangible benefits of being part of a global training network (for example, in terms of collaboration or reuse of training content developed by other training centres). The main issue identified was the lack of systematic mechanisms and efforts for interaction, communication and cooperation between the centres, beyond the annual advisory group meetings. These mechanisms would have created a network effect, increasing the benefits derived from collaboration and resulting in outcomes greater than if the centres had operated in isolation.

- *Identify programmes/projects that are using your RTC/STC/general OTGA facilities (online platform) and describe how they collaborate or engage with OTGA.*

OTGA provided the possibility for other scientific organisations to use its platform to conduct their training activities under OTGA’s “affiliate programme”. For instance, the data related training courses of VLIZ were delivered using the OTGA platform as a part of the programme. In this process, VLIZ trainers were provided with necessary support for adapting their materials to online delivery. The OTGA’s affiliate programme has not required any payments to be made by the participating organisations (such as NF-PGO, ECOP, IALA and MEDIN) that used the platform.

- *To what extent has OTGA been contributing to capacity development of ocean professionals in regions?*

OTGA has contributed to the capacity development of ocean professionals by providing free, quality courses on various topics including ocean data analysis and early warning models. Beneficiaries appreciated the pace of learning and the certification they received, although some noted limited impact of the certification. However, the number of beneficiaries of OTGA across regions is uneven. According to a list of beneficiaries provided by the project management, in 2022, 2% of them were from Arab States, 8% from Africa, 26% from Europe and North America, 30% from Latin America and the Caribbean and 34% from Asia and the Pacific. Moreover, further opportunities remain untapped to broaden OTGA’s appeal and utility to a more diverse set of users, strengthening it as a comprehensive platform for relevant capacity building and awareness raising activities.

- *How has IOC programmes used OTGA to develop capacity (and address to priorities and needs as defined in ‘IOC Strategy on Capacity Development and transfer of marine technologies’)?*

Although OTGA was initially intended to be a platform for all relevant IOC training programmes, the approach it employs, which is in line with the ISO standard requirements shy away some potential users. For example, some IOC programmes prefer to conduct their own training courses on different platforms, typically spanning two or three days with no subsequent follow-up or online archive for training resources. Nevertheless, OTGA is used by some IOC programmes, including the [Tsunami Programme](#) and steps are being taken by the project team to encourage these programmes to use OTGA as a repository for their training materials and provide an online service for course review.

The Ocean InfoHub (OIH)

- *How effective and efficient are/were the governance, coordination and management structures of the project in (i) engaging end users in co-design; (ii) diverse constituencies and (iii) mainstreaming OIH/ODIS as a data ecosystem for IOC and other partner organizations, including the UN ocean decade?*

Despite COVID-19 related delays, OIH implementation was efficient and effective. OIH was built on existing initiatives and data hubs, rather than creating new databases, which contributed to efficiency. OIH also worked collaboratively with multiple partners on the technical design of ODIS as well as in project aspects related to data governance and project management. In these efforts, OIH facilitated mutual learning among stakeholders, enhancing the project’s impact, credibility, and relevance within the Ocean

scientific community. Coordinating a global project, particularly with regional nodes, presented considerable complexities which the team managed through effective communication. OIH also made efforts to mainstream ODIS within the UN Ocean Decade by registering a programme called Ocean Data 2030 that invited National Oceanographic Data Centres (NODCs) to engage, contributing towards system sustainability. However, some stakeholders expressed concern that OIH was not prioritised within the Ocean Decade, despite the leading role of IOC, which may have a negative impact its sustainability and effect. Nevertheless, a strategic opportunity for OIH's sustainability was identified as a key role it could play within the anticipated Ocean Decade Coordination Office for Data Sharing, hosted by IODE.

- *To what extent was the timeframe, the geographic coverage and thematic coverage of the project adequate?*

In the case of OIH, the architecture and technological features of the system, as well as its geographic and thematic coverage were adequate. These aspects, together with the open source and open access nature were recognised by stakeholders as the main success factors of the project. The attractive architecture that features mature data management practices has perceived positively by data organisations, consolidating OIH's position in the field.

