



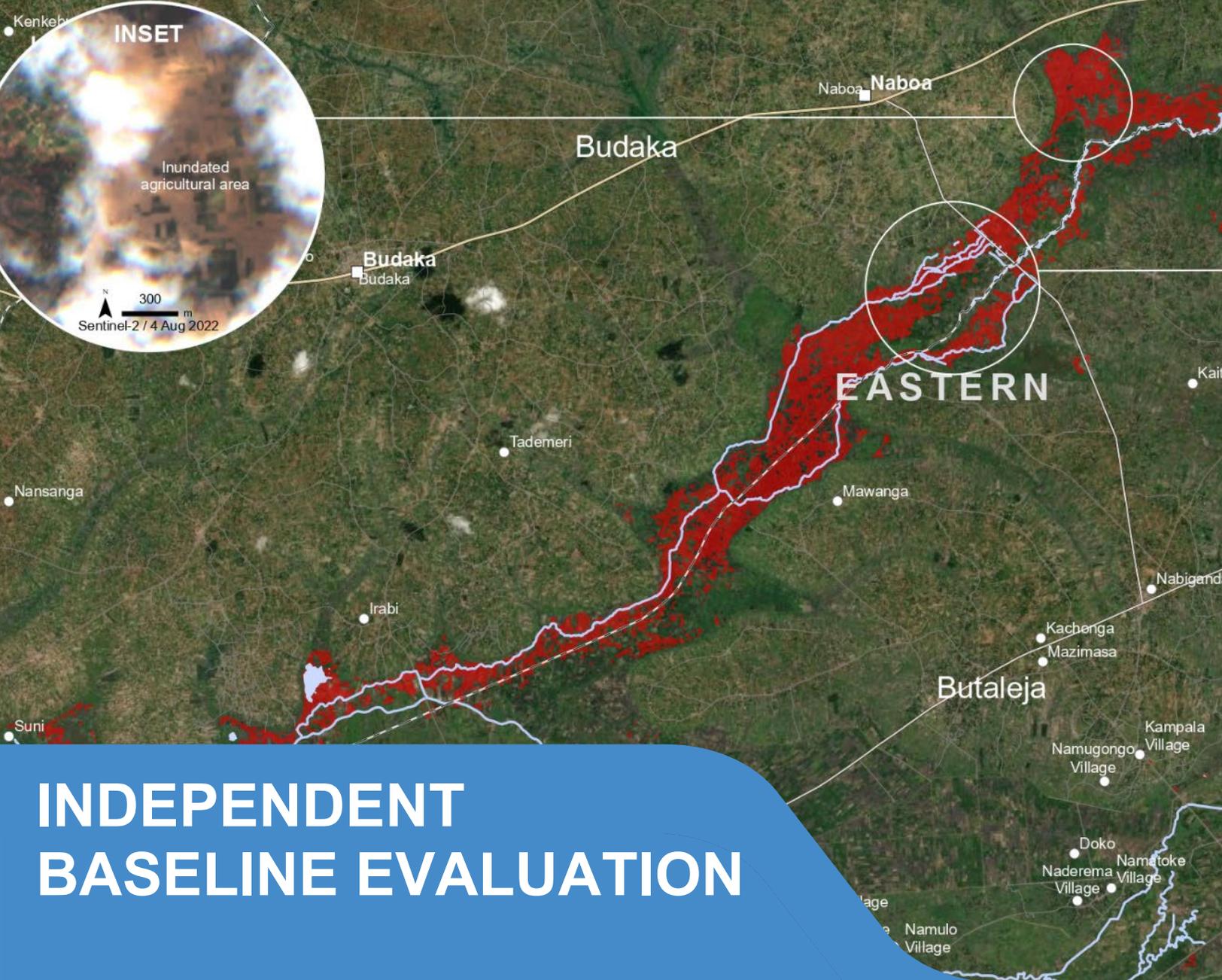
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United Nations Institute for Training and Research

PROJECTS, EASTERN REGION

34°3'E

2,000km<sup>2</sup> |
 20km<sup>2</sup> |
 1,444,000 |
 POPULATION POTENTIALLY EXPOSED 9,000



# INDEPENDENT BASELINE EVALUATION

STRENGTHENING CAPACITIES IN THE USE OF  
GEOSPATIAL INFORMATION FOR IMPROVED  
RESILIENCE IN ASIA-PACIFIC AND AFRICA

**Cover photo credit:** UNOSAT.

Satellite detected water extents in Mbale, Budaka, Butaleja, Butebo, Kibuku Districts, Eastern region, Uganda.

This evaluation report is a product of the Planning, Performance Monitoring, and Evaluation Unit of UNITAR. The findings, conclusions and recommendations expressed herein do not necessarily reflect the opinion of the partners of the “Strengthening Capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa” project. The evaluation was conducted by José Antonio Cabo Buján. The report is issued without formal copy editing.

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## Acronyms and Abbreviations

<b>CBD</b>	Convention on Biological Diversity
<b>COP</b>	Conference of the Parties
<b>CS</b>	Common Sensing (Project)
<b>DDM</b>	(Bangladesh) Department of Disaster Management
<b>DRR</b>	Disaster Risk Reduction
<b>EPI</b>	(Yale University) Environmental Performance Index
<b>GCF</b>	Green Climate Fund
<b>GDP</b>	Gross Domestic Product
<b>GEF</b>	Global Environment Facility
<b>GIS</b>	Geographic Information System
<b>GIT</b>	Geospatial Information Technology
<b>GRES</b>	Gender Results Effectiveness Scale
<b>ITCZ</b>	Intertropical Convergence Zone
<b>LDC</b>	Least Developed Country
<b>LEDS</b>	Low Emission Development Strategy
<b>LMI</b>	Lower Middle Income
<b>MRVA</b>	Multi-Hazard Risk and Vulnerability Assessment
<b>NADIMAC</b>	(Rwanda) National Disaster Management Committee
<b>NCDM</b>	(Cambodia) National Committee for Disaster Management
<b>NDC</b>	Nationally Determined Contribution
<b>NDMA</b>	(Pakistan) National Disaster Management Authority
<b>NDMO</b>	(Lao PDR) National Disaster Management Office
<b>NLCS</b>	National Land Commission Secretariat
<b>NORAD</b>	Norwegian Agency for Development Cooperation
<b>NOSDRA</b>	National Oil Spill Detection and Response Agency
<b>NSDI</b>	National Spatial Data Infrastructure
<b>NSDRR</b>	National Strategy on Disaster Risk Reduction
<b>ODA</b>	Official Development Aid
<b>SDG</b>	Sustainable Development Goals
<b>SFDRR</b>	Sendai Framework for Disaster Risk Reduction
<b>SIDS</b>	Small Islands Developing States
<b>ToC</b>	Theory of Change
<b>UNDP</b>	United Nations Development Programme
<b>UNEG</b>	United Nations Evaluation Group
<b>UNOSAT</b>	United Nations Satellite Centre
<b>USD</b>	Dollars of the United States of America
<b>NLCS</b>	(Bhutan) National Land Commission Secretariat

## Foreword

The “Strengthening capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa” project aims to improve resilience in Africa and in the Asia – Pacific region using geo-spatial information technologies through capacity development that is comprised of trainings delivered in various modalities, and in developing actual solutions tailored to beneficiaries’ needs and resources. The project builds on past experiences and lessons from the CommonSensing project that aimed to strengthen the capacities of Fiji, Solomon Islands and Vanuatu in reaching important sustainable development objectives since 2018, UNOSAT’s rapid mapping services as well as other prior projects with partner countries in the area of disaster risk reduction and natural resource management.

This independent baseline evaluation aimed to reflect on past initiatives and experiences, and assess the entry level project conditions in order to provide a baseline against which the project’s progress can be measured and evaluated. The specific objectives of the evaluation were to validate and obtain baseline evidence on the project’s log frame indicators. Moreover, it also validated the project’s theory of change; the adequacy of the log frame, including the adequacy of the indicators, performance measures, means of verification and underlying assumptions; and the project’s implementation strategy.

The evaluation issued a set of three recommendations and a set of five lessons to be learned. The evaluation was managed by the UNITAR Planning, Performance Monitoring, and Evaluation Unit (PPME) and was undertaken by one independent evaluator, Jose Antonio Cabo Bujan. The PPME Unit provided guidance, oversight and quality assurance for the evaluation’s work. UNOSAT’s response to the evaluation and its conclusions and recommendations are outlined in the Management Response. The PPME Unit is grateful to the evaluator, UNOSAT, beneficiary countries, and other evaluation stakeholders, including the Norwegian Agency for Development Cooperation for providing important input into this evaluation.

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## Executive Summary

This report presents the findings, conclusions, recommendations, and lessons learned of the baseline evaluation of the “Strengthening capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa” project. The project intends to develop the capacities of eight national governments in Asia-Pacific and Africa, i.e., Nigeria, Uganda, Lao PDR, Buthan, Bangladesh, Fiji, Solomon Islands, and Vanuatu; to use geospatial information in decision-making to improve disaster risk management and natural resource management.

The evaluation assessed the entry level project conditions in order to provide a baseline against which the project’s progress can be measured and evaluated. The specific objectives of the evaluation were to validate and obtain baseline evidence on the project’s log frame indicators. Moreover, it also validated the project’s theory of change; the adequacy of the log frame, including the adequacy of the indicators, performance measures, means of verification and underlying assumptions; and the project’s implementation strategy.

The evaluation was conducted between November 2021 and September 2022, during the inception phase of the project, and followed a participatory approach. Three workshop meetings were held with the project team to discuss the project’s logframe and results. Four interviews were conducted with representatives of the project’s focal agencies in Bangladesh, Lao PDR, Bhutan and Fiji. These interviews served as the basis to develop a scorecard survey inspired by the UNDP-GEF’s capacity development scorecard, used to measure the capacity development-related impact indicators in the logframe. The baseline evaluation also proposed five counterfactual countries to assess the project’s impact in the final evaluation: Cambodia, Pakistan, Rwanda, Nepal, and Cameroon. Unfortunately, baseline measures for the counterfactual countries were not collected due to limited access to national stakeholders in those countries. Besides the accessibility to the counterfactual countries, the evaluation was conducted during the project’s inception phase, with the specific country interventions being discussed, which limited the evaluation undertaking. Additionally, data related to gender and socioeconomic digital divide and tropical cyclone Harold’s damages for the Pacific countries was collected.

### Key findings

- National government organizations partially understand the potential of GIT and Earth Observation and already use them for disaster needs assessments and monitoring of natural assets, albeit in a non-systematic manner and uneven among participating countries.
- Five countries can be identified as counterfactuals to the target countries.
- Target Pacific countries face severe threats from climate change and need to increase funding to bridge their adaptation gap. Evidence-based proposals could support these countries' national designated agencies to obtain increasing support from climate funds and multilateral financial institutions.
- The Project’s Pacific Island countries aim to improve their capacities to access climate finance and evidenced-based decision making.
- The project strategy addresses challenges identified in the target countries' national development strategies and sector consistent with the 2030 Agenda, the Samoa Pathway, and the 2015-2030 Sendai Framework.
- The impact of the COVID-19 pandemic on SIDS and LDCs, particularly countries whose economies depend to a significant degree on commodities and tourism, as the project's target countries, have made support for capacity development and finance even more relevant and urgent, as stated in national development strategic documents.

- The project will develop public goods for which no market demand currently exists, but that will produce significant socioeconomic benefits in terms of increased finance for adaptation, access to geospatial information for enhancing decision-making at the national, district, and individual levels, and more effective relief efforts in disaster situations.
- The NORAD project incorporates lessons learned from previous UNITAR-UNOSAT interventions. However, the project logical framework still includes impact indicators that are unlikely to be affected by the project intervention in the midterm.
- While numerous interventions support disaster risk or natural resource management in the target countries, currently, none of them are supporting the same goal as this project. However, some past and current initiatives have supported the development of geographical and geospatial data infrastructure in target and counterfactual countries.
- The project has internalized the impacts of COVID-19 from the CommonSensing project by preparing contingency online distance delivery of capacity development and engaging local experts.
- Gender issues are prevalent in all the project target countries. The project is gender targeted and aligns with the beneficiary government organizations' gender parity policies.
- The project's sustainability strategy is based on past implementation experiences by UNITAR-UNOSAT, particularly the Common Sensing project and the institutional strength of the beneficiary organizations.
- The project results framework has not yet formulated concrete national outputs and outcomes logically linked to the project's proposed activity package.
- The observed global downtrend in disaster mortality may be partially due to development assistance, including capacity development and technology transfer, as is the case of this project. However, attribution to a single project of any given reduction in disaster mortality or damage is unlikely. Thus, the project's impacts will be higher quality, more accurate disaster assessments enable a more efficient delivery of relief measures, contributing to efficient relief measures and better risk assessment reducing impact of hydrometeorological hazards.
- Capacity development in disaster risk management contributes to enhancing resilience and mitigating the human and economic impacts of disasters. However, said changes will manifest in differences in trends of impacts relative to the population size and economic growth but will never be apparent in the project's implementation period. The project's expected impact is improved institutional mechanisms and organizational capacities to address climate and natural hazard risk.
- Capacities to better monitor ecosystem change and drivers of degradation are necessary for mainstreaming biodiversity into decision-making processes. However, data alone is not a sufficient condition for mainstreaming.
- Natural resource management impacts cannot be attributed to any given intervention or external investment in natural resource management. The project's impact will be enhanced institutional capacities to monitor ecosystem changes and pollution.
- The original project's logical framework impact indicators do not reflect or can be attributed to the changes in national capacity introduced by the project. Impact indicators can be better gauged by national capacity, measured by means of scorecards or surveys.

Based on the above findings, the baseline evaluation formulates eleven concluding points:

- Project countries have different national circumstances and applications for geospatial information and earth observation technologies. Therefore, specific activities in each country constitute separate projects, leading to different outputs, outcomes, and potential impacts. In all countries, national agencies identified by the project understand GIT as a

valuable tool for DRR or natural resource management. They have identified capacity development needs to be supplied by the project at specific government departments. Fiji, Vanuatu, and Solomon Islands have a designated authority/ focal point for international funds, with the capacity to implement additional international funding for climate change adaptation and mitigation, which could be enhanced by project proposals using geospatial information to make a case for adaptation needs.

- The project strategy is aligned with the target countries' national development strategies and sector (DRR, climate change, biodiversity, and environment) strategies and framed in outcomes of United Nations conferences, including the third International Conference on Small Island Developing States and the 2030 Agenda for Sustainable Development.
- The project has incorporated lessons learned from previous UNITAR-UNOSAT interventions, particularly the IPP CommonSensing project, reducing transaction costs and improving efficiency. Moreover, this project benefits from the training experience acquired during the implementation of the CommonSensing project, affected by COVID-19 and natural hazards.
- Most of the official development aid (ODA) flows for disaster risk management and natural resource management/ environmental matters is not directed towards the use of geospatial information for disaster risk management and natural resource management. However, the SERVIR interventions in Southeast Asia and South Asia and the JICA funded project in Bhutan are currently implemented and specifically directed towards developing the national spatial data infrastructure.
- The project strategy is the most effective means of delivering the intended benefits (increased capacity to use geospatial solutions). The expected social benefits will likely surpass the expected costs assumed by the beneficiary/ focal agencies. Moreover, the acquired capacities can be transformed products (e.g., land cover maps, spatial damage assessments) driven by market demand and delivered by the public sector (with public or private clients) or outsourced to the private sector.
- The project strategy addresses technical issues, responding to specific capacity development demands by government organizations of the target countries. These capacities will support said government agencies to fulfill their mandates within the national disaster risk management and biodiversity and environmental management strategies and programmes without needing direct involvement of this project in ensuring coordination or synergies with programmes and projects supported by other development partners.
- The project is gender-targeted, aiming to achieve parity in access to capacity development.
- Beneficiary organizations have sufficient budgetary allocation and institutional capacity and function explicit in national strategy documents to continue the application of technical solutions implemented through the project. For all target national organizations, the national regulatory and policy framework enables the application of technical solutions, access to the learning platform, and technical backstopping.
- The results chain is partially logically linked and based on sound assumptions, but it needs consolidation by formulating concrete outputs, outcomes, intermediate results, and realistic impacts.
- Impacts at the level of changes in mortality or damage rates will be undetectable or not attributable to the project.

The evaluation proposes a set of three recommendations:

- Project's log-frame outputs could be specified beyond "capacities developed" to match the specific national demand for geospatial products. The specific outputs e.g., "applications to evaluate climate risk in land parcels" or "satellite-based oil spill monitoring application"

are needs identified by the national beneficiaries (government organizations) to minimize public sector costs and maximize social benefits from a potential market-driven upscale of the project's outcomes.

- The project could strive to be gender responsive by promoting disaggregated data collection and dissemination. The project could realize advocacy and awareness during the inception phase and training and courses. Additionally, a module on gender and GIT and climate finance could be incorporated into the training schedule, building upon the case studies developed during the implementation of prior UNOSAT projects.
- The logical framework must respond to realistic assumptions and logical connections between activities, outputs, and outcomes. Therefore, the results framework should: i) not include indicators of impacts not attributable to the project and only suggest contributions to these areas; ii) include specific outputs related to the needs of the eight government organizations involved; iii) reformulate the outcomes according to the intended use of the project's outputs (organizational change).

Lessons to be learned identified during the evaluation are as follows:

- Access to project stakeholders is key for baseline evaluation consultations and measures.
- Projects that benefit countries from different regions with different needs require logical frameworks that account for those.
- It is useful to build new projects based on previous projects' lessons learned.
- Identifying counterfactuals is a challenging task given the numerous differences and collecting data for counterfactuals remains more challenging than collecting data for target countries
- Impact indicators need to be formulated in a way that the project can measure some contribution/attribution.

## Acknowledgements

The baseline evaluation consultant would like to thank the project team and the UNITAR evaluation team for the support provided in this evaluation. More importantly, thanks to all respondents for national governments who made time for the interviews and provided the bulk of the information in this report.