- *What interfaces can we build, within the scope and budget of the project, that assist end users for management or decision-making or policy development?*

OIH has focused strongly on building a robust technical infrastructure and engaging with multiple partners to index data. However, efforts to assist decision-making and policy development have been limited. One potential area for increased impact and sustainability involves transforming raw data into actionable knowledge via business intelligence, which could help policy-makers take informed decisions. In addition, the application of artificial intelligence could uncover hidden patterns and insights related to data, further highlighting potential gaps and areas for development.

The Pacific Islands Marine Bioinvasions Alert Network (PacMAN)

- *Which local science and technical capacity has PacMAN been able to develop in Fiji, and how effective is it considering local needs and capacity?*

PacMAN has had an impact on local scientific and technical capacity by enabling in-country molecular analysis capabilities, particularly regarding real-time polymerase chain reaction (PCR). The project not only provided a proof of concept for data sharing and access, but also aimed to create a data system that enables meta-analysis. This has allowed the application of cutting-edge science to address key biodiversity and pathogen issues. It also has far-reaching implications for various scientific fields, from agriculture to soil analysis. The project has a critical policy aspect as well, leading to meaningful interactions with decision-makers. The project's inputs to the Fiji's Marine Invasive Species Policy and the National Invasive Species Framework Action Plan are expected to yield long-term positive results. The strategic partnership created by PacMAN with the University of the South Pacific (USP) is expected to trigger a cascading effect across the region. Furthermore, scientific language was tailored for effective communication with local communities, such as those around a harbour field site. The project team established direct networking

channels with authorities and shared new methodologies with the scientific community. It also prepared a two-minute animated [video](#) to convey the purpose of the project by paying special attention to the selection of images and other aspects to ensure the video resonates well with the community.

- *What has been the impact of PacMAN for Fiji with regards to raising awareness and management of marine invasive species at the appropriate levels (national/regional)?*

PacMAN promoted collaboration amongst various national and regional agencies, non-government organisations, and academia. The project's work with the USP proved to be successful with regards to the implementation of in-person and virtual capacity building activities. The government agencies collaborated with universities under the project by sharing laboratory equipment since the research infrastructure of the latter was not of sufficient quality. Moreover, the project cultivated synergies with regional and international organisations such as the [GEF 6](#) Regional Invasive Project, which co-funded the PacMAN training course, aiming to boost capacities to address the threat posed by invasive alien species. Another initiative is the SPREP guide 'Develop a national or territorial invasive species strategies and action plan' ([NISSAP](#)), which deals specifically with marine-introduced species. This initiative is facilitated by the Biosecurity Authority of Fiji (BAF) and the United Nations Development Programme (UNDP).

- *Are there any shortcomings or gaps the project should still deal with to be able move into a sustained monitoring system?*

The evaluation found that although the project has achieved its major milestones, its success would depend on the ownership of the government of the tools and monitoring plan developed. Some stakeholders believed that the selection of a university (USP) instead of a government agency as the implementing partner was a limitation and potential challenge for ownership, and therefore, sustainability

The continuity of the monitoring plan developed within the project depends on making data rapidly accessible. PacMAN encountered challenges related to data collection and regular monitoring. Therefore, finding effective ways to accelerate this process was identified as a necessary step, a task that OBIS is currently undertaking.

Enhancing Climate Services for Improved Water Management (CliMWaR)

- *What do you consider as the major contribution of the CliMWaR project in terms of climate services and water resources management?*

CliMWaR yielded impact in strategic targeting and capacity building in areas of drought and flood management. Particularly in Central America and Southern Africa and Sahel region it has increased institutional skills for water management and policy-making. Its focus on midsummer drought in Central America and the delivery of essential insights on climate change adaptation options in Southern Africa have been widely acknowledged by stakeholders. Significant contribution of CliMWaR to disaster risk management was notable, with a reference to its role during the disastrous floods in Zimbabwe in 2019. It was during this crisis that the improvements to the EWS, brought about by the project, proved essential in safeguarding people and property. It was also successful in enhancing

the capabilities of countries in forecasting floods and droughts Furthermore, the project facilitated extensive stakeholder engagement and local community involvement, thus building a solid foundation for future work. CliMWaR also initiated cross-sector collaboration between different stakeholders. For example, the Water Management Service of the University of Zambia started to work together with the national water resources management authorities thanks to the project. In the same vein, the project has strengthened regional collaborations and networks, stimulating south-south cooperation.

- *What do you consider are the main outputs, outcomes and/or impact of the CliMWaR project?*

The main achievement of CliMWaR can be summarised as: i) improved climate services for flood and drought risk management through the development of monitoring and early warning systems in Africa, stakeholder engagement and communication tools in Latin America and the Caribbean, and guidelines for creation of water-related risk vulnerability atlas; ii) enhanced capacities of multiple stakeholders on climate services by hosting various workshops, and creating manuals and tools; iii) strengthening national drought and flood risk management strategies and policies through the support on the development of national frameworks for climate services in Zimbabwe and Mozambique, trainings for parliamentarians, and other high-level meetings and working groups to discuss main challenges and best practices.

- *How has the project supported IHP Flagship Initiatives, strengthened regional collaboration and networks, as well as south-south cooperation?*

CliMWaR has strengthened regional collaborations and networks, stimulating south-south cooperation It has facilitated professional relationships within Africa and internationally, playing a key role in reinforcing partnerships and initiating collaborative work on various projects. For example, CAZALAC (a Category II Centre in Chile) supports the creation of an African drought atlas, building up on its experience in Latin America and the Caribbean. Another instance in that respect is the collaboration initiated through CliMWaR between the University of Botswana and the University of Zambia on various aspects of water management. Furthermore, CliMWaR, overall, contributed to the implementation of IHP-IX strategy.

- *What do you consider were the major challenges regarding the implementation of the CliMWaR project?*

In the Sahel region, CliMWaR faced limitations in its ability to influence or manage the actions taken by actors on the ground, despite sharing information with relevant agencies in the region. The main challenge was the unavailability of some stakeholders to be trained on the project's tools, due to their busy schedules. Even during online or face-to-face trainings, participants tended to be distracted by their daily tasks and not paying full attention to the course. Moreover, in Zimbabwe, the high turnover of staff in the target ministries proved a challenge in the use of the EWS platform, along with lack of IT equipment and poor connectivity. This issue has been exacerbated by the degradation of the country's hydrological stations over the years due to damage caused by floods and lack of resources for restoration. While UNESCO and its project partners have provided electronic data collection instruments and piloted new technologies, maintaining these systems in the long-run, especially when government resources are scarce.

- *Which of the objectives do you consider the CliMWaR project has contributed to?*

The evaluation highlights that CliMWaR managed effectively to train relevant actors on climate services. The project strengthened, both in LAC and target regions of Africa, the drought monitoring systems and EWS. Moreover, CRIDA is a relevant and effective approach to risk assessment and planning that involves local actors and communities. While there is potential for the project to influence policies in the long run, it will require more buy-in from policy-makers.

- *What is your appraisal on the four pillars of CliMWaR implementation?*

The evaluation could not find sufficient evidence on this question. The documentary evidence is inadequate and stakeholders interviewed hardly remembered or were aware of the four pillars of the project. Nevertheless, the project and its approach are considered highly relevant to the flood and droughts and water management contexts in Africa and LAC. Furthermore, the stakeholders appraised that the project was very much in line with IHP strategy for 2022-2029.

Biosphere Reserves as Observatories for Climate Change Adaptation in Southern Africa (Be-Resilient)

- *To which extent has the project been able to demonstrate that Biosphere Reserves can provide a context to generate relevant data and knowledge that can support co-production of solutions to environmental challenges by combining local and various types of scientific knowledge and the direct participation of men and women community members in decision-making for local DRR and climate change adaptation?*

The biosphere reserves provide a very relevant context to generate relevant data knowledge and develop solutions that will address climate change challenges. Be-Resilient collaborates with existing biosphere reserves, directly involving their managers and reaching their local communities. UNESCO could build on its experience on monitoring landscape vulnerabilities in conservation areas, in particular, monitoring the impact of environmental challenges on waste in rivers, on water quality and water supply, and the impact on people depending on the rivers for agriculture and consumption. Its emphasis on combining indigenous knowledge in conservation areas and scientific knowledge to develop better solutions made the project even more relevant. Furthermore, regional and transborder cooperation among biosphere reserves in Southern Africa is a fundamental aspect of the project, ensuring that these reserves fulfil their role as action learning networks for piloting climate change adaptation in target areas.