## Introduction

1. The project “Strengthening capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa” intends to develop the capacities of eight national governments to use geospatial information better to improve disaster risk management and natural resource management.
2. Six of eight project countries, Bangladesh, Lao PDR, Uganda, and the Pacific Island Countries of Fiji, Solomon Islands, and Vanuatu, are exposed to natural hazards, including hydrometeorological (storms, floods) and geophysical (earthquakes). Floods associated with summer monsoons and tropical cyclones are an annual recurrence, which people in these countries have traditionally adopted. However, the increase in exposure driven by population and economic growth, compounded by climate change, threatens people and national economies. Moreover, these countries are least developed countries (LDC) and small island developing States (SIDS). A significant proportion of their economies depend on climate-sensitive sectors, such as agriculture, fisheries, and tourism. Recently, they have been affected by COVID-19, increasing poverty risk and consequently vulnerability to disasters.
3. In two of the project countries, Bhutan and Nigeria, the project’s beneficiary national governments intend to develop capacities for generating and disseminating spatial information on land use and environmental change to enhance the sustainable use of natural resources.
4. The project intends to achieve different outcomes for each of the eight target countries, being these:
  - Use of Earth Observation and Geospatial Technologies for *Sustainable Natural Resource Management* in Bhutan.
  - Improvement of geospatial capacities for *Environmental Remediation and Preservation* in Nigeria.
  - Improvement of *climate change resilience and sustainable development* in the Pacific Islands.
  - Geospatial capacity development for enhanced disaster risk management in Uganda, Lao, PDR, and Bangladesh.
5. While the training and capacity development and knowledge platform project components will be implemented in all project countries, the climate finance component (deployment of climate finance advisors) will only be applicable to the Pacific Islands project countries. Climate finance advisors were first introduced in the Pacific countries by the CommonSensing project (implemented between 2017 and 2022).
6. The Norwegian Agency for Development Cooperation (NORAD) funds the project with NOK 60,000,000 (approximately \$ million). The initial implementation framework of four years from November 2020 to October 2023 has been adjusted after COVID-19 to an implementation timeframe from August 2021 to July 2024.

## Evaluation purpose and scope

7. The baseline evaluation aims to validate the project strategy and provide a baseline against which the project’s progress can be measured and evaluated.

8. The specific objectives of the evaluation are:
  - To validate the project's theory of change (ToC): results chain, assumptions, and risks.
  - To assess the project's implementation strategy.
  - To map other similar or synergetic interventions implemented by national or international organizations.
  - To validate the adequacy of the log frame, including the indicators, means of verification, and underlying risks and assumptions.
  - To measure the baselines for the project's log frame indicators.
  - To collect counterfactual information comparing non-intervention peer countries.
9. The evaluation will cover the project theory of change for the eight implementation countries: Bhutan, Bangladesh, Fiji, Nigeria, Lao PDR, the Solomon Islands, Uganda, and Vanuatu, establishing baseline measures for the logical framework indicators for 2021 or the latest year for which data is available. The evaluation will adhere to UNITAR and the United Nations Evaluation Group (UNEG) ethical standards and incorporate human rights, gender, and equity perspectives in the evaluation process and findings.

## Methodology

10. The evaluation followed a participatory approach, engaging project stakeholders, primarily project team members and management-level representatives from the project's national focal agencies. Four interviews were held with representatives of the project's focal agencies in Bangladesh, Lao PDR, Bhutan and Fiji. The inception report for Uganda, provided by the project team, was reviewed in the absence of interviews with the representatives of the focal agencies in the country. Additionally, three workshop meetings were held with the project team to discuss the project's logframe and results. Annexes 2 and 3 list all respondents interviewed, and documents reviewed.
11. Qualitative interviews with national stakeholders served to develop a scorecard survey based on the capacity development scorecard used in the Global Environment Facility (GEF) interventions,<sup>1</sup> which provides a numeric baseline value (from zero to eighteen) for beneficiary organizations' current institutional capacities. This survey complements any subsequent surveys measuring capacity developments administered during the midterm and final evaluations.
12. The baseline evaluation is also intended to identify potential counterfactual (control) countries to measure better the project impact at the midterm and, especially, final evaluation stages. A matching approach with propensity score regressions was attempted, using 35 variables representing countries' exposure, vulnerability and capacity, disaster impact, and international funding, and nine regional/ country grouping dummies to calculate propensity scores and match. However, since each country has different planned outputs and outcomes, the matching exercise did not capture the necessary dimensions, and the results were unviable. Instead, the evaluation used a qualitative selection based on physical exposure to natural hazards, ecosystem types and ecosystem health, and socioeconomic variables. The counterfactual selection criteria for Lao PDR, Bangladesh, and Uganda included physical exposure to floods index, mean annual people affected by floods (per 100,000 people), Mean

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<sup>1</sup> Annex 6 presents the scorecard.

annual damages (proportion of GDP), Per capita income (current US\$) 2020 and Employment in agriculture (% of total employment). The counterfactual selection criteria for Bhutan and Nigeria included SDG 15.9.1 status, EPI Ecosystem Vitality Score,<sup>2</sup> Population growth (annual%), GDP per capita (current US\$) 2020 and Dominant biome in area of interest. Five countries were selected as counterfactual: Cambodia, Pakistan, Rwanda, Nepal, and Cameroon. Annex 9 provides a description of the counterfactual selection.

## Evaluation questions

13. The evaluation attempts to answer eight evaluation questions. Methods, indicators, and key assumptions are listed in the evaluation matrix in Annex 4.

### Baseline measures

i) What are the existing capacities in applying GIT and Earth Observation in the thematic areas in the project countries?

a. Are there any existing capacities to analyze geospatial data and information for disaster risk reduction (DRR), climate change adaptation or natural resource or biodiversity management?

What is the use of GIT in stakeholder's respective national institutions/organizations?

ii) What is the countries' and stakeholders' respective institutions/organizations current access of climate funding? (Only for Fiji, Solomon Islands and Vanuatu).

### Intervention strategy

iii) Does the project strategy address the identified challenges in a manner consistent with national priorities, United Nations principles and strategies, the Sustainable Development Goals (SDGs) and other relevant international commitments (e.g., Nationally Determined Contributions (NDCs), the Samoa Pathway)?

iv) Is the project strategy the most cost-effective means of delivering the intended benefits?

a. To what extent have lessons from previous experience from UNITAR and other organizations been incorporated into the project's design?

b. Have alternative designs been considered and evaluated?

v) How is the project strategy coherent with other ongoing or planned interventions, the use of GIT or the thematic areas?

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<sup>2</sup> Yale's University Environmental Performance Index (EPI). Using 32 performance indicators across 11 issue categories, the EPI ranks 180 countries on environmental health and ecosystem vitality. Ecosystem vitality reflects the status of ecosystems and flow services. As preventing ecosystem degradation and loss of ecosystem services is the overarching goal of the two target countries, we select the two countries in their respective regions with the most similar score, similar ecological characteristics, similar achievement of biodiversity mainstreaming objectives, and similar environmental challenges. To measure the achievement of biodiversity mainstreaming, we use Oxford's SDG tracker for SDG indicator 15.9.1: Ecosystem integration and biodiversity in planning. This SDG is linked to the CBD's Aichi Biodiversity Targets and will be achieved in 2020. However, the same target will be included in the post-2020 biodiversity targets framework to be released by the end of 2022.

- a. What other institutions/organizations/ knowledge platforms/e-learning/communities of practice in countries are already intervening in the project's area of intervention? Is there any collaboration exchange among them?
- b. What are the potential synergies/ overlaps/ contradictions with other ongoing or planned interventions?
  
- vi) How does the project strategy respond to gender and human rights issues, including equitable access and indigenous groups rights?
  
- vii) How does the project strategy address the continuity of project results at beneficiary organizations (sustainability)?

**Theory of change and logical framework**

- viii) What is the possible contribution/attribution of the project outputs and outcomes to the intended impact?
  - a. Is the results chain logically linked and based on sound assumptions?
  - b. Are the suggested impact indicators valid and measurable?
  - c. Have all risks been identified, and mitigation strategies developed?

## Limitations

14. The baseline evaluation was conducted during the project's inception phase, with most of the national experts still to be recruited and even the details of the specific country interventions being discussed with several national government organizations. As a result, the baseline evaluation had minimal access to project documentation besides the project proposal and two inception reports (Bangladesh and Uganda) (Annex 3). Moreover, at the time of the first draft, the baseline evaluation had contacts from only four national stakeholders, which has impacted the report's delivery time and the validity of the conclusions for the countries yet to be assessed. For Uganda, this limitation was mitigated using the information from the inception report prepared by the project team.
15. Furthermore, the evaluation was unable to obtain data for the Pacific islands regarding the digital socioeconomic and gender divide and for Vanuatu and Solomon Islands regarding Harold damages (US\$).

## Findings

### *EQ1. Use of geospatial information technology and earth observation*

- *What are the existing capacities in applying GIT and Earth Observation in the thematic areas?*
- *Are there any capacities to analyze geospatial data and information in for disaster risk reduction, climate change adaptation or natural resource or biodiversity management?*
- *What is the use of GIT in stakeholder's respective national institutions/organizations?*

### Project countries

16. **Finding 1. National government organizations partnering with the project (focal agencies) partially understand the potential of GIT and Earth Observation and already use them for disaster needs assessments and monitoring of natural assets, albeit in a non-systematic manner and uneven among participating countries. Focal agencies have identified their capacity needs and the recipients of the project's planned capacity development activities, which, in some cases, involve other national agencies and ministries, to the retention of capacity and synergies in the use of GIT and Earth Observation.**

In the project document, all countries are to strengthen technical capacities in the use of geospatial information technology applications for improved disaster risk management and natural resource management operational planning and decision making.

### Disaster risk reduction

#### *Brief country context*

17. **Bangladesh and Lao PDR** share similar exposure to hydrometeorological hazards, especially precipitation associated with the summer monsoon and tropical cyclones (figure 1). Limited road access and communication (phones, internet) constraint delivery of essential government services and relief efforts, increasing the vulnerability of rural areas, with economies depending on climate-sensitive sectors, such as agriculture and fisheries.
18. **Lao PDR** is a Least Developed Country (LDC).<sup>3</sup> Vigorous economic growth over the last three decades has driven poverty from 46 per cent headcount at the national poverty line in 1993 to 18.3 per cent in 2019. However, poverty reduction has been uneven, and it is much higher in rural areas (23.8), especially in mountain districts with a significant minority population, than in urban areas (7 per cent).<sup>4</sup> Agriculture contributes 16 per cent of the national income and occupies nearly two-thirds of the labor force (61 per cent). Lao PDR is exposed to riverine floods and tropical cyclones that caused an average annual loss of 1 per cent of the Gross Domestic Product (GDP)<sup>5</sup> over the past three decades.

<sup>3</sup> (United Nations Department of Economic and Social Affairs, 2022).

<sup>4</sup> (Pimhidzai, 2015) (Ministry of Planning and Investment and United Nations Development Program, 2017) (Lao Statistics Bureau and World Bank, 2020).

<sup>5</sup> Own calculation with data from (Guha-Sapir, Below, & Hoyois, 2022) and (World Bank, 2022).

19. **Bangladesh** is an LDC.<sup>6</sup> Strong economic growth over the last years has caused substantial reductions in poverty headcount (from 44.2 per cent in 1991 to 20.5 per cent in 2019),<sup>7</sup> yet the country is challenged by persistent poverty pockets associated with rural areas.<sup>8</sup> Floods are the primary disaster in Bangladesh, affecting millions of people and causing significant damage, amounting to an average of 0.7 per cent of its annual GDP (table 1).<sup>9</sup>
20. **Uganda** is an LDC.<sup>10</sup> Agriculture is an important economic sector, contributing 24 per cent to the national income and employing 72 per cent of the working-age population. The poverty rate at the national poverty line has remained stable over the last 15 years and is still high at 20 per cent poverty prevalence and 41 per cent for extreme poverty,<sup>11</sup> affecting rural areas (74 per cent of the population)<sup>12</sup> in particular (55 per cent of rural household in multidimensional poverty against 23 per cent of urban households).<sup>13</sup> Recurrent droughts contribute to the higher poverty prevalence in rural areas and have important impacts in the national economy.<sup>14</sup> Uganda is also affected by floods caused by heavy rains associated with the Intertropical Convergent Zone (ITCZ) migration between March and May (figure 2), affecting an average of 66,000 people yearly.<sup>15</sup>

### *Expected project results and focal agencies*

21. In **Bangladesh**, the **Department of Disaster Management (DDM)** is responsible for disseminating early warning systems at the community level and collecting information for disaster damage assessments and needs reports. During a disaster, the sub-district (Upazila) disaster management committees collect and pass on the information necessary for the assessment and damage forms (SOS form and D-form) within one hour and three weeks of an emergency. These forms orient relief operations. This information is conveyed by volunteers working at the village (union) disaster management committee level, who are ultimately responsible for disseminating early warnings. Early warnings are also transmitted through the mobile phone network. Currently, damage assessment and needs information is collected through the work of the volunteers, and transmitted in paper or excel formats, not including aerial, satellite imagery, or maps. The DDM intends to develop its capacity to access and process geospatial information to direct relief efforts accurately and immediately. The newly established GIS unit, the Multi-Hazard Risk and Vulnerability Assessment (MRVA) cell, will be responsible for accessing, processing, and disseminating map products using geospatial information and will be the recipient of the training other capacity development activities of the project.

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<sup>6</sup> Together with Lao PDR, Bangladesh should be graduating from the LDC category by 2026 (United Nations Department of Economic and Social Affairs, 2022).

<sup>7</sup> (ADB, 2022) (Government of the People's Republic of Bangladesh, 2017) (UNDRR, 2020).

<sup>8</sup> (World Bank, 2019).

<sup>9</sup> Own calculation with data from (World Bank, 2022) and (Guha-Sapir, Below, & Hoyois, 2022).

<sup>10</sup> (United Nations Department of Economic and Social Affairs, 2022).

<sup>11</sup> (World Bank, 2022).

<sup>12</sup> (United Nations, Department of Economic and Social Affairs, Population Division, 2018).

<sup>13</sup> (UNICEF Uganda Country Office, 2017).

<sup>14</sup> (World Bank, 2022).

<sup>15</sup> (Guha-Sapir, Below, & Hoyois, 2022).

22. In **Lao PDR**, the **Disaster Prevention and Risk Reduction Division**<sup>16</sup> **National Disaster Management Office (NDMO)**<sup>17</sup> of the Ministry of Labor and Social Welfare is the leading government organization coordinating all aspects of disaster risk management, especially damage assessment and relief operations. Acting as secretariat and vice-chairman of the overarching National Disaster Management Committee, where 13 government agencies and ministries are represented, the NDMO collects information from the field through the district disaster management committees and other ministries and agencies. Some ministries, notably the Ministry of Agriculture and the Ministry of Health, have GIS capacities and produce maps with the location of culture, soils, health centers, and other relevant characteristics. However, there are no current capacities to access and process geospatial information to assess and locate damage and produce GIS products to communicate information orienting relief operations. Thus, acquiring geospatial information is critical for more efficient disaster assessment and relief operations. The NDMO plans to include representatives of other ministries/ government agencies to enhance data collection and assessments of disaster risk zones. The participating government agencies, such as the ministries of health, transportation, energy, etc., would participate in the project's steering committee. The training would be approached as training of trainers to ensure retention of the developed capacities. Since 2017, UNITAR-UNOSAT has produced 20 GIS products assessing the extent of floods, earthquake shaking intensity zones, and population exposure to tropical cyclones for Lao PDR.
23. In **Uganda**, the Office of the Prime Minister – Department of Relief, Disaster Preparedness and Management (DPM) is the government organization responsible for issuing early warnings and providing and coordinating the emergency response through the National Emergency Coordination and Operations Centre.<sup>18</sup> UNOSAT has produced flood and landslide maps for Uganda since 2007, the latest being a satellite assessment of the Bundigbunyo district landslide in 2019.
24. Under this project, UNOSAT will support the DPM developing a user-friendly web- based decision support systems (satellite- based flood monitoring system) to improve risk mapping and flood monitoring to optimize relief operations.

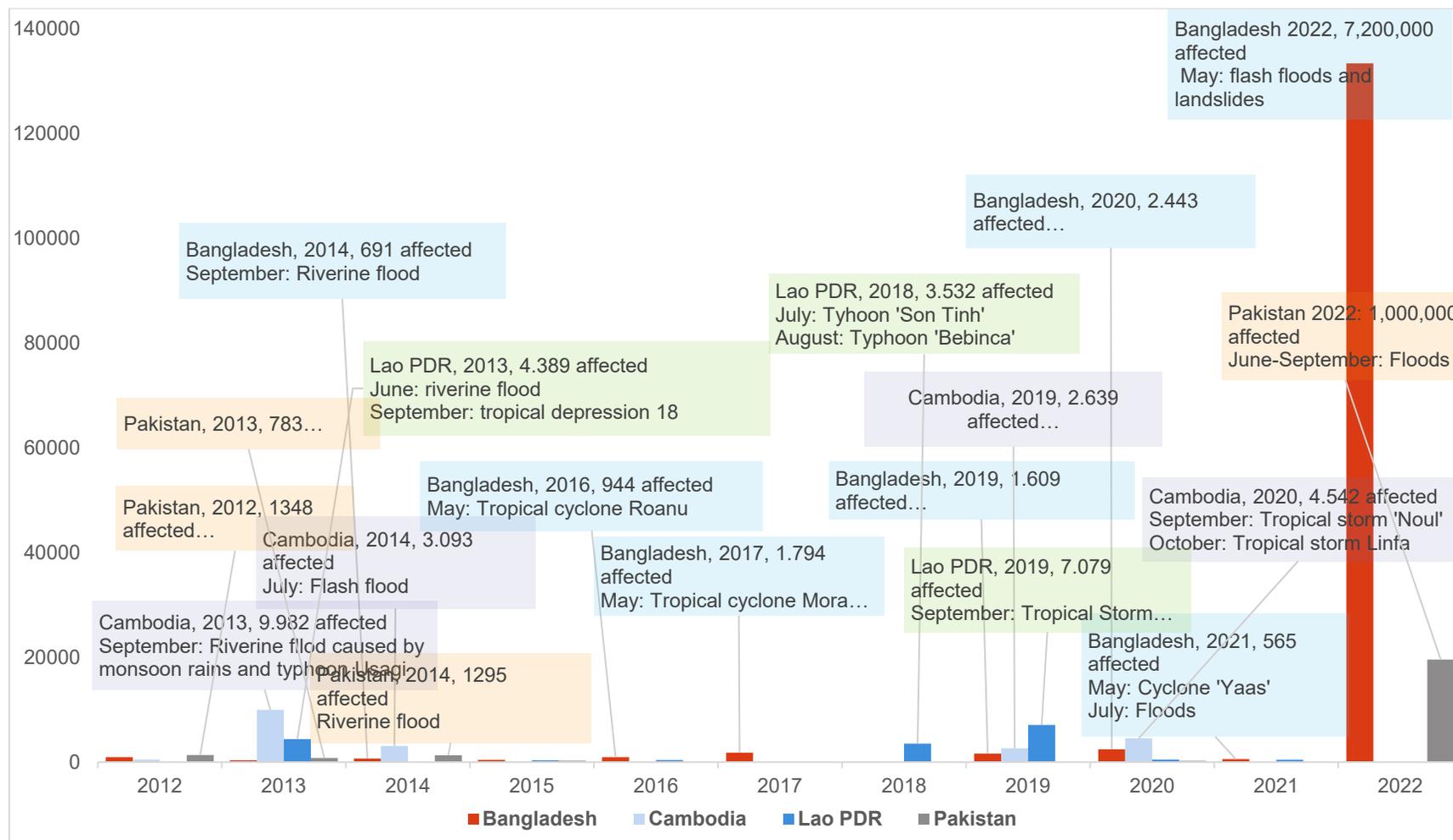
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<sup>16</sup> Different names of the said Ministry were found and communicated by interviewees and project management stakeholder. Naming might be different due to translation.