- *What is the impact of this project on community resilience in the participating Biosphere Reserves, i.e. in better preparing the communities for disasters, and for the progressive impacts of increased climate variability and change?*

Be-Resilient has managed to raise awareness among local communities, regional and local authorities as well as key economic actors in Southern Africa on the necessity to mitigate the repercussions of climate change and helped the biosphere reserves to develop climate adaptation strategies and to provide them with the tools to better prepare for disasters.

Nevertheless, it is too early to assess on the impact on the resilience of the targeted biosphere reserves. It will depend on the implementation of the solutions identified through the project.

- *Which added value to the MAB and IHP programmes has the project provided through its approach to integrate the MAB and IHP programme objectives and expertise?*

The evaluation found that a collaboration was established for the first time with a common funding between IHP and MAB thanks to Be-Resilient. Furthermore, the project created linkages with IHP's flagship initiatives: International Flood Initiative (IFI) as well as the International Drought Initiative (IDI). Other collaborations established with institutions in Chile, the Netherlands and the USA allowed the project to access funding as well as high-quality research (for example, the Princeton Climate Institute provided critical technical contribution to the development flood and drought monitoring tools).

- *To which extent has the project had a catalytic impact in southern Africa on strengthening the network of Biosphere Reserves and resulting in demand for this scientific approach to support communities in addressing climate change challenges and associated hazards?*

The project enabled collaboration among different reserves, setting them up as role models for climate change adaptation. This led to the creation of three spin-off projects, Be-Resilient South Africa, Be-Resilient Zimbabwe (in Chimanimani and Chipinge districts), and BuPuSa (Zimbabwe-Mozambique), and mobilisation of funds from new donors, such as UNOPS, the World Bank and the Austrian Development Agency. The 'biosphere reserve model' helped expand the project to include seven countries and attract cross-border interest between Zimbabwe and Mozambique, a first for Southern Africa. Moreover, the spin-off projects used resources effectively by organising joint capacity building activities for biosphere reserves while ensuring that the climate prediction tools are adapted to each reserve by deploying the same methodology. Finally, Be-Resilient plans to organise a dedicated conference on resilience in biosphere reserves and produce policy briefs to better inform key stakeholders about the project's objectives and outcomes.

Annex 9. Management of the evaluation and evaluators' biodata

The evaluation team consisted of Sirin Elci, INOMER's President, and three INOMER consultants: Jerome Helfft, Manuel Ricardo Galindo Moreno and Alix Willemez. The team was assisted by INOMER's statistician Gulenay Dogan.

Sirin Elci supervised the evaluation process as a whole, led all evaluation activities and oversaw the quality of each deliverable. She undertook an important part of report writing and editing, and liaised with UNESCO. Manuel Ricardo Galindo Moreno acted as the project coordinator and Jerome Helfft, as the senior evaluator. Alix Willemez provided input and guidance on the scientific areas covered by the FUST projects. Gulenay Dogan was in charge of the online survey and analysis. Brief biographies of the team are given below.

Sirin Elci, has a professional experience of 31 years, 26 of which in the design, implementation, monitoring and evaluation of STI institutions, strategies, systems, policies, programs and projects. She is also a professor of Innovation Policy, Innovation Ecosystems and Open Innovation at the Institut Mines-Télécom Business School in Paris, and a Senior Researcher at the European Future Innovation System Centre in Brussels. Sirin created INOMER as a result of a successful management buy-out from the multinational consultancy Technopolis Group, where she worked as a Founding Director and a Board Member for eight years.

During her career, Sirin worked as Project Director, Team Leader or Senior Expert in complex and strategic evaluation projects of UN, and other international organisations (such as EC, OECD and the World Bank) as well as national and regional authorities all over the world.

Sirin has worked as a consultant for UNESCO for several years. She recently acted as the Team Leader in the Evaluation the UNESCO/Sida Project Strengthening Science Technology and Innovation Systems for Sustainable Development in Africa (2020-2022). She led the GO-SPIN and STI Policy Development project for the Islamic Development Bank, Uzbekistan and Cambodia GO-SPIN projects, including the development of the National STI Policy and sample policy instruments for Uzbekistan, evaluation of the L'Oréal-UNESCO For Women in Science (FWIS) program, STI review and technology needs assessment for Bhutan, contribution to UNESCO Science Reports, including acting as the member of the editorial board for the new report. Recently she acted as Team Leader of the Evaluation the UKAid-funded Human Development Innovation Fund (HDIF) (GBP 40 million) and conducted the review of the Just Energy Transition in Southeast Asia: Support the ILO's Just Energy Transition for the ILO.

Having provided consulting and capacity building services in more than 60 countries, Sirin brings broad experience from different contexts, cultures and organizations to the clients. This diverse experience provides her with the unique advantage of offering a holistic view of inclusive and sustainable development and positive impact through STI.

Jerome Helfft, a senior consultant of INOMER, is an evaluation expert with more than 19 years of professional experience in a wide range of fields including science, technology and innovation, poverty reduction and agriculture. He has an extensive track-record in designing and implementing evaluation processes and monitoring systems at project, program or institutional levels, notably using results-based approaches. Jerome has conducted or managed more than 45 evaluations and various research studies, using both qualitative and quantitative methods. He mainly worked in the projects of UN agencies and other multilateral organizations.

Examples of his recent roles include working as INOMER's team member for the evaluations of the UNESCO/Sida Project Strengthening Science Technology and Innovation Systems for Sustainable Development in Africa, the UKAid funded Human Development Innovation Fund for UNDP, the technology needs assessment in the Democratic Republic of the Congo for the

UNOPS/UN Technology Bank for LDCs, external assessment of the public R&D institutions in Serbia for the Serbian Government under a World Bank-funded project.

Manuel Ricardo Galindo Moreno 16 years of experience and more than nine years working in policy research, evaluation of programmes, projects, institutions, data extraction, analysis and visualisation. Throughout his work experience in INOMER, he has demonstrated his ability to coordinate projects, conduct qualitative and quantitative analysis as well as use IT tools and platforms. During his work with INOMER he has coordinated complex projects such as the MOPAN assessments of the ILO and EBRD, evaluation of the UKAid funded Human Development Innovation Fund for UNDP, evaluation of the performance of research and development institutions in Serbia and capacity development for the Peruvian Government on the design, management and evaluation of STI programmes.

Before joining INOMER, Manuel worked at UNESCO for four years in the Natural Sciences Sector where he carried out assessments, data collection and analysis in the projects of the Organisation. The vast majority of these tasks included desktop research, field work and practical capacity building sessions. During his work at UNESCO, he also familiarised himself with the UNESCO's programmes in the fields of Natural Science, notably IHP, MAB and IOC activities. Additionally, he has actively contributed to UNESCO's database on Science and Technology Policy and Innovation Instruments (GO-SPIN) which combines qualitative and quantitative data to advise on the elaboration of STI policies and instruments, as well as to assess country performance.

Alix Willemez has 18 years of experience working with multilaterals and national organizations (e.g. African Development Bank and Crédit Agricole), Government Ministries in France, New Zealand, Germany, New Caledonia), NGOs such as WWF, ICUN, international development organizations (e.g GEF, UNIDO, EU, IRENA) and academic institutions (Institute for Regional Maritime Security of West Africa, Liverpool Seabed Governance Institute, University of New Caledonia) in a wide range of topics such as sustainable fisheries, reduction of the marine plastic pollution, climate-change, land degradation and biodiversity.