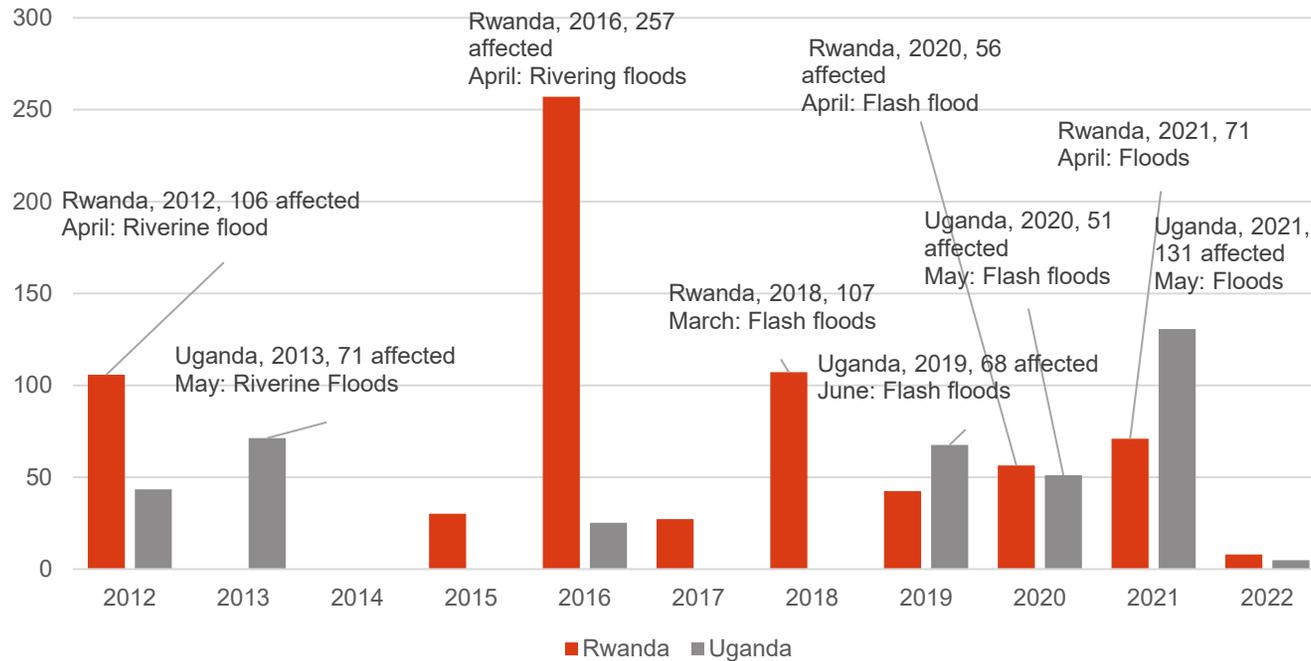
<sup>17</sup> Idem.

<sup>18</sup> (Development Initiatives, 2019).

**Figure 1: Hydro-meteorological hazard-induced disasters affecting more than 500 people (per 100,000 people) in Bangladesh and Lao PDR 1990-May 2022. Cambodia and Pakistan included as counterfactuals**



**Figure 2: Hydro-meteorological hazard-induced disasters affecting more than 50 people (per 100,000 people) in Uganda 2012-2022. Rwanda included as counterfactual**



25. Main disasters induced by hydrometeorological hazards tend to coincide in all target and counterfactual countries, as events are related to the same drivers: tropical cyclones and the Asian monsoon for Asian countries, and the onset of the rainy season in African countries.

## Natural resource management

### *Brief country context*

26. **Bhutan** is an LDC.<sup>19</sup> Environmental services strongly underlie Bhutan's national economy, with agriculture, hydropower, and tourism, contributing 44 per cent to the national income.<sup>20</sup> Moreover, the total value of Bhutan ecosystem services is estimated at USD 16 billion per year (seven times the national income), with forests, cropland, grassland, rivers, and wetlands as the most economically relevant ecosystems.<sup>21</sup> Despite having merely 3 per cent of its land area under cultivation,<sup>22</sup> agriculture employs 55 percent of the working-age population.<sup>23</sup> Economic growth driven by hydropower development has slashed poverty rates<sup>24</sup> in the last decade, from 23 percent to 8.2 percent, although poverty is still higher in rural areas (12 percent of the rural population).<sup>25</sup> Conservation and sustainable management of natural resources is a high priority in Bhutan, which includes a minimum of 60 per cent forest cover in its constitution and a commitment to carbon neutrality: Bhutan's 2015 GHG inventory (latest) revealed a net sink of 5.6 Mt CO<sub>2</sub>e.<sup>26</sup> Bhutan's main carbon sink is its forests, mainly eastern Himalayan broad leaves and coniferous forests covering 70 per cent of its land area.<sup>27</sup>
27. Driven by oil production and price declines over the last decade, **Nigeria**, Sub-Saharan Africa largest economy, has transitioned from rapid growth to experiencing moderate and even negative growth rates and stagnation in poverty reduction, with extreme poverty at 39 per cent of the population in 2018.<sup>28</sup> Despite the oil industry's importance to Nigeria's economy, agriculture is still an important sector, contributing a quarter of the national income and 35 per cent of employment.<sup>29</sup> Most (84 per cent) of Nigeria's extensive surface area (923,770 km<sup>2</sup>) is covered by relatively dry savanna-forest and grassland mosaics,<sup>30</sup> mostly severely degraded by human actions driven by the country's population and economic growth.<sup>31</sup> Nigeria's coastal plains are much more humid, including the extensive Niger river delta, once covered by massive mangrove forests.<sup>32</sup>

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<sup>19</sup> General Assembly resolution A/RES/73/133 adopted on 13 December 2018, decided that Bhutan will graduate five years after the adoption of the resolution, i.e., on 13 December 2023 (United Nations Department of Economic and Social Affairs, 2022).

<sup>20</sup> (World Bank, 2022) (National Biodiversity Centre, Ministry of Agriculture and Forests, Royal Government of Bhutan, 2014).

<sup>21</sup> (Kubiszewski, Costanza, Dorji, Thoennes, & Tshering, 2013).

<sup>22</sup> (Forest Resources Management Division, 2016) (Ministry of Agriculture and Forests, 2019).

<sup>23</sup> (International Labour Organization, 2022).

<sup>24</sup> (World Bank Group, 2020).

<sup>25</sup> (Gross National Happiness Commission, 2021).

<sup>26</sup> (Royal Government of Bhutan, 2021) This is the equivalent of the total net GHG emissions of Timor-Leste. While current net emissions may be slightly positive (0.36 Mt CO<sub>2</sub>, 2019 estimation), they are still negligible at global level. Fiji's net emissions are negative (-16 Mt CO<sub>2</sub>e, 2019 estimate) (CAIT, 2019).

<sup>27</sup> (National Environment Commission Royal Government of Bhutan, 2020).

<sup>28</sup> (African Development Bank, 2022) (World Bank, 2022) (World Bank, 2022).

<sup>29</sup> (International Labour Organization, 2022).

<sup>30</sup> Own calculation with data from (Olson, et al., 2001).

<sup>31</sup> (Federal Ministry of Environment, 2015).

<sup>32</sup> (Federal Ministry of Environment, 2015).

## Expected project results and stakeholders

28. In **Bhutan**, the **National Land Commission Secretariat (NLCS)** manages cadaster data and land use (including agricultural, habitational, industrial, and conservation). It monitors land cover and identifies environmental changes and impacts. The National Land Commission is developing a geographical information data portal that consolidates geospatial information generated by several government agencies on cadaster, agricultural use, expansion of urban areas, trekking routes, and conservation areas. The portal development includes the efforts of several government agencies, coordinated by the Center for Geoinformation of Bhutan, within the National Land Commission. With Japan's government's support, the Center for Geoinformation is currently developing the National Spatial Data Infrastructure (NSDI) to create a framework for sharing geospatial data across the country. One topic of particular importance to be integrated into the said portal is monitoring changes in land cover. Monitoring changes in land uses such as agriculture, urban areas, different forest types and wetlands has important implications for policymaking in rural-urban migration, growth of urban areas, and increasing pressure on natural areas. The National Land Commission expects support from this project to support the land management component of a geospatial portal being developed to provide national government agencies, local government (districts), the private sector, and the public with data for planning and accounting. The portal should also integrate geospatial data generated by unmanned aerial vehicle (UAV) surveys. In mountainous Bhutan, UAV are more efficient and cost-effective than ground surveys and high-resolution satellite imagery. While several government agencies in Bhutan operate drones, they need to standardize their use and consolidate the data generated by drone surveys.
29. Ogoniland, covering some 1,000 km<sup>2</sup>, is a region in the coastal plains of the eastern Niger delta in **Nigeria**. From 1950 until 1993, Ogoniland was explored and exploited by the oil industry. As a result, soils, biota surface water, and groundwater are still heavily polluted with oil, severely affecting the local population. Since the national reconciliation in 1999, cleaning up and rehabilitation of Ogoniland has been a priority for the national government. Oil spills from ongoing oil extraction in other locations off the Niger delta and oil pollution keep on affecting Ogoniland's coast. At the same time, the Nigerian government has limited capacities to monitor and react to spills independently. Since 2006, the National Oil Spill Detection and Response Agency (NOSDRA) of the Federal Ministry of Environment has monitored and shared GIS data on oil spills based on reports by oil companies or private citizens.<sup>33</sup> UNOSAT will improve geospatial capabilities for Environmental Remediation and Preservation to enable NOSDRA to detect and verify the extent and origin of oil spills independently from industry reports. UNOSAT has not produced any maps supporting environmental remediation and preservation for Nigeria.

## Counterfactuals

30. **Finding 2. Five countries can be identified as counterfactuals, sharing similar hazard, exposure, and vulnerability values or biodiversity mainstreaming and ecological characteristics to the target countries and with similar baseline values in using geospatial information.**

### Disaster risk reduction

31. To establish potential counterfactuals, we use the INFORM disaster risk index score supplemented with key socioeconomic and geographic characteristics that correlate with disaster

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<sup>33</sup> <https://nosdra.oilspillmonitor.ng/oilspillmonitor.html>

risk and achievement of environmental goals, as they account for exposure, vulnerability, and accounting for ecosystem services. The selected counterfactuals are listed in Table 1. Selection details are provided in Annex 9.

**Table 1: Key disaster impact indicators for treatment and counterfactual countries. 2011-2021 annual means for people affected by disasters and disaster damage**

Country	Inform physical exposure to floods index <sup>34</sup>	Mean annual people affected by floods (per 100,000 people) <sup>35</sup>	Mean annual damages (proportion of GDP%) <sup>36</sup>	Per capita income (current US\$) <sup>37</sup> 2020	Employment in agriculture (% of total employment) <sup>38</sup>
Lao PDR	9.1	2,451	0.110%	\$2,629.7	61%
Cambodia	9.5	2,812	0.740%	\$1,543.7	35%
Bangladesh	10.0	1,871	0.050%	\$1,961.6	38%
Pakistan	8.8	855	0.340%	\$1,188.9	37%
Uganda	5.1	81	0.002%	\$822.0	72%
Rwanda	4.4	49	0.050%	\$797.9	62%

32. Like its northern neighbor Lao PDR, **Cambodia** is a lower-income, primarily rural, and agricultural-dependent country (table 3). While drier and much less mountainous than **Lao PDR**, Cambodia is exposed to floods of the Mekong and Tonle Sap basins, driven by monsoon rains and tropical typhoons,<sup>39</sup> coinciding with Laos (figure 1), causing significant disruption and damage (table 2). The leading organization responsible for disaster response in Cambodia is the National Committee for Disaster Management (NCDM). During a disaster, the NCDM sets the Emergency Coordination Centre to collect information through its Sub-National Committees for Disaster Management and direct and coordinate relief efforts, including the rapid response teams of the Ministry of Health. The Emergency Coordination Centre is supported by UN agencies, such as UNICEF and the World Food Programme, and NGOs, such as Plan International, Save the Children, and Cambodia Red Cross, members of the Humanitarian Response Forum. Disaster information collection includes maps, but they are not systematically, and field information is not standardized or disaggregated.<sup>40</sup> However, the Mekong Commission analyzed flood extent in 2018 using geospatial data, and UNOSAT provided flood assessment maps in 2008, 2011, and 2013.

33. **Pakistan** is a lower-middle-income country. Most of the population is rural, and agriculture and livestock possess a critical economic and social weight (Table 3). Despite enormous reductions since the early 2000s, a fifth of the country's population is below the national poverty line, mostly in rural areas. The country has diverse ecosystems, but in contrast to **Bangladesh**, it is primarily arid and prone to droughts. However, recurrent floods linked to the South Asian monsoon cause significant damage and disruption (Table 3). The National Disaster Management Authority (NDMA) coordinates risk and disaster assessments, ensuring uniformity of data. The NDMA has

<sup>34</sup> (INFORM, 2022).

<sup>35</sup> (Guha-Sapir, Below, & Hoyois, 2022).

<sup>36</sup> Own calculation with data from (Guha-Sapir, Below, & Hoyois, 2022).

<sup>37</sup> (World Bank, 2022).

<sup>38</sup> (International Labour Organization, 2022).

<sup>39</sup> (Guha-Sapir, Below, & Hoyois, 2022).

<sup>40</sup> (UNDRR, 2019).

a decentralized structure in its Provincial Disaster Management Authorities (PDMAs) and District Disaster Management Authorities (DDMAs). However, there is limited coordination and information sharing between government agencies at the national, provincial, and local levels and no systematic use of GIS in assessments.<sup>41</sup> UNOSAT has provided the government of Pakistan with satellite-based flood assessments since 2005, the latest concerning the 2020 Baluchistan and Sindh floods.

34. While much smaller than **Uganda** (26,340 km<sup>2</sup>, and 13 million people, against Uganda's 241,550 km<sup>2</sup>, 46 million people), **Rwanda**, being a landlock, East African Community country, shares a similar geographical position, climate, and general ecological characteristics with Uganda. Both countries are LCDs, markedly rural, with agriculture having a predominant social and economic role (table 3). As in Uganda, significant reductions in poverty rates driven by rapidly growing economies leave over half of the population in extreme poverty, overwhelmingly in rural areas. While droughts affect most people in this agrarian country, rainy season floods are recurrent and cause significant damage and disturbance (Table 3). In Rwanda, disaster response is coordinated by the National Disaster Management Committee (NADIMAC), chaired by the Minister in Charge of Emergency Management, with a decentralized structure at the district level: District Disaster Management Committee (DIDIMAC). A technical committee assists the NADIMAC (NADIMATEC) and the National Platform for Disaster Management (NPDM), including UN Agencies, NGOs, and representatives from the private sector and academic institutions. Rwanda has not received any support or map products from UNOSAT.

### Natural resource management

35. Counterfactuals for countries developing capacities in natural resource management are based in the Yale's University Environmental Performance Index (EPI) scores, ecological characteristics (ecosystem types) and achievement of biodiversity mainstreaming objectives (SDG indicator 15.9.1). Counterfactuals are listed in Table 2. Selection details are provided in annex 9.

**Table 2: Key natural resource management indicators for treatment and counterfactual countries. Biomes**

Country	SDG 15.9.1	EPI Ecosystem Vitality Score	Population growth (annual %) <sup>42</sup>	GDP per capita (current US\$) 2020 <sup>43</sup>	Dominant biome in area of interest <sup>44</sup>
Bhutan	National target reflecting ABT2 exists, and progress is there, but at as insufficient rate	45.7	0.11	3,000.78	Temperate forests
Nepal	National target reflecting ABT2 exists, and progress is there, but at as insufficient rate	40.5	0.18	1,155.14	Temperate forests

<sup>41</sup> (UNDRR, 2019).

<sup>42</sup> (United Nations Population Division, 2019).

<sup>43</sup> (World Bank, 2022).

<sup>44</sup> (Olson, et al., 2001).

Nigeria	National target reflecting ABT2 exists, and progress is on track to achieve it	42.4	0.25	2,097.09	Mangroves
Cameroon	National target reflecting ABT2 exists, and progress is there, but at as insufficient rate	46.9	0.26	1,537.1	Mangroves

36. **Nepal** is a lower middle-income country with a primarily rural population, and agriculture is the leading economic sector (23 per cent of the national income and 64 per cent of employment).<sup>45</sup> Subtropical grasslands and temperate forest biomes occupy most of the national surface area and sustain the most significant population densities. Human activity has caused substantial land use changes, causing degradation of essential ecosystem services.<sup>46</sup> In Nepal, the Ministry of Land Management, Cooperatives, and Poverty Alleviation maintains a geoportal<sup>47</sup> that includes cadastral information, hazards, land use, and social infrastructure. However, some layers are not functional or not freely available.
37. The western coast of **Cameroon**, adjacent to Ogoniland, is affected by recurrent oil spills and oil pollution.<sup>48</sup> Cameroon is a lower-middle-income country with a primarily urban (58 per cent) population. Its economy depends on the export of commodities, both oil and crops. Agriculture still employs nearly half the labor force and contributes 18 per cent to the national income.<sup>49</sup> National capacities to monitor oil spills and pollution are minimal and lack necessary human, financial and technical resources.