Alix is a member of the World Commission on Environmental Law, member of the Advisory Board of the Deep-Ocean Stewardship Initiative, a global network which seeks to integrate science, technology, policy, law and economics to advise on ecosystem-based management of resource use in the deep ocean; and maritime development expert for the UN regular process for World Ocean Assessment, renewable energy expert for the Ren's 21 Global Renewable Status and deep-sea energy and mineral expert for the International Network for Scientific Investigation of deep-sea ecosystems. She holds a PhD degree in Law ("Legal aspects of the sustainable exploitation of marine energy and mineral resources").

Gulenay Dogan has broad experience in similar evaluation projects. She has been involved in the evaluation of STI systems, policies and programs implemented by INOMER for more than a decade, including the ones implemented for the UN agencies in Africa. As a statistician, she has carried out data collection and analysis, in a number of projects of INOMER such as the assessment of the research institutes in Serbia for the Serbian Government, COVID-19 impact on STI systems in Central Asia for UNESCO, STI review and technology needs assessment project for the UNTB in DRC, Mozambique, Lesotho, Liberia, Malawi, Zambia, Nepal and Cambodia.

Annex 10. Survey instrument and in-depth interview guide

Survey questions

How were you informed about the project? ☐ Through the communications UNESCO (including its Field Offices) ☐ Through the communications of the Government of Flanders ☐ Through the communications of the Intergovernmental Oceanographic Commission of UNESCO (IOC) ☐ Through the organisation I work for ☐ Through another organisation ☐ Meetings/seminars ☐ Newspapers/magazines ☐ TV/Radio ☐ Social media ☐ Other																																																															
A. Relevance Please assess the relevance of the FUST project to your country/region by indicating the extent to which you agree or disagree with the following statements. <table border="1"> <thead> <tr> <th></th> <th>Strongly agree</th> <th>Agree</th> <th>Somewhat agree</th> <th>Somewhat disagree</th> <th>Disagree</th> <th>Strongly disagree</th> <th>Don't know</th> </tr> </thead> <tbody> <tr> <td>The project's goals and objectives are aligned with the overall development priorities we have at the national level.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>The project's goals and objectives are aligned with the overall development priorities we have at the basin scale (local) level.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>The project's goals and objectives are aligned with the overall development priorities we have at the regional.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>The thematic coverage of the project is relevant and aligns well with the needs and priorities, including Sustainable Development Goals, of my country.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>The thematic coverage of the project is relevant and aligns well with the needs and priorities, including Sustainable Development Goals, of my region.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>The project demonstrates particular attention to utilising scientific and science-based activities as</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>									Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree	Don't know	The project's goals and objectives are aligned with the overall development priorities we have at the national level.								The project's goals and objectives are aligned with the overall development priorities we have at the basin scale (local) level.								The project's goals and objectives are aligned with the overall development priorities we have at the regional.								The thematic coverage of the project is relevant and aligns well with the needs and priorities, including Sustainable Development Goals, of my country.								The thematic coverage of the project is relevant and aligns well with the needs and priorities, including Sustainable Development Goals, of my region.								The project demonstrates particular attention to utilising scientific and science-based activities as							
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effective enablers of addressing environmental challenges.							
The project shows consideration for addressing the needs of specific area-based disadvantaged groups.							
There is a commitment to promoting gender equality within the project activities.							
The project shows consideration for addressing the needs of specific area-based indigenous peoples.							

Please briefly explain how gender equality was addressed in the project:

B. Efficiency and coherence

Please specify your views about the following statements.

	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree	Don't know
Risks and challenges are effectively addressed during project implementation.							
The project achieves coherence and synergies with similar programmes/projects in my country/region.							
Project implementation is flexible and adaptive to respond to changing conditions and to take advantage of emerging opportunities.							

Please briefly explain the coherence and synergies created with similar programmes/projects in your country/region:

C. Effectiveness

Please assess the effectiveness of the project by indicating the extent to which you agree or disagree with the following statements.

	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree	Don't know
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The project's activities and outputs led to tangible positive outcomes.							
The project's outcomes hold great potential for creating long-lasting positive change in the areas such as oceanography, water management, geosciences, promoting sustainable development and growth.							
The project helped me develop my capabilities and skills in the relevant field.							

Please briefly explain what skills you developed with the project and how they are useful to you:

D. Sustainability

Please specify your views about the following statements.

	Strongly agree	Agree	Somewhat agree	Somewhat disagree	Disagree	Strongly disagree	Don't know
The project created new opportunities for scientific cooperation with Flanders.							
The project helped us establish new international scientific collaborations with various partners outside of Flanders, benefiting from researchers and institutions at the international level.							
The involvement of scientists/institutions from Flanders enhanced the benefits created by the project.							
We believe the new linkages established with scientists/institutions from Flanders will be sustained over time, enabling ongoing cooperation and mutual benefits.							
The project activities,							

outputs and effects have effectively raised awareness of the themes covered by the project.							
The project activities (including communication activities), outputs and effects have effectively increased the visibility of UNESCO's efforts on the subject.							
The project activities (including communication activities), outputs and effects have effectively increased the visibility of the Government of Flanders' efforts on the subject.							
I believe project can be successfully replicated in other regions/contexts for lasting impact.							

Please briefly explain how you use or could use the new linkages established with the scientists/institutes from Flanders:

Generic In-depth Interview Guide

A. FUST and project level questions

Resource deployment

1.	Based on your experience, is the deployment of resources under FUST aligned with other UNESCO programmes and funding sources to avoid duplications and increase synergies? What were/are the steps taken to achieve coherence, complementarity and avoid duplication? Please elaborate with examples.
2.	In your view, are there any untapped opportunities or areas where resource deployment could be improved to enhance the potential impact of FUST's investments? Are there any challenges in optimising resource deployment? If yes, how can these be addressed? Please elaborate.

Governance, management and coordination mechanisms

1.	What is your experience and opinion about the effectiveness of the governance framework established under the FUST in terms of ensuring effective project selection and implementation? Please elaborate with examples.
2.	Can you describe the level of coordination between UNESCO's relevant services and the Flemish Government, particularly with BSP, the Natural Science Sector, IOC, and field offices? In your view, how effective this coordination has been in facilitating project management and implementation?
3.	In your opinion, what are the biggest challenges to effective and efficient governance, coordination, advisory, and management frameworks under the FUST, and how can these challenges be addressed?
4.	Can you describe the project selection process in Flanders? How effective and efficient this process has been in identifying and selecting projects that align with the objectives of the FUST?
5.	Can you describe the project selection process in UNESCO side? How effective and efficient this process has been in identifying and selecting projects that align with the objectives of the FUST?
6.	Based on your experience, how effective is the Steering Committee under the FUST in terms of providing guidance and support for project selection and implementation? How have the Steering Committee meetings impacted the efficiency of project implementation? What improvements could be made to enhance the effectiveness of this framework?

[Relevance]

1.	Looking at the timeframe, geographic coverage, and thematic coverage of the FUST- funded projects, do you believe they are adequate within the context of the overall programme? In your opinion, were these factors appropriately balanced to achieve the desired outcomes and impact? Please elaborate with examples.
2.	How do you see the current and future potential of these projects in contributing to relevant UNESCO's and the Flemish government policies in the context of the 2030 Agenda? Can you describe any specific strategies or initiatives that have been implemented to align the projects with these policies, and how effective have these been? Please elaborate with examples.

3.	How well do these projects align with stakeholder and beneficiaries' needs, taking into consideration regional, national, and local priorities at the basin scale? Can you describe any specific efforts that are or were made to engage with stakeholders and beneficiaries during the project design and implementation phases? How effective were these efforts in ensuring alignment with their needs? Please elaborate with examples.
4.	Have the projects given adequate consideration to the potential of scientific and science-based activities as enablers, as well as social and environmental concerns, mainly disadvantaged groups, indigenous peoples, and gender equality? Can you describe any specific steps that were taken to ensure that the projects are aligned with these priorities? How effective were these steps in addressing these concerns? Please elaborate with examples.