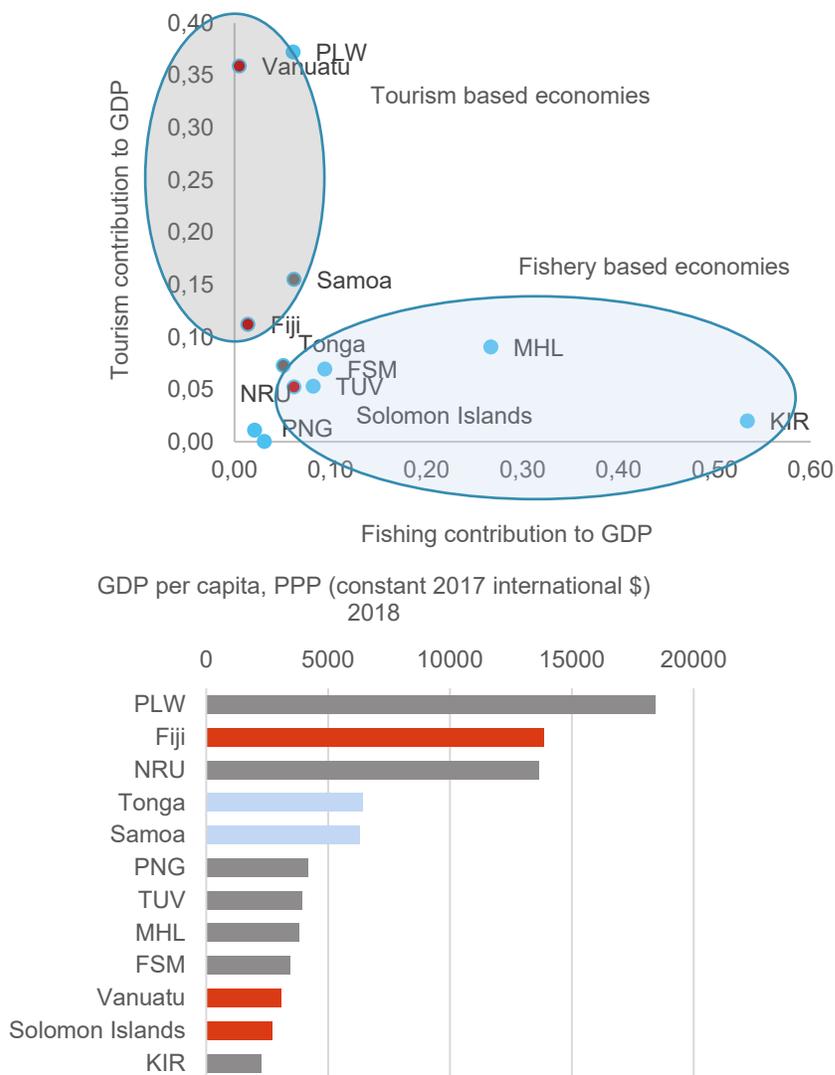
*EQ2. What are the countries and stakeholders' respective institutions/organizations current access of climate funding? (Only for Fiji, Solomon Islands and Vanuatu)*

38. **Finding 3. Fiji, Solomon Islands, and Vanuatu face severe threats from climate change and need to increase funding to bridge their adaptation gap. Evidence-based proposals could support these countries' national designated agencies to obtain increasing support from climate funds and multilateral financial institutions.**
39. Sea level rise, ocean warming and acidification, and intensification of hydrometeorological hazards, including storms and tropical cyclones, threaten the economic basis of Fiji, the Solomon Islands, and Vanuatu. Damage and loss suffered in the last decade. The three countries' economies depend to a significant degree on climate-sensitive sectors: tourism and fisheries (figure 3).

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<sup>45</sup> (World Bank, 2022).  
<sup>46</sup> (Ministry of Forest and Soil Conservation, 2014).  
<sup>47</sup> <https://nationalgeoportal.gov.np/#/map>  
<sup>48</sup> (Alemagi, 2007).  
<sup>49</sup> (Republic of Cameroon, 2012).

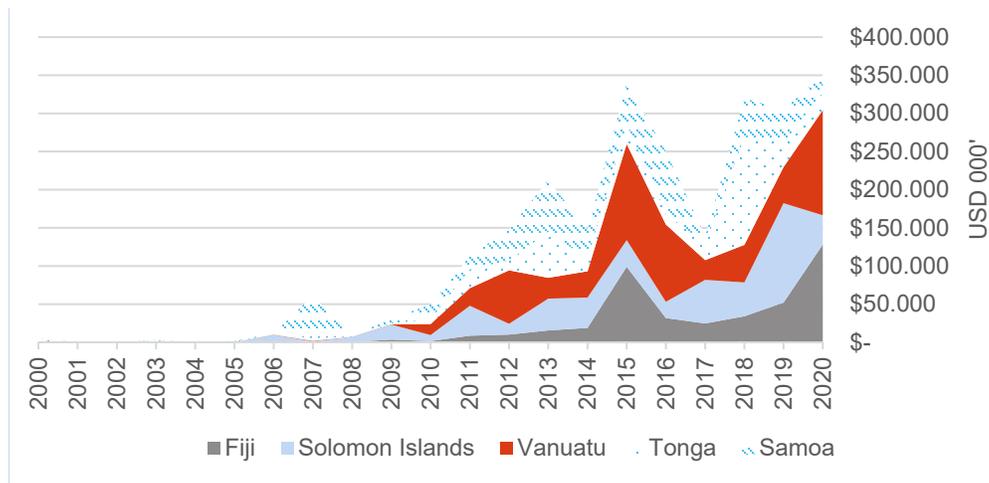
**Figure 3: National income and most important economic sectors by contribution to national income.<sup>50</sup>**



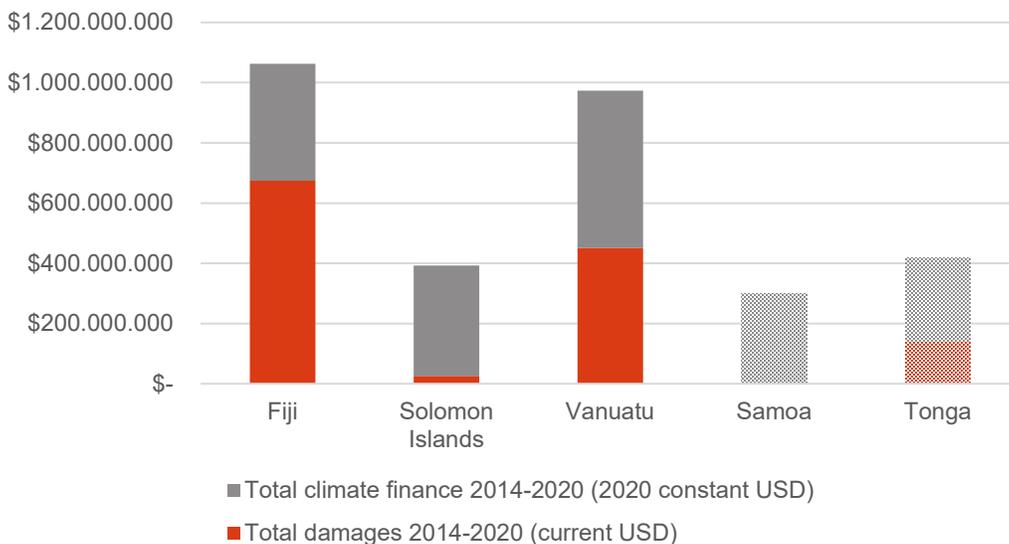
40. Given their exposure and vulnerability to climate change, the project target countries, and all Pacific Island Countries (PIC) need significant finance to bridge their adaptation and capacity gaps and transition to low-carbon blue economies, according to the SAMOA pathway and their national development strategies. Between 2014 and 2020, donors committed a total of USD 1.28 billion (table 3) to the three target PICs Fiji (30 per cent), Solomon Islands (29 per cent) and Vanuatu (30 per cent). In 2020 (last data year) climate finance flows exceeded \$306.3 million have been committed as climate-related development finance for the three countries (Fiji \$128 million, Solomon Islands, \$38 billion, and Vanuatu \$137 million). Climate finance flows have been growing steadily since the 2010s and have reached an amount equivalent to the financial damage from hydrometeorological-hazard-induced disasters, albeit unevenly distributed (figure 4 and 5).

<sup>50</sup> Own elaboration based on (Fouad, Novta, Preston, Schneider, & Weerathunga, 2021) with data from (The World Bank, 2022), (World Tourism Organization, 2022) and (World Bank, 2012).

**Figure 4: Climate-related finance in the project target countries and potential counterfactuals 2000-2020**



**Figure 5: Distribution of damages and climate finance in the three target countries and potential counterfactuals.**



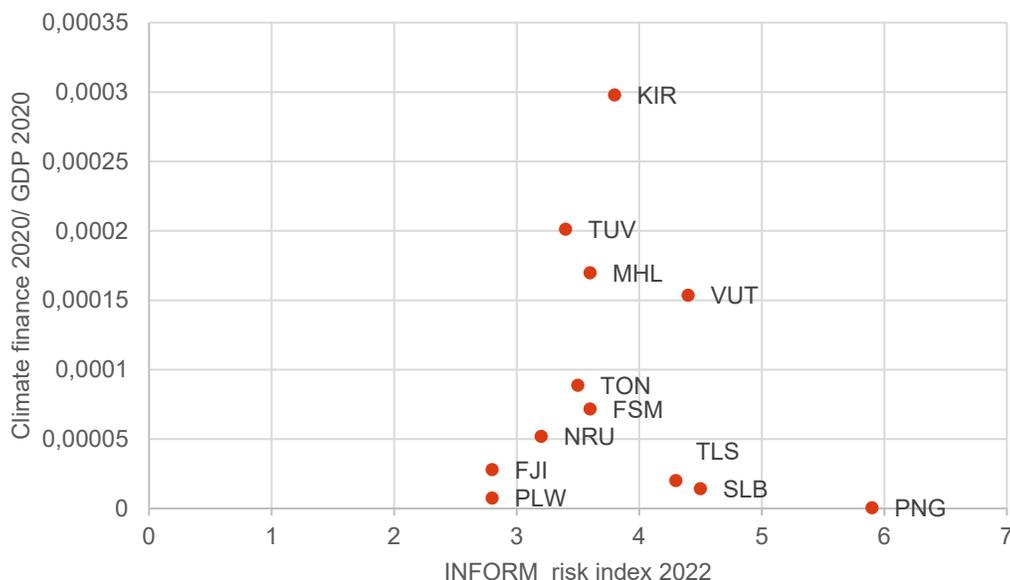
41. Climate finance flows vary yearly and have apparent cycles (figure 4). These pseudo-cycles are caused by replenishment cycles and investment decisions by multilateral and bilateral donors. Thus the 2015 finance peak corresponds to the first appearance of the Green Climate Fund and World bank disbursements, while the 2018-2020 peak is caused by new bilateral and private donors, combined with new replenishment cycles of multilateral financial institutions and funds (table 3). Climate finance sources in the three countries are heavily dependent on three actors (two bilateral actors: Australia and Japan, and one multilateral financial institution: the World Bank, which contributed 60 percent of the total climate finance in the 2014-2020 period. Australia alone contributes 30 per cent of the total funding for the same period and shows more annual regularity than the other donors.

42. Most GCF is also implemented through multilateral financial institutions (World Bank and Asian Development Bank) and the Secretariat of the Pacific Regional Environment Program, a UNOSAT partner. Only in Fiji, Fiji Development Bank is accredited and directly implements \$5 million GCF funding. Thus, the bulk of current climate funding aligns with the partnership agreements of the countries with the multilateral financial institutions, which are guided by the countries' NDCs.
43. However, exposure and climate finance are correlated in the Pacific, making a case for evidence-based proposals as promoted by this project (figure 6). While the final evaluation of Common Sensing found no evidence of any substantial contribution of the project to increasing climate finance yet, the mechanisms supported by Common Sensing had not yet started functioning at the time of that final evaluation.

**Table 3: Climate finance flows 2014-20 (thousand 2020 constant USD) for Fiji, Solomon Islands and Vanuatu (donors over USD 1 million since 2014).**

Donor	2014	2015	2016	2017	2018	2019	2020	Total	%
Australia	16,683.69	58,776.54	42,059.91	50,373.47	34,617.98	64,821.14	64,521.83	331,854.57	26.0%
World Bank	7,843.80	74,171.38	55,565.33	-	18,779.45	53,604.43	74,300.00	284,264.39	22.3%
Japan	3,644.15	45,520.21	2,054.30	324.62	4,984.57	4,291.13	75,026.68	135,845.65	10.6%
EU Institutions (excl. EIB)	-	12,194.77	18,128.64	2,378.85	32,973.20	-	35,327.64	101,003.10	7.9%
New Zealand	13,377.78	17,345.93	1,416.61	12,060.85	9,293.44	18,725.54	15,784.03	88,004.18	6.9%
AsDB	23,943.23	-	1,927.77	-	-	39,784.43	11,320.00	76,975.42	6.0%
GCF	-	32,988.20	19,385.67	-	-	-	5,000.00	57,373.87	4.5%
Korea	4,845.07	286.99	857.81	31,615.61	8,897.58	5,799.19	1,296.64	53,598.88	4.2%
GEF	13,059.59	-	3,738.32	-	1,008.08	22,399.56	10,835.13	51,040.69	4.0%
United Arab Emirates	8,498.91	4,251.06	-	-	-	15,415.62	-	28,165.58	2.2%
Climate Investment Funds	-	7,439.35	7,108.94	-	6,602.95	-	-	21,151.24	1.7%
Canada	-	-	-	3,809.11	3,628.75	41.33	372.80	7,851.98	0.6%
Bezos Earth Fund	-	-	-	-	-	-	7,200.00	7,200.00	0.6%
Germany	15.15	803.93	501.42	2,171.17	783.79	1,450.56	797.72	6,523.75	0.5%
Global Green Growth Inst.	-	-	741.25	1,175.90	2,670.79	513.44	93.64	5,195.03	0.4%
IFAD	-	4,824.95	-	-	-	-	-	4,824.95	0.4%
United Kingdom	2.70	-	-	988.95	-	2,341.08	897.78	4,230.51	0.3%
France	531.30	399.71	236.66	622.96	960.67	250.15	625.09	3,626.54	0.3%
Sweden	148.98	957.00	510.36	-	293.97	163.94	14.48	2,088.72	0.2%
Iceland	-	-	-	1,420.27	3.67	13.88	-	1,437.82	0.1%
Switzerland	-	-	258.92	746.26	266.60	-	106.50	1,378.27	0.1%
Austria	253.56	-	-	-	1,006.65	-	-	1,260.21	0.1%
Others (<1 million USD)	783.19	-	994.93	-	-	-	205.86	1,983.98	0.2%
<b>TOTAL</b>								<b>1,276,879.34</b>	

**Figure 6: Link between climate change exposure and climate finance.<sup>51</sup>**



## Counterfactuals

44. Two countries are potential counterfactuals for the climate finance PICs: Tonga and Samoa. Both countries share similarities in economic structure, exposure, and vulnerability to hazards and climate finance flows (figures 6,7,8 and 9).
45. **Finding 4. The Project's Pacific Island countries aim to improve their capacities to access climate finance and evidenced-based decision making**
46. In **Fiji**, the Ministry of Economy (MoE), as the Climate Change National Designated Authority (NDA), plans to use the project to build upon the data infrastructure and data portal developed under the CommonSensing project, developing customized thematic applications enabling government agencies, local government and the private sector to identify climate-related risks, including, parcel risk classification, optimal crops, and people and assets exposed to various climate hazards (floods, cyclones) to estimate the cost of adaptation, including relocation measures. The thematic application should enable end-users to establish the current and projected situations under different climate scenarios. As National Designated Authority, the MoE will also use data and projections from the thematic application to prepare climate finance proposals to bridge Fiji's current adaptation gap.

*EQ3: Does the project strategy address the identified challenges in a manner consistent with national priorities, United Nations principles and strategies, the SDGs, and other relevant international commitments (e.g., NDCs, the Samoa Pathway)?*

<sup>51</sup> The INFORM risk index correlates with the amount of climate finance received. INFORM 2022 is used, as countries vulnerabilities do not significantly change every year. Climate finance from (OECD, 2022).

**Finding 5. The project strategy addresses challenges identified in the target countries' national development strategies and sector (disaster risk management, natural resource management) strategies consistent with the agenda 2030 (SDG) and the Samoa Pathway. And the 2015-2030 Sendai Framework.**

47. The project's target countries are a diverse set that shared vulnerabilities to climate change, hydrometeorological hazards and environmental degradation, and limited national capacities, being either SIDS or LDCs.
48. UN declarations and national strategy documents acknowledge SIDS and LDCs' particular need for international funding support. The Samoa Pathway, the outcome of the third International Conference on Small Island Developing States in 2014, stresses the importance of continued support to address gaps in the capacity to gain access to and manage climate finance, citing the GCF specifically. Their special needs are reflected in the 2015 sustainable development goals, specifically in target 13b, *Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth, and local and marginalized communities*, and 17.18, *enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts*.
49. Specifically, the project will directly support the implementation of the following policies and strategies:

In Bangladesh, the National Plan for Disaster Management (2021-2025) and the associated national level actions from the Sendai Framework for Disaster Risk Reduction (SFDRR) include the priority of promoting real time access to reliable data, including GISGIS, and use information and communications technology innovations to enhance measurement tools and the collection, analysis, and dissemination of data.

In Lao PDR, the 2019 Law on Disaster Management and the National Strategy on Disaster Risk Reduction (NSDRR) 2021-2030, and the 2021 National Strategy on Climate Change that include provisions to develop and strengthen capacity for management of disaster related data and information system.

The Bhutan geo-information policy of 2018, formulated based discussions in the frame of other externally funded projects and aiming to ensure availability of reliable geo-information, enhance data discovery, accessibility and sharing, and to promote sustainable and optimal use of geoinformation and technologies.

Fiji's National Climate Change Policy and its Nationally Determined Contribution (NDC), NDC Investment Plan and Projects Pipeline, and the Low Emission Development Strategy (LEDS) (2018-2050), an economy-wide decarbonization plan, identifying mitigation options for major sectors of the economy needing new and additional climate finance.

The Solomon Island's Climate Change Policy (2012-2017), linked to its National Development Strategy (2016-2035) that needs additional international finance to be implemented.

Vanuatu's Climate Change and Disaster Risk Reduction Policy (2016-2030), and the NDC Implementation Road Map that require additional international finance for implementation.

50. **Finding 6. The impact of the COVID-19 pandemic on SIDS and LDCs, particularly countries whose economies depend to a significant degree on commodities and tourism, as the project's target countries, have made support for capacity development and finance even more relevant and urgent, as stated in national development strategic documents.**

51. Fiji, Solomon Islands, and Vanuatu's economies have suffered severe impacts from the recent COVID-19 pandemic, with their national incomes contracting by 16 per cent, 4 per cent, and 7 per cent, respectively, further impairing their adaptation capacity, therefore making international funding flows for adaptation and resilience ever more urgent. This is expressed in their 2021 updated and enhanced nationally determined contributions of 2020 and 2021. Likewise, COVID-19 has also impacted the economies of Lao PDR and Bangladesh, increasing the risk of poverty, especially for vulnerable populations also exposed to disasters.

*EQ4: Is the project strategy the most cost-effective means of delivering the intended benefits?*

52. **Finding 7. The project will develop public goods for which no market demand currently exists, but that will produce significant socioeconomic benefits in terms of increased finance for adaptation, access to geospatial information for enhancing decision-making at the national, district, and individual levels, and more effective relief efforts in disaster situations.**

53. The project will deliver different capacity building interventions, including training and technical backstopping, expected to deliver five different outputs:

- In Fiji, the Solomon Islands, and Vanuatu, the capacity to produce higher quality, evidence-based climate change adaptation project proposals with an enhanced likelihood of being funded.
- In Fiji, development of applications enabling end-users to assess climate risks attached to land parcels.
- In Lao PDR, and Bangladesh, and Uganda capacity for enhanced evidenced based decision making to support disaster response and early recovery planning.
- In Bhutan, complementing the development of a geospatial data portal, capacities to incorporate geospatial and UAV information into sustainable land management.
- In Nigeria, capacity building for Environmental Remediation and Preservation in Ogoniland marine safety and fishery protection.

54. These five outputs are delivered through one implementing agency, UNITAR-UNOSAT, with project management and administration provided by a single project team based at UNITAR headquarters and two regional offices (one for Africa and one for Asia). Building on the experience of the CommonSensing project, the project places one in-country technical expert hosted at each of the beneficiary national government organization. In Pacific countries seeking to enhanced

climate finance flows, the project deploys a climate finance advisor. Compared to the CommonSensing project, this simplified (fewer implementing partners), more systematic approach to delivering tailor-made capacity development products reduces the transaction costs involved in the coordination of different international actors delivering individual components of the intended capacity development framework.

55. The project cost-effectiveness will be given by the ratio between the project costs and the project's social benefits. Social benefits are implicit in the project outcomes. That is, how the beneficiary national government organizations will use the solutions crafted by the project, i.e., enhanced delivery of relief efforts, increased adaptation capacity against climate change impacts, and more efficient recovery of household income after a disaster.
56. Project costs (in converting outputs into outcomes) will vary across beneficiary/ focal agencies depending on the output and outcome. For instance, costs for Pacific countries will entail the recruitment of sufficient human resources (project team will support the recruitment of technical staff for Fiji) to ensure the supply and dissemination of good-quality, evidence-based project proposals (climate finance advisors). For disaster risk management and relief operations, costs include acquiring satellite imagery (purchasing high-resolution satellite images is not always necessary) and maintaining sufficient human resources and equipment at the national and the district levels to sustain the production of good quality spatial data. Thus, different strategies with different project costs are specific to each of the eight national projects, based on the expected outcomes. For instance, although the use of satellite imagery of sufficient resolution for post-disaster damage assessments in Bangladesh or Lao PDR, the use of unmanned aerial vehicles (UAV) can be more cost-effective than the high-resolution satellite imagery (or the even costlier ground surveys) needed for the precise land cover and land use spatial data at the individual land parcel level required for the planned Bhutan one-stop geoportal.
57. The final evaluation of the Common Sensing project was undertaken together with a Cost-Effectiveness analysis (CEA) of the outputs. However, this CEA referred to the use of satellite imagery compared to other data collection methods (field survey, UAV, etc.). As discussed above, depending on the resolution required, countries plan to blend several collection methods for their purposes, including all the methods mentioned above.
58. Estimating the cost-effectiveness of the project will require an estimation of the total project costs (Proposal in Table 4) and the expected benefits of the intervention (outcomes). Estimating the monetary of the project's outcomes: enhanced procedures based on GIT-based decision-support solutions, may not be viable. Thus, the project's efficiency will be determined based on the costs needed to achieve the expected outcomes. Therefore, the project will be more efficient if all results are achieved within the allotted time, and less if those costs raise (e.g., through project "non-cost" extensions) or if the results are not obtained. At the time of the baseline evaluation, both values: costs and benefits, are zero.

**Table 4: Costing items**

Item	Amount	Estimation method
NORAD grant <sup>52</sup>	USD 5,529,733 <sup>53</sup>	Agreement NORAD-UNOSAT, expenditure reports
UNOSAT in-kind contribution	tbd	Grade and time dedication of UNOSAT program officers
National government in-kind contribution	tbd	It includes grade and time of government officials in support of project activities, use of facilities, equipment, and vehicles
Human resources costs (by national government from budget or external sources)	tbd	Recruitment or outsourcing of new human resources to implement project solutions (including professionals updating code of open-source software)
Equipment costs (by national government from budget or external sources)	tbd	Equipment (hardware, vehicles, UAVs etc., including supplies and servicing) acquired or rented by the national government to implement project solutions
Licensing costs (by national government from budget or external sources)	tbd	Annual costs of licensed software used to implement project solutions

*EQ5: How is the project strategy coherent with other ongoing or planned interventions in the use of GIT or the thematic areas?*

- *To what extent have lessons from previous experience from UNITAR and other organizations been incorporated into the project's design?*
- *What other institutions/organizations/ knowledge platforms/e-learning/communities of practice in countries are already intervening in the project's area of intervention?*
- *What are the potential synergies/ overlaps/ contradictions with other ongoing or planned interventions?*

**59. Finding 8. The NORAD project incorporates lessons learned from previous UNITAR-UNOSAT interventions. However, the project logical framework still includes impact indicators that are unlikely to be affected by the project intervention in the midterm.**

60. Since 2005, UNOSAT has conducted capacity development activities in several Asian and African countries. The (provisional) endline evaluation of the IPP CommonSensing project includes the following lessons learned:

- Define realistic, measurable results.

<sup>52</sup> Includes all project activities and the in-country experts and climate finance advisors.

<sup>53</sup> Exchange rate: 1 NOK = 0.0921583 USD.

- Include a gender analysis to ensure gender mainstreaming.
- Engage local staff and institutional partners when designing the solution.
- Avoid transaction costs associated with staff turnover at implementing partners.
- Include environmental sustainability outcomes.

61. All these lessons learned have been incorporated into this project's design. Thus, the project intends to conduct a thorough gender analysis and collect gender-disaggregated data (see findings under evaluation question six). The project's inception phase involves a thorough involvement of national government organizations (beneficiary organizations) in designing and framing the specific capacity development activities. Moreover, the current project significantly simplifies the governance structures, without including the high number of implementing partners of previous interventions, thus reducing coordination and staff turnover risks.
62. However, the logical framework still links the project's success to broad changes in the impact of disasters, which is very unlikely to be affected by this intervention or any other four-five-year project aiming to strengthen capacities in disaster risk management. Moreover, if the project influences such impacts, the logical framework should also reflect impacts in terms of biodiversity or ecosystem health of the expected strengthening for sustainable environmental management in Bhutan and Nigeria. Thus, the project design still includes unachievable and likely unmeasurable results within the project timeframe (see discussion under evaluation question eight).
63. As with regards to synergies, the evaluation was unable to detect any synergies with other projects. However, they are likely existing in the case of SERVIR Mekong. See section further below.

### Other regional and national initiatives

64. **Finding 9. The project supports the development of geospatial platforms mostly in the cloud. While numerous interventions support disaster risk or natural resource management, currently, no other national interventions are supporting the same goal as this project. However, some past and current regional and national initiatives have supported the development of geographical and geospatial data infrastructure in target and counterfactual countries.**

### Disaster risk management

65. The [SERVIR-Mekong](#) project implemented between 2014 and 2022, aims to better understand and manage climate risks through geospatial data. The project is a joint initiative of USAID, NASA, and ADPC covering Cambodia, Lao PDR, Myanmar, Thailand, and Viet Nam. The project has provided satellite imagery, data, and decision support tools to several agencies, including the Mekong River Commission (MRC), the World Food Programme (WFP), and national governments, to improve disaster risk management and natural resource management.
66. Of particular interest is the provision of near real-time data to WFP to optimize their response to the 2020 floods in Cambodia. The SERVIR-Mekong project has also provided satellite-based rainfall data products enabling the MRC to increase the accuracy of flood forecasting by eight days.
67. In Pakistan, the Global Facility for Disaster Reduction and Recovery (GFDRR), the World Bank, and the Department for International Development (DFID) are supporting the National Disaster Management Authority of Pakistan to develop a Shared Platform for Disaster

Resilience Information to serve as a one-stop online hub of risk information, under the project Scaling Up Innovation in Disaster Risk Management. The platform aims to share geospatial datasets and maps on hazards and exposure among national agencies to enable optimized access to information on disaster risks and hazards by all decision-makers. The programme aims to improve the current Pakistan Disaster Info website that contains hazard maps, including drought, floods, landslides, glacial lake outburst floods, earthquakes, and landslides.

### Natural resource management

68. The SERVIR-Mekong project has provided Thailand's Pollution Control Department and the government in Cambodia with satellite-based forecast products for forest fires and associated effects on air quality.
69. Analogous to their efforts in Southeast Asia, in South Asia, the International Centre for Integrated Mountain Development (ICIMOD) hosts SERVIR Hindu-Kush Himalaya a joint initiative of USAID and NASA that collects ground-based data and geospatial information to help decision-makers respond to environmental challenges in the Hindu Kush Himalaya, with a focus in Afghanistan, Bangladesh, Myanmar, Nepal, and Pakistan.
70. In Bhutan, the government of Japan, through the Japan International Cooperation Agency (JICA), is funding a project implemented by the National Land Commission Secretariat (NLCS) with roughly USD 7 million to Bhutan to develop a digital topographic of Bhutan. This project builds upon the 2015-2017 project Establishment of National Geospatial Data Infrastructure, which produced a repository of digital geospatial data.
71. In all target countries, numerous interventions are being implemented to develop individual and institutional capacities in disaster risk and environmental and natural resource management (table 5a and 5b). However, other than the projects cited above, past and current investment is not directed to the project's beneficiary organizations or specific topics (geospatial information).

**Table 5: Official Development Aid for Disaster Risk Reduction, all channels, in million US\$ (constant 2020 prices)<sup>54</sup>**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Uganda	..	..	..	..	..	..	..	0.24	1.73	0.17	<b>2.13</b>
Rwanda	..	..	..	..	..	..	..	0.27	..	..	0.27
Lao PDR	..	0.02	..	..	..	..	..	0.14	0.50	7.51	<b>8.18</b>
Cambodia	0.93	9.91	5.25	11.50	8.74	..	0.16	0.85	6.53	11.74	55.60
Bangladesh	3.08	2.10	3.35	3.48	2.74	2.49	3.34	6.78	7.29	11.83	<b>46.48</b>
Pakistan	0.27	0.02	..	..	..	..	0.01	2.11	15.81	6.30	24.52

**Table 6: Official Development Aid for Environmental Protection, all channels, in million US\$ (constant 2020 prices)<sup>55</sup>**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Nigeria	2.08	1.19	1.18	0.79	0.55	0.78	4.79	4.15	1.83	2.85	20.19
Cameroon	7.79	5.57	8.23	10.45	8.38	15.91	9.20	8.17	7.87	6.26	87.82
Bhutan	2.78	4.00	3.77	0.96	1.01	0.37	0.87	1.18	1.00	0.47	16.41
Nepal	11.57	17.49	38.91	45.68	22.48	34.25	26.61	23.54	19.87	21.49	261.89

<sup>54</sup> (OECD, 2022)

<sup>55</sup> (OECD, 2022)

## COVID-19

72. **Finding 10. The project has internalized the impacts of COVID-19 on the latest intervention strategy by preparing contingency online distance delivery of capacity development and engaging local experts.**
  
73. The UNITAR-UNOSAT 2018-2021 intervention in the Pacific (the CommonSensing project) was affected by COVID-19 and natural disasters (tropical storms and one volcanic eruption), leading to a switch to blended training (online and through in country deployed experts). During the implementation of Common Sensing, eliminating field training and data collection, compounded by the late deployment of climate finance advisors, severely impacted the timely achievement of project results and generated experience with online and distance training and data collection. Thus, the current project's strategy incorporates a blended online and in-person delivery of capacity development activities together with the deployment of local experts, preventing disruptions linked to pandemic or natural disaster effects.

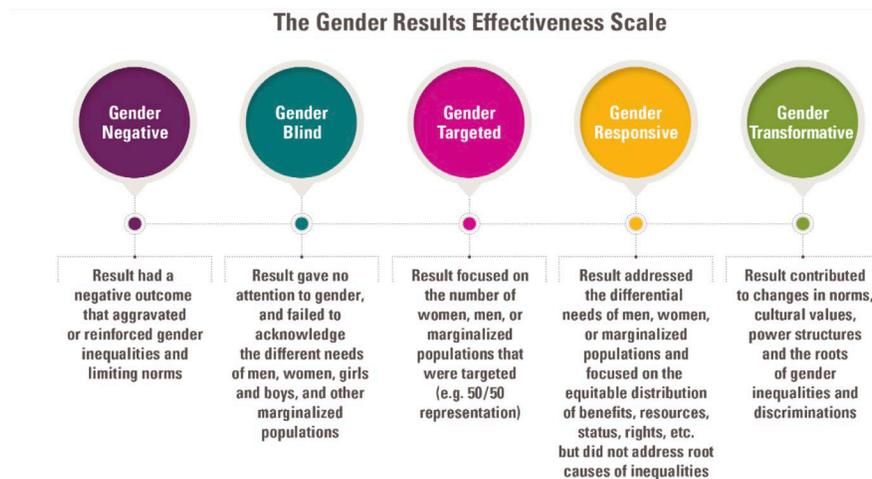
*EQ6: How does the project strategy respond to gender and human rights issues, including equitable access and indigenous groups' rights?*

- Extent to which gender issues have been incorporated into the project strategy
- Availability of gender disaggregated data

## Gender

74. **Finding 11.** Gender issues are prevalent in all the project target countries, as acknowledged by the project's focal agencies. The project is gender targeted and aligns with the beneficiary government organizations' gender parity policies.

Figure 7: UNDP Gender Results Effectiveness Scale (GRES)



75. The project is gender-targeted (figure 7) as it intends to achieve parity among women and men accessing training and other awareness and capacity development activities. In past projects, UNITAR-UNSOAT did not achieve full gender parity in access to training and technical backstopping but raised women's participation significantly by raising awareness of women in DRR and collecting gender-disaggregated data on access and progress on capacity development activities. The main challenge is to overcome gender differences driven by historical processes over which the project exerts no control. For instance, differential access to technical careers, rooted in patriarchal traditions and gender stereotypes, means that, for historical reasons, the female professional pool to join the GIS teams, tends to be smaller than that for men.

76. The current project will collect gender-disaggregated data on the proportion of trained technical participants successfully meeting learning objectives and confirming the application of the training's knowledge and skills in their professional fields. National focal points and the relevant government organizations are aware of the gender challenges in accessing technical and management positions and are committed to enabling equal participation in the project's capacity development activities (baseline evaluation respondents). Despite persistent shortcomings, access to higher education and managerial positions (SDG 5.5) has progressed in most project target countries. Still, it has regressed in Bangladesh and Bhutan (table 6). The relatively low share of women in managerial positions may be partially explained by the limited access to higher and tertiary education (table 6).

**Table 7: Female access to tertiary education and managerial positions**

Country	Educational attainment, at least completed short-cycle tertiary, population 25+, female (%) <sup>56</sup>	Year	Proportion of women in managerial positions (%) <sup>57</sup>	Year
Bangladesh	10.9	2020	10.7	2017
Bhutan	7.4	2017	18.5	2015
Fiji	5	2017	38.9	2016
Lao PDR	no data	NA	59	2017
Nigeria	13.8	2006	64.4	2019
Solomon Islands	no data	NA	25.7	2013
Uganda	5.5	2012	35.1	2017
Vanuatu	no data	NA	37.1	2017
Cambodia	2.50	2015	30.9	2012
Cameroon	0.72	2010	49.3	2014
Nepal	2.24	2011	13.2	2017
Pakistan	2.67	2019	4.9	2018
Rwanda	3.42	2018	31.9	2018
Samoa	No data	NA	43.1	2017
Tonga	5.36	2011	26.6	2003

77. Gender issues concern access to the project's capacity development activities and, at the outcome level, how differences in exposure and vulnerability, including due to limited access to technology and information, meaning that disaster impacts and degradation of ecosystem services differently affect men and women.

78. In Bangladesh, the loss of agricultural assets due to disasters primarily affects women disproportionately employed in agriculture (30 per cent male, 58 per cent female employment in agriculture)<sup>58</sup> and more vulnerable, as they are more affected by poverty and less access to relief aid.<sup>59</sup> In Lao PDR, heavy rains and floods disrupt agricultural production, affecting livelihoods and food security. More women are employed in agriculture (64 per cent) than men (59 per cent),<sup>60</sup> and the loss of farming assets (land, farming equipment, animals) can push large portions of the population into poverty. In Bhutan, rural-urban migration has led to a higher proportion of female employment in agriculture (Baseline evaluation respondents), which exposes their households to the risk of environmental degradation. In general, women are more dependent on agriculture in the project's target countries (table 7), except for Nigeria and Fiji, increasing their exposure to hydrometeorological hazards, climate change, and commodity price shocks. While no gender-disaggregated data exist yet for disaster casualties and affected people for most project countries, in Fiji, a study on the impacts of tropical storm Wiston, in 2016, showed that although women did

<sup>56</sup> (UNESCO Institute for Statistics, 2022).

<sup>57</sup> (UN Department of Economic and Social Affairs, 2022).

<sup>58</sup> (ILO, 2019) (UNDRR, 2020).

<sup>59</sup> (UNDRR, 2020).

<sup>60</sup> (ILO, 2022).

not have more propensity to suffer injuries or harm, they were disproportionately affected by economic losses.<sup>61</sup>

79. Regarding other vulnerable groups, national focal points interviewed recognized they have not yet integrated them systematically in their respective agencies.

**Table 8: Employment in agriculture, male and female**

Country Name	Employment in agriculture, male (% of male employment) 2019 <sup>62</sup>	Employment in agriculture, female (% of female employment) 2019 <sup>63</sup>
Bangladesh	30	58
Bhutan	50	64
Fiji	22	8
Lao PDR	59	64
Nigeria	44	24
Solomon Islands	37	38
Uganda	68	77
Vanuatu	57	57
Pakistan	30	65
Nepal	52	74
Cambodia	33	37
Cameroon	40	48
Samoa	42	7
Tonga	31	2

### Digital divide

79. The gender digital divide limits women's access to the project's capacity education activities and increases women's vulnerabilities to disasters, ecosystem degradation, and commodity price shocks. Access to the internet and mobile phones is relatively good in all target countries (figure 8), yet with significant socioeconomic and gender gaps (table 9).

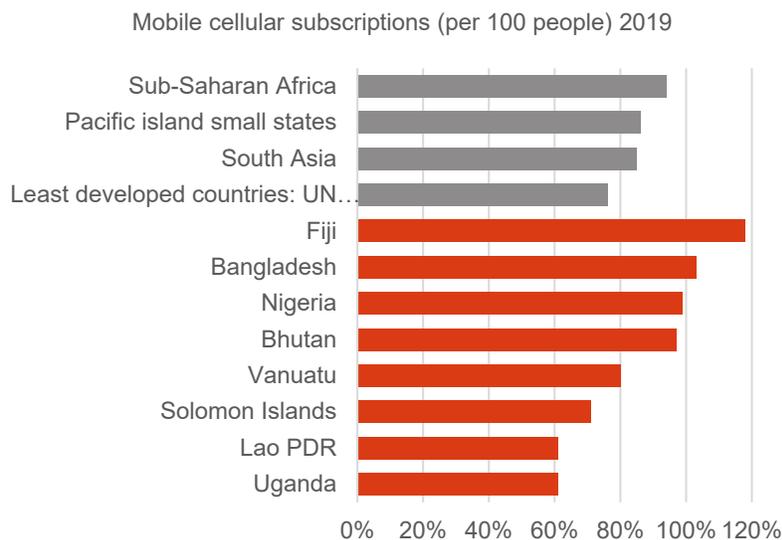
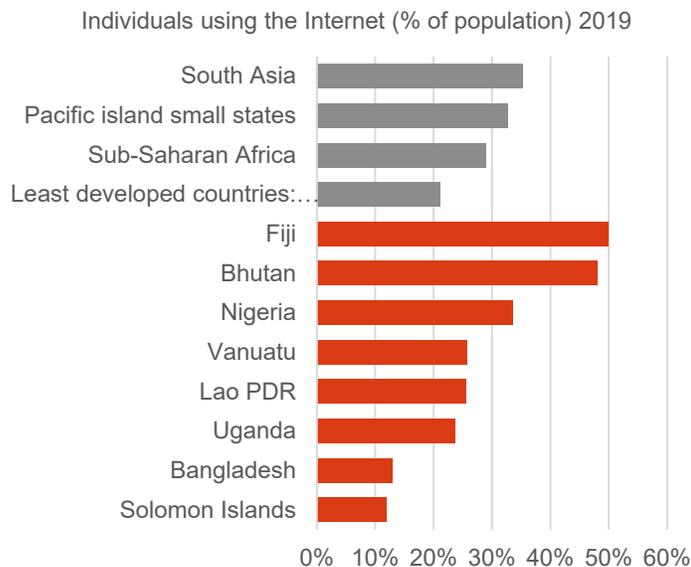
**Figure 8: Access to internet and mobile phones, compared with regions<sup>64</sup>**

<sup>61</sup> (Asian Development Bank, 2022)

<sup>62</sup> (International Labour Organization, 2021)

<sup>63</sup> (International Labour Organization, 2021)

<sup>64</sup> (International Telecommunication Union (ITU), 2022)



**Table 9: Digital socioeconomic and gender divide<sup>65</sup>**

Country Name	Percentage of individuals using the internet, male	Percentage of individuals using the internet, female	Access to internet, income, poorest 40%	Access to internet, income, richest 60% (% age 15+)
Bangladesh	0.27	0.13	0.07	0.28
Bhutan	0.75	0.25	no data	no data
Lao PDR	0.27	0.24	0.14	0.33
Nigeria	0.35	0.19	0.20	0.32
Uganda	0.36	0.24	0.19	0.37

<sup>65</sup> (International Telecommunication Union (ITU), 2022).

Vanuatu	no data	no data	no data	no data
Fiji	no data	no data	no data	no data
Solomon Islands	no data	no data	no data	no data

80. As COVID-19 imposed the holding of capacity development activities online, preventing in-person training, the IPP CommonSensing project identified gender and socioeconomic digital divide as a barrier preventing the delivery of capacity development activities. Thus, the project implemented measures including enabling access to internet-connected computers and offline course content. The digital divide affects access to project training and the vulnerability of populations to natural hazards and other shocks.
81. Most project countries present a digital gender gap (table 9). In Bangladesh, mobile phones are a fundamental tool in disseminating disaster early warnings. Bangladesh has a good proportion of mobile subscriptions (103 subscriptions per 100 people). However, there are significant differences in mobile phone use: merely 58 per cent of women, against 86 per cent of men use mobile phones (3 and 30 per cent using the internet respectively). Female mobile phone ownership and use are less prevalent in rural contexts and more exposed to hydrometeorological hazards. In Lao PDR, most damage by floods is caused in the relatively more affluent Mekong valley district. However, hill country villages with limited access to the internet and mobile phones and much lower income per capita are more vulnerable to flash floods and landslides. At the same time, severe digital and road infrastructure constraints make relief efforts challenging according to evaluation interviewees.
82. Respondents to the baseline evaluation confirmed having policies in place guaranteeing equal opportunity of access to men and women to technical and management positions in their organizations, and commitment to ensure parity in the capacity development activities offered by the project. Respondents also understood the special vulnerability of women and girls to natural hazard induced disaster and ecosystem degradation. However, precise disaggregated data on differentiated impacts does not yet exist in any of the target or counterfactual countries.

## Sustainability

*EQ6: How does the project strategy address the continuity of project results at beneficiary organizations (sustainability)?*

83. **Finding 12.** The project's sustainability strategy is based on past implementation experiences by UNITAR-UNOSAT, particularly the Common Sensing project and the institutional strength of the beneficiary organizations.
84. The project's exit and sustainability strategy are based on the UNITAR-UNOSAT's continuing technical backstopping service from both headquarters and regional offices in Bangkok and

Nairobi, the deployment of in-country GIS technical experts at each focal agency, and the establishment of a knowledge platform and community of practices during the project duration.<sup>66</sup>

85. The final evaluation of the Common Sensing project implemented in Fiji, the Solomon Islands and Vanuatu between 2018 and 2021 using the same capacity development structure, showed that the knowledge acquired during the project's trainings were significantly applied to the beneficiary agency's work.<sup>67</sup>
86. The training courses, knowledge platform, and national experts should supply sufficient know-how to form a core group of experts at the beneficiary organizations who can disseminate the acquired capacities within other national government agencies. For this project, beneficiary organizations are expected to absorb the national experts deployed by the project or recruit new staff to implement the project's solutions.
87. At least some of the project's beneficiary agencies (e.g., in Lao and Bhutan) plan to include representatives of other government agencies, including the ministries of Agriculture and Environment, to ensure capturing acquired capacities and foster synergies in future application of geospatial information. In Bangladesh, the Department of Disaster Management (DDM) will include the recently established disaster management information centers in all 64 districts in the capacity development activities of the project, either directly or through a training-of-trainers mechanism, thus enabling the institutionalization and sustainability of the acquired know-how.
88. UNOSAT's CommonSensing project implemented a ToT mechanism. However, the late introduction of the ToT hampered its effectiveness. Similarly, the knowledge platform planned for the CommonSensing project did not deliver its expected results, as it could not be established until the end of the project. Thus, to ensure sustainability, the NORAD project needs to deploy the ToT and knowledge platform from the beginning, following UNITAR's cluster evaluation recommendations.<sup>68</sup>
89. All national beneficiary organizations in Bangladesh, Lao PDR, and Bhutan are well-established national technical agencies central to national governments' operations and strategies in disaster risk reduction and land management. While annual budget allocations may vary, there could be budget cutbacks in response to current post-pandemic or energy crises, potentially affecting the recruitment of national experts. Their continuous operations and implementation of annual work plans during the project implementation framework are beyond doubt.

*EQ8: What is the possible contribution/attribution of the project outputs and outcomes to the intended impact?*

90. **Finding 13.** The project results framework has not yet formulated concrete national outputs and outcomes logically linked to the project's proposed activity package.

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<sup>66</sup> Sustainability of developed capacities is sustained by three elements incorporated in the project: i) content availability; ii) qualified trainers' availability; and iii) peer support mechanism. Data and technology sustainability is also based on three pillars: i) technology hosting; ii) technical users (producers); and iii) decision makers (users) (UNITAR, 2022a, 2022b).

<sup>67</sup> (UNITAR, 2021).

<sup>68</sup> (UNITAR, 2022).

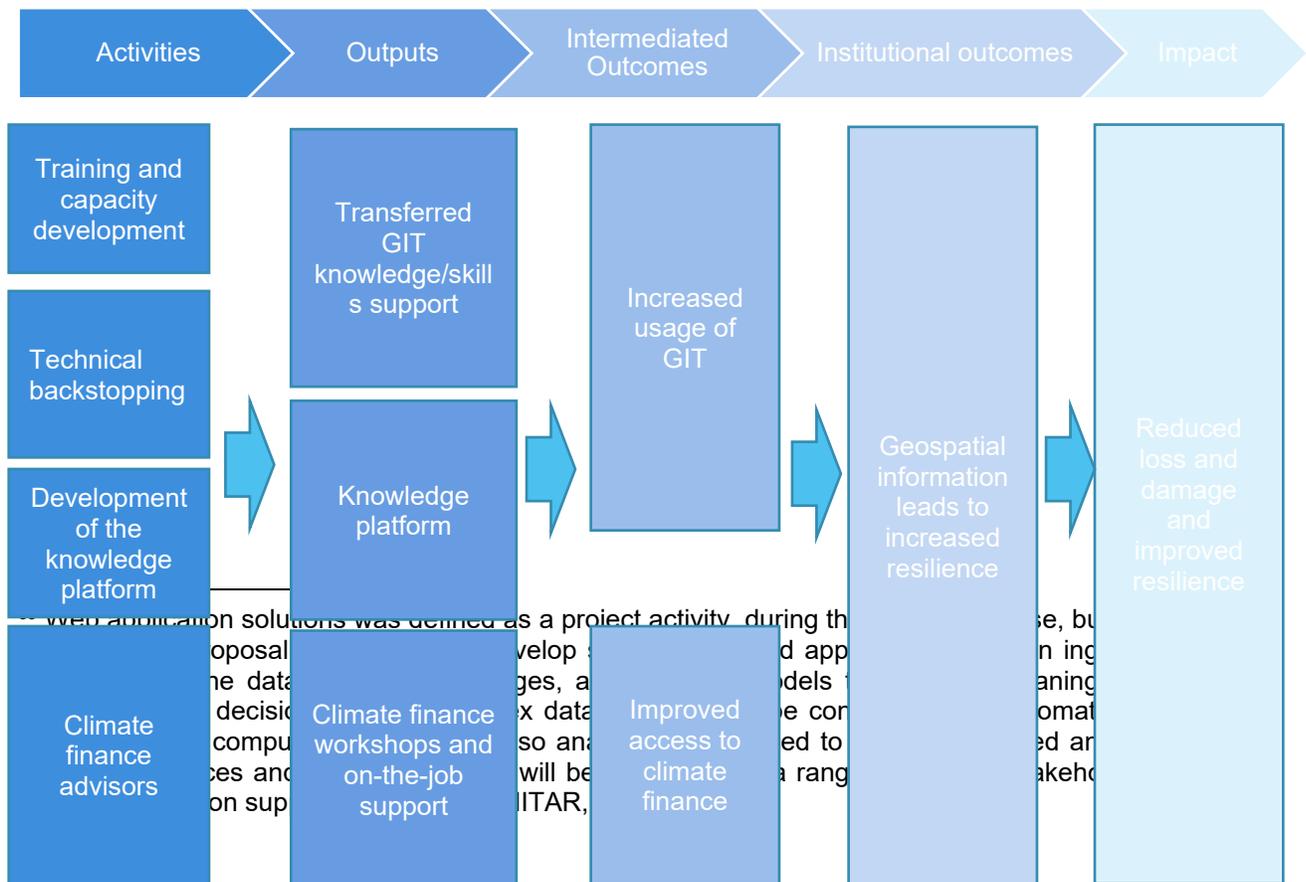
91. The original project theory of change (ToC), Figure 9 and Table 10, is based on delivering standard training packages adapted to the beneficiaries/ focal agencies', needs and desired outputs. It follows the same structure as previous UNITAR-UNOSAT interventions, namely the CommonSensing project. It incorporates measures addressing implementation issues identified during CommonSensing, including adopting a blended/hybrid delivery of capacity development inputs, with efforts to mitigate the digital divide, and the placement of national experts to promote the institutionalization of capacities and to enhance technical backstopping supplied by the UNOSAT project team from headquarters and regional offices.

92. However, the concrete project outputs and outcomes per country were not yet identified at the baseline evaluation. Instead, the project results framework outlined general outcomes (figure 9 and table 10), which can be summarized as follows:

- Strengthened knowledge, skills, and awareness of the use of geospatial applications.
- Knowledge and skills are sustained, thereby enhancing evidence-based decision-making amongst beneficiaries.
- For the Pacific Island States: Strengthened knowledge and skills in accessing climate finance.
- Parity access to project activities.

Outcomes should result as beneficiary organizations use the project's expected outputs: enhanced skills and knowledge management infrastructure.

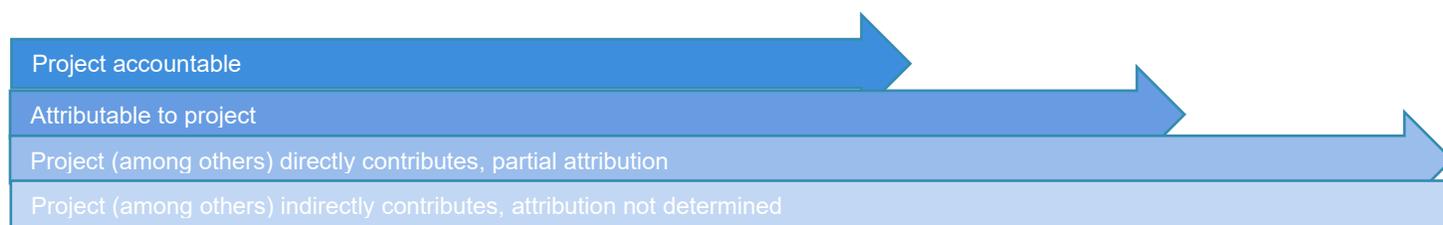
**Figure 9: Simplified theory of change in the project proposal<sup>69</sup>**



**Table 10: Original project logic (As in project proposal, October 2020)**

Activities			Outputs		Intermediate Outcomes	Institutional outcomes
Project management	Training and capacity development	Capacity development and training among IGAD and ECOWAS member states to transfer skills to government officials for informed decision making	Capacity needs assessment	In-country technical trainings Regional technical trainings Awareness rising events	Strengthened knowledge, skills, and awareness in utilizing geospatial information technologies (GIT)	Enhanced capacity to apply GIT and earth observation (EO) application in thematic areas
		Capacity development trainings to regional organizations such as ESCAP and ADPC to transfer skills to government officials for informed decision making in Asia Pacific				Increased usage of GIT in trained stakeholder's respective home organizations
	Technical backstopping activities		Technical backstopping provided to stakeholders	Improved ability to analyze geospatial data and information following a humanitarian crisis	Enhanced evidenced-based decision making among humanitarian actors during major disaster events	Stakeholders in member states region institutions using geospatial applications for decision making related to improve resilience
	Development of the knowledge platform		Knowledge platform established	Long term sustainability of technical capacities	Embedding of GIT in stakeholder's organizations	
Community of Practice						
Distance learning						
Deployment of climate finance advisors		Access to the climate finance access hub of the Commonwealth secretariat	Improved access to climate finance in the target countries in the Pacific			

**Table 11: Project's proposed modifications to the results framework by the baseline evaluation**



Activities	Country	Outputs	Outcomes	Intermediate outcomes	Impacts
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Project management	Capacity needs assessment	Training and capacity development	Technical backstopping activities	Development of the knowledge platform	Bangladesh	Staff at the Department of Disaster Management (DDM) at the national and sub-national (district) level trained and equipped to integrate geospatial information into disaster assessment and damage forms	Relevant government agencies produce more accurate information on disaster damage	Higher quality, more accurate disaster assessments enable a more efficient delivery of relief measures	Efficient measures better assess reduction of hydrological	
					Lao PDR	Staff at the National Disaster Management Office (NDMO) and other government agencies (e.g., ministries of health, transportation, and energy) trained and equipped to integrate geospatial information into disaster assessment and damage forms				
					Uganda	Staff at the Office of the Prime Minister– Department of Relief, Disaster Preparedness and Management trained and equipped to integrate geospatial information into disaster assessment and damage forms				
					Fiji	Staff at the Ministry of Economy has the training and equipment to develop thematic apps enabling projections of climate risks	Thematic apps enabling end users to draw projections on climate risk developed	Thematic apps support optimizing adaptation by allowing end-users to plan according to climate risk and climate risk projections		
					Bhutan	Staff at the National Land Commission Secretariat (NLCS) has the training and equipment to develop a data portal including geospatial and earth observation data, including layers on extent and change of wetlands and other ecosystems	The Bhutan data portal includes layers on ecosystem extent and change, including wetlands	National and local government effectively monitor changes in ecosystem extent and associated services for policy making		
					Nigeria	Staff at the Federal Ministry of Environment has the training and equipment needed to use geospatial information to monitor oil spills and pollution affecting the Eastern Niger delta	The Federal Ministry of Environment detects and monitors new oil spills	Oil pollution mitigation measures are effectively deployed		
					ECOWAS and ESCAP regions	Technical and management staff in countries of the target regions are aware of the application of GIT for disaster risk reduction and natural resource management	National governments develop policies and plans to expand their use of GIT and EO based technologies for disaster risk management	National governments secure funding to develop GIT and EO based technologies for disaster risk management and natural resource management		
					Regional technical trainings and awareness rising events					

				and natural resource management		
	Deployment of climate finance advisors	Fiji, Vanuatu, Solomon Islands	Staff at the National Designated Agencies can access GIT data to enhance climate finance proposals	Climate finance proposals include GIT and EO-derived data on hazards, exposure, and vulnerability	Climate finance proposals are funded	Incr clim flow the gap

93. Likewise, the proposal's theory of change and results framework does not identify concrete outputs, i.e., specific products, such as a spatial data portal and geospatial information for post-disaster assessments determined by the project team and respondents of the baseline evaluation.
94. Based on interviews with national project stakeholders, the representatives of the beneficiary/ focal agencies (The departments of Disaster Management in Lao PDR and Bangladesh, and the National Land Commission Secretariat in Bhutan), and the inception reports, the project logic could be reformulated in a more streamlined and specific form as described in table 11. As a result of the baseline evaluation exercise, project management updated the project's logical framework. The new proposal is presented in Annex 8.

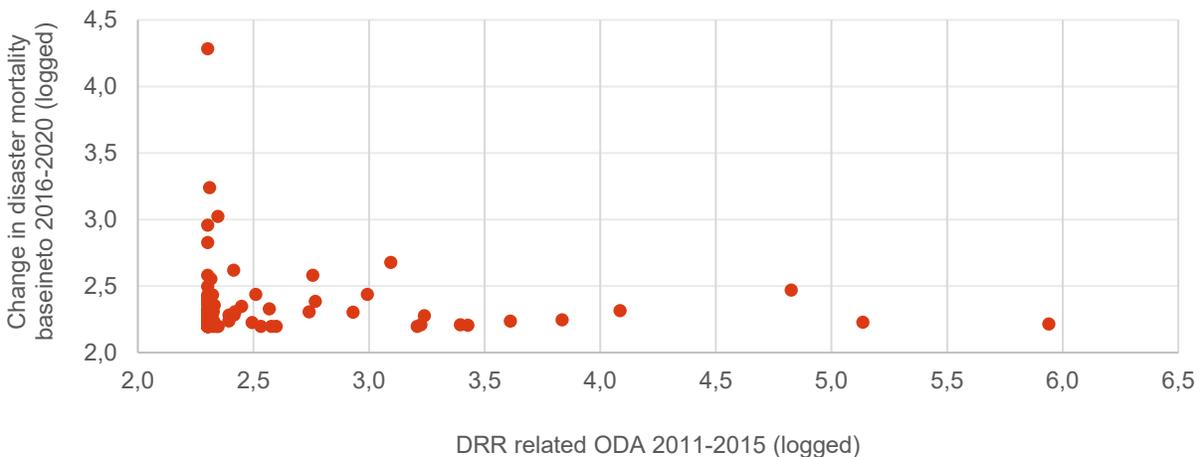
**Finding 14. The observed global downtrend in disaster mortality may be partially due to development assistance, including capacity development and technology transfer, as is the case of this project. However, attribution to a single project of any given reduction in disaster mortality or damage is unlikely. Thus, the project's impacts will be higher quality, more accurate disaster assessments enable a more efficient delivery of relief measures, contributing to efficient relief measures and better risk assessment reducing impact of hydrometeorological hazards.**

95. Changes in loss and damage caused by disasters depend on drivers of exposure (population growth, urbanization, location of productive assets and infrastructure) and vulnerability (poverty, government services, environmental degradation), and hazards (magnitude, frequency, trajectory) that cannot be influenced by the project outcomes. Moreover, several drivers, including climate change and exposure, change at time scales of years and decades, making it unlikely to attribute any changes in their impacts to a four-year project. While decades of investment capacity development in disaster risk management and preparedness have resulted in a global reduction in the number of victims of disaster victims (from 1.98 during 2005-2014 to 1.32 during 2011-2020), there is no apparent trend for the project target countries (figure 13). Thus, the combined investment in disaster risk management capacities in the project's target countries between 2011 and 2020 of US\$ 137 million (table 3) did not have an apparent impact on reducing disaster mortality.
96. Moreover, disaster mortality and damage over the last decade show no correlation with investments in capacity development or technology transfer (figure 13) or for the project's DRR target countries, as stochastic events may produce sudden increases in the number of victims

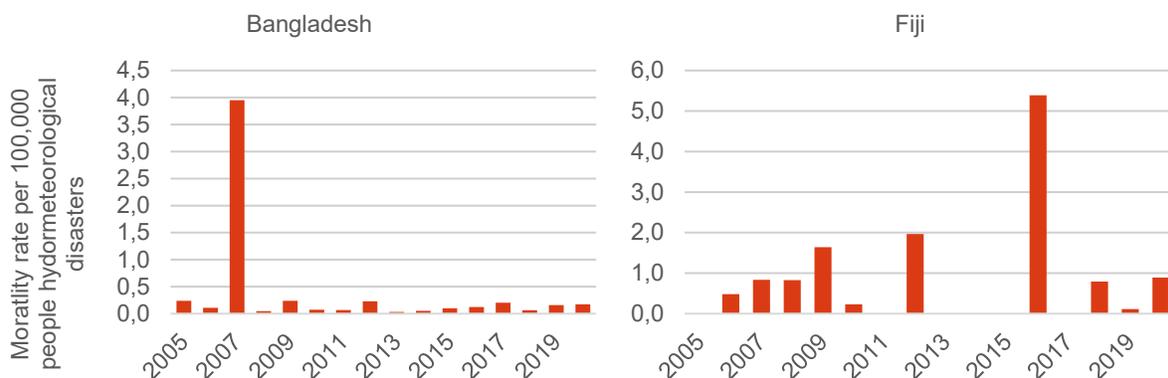
and infrastructure development and urbanization may create positive trends in the absolute magnitude of economic losses. The final evaluation of the CommonSensing project, which had similar impact indicators, stated that: *most of the impact indicators could have been affected by attribution issues, especially those related to increased population resilience and cost savings during natural disasters, for example, indicator “10.4 Amount of economic damages (in £) from multi-hazards in three partner countries”. Any improvement in this area cannot be directly attributed to the impact of the CS project as improvement also depends on the number of natural disasters affecting partner countries.* Thus, the predecessor project was not able to measure any visible impact on changes in mortality and damages in the three Pacific Island countries where it was implemented.

**Figure 10: Correlation between changes in 2016-2020 hydrometeorological disaster mortality per 100,000 people and 2016-2015 DRR related ODA.**

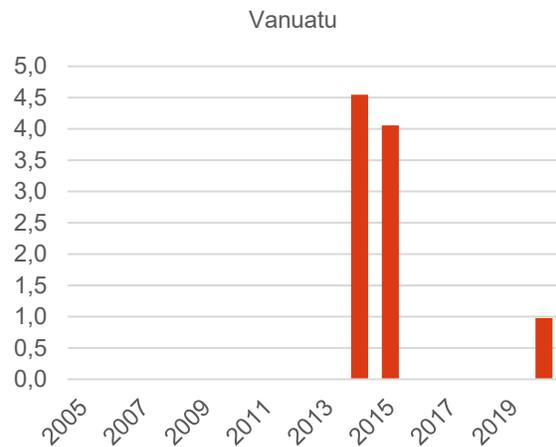
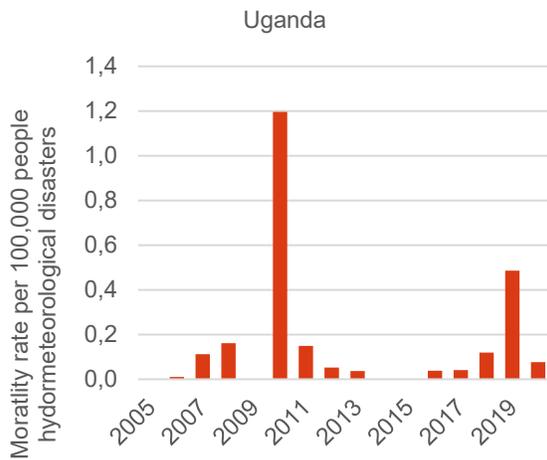
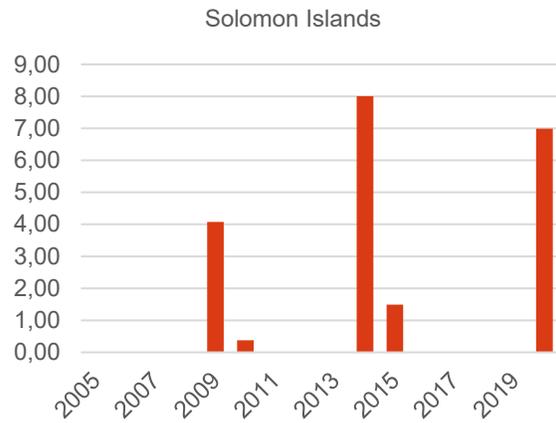
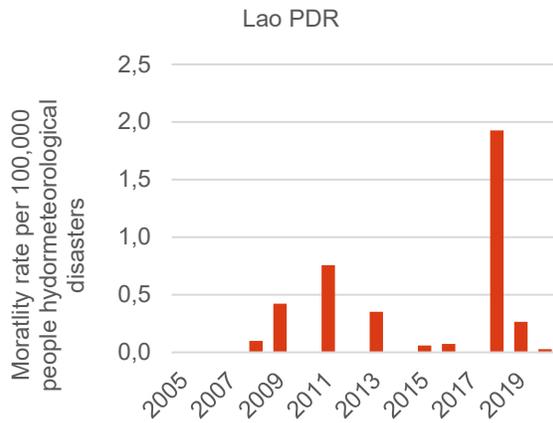
Hydrometeorological disasters chosen as they are recurrent mortality drivers against climatological disasters such as drought (important effects but challenging to establish direct mortality linkage) or geophysical, earthquakes and tsunamis (important mortality but stochastic). N=107, all middle to lower income countries.



**Figure 11: Hydrometeorological disaster (extreme temperature, landslide, flood, and storm) mortality for the project’s DRR target countries.<sup>70</sup>**



<sup>70</sup> Baseline evaluation calculations based on (Guha-Sapir, Below, & Hoyois, 2022).



97. **Finding 15. Capacity development in disaster risk management contributes to enhancing resilience and mitigating the human and economic impacts of disasters. However, said changes will manifest in differences in trends of impacts relative to the population size and economic growth but will never be apparent in the project’s implementation period. The project’s expected impact is improved institutional mechanisms and organizational capacities to address climate and natural hazard risk.**

### Example of application of the project’s log-frame impact indicators

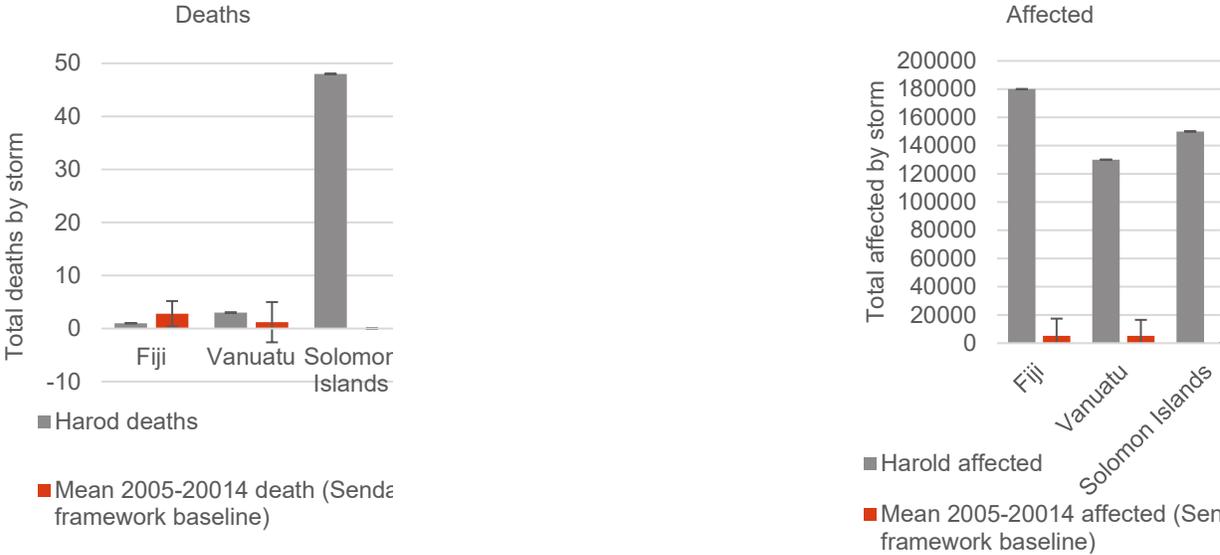
98. During the fourth year of implementation of the CommonSensing project (April 2020), Fiji, Vanuatu, and the Solomon Islands suffered the effects of Tropical Cyclone Harold (figure 12). Harold reached category five as it passed near Fiji and made landfall in Vanuatu, degrading to a tropical storm afterward. Harold caused a total death toll of 52 casualties and affected half a million people in the three countries, causing damages of at least US\$ 13 million (damage data only for Fiji). Compared with the averages for the Sendai Framework disaster baseline of 2005-2014, the casualties, affected, and damages caused by Harold did not have any statistical difference with the mean or were vastly above the average. Thus, using this indicator to measure the impact of CommonSensing, we would conclude that the project had a significantly negative effect (table 12 and figure 13). Of course, the fact is that Harold was a powerful storm, of the kind

that may become more frequent in the following decades due to climate change. Therefore, the project has a significant role in enhancing capacities to address increased climate risk.

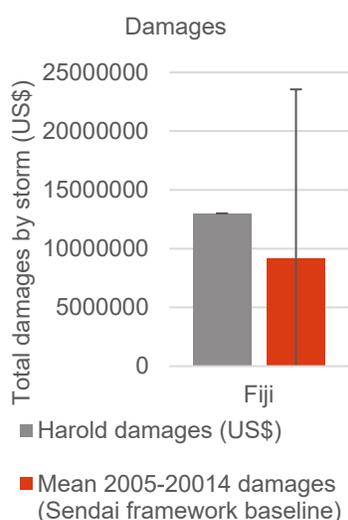
**Figure 12: Tropical cyclone Harold (2020) track**



**Figure 13: Impacts of tropical storm Harold (2020) compared to the 2005-14 baseline<sup>71</sup>**



<sup>71</sup> Own calculations with data from (Guha-Sapir, Below, & Hoyois, 2022).



**Table 12: Impacts of tropical storm Harold (2020) compared to the 2005-14 baseline<sup>72</sup>**

Country	Harold deaths	Mean deaths 2005-14	Harold affected	Mean affected 2005-14	Harold damages (US\$)	Mean damages 2005-14
Fiji	1	2.8	180000	5158.3	13,000,000	9,177,900
Vanuatu	3	1.2	130000	5200.0	no data	
Solomon Islands	48	0	150000	0.0	no data	

99. **Finding 16. Capacities to better monitor ecosystem change and drivers of degradation (oil spills, pollution) are necessary conditions for mainstreaming biodiversity into decision-making processes in the proposed project indicator SDG 15.9. However, data alone is not a sufficient condition for mainstreaming.**

100. The Convention for Biological Diversity (CBD), in its 2011-2020 strategic plan and targets (Aichi targets), recognized that maintaining ecosystem services critical for human wellbeing will require integrating biodiversity values into national and local development and poverty reduction strategies and planning processes (target 2, Aichi targets). This target has been incorporated into the Sustainable Development Framework, to be achieved in 2020, but it will be part of the new post-2020 biodiversity framework being consolidated (set to be finalized by the CBD COP in late 2022).

101. Despite investments of US\$ 41 billion since 1991,<sup>73</sup> and while most countries incorporate target 2 in their National Biodiversity and Strategy Action Plans, the development of infrastructure,

<sup>72</sup> Own calculations with data from (Guha-Sapir, Below, & Hoyois, 2022).

<sup>73</sup> Sum of GEF grants and mobilized co-finance in all GEF cycles since 1991. The GEF is the financial mechanism of the Convention on Biological Diversity and the world's main funding source for biodiversity projects (Global Environment Fund (GEF), 2022)

agriculture, and human habitations still threatens species and ecosystems, particularly in lower- and middle-income countries, hosts to the greatest biodiversity of the world.

102. Data is a fundamental part of the mainstreaming process that needs updated figures and projections of pressures on habitats and biodiversity and trends and status of populations and communities. Examples of biodiversity-relevant indicators in developing national plans are deforestation and forest cover rates, land-use change and degradation, the population of threatened species and number, representativeness, and the size of protected areas. Thus, geospatial information and earth observation have a vital role to play by providing decision-makers with real-time estimates of habitat extent and dimension of threats (population centers, pollution, fires, etc.). However, data alone does not suffice to ensure mainstreaming of biodiversity and maintenance of ecosystem services, as policy and enforceable regulatory frameworks, introducing changes in land use and production processes are necessary. Therefore, changes in biodiversity-relevant indicators will not be attributable to projects such as the NORAD project, which intends to develop the capacity to collect and process the information on ecosystem changes and degradation.

### Examples of policy mainstreaming and biodiversity-relevant indicators

103. Both Nepal and Bhutan have NBSAP targets reflecting Aichi Biodiversity Target 2 and are rated equally by the CBD as having some but insufficient progress. However, they differ in the level of mainstreaming into national development plans. Bhutan incorporates Aichi target 2 (table 3) into its NBSAP, but only indirectly into its 12th Five Year Plan (2018-2023), integrated into the Gross National Happiness Index. The Index environmental domain includes several measures of perceptions on environmental issues but no direct evidence of biodiversity-relevant variances. In contrast, Nepal's 15th National Development Plan (2019-24) incorporates one biodiversity-relevant indicator: forest density (trees/ hectare). Yet these differences in funding for capacity for environmental management (table 13) are not reflected in changes in objectively verifiable indicators that could be informed by geospatial information or earth observation (table 13).

**Table 13: Comparison between biodiversity-relevant indicators in Bhutan and Nepal<sup>74</sup>**

Country	Indicator	Value 2010	Value 2021	Change (%)
Nepal	Share of important terrestrial biodiversity sites that are protected	52%	52%	0%
Bhutan		45%	47%	4%
Nepal	Proportion of important sites for freshwater biodiversity that are covered by protected areas	35%	35%	0%
Bhutan		31%	35%	11%
Nepal	Annual change in forest area	-0.01%	0.00%	100%
Bhutan		0.37%	0.07%	-81%
Nepal	Red List Index	0.83	0.83	0%
Bhutan		0.80	0.80	0%

<sup>74</sup> (UN Department of Economic and Social Affairs, 2022).

104. **Finding 17. Natural resource management impacts such as changes in mountain green cover index, wetland extent, or any tangible changes in environmental conditions cannot be attributed to any given intervention or external investment in natural resource management. The project’s impact will be enhanced institutional capacities to monitor ecosystem changes and pollution.**
105. National management capacities are one of many factors influencing changes in habitat change and population status. Population and economic growth are the main determinants of changes in environmental status. Political leadership, climate change, and invasive alien species can adversely affect habitat extent and ecosystem health. Moreover, biological response rates, such as changes in population growth rates, distribution, and densities, are mediated by long generation lengths of target populations (e.g., emblematic/ commercially important species such as tigers, shrimps, good indicators of general ecosystem health), and the dominant habitat species (e.g., Dipterocarpacean trees, mangrove species). For instance, if an intervention aims to improve capacities to monitor oil pollution in mangroves, the recovery of the mangrove ecosystem would exceed the project's implementation frame and be influenced by many other factors, including those mentioned above.
106. Between 2011 and 2019, at least US\$ 37 million<sup>75</sup> have been invested in external projects to improve national capacities to effectively manage natural resources, including forests and wetlands in Bhutan and Nigeria. However, these initiatives have not been translated into apparent or measurable changes in forest cover, wetland extent, or ecosystem health, although they may have contributed to mitigating negative impacts on ecosystem health and services (table 13).

**Table 14: Change in environmental indicators compared to environmental official development assistance**

Country	Environmental ODA 2011-15 <sup>76</sup>	Environmental ODA 2011-19 <sup>77</sup>	Environmental Performance Index Ecosystem Vitality change (2010-2020) <sup>78</sup>	Change in forest cover 2015-20 <sup>79</sup>	Change Mountain Green Cover Index 2010-18 <sup>80</sup>	Change Mountain Green Cover Index 2015-18 <sup>81</sup>
Bhutan	12.52	15.94	-17.3	0.00	-0.01%	0.00%
Nigeria	5.80	17.34	5.2	-0.04	-0.11%	-0.05%
Nepal	136.12	240.39	-15.1	0.00	-0.07%	-0.03%
Cameroon	40.42	81.56	1	-0.01	-0.04%	-0.01%

<sup>75</sup> (OECD, 2022).

<sup>76</sup> (OECD, 2022).

<sup>77</sup> (OECD, 2022).

<sup>78</sup> (Wolf, Emerson, Esty, de Sherbinin, & Wendling, 2022).

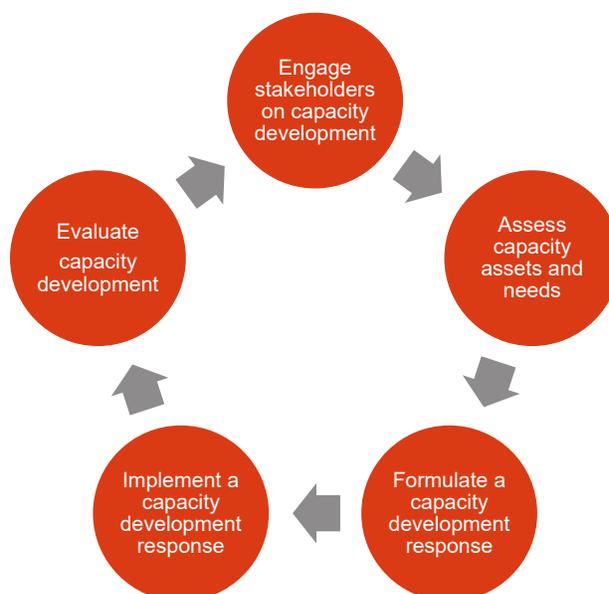
<sup>79</sup> Own calculation with data from (FAO, 2022).

<sup>80</sup> (UN Department of Economic and Social Affairs, 2022).

<sup>81</sup> (UN Department of Economic and Social Affairs, 2022).

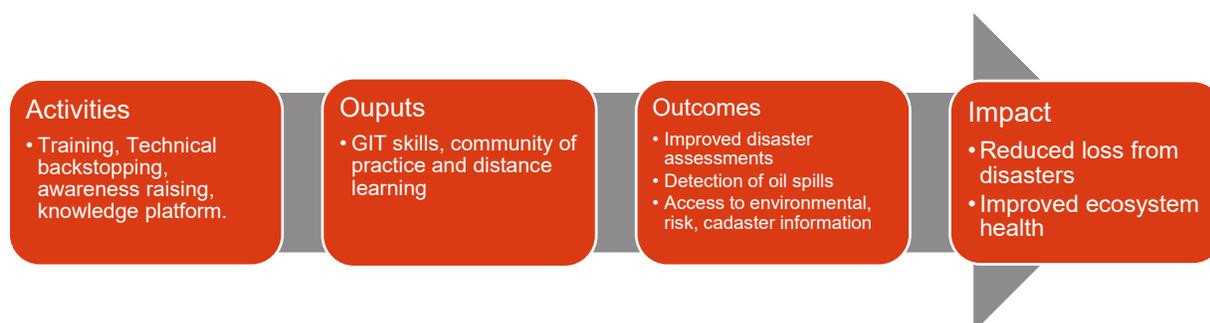
107. **Finding 18. The original project's logical framework impact indicators do not reflect or can be attributed to the changes in national capacity introduced by the project. Impact indicators can be better gauged by national capacity, measured as means of score cards or surveys.**
108. The ultimate goal of the project still is, for the DRR and climate finance sub-projects, reducing loss due to disasters in line with the Sendai Framework and the Agenda 2030, and, for the NRM sub-projects, improving ecosystem health and human wellbeing in line with the CBD strategic framework and the Agenda 2030, the discussion above shows that change in macro-environmental or disaster risk reduction indicators will either not change responding to this project, or changes cannot be attributed to it.
109. The United Nations Development Group (UNDG) defines capacity as the ability of people, organizations to manage their affairs successfully and the UN general assembly defines capacity development as the process by which people, organizations and society systematically stimulate and develop their abilities over time to achieve social and economic goals. Capacity development can be articulated in several components, such as leadership, knowledge, accountability, functional (internal policies, arrangements, procedures) and technical capacities (knowledge, technical skills), operating at the enabling, organizational and individual levels, and following an implementation cycle (figure 14).<sup>82</sup> The NORAD project acts at the organizational and individual level, fostering functional and technical capacities.
110. The project's outputs are key government organizations staff trained on a set of new skills in the target countries, as well as increased awareness on the importance of GIT in the sector, the establishment of a knowledge platform and provision of technical backstopping activities, while the utilization of these acquired capacities and products to provide optimize disaster risk management and natural resources management would be the project's outcome (figure 14).

**Figure 14: Stages in capacity development and contribution of capacity to project's results**



<sup>82</sup> (UNDP, 2009).

**Figure 15: Capacity development contributions to project results**



111. Focusing on the evaluation part of the capacity development implementation cycle, we need a device to measure the delivery capacity development (outputs) and use (outcome).
112. The baseline and target capacity level can be determined quantitatively by using ranking system for the existing and the desired capacity as follows:
  - No evidence of relevant capacity – score 0
  - Some evidence of capacity – score 1
  - Partially developed capacity – score 2
  - Widespread, but not comprehensive capacity – score 3
  - Fully developed capacity – score 4
113. Each level can be operationalized as a series of score-bearing questions within a survey. The score obtained of said survey provides a single numeric value for the baseline and desired level of capacity and/ or use. Scorecards have been widely used to measure progress in capacity and development results in different contexts. The GEF uses, since 2010, a capacity development scorecard developed by UNDP, which is similar in concept to the METT, and includes questions along three levels of capacity development: systemic, organizational, and individual.
114. Scorecards are flexible tools that can be adapted to different contexts. Here, we proposed a combined capacity development scorecard at the organizational capacity level that would give a single numerical value for the organizational capacity, at the outcome level (utilization of project deliverables by project beneficiaries). The scorecard must be administered at the management level of the beneficiary organizations before and after the intervention.
115. In contrast, for individual capacity (output level), measuring capacity and skills will be done in the same manner as in the CommonSensing projects through specific tests before and after the delivery of the capacity development activities (training, technical backstopping) and the surveys on utilization of project outputs foreseen in the project proposal's indicator framework. An adapted scorecard, tested during the baseline evaluation is presented in Annex 6.

**Table 15: Proposed impact indicator framework by the baseline evaluation**

Expected long-term result	Original Indicator	Proposed indicator	Means of Verification
Improved resilience to natural hazards and climate change in Africa and Asia and Pacific	(SDG 13.3.2) Number of countries that have communicated the strengthening of institutional, systemic, and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions	(SDG 13.3.2) Number of countries that have communicated the strengthening of institutional, systemic, and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions	Relevant national policy documents attributing capacity development to the project, e.g., NBSAPs, Climate Change or Disaster Risk Management strategies
	Reduced human loss from natural hazards SDG 11.5.1 Number of deaths, missing persons and persons affected by disaster per 100,000 people	Increased scores of the adapted capacity development scorecard	Qualitative interviews with national stakeholders during the MTR or TE
	Reduced economic damages from multihazards. SDG 11.5.2 Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services		Case studies or publications at the UNOSAT webpage citing National Stakeholders
Enhanced natural resource management for environmental conservation (Nigeria and Bhutan)	SDG 15.9: By 2020 integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts		Capacity development scorecard applied at baseline, midterm, and terminal evaluation
Demonstrated benefits of UNOSAT's trainings and services on	Number of impact stories published on UNOSAT's website highlighting a beneficiary from a technical training	Improved disaster assessment reports with evidence-based information from GIT analysis (Bangladesh, Lao PDR, Uganda)	Disaster assessment forms and interview with DMD (BGD), NDMO (LAO), and DRDPM (UGA)



reducing disaster and climate impact		Functional open-access data portal includes environmental layers: forest types, wetlands etc. (Bhutan)	Data portal and interview with NLCS
	Number of impact stories published on UNOSAT's website highlighting the impact technical backstopping activities and geospatial solutions have had on partner agencies and member states efforts	The Federal Ministry of Environment access and process GIT data to independently monitor oil spills (Nigeria)	Nigerian Oil Spill monitor and interviews with NOSDRA
		Customized thematic applications enable government agencies, local governments, and the private sector to identify climate-related risks (Fiji)	Thematic applications and interviews with NDA
Improved access to climate funds	Number of donor-approved project proposals or concept notes that were developed with the support of the climate finance advisors	Number of donor-approved project proposals or concept notes that were developed with the support of the climate finance advisors	Climate funding proposals and interviews with GCF NDAs
	Number of newly GCF accredited agencies that received CFA support		

## Conclusions

1. Project countries have different national circumstances and applications for geospatial information and earth observation technologies. Therefore, specific activities in each country constitute separate projects, leading to different outputs, outcomes, and potential impacts. In all countries, national agencies identified by the project understand GIT as a valuable tool for DRR or natural resource management. They have identified capacity development needs to be supplied by the project at specific government departments.
2. Fiji, Vanuatu, and the Solomon Islands have a designated authority/ focal point for international funds, with the capacity to implement additional international funding for climate change adaptation and mitigation, which could be enhanced by project proposals using geospatial information to make a case for adaptation needs.
3. The project strategy is aligned with the target countries' national development strategies and sector (DRR, climate change, biodiversity, and environment) strategies and framed in outcomes of United Nations conferences, including the third International Conference on Small Island Developing States and the 2030 Agenda for Sustainable Development.
4. The project design has incorporated lessons learned from previous UNITAR-UNOSAT interventions, particularly the IPP CommonSensing project, reducing transaction costs and improving efficiency. Moreover, this project benefits from the online/blended training experience acquired during the implementation of the CommonSensing project, affected by COVID-19 and natural hazards.
5. Most of the official development aid (ODA) flows for disaster risk management and natural resource management/ environmental matters is not directed towards the use of geospatial information for disaster risk management and natural resource management. However, the SERVIR interventions in Southeast Asia and South Asia and the JICA funded project in Bhutan are currently implemented and specifically directed towards developing the national spatial data infrastructure.
6. The project strategy is the most effective means of delivering the intended benefits (increased capacity to use geospatial solutions). The expected social benefits will likely surpass the expected costs assumed by the beneficiary/ focal agencies. Moreover, the acquired capacities can be transformed products (e.g., land cover maps, spatial damage assessments) driven by market demand and delivered by the public sector (with public or private clients) or outsourced to the private sector.
7. The project strategy addresses technical issues, responding to specific capacity development demands by government organizations of the target countries. These capacities will support said government agencies to fulfill their mandates within the national disaster risk management and biodiversity and environmental management strategies and programmes without needing direct involvement of this project in ensuring

coordination or synergies with programmes and projects supported by other development partners.

8. The project is gender-targeted, aiming to achieve parity in access to capacity development. Moreover, UNITAR-UNOSAT has collected gender-disaggregated enrollment and progress data for their capacity development activities and has implemented measures in previous projects to bridge digital access gaps.
9. Beneficiary organizations have sufficient budgetary allocation and institutional capacity and function explicit in national strategy documents to continue the application of technical solutions implemented through the project. For all target national organizations, the national regulatory and policy framework enables the application of technical solutions, access to the learning platform, and technical backstopping.
10. The results chain is partially logically linked and based on sound assumptions, but it needs consolidation by formulating concrete outputs, outcomes, intermediate results, and realistic impacts.
11. Impacts at the level of changes in mortality or damage rates will be undetectable or not attributable to the project

## Recommendations

1. Project's log-frame outputs could be specified beyond "capacities developed" to match the specific national demand for geospatial products. The specific outputs e.g., "applications to evaluate climate risk in land parcels" or "satellite-based oil spill monitoring application" are needs identified by the national beneficiaries (government organizations) to minimize public sector costs and maximize social benefits from a potential market-driven upscale of the project's outcomes.
2. The project could strive to be gender responsive by promoting disaggregated data collection and dissemination. The project could realize advocacy and awareness during the inception phase and training and courses. Additionally, a module on gender and GIT and climate finance could be incorporated into the training schedule, building upon the case studies developed during the implementation of prior UNOSAT projects. To account for the project's gender objectives, the following indicators are proposed:

### Output level:

1. Number of women/ other groups made vulnerable participating in training;
2. Number of women/ other groups made vulnerable participating in technical teams;

### Outcome level:

1. Number of women/other groups made vulnerable successfully completing the training
2. Number of project's focal agencies that collect disaggregated data based on gender and other vulnerable groups

### Impact level:

1. Disaggregated data are incorporated into decision-making processes. E.g. climate funding proposals address differential exposure, vulnerability, and impacts of hydrometeorological hazards on men, women, and vulnerable groups
3. The logical framework must respond to realistic assumptions and logical connections between activities, outputs, and outcomes. Therefore, the results framework should:
    - a. Not include indicators of impacts not attributable to the project, such as disaster loss and damage changes, and only suggest contributions to these areas.
    - b. Include specific outputs related to the needs of the eight government organizations involved.
    - c. Reformulate the outcomes according to the intended use of the project's outputs (organizational change).

## Lessons Learned

- Access to project stakeholders is key for baseline evaluation consultations and measures.
- Projects that benefit countries from different regions with different needs require logical frameworks that account for those.
- It is useful to build new projects based on previous projects' lessons learned.
- Identifying counterfactuals is a challenging task given the numerous differences and collecting data for counterfactuals remains more challenging than collecting data for target countries
- Impact indicators need to be formulated in a way that the project can measure some contribution/attribution.

## Annexes

### Annex 1: Terms of reference

#### Terms of Reference

#### Independent Baseline Evaluation of the Strengthening capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa project

##### Background

1. The **United Nations Institute for Training and Research (UNITAR)** is a principal training arm of the United Nations, with the aim to increase the effectiveness of the United Nations in achieving its major objectives through training and research. UNITAR's mission is to develop individual, institutional and organizational capacities of countries and other United Nations stakeholders through high quality learning solutions and related knowledge products and services to enhance decision making and to support country-level action for overcoming global challenges. Learning outcomes are associated with about two-thirds of the Institute's 800-some events organized annually, with a cumulative outreach to over 320,000 individuals (including some 200,000 learners). Approximately three-quarters of beneficiaries from learning-related programming are from developing countries. UNITAR programming is aligned with the 2030 Agenda for Sustainable Development and the outcomes of other major outcomes from 2015, including those of the Sendai (Disaster Risk Reduction), Paris (Climate Change) and Addis Ababa (Financing for Development) conferences. In accordance with 2030 Agenda principles of reaching the furthest behind first, emphasis will be placed on the needs of countries in special situations, including the small island developing States (SIDS), the land-locked developing countries (LLDCs) and the least developed countries (LDCs).
2. UNITAR's Operational Satellite Applications Programme - UNOSAT is a knowledge centre within the UN dedicated to supporting fellow agencies and Member States in their use of Geospatial Information Technologies (GIT) and has recently been recognized by ECOSOC as the United Nations Satellite Centre (resolution E/2021/L.22). The programme has spearheaded the use of these technologies in various fields of application, namely for emergency response, disaster risk reduction, peace and security, but also for the protection of cultural heritage and monitoring and evaluation of development projects.
3. Since 2011, UNOSAT has been implementing, with the financial support from the Norwegian Ministry of Foreign Affairs and NORAD, training and capacity development activities in Asia with support from its Office in Bangkok hosted at United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), and in East Africa with key contribution from its Office in Nairobi.
4. The **"Strengthening capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa"** project aims to improve resilience in Africa and in the Asia – Pacific region using geo-spatial information technologies. This will be accomplished through capacity development that is comprised of trainings delivered in various modalities, and in developing actual solutions tailored to beneficiaries' needs and resources. The aim will be accomplished through a user-centered approach focusing on practical technical trainings, technical backstopping and support from peers through a community of practice.
5. The project builds on past experiences by:

- I. Deepening the impact of past capacity development trainings ;
  - II. Replicating success in new regions, namely in the Pacific SIDS and in West Africa; and
  - III. Revealing the inter-connections between various risks in developing applications of geo information technologies to other thematic areas where it brings high benefits, like Climate Resilience, Environmental Preservation and Food Security, and fostering exchanges of knowledge acquired between project stakeholders by inter alia assisting selected countries to apply GIT to interlinked thematic areas such as climate resilience, environmental preservation, and food security to improve knowledge sharing among project stakeholders.
6. More precisely, the project design intends to further strengthen capacities from previous project cycles, introduce modern technological advancement including artificial intelligence, and provide integrated solutions for decision making related to the thematic areas. Through awareness raising activities the project will promote project achievements and impacts of innovative technological solutions at the regional/national level. Also, a community of practice will be created, and technical backstopping will be continued for sustaining developed knowledge and capacities. Finally, a training of trainers is planned to ensure capacities will be sustained in the future.
  7. The proposed activities will benefit a wide range of stakeholders in eight countries (seven of which are in special situations) across four regions.
  8. The project document calls for an independent baseline, midline and endline evaluation.

#### **Purpose of the baseline evaluation**

9. The purpose of the baseline evaluation is to reflect on past initiatives and experiences, and assess the entry level project conditions in order to provide a baseline against which the project's progress can be measured and evaluated. The specific objectives of the evaluation are to validate and obtain baseline evidence on the project's log frame indicators, including measures such as:
  - Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions (impact indicator related to SDG 13.3.2);
  - Number of deaths, missing persons and persons affected by disaster per 100,000 people (impact indicator related to SDG 11.5.1); and
  - Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services (impact indicator related to SDG 11.5.2);.

Moreover, specific baselines shall be established for the current use of geospatial applications for decision-making related to improving resilience. A 2-step needs assessment exercise will be implemented by project management in parallel to the baseline evaluation and it is recommended to closely collaborate.

The purpose of the baseline evaluation is to also validate the project's theory of change; the adequacy of the log frame, including the adequacy of the indicators, performance measures, means of verification and underlying assumptions; and the project's implementation strategy.

#### **Scope of the evaluation**

10. The evaluation will cover the project's four regions (East-Africa, West-Africa and Asia and Pacific) and more specifically the project countries (Bhutan, Bangladesh, Fiji, Nigeria, Lao PDR, the Solomon Islands, Uganda and Vanuatu) and will focus on identifying measures of the log frame indicators just

prior to project start-up, using 2020 as a baseline. In the event 2020 measures are not available, the evaluation will identify earlier measures e.g., 2019 or measures of alternative measures or proxy indicators if required.

### Principal evaluation questions

11. The following questions are intended to guide the evaluation:

- What are the **existing capacities** in applying GIT and Earth Observation in the thematic areas? What are the current knowledge, skills and awareness about GIT? More particularly what are the abilities to analyse geospatial data and information in situations of (response to) humanitarian crisis?
- What is the **use of GIT** in stakeholder's respective **national institutions/organizations**?
- To what extent is **GIT yet used** by **humanitarian actors during major disaster** events in the target countries?
- What is the countries' and stakeholders' respective institutions/organizations current **access of climate funding**?
- What **other institutions/organizations** (beyond the partners) in countries are already intervening in the project's area of intervention, if any, and how?
- What other **knowledge platforms/e-learning/communities of practice** are already being offered in the project's area of intervention, if any?
- To what extent are **regional or inter-regional exchanges and learning** happening?
- What lessons have been learned from previous (and ongoing) initiatives and experiences on the subject matter and to what extent have lessons been incorporated into the project's design?
- Are there any gender related issues that the project can address in its activities to ensure gender action?
- What are some other steps the project can take to ensure sustainability of the project's activities?
- What is the possible **contribution/attribution** of the project outputs and outcomes to the intended impact?
- Are the suggested **impact indicators valid and measurable**?
- Do the suggested/planned activities and outputs address the identified challenges to be attended by the intervention?
- Are there other risks beyond those identified by the project likely to impact delivery of results, and are mitigation measures for the risks already identified sufficient?

All key data collected shall be disaggregated by sex and age grouping.

### Evaluation Approach and Methods

12. The evaluation is to be undertaken in accordance with the [UNITAR Monitoring and Evaluation Policy Framework](#) and the [Norms and Standards of the United Nations Evaluation Group](#). The evaluation will be undertaken by a supplier or an international consultant (the "evaluator") under the overall responsibility of the UNITAR Planning, Performance Monitoring and Evaluation (PPME) Manager.
13. The evaluation shall follow a participatory approach and engage a range of project stakeholders in the process. Data collection should be triangulated to the extent possible to ensure validity and reliability of findings and draw on the following methods: comprehensive desk review, including