[Coherence]

1.	From your perspective, in what ways has the support provided through FUST complemented or reinforced UNESCO's programmes, particularly in connection with their contribution to strengthening UNESCO's C/4 (medium-term strategy) and C/5 (programme and budget)? Can you provide specific examples of how the projects funded by FUST have synergized and aligned with UNESCO's overarching strategies and goals? What is the impact they create on advancing those strategies?
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[Efficiency]

1.	Have the projects been able to deliver the outputs envisaged within the expected timeframe, taking into account any potential delays caused by the COVID-19? Can you describe any specific challenges or adjustments that were made to ensure timely delivery of project outputs? How effective were the measures taken? What could have been done differently, if anything?
2.	Do you think the human and financial resources were used efficiently in the implementation of the projects? Can you describe any specific measures that were taken to optimize the use of resources and minimize inefficiencies? How effective were these measures? What could have been done differently, if anything?
3.	What were the opportunities identified during the implementation of projects to develop potential synergies with relevant networks and partners? Were they seized effectively? Can you describe any specific efforts that were made to identify and engage with these networks and partners? How effective were these efforts in promoting collaboration and achieving project goals?
4.	In your opinion, have partnerships and cooperation with implementing partners been effective in the implementation of projects? Can you describe any specific examples of successful collaborations with implementing partners, and how their involvement contributed to the overall success of the projects? Were there any challenges encountered in working with implementing partners, and how were these challenges addressed? What could have been done differently, if any?

[Effectiveness/Signs of Impact]

1.	How successful have the projects been in achieving their expected results? Can you provide specific examples of the outcomes and impacts that were anticipated, and how well these were realized? Were
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there any notable deviations from the expected results, and if so, how were these deviations addressed? What could have been done differently, if any?
2. In your view, what were the key enablers that contributed to the achievements of the projects? Could you identify specific factors, resources, or strategies that played an important role in facilitating the successful outcomes?
3. What were the key challenges faced during the project implementation, and how were they overcome or managed? What could have been done differently, if any?
4. In your opinion, was an adequate monitoring framework/methodology put in place to ensure the achievement of expected results and maximize the success of the projects? How effective was the monitoring framework/methodology in providing timely feedback and facilitating necessary adjustments during project implementation? What could have been done differently, if any?
5. Were any differences between the actual outputs and the expected outputs of the projects discussed between UNESCO and the Government of Flanders? If so, to what extent were they effective in addressing the reasons behind the differences and finding appropriate solutions or adjustments? Please elaborate with examples.
6. What have been the [expected] longer-term effects of the projects within the respective institutional, country, regional, and international contexts? Can you describe any specific impacts that have extended [will extend] beyond the project duration, such as institutional changes, policy advancements, or replication of successful approaches? What potential multiplier effects or replication opportunities have emerged [can emerge] as a result of these projects?

[Sustainability]

1. What are actions and communication strategies that have been put in place to ensure the sustainability and scalability of the projects over time and/or in other contexts? Can you give examples of any specific approaches that were [are being] used to promote the long-term viability and replication of the projects and their outcomes and impacts? In your view, how effective are these mechanisms in ensuring project sustainability and scalability?
2. How have the project activities, outputs, and effects contributed to raising the visibility of the selected projects, Flanders, and UNESCO? Can you describe any specific initiatives or approaches that were implemented to enhance the visibility? What notable outcomes or impacts have been achieved in terms of increased awareness and visibility of projects, Flanders, and UNESCO? Please elaborate with examples. What else could be done?
3. Did the projects create new opportunities for international scientific cooperation? Please elaborate. Did these collaborations involve scientists from Flanders? Please explain. What efforts were made to engage scientists from Flanders? Can you provide specific examples of measures taken to attract and involve scientists from Flanders? What were/are the challenges faced in these engagements? How were they addressed? What else can be done?
4. Could you share any notable benefits, outcomes, or success stories resulting from the involvement of scientists from Flanders? Please elaborate. What are the lessons learnt from these collaborations?

F. Recommendations

1.	Overall, what are the lessons learnt based on your experience?
2.	How do you think collaboration between the Flemish Government and UNESCO could be strengthened further within the framework of the Trust Fund? Please provide specific examples or suggestions on potential areas of collaboration, joint initiatives, or strategies that could be implemented to enhance the partnership and achieve even greater impact.
3.	What recommendations do you have to increase the impact and sustainability of the FUST and the projects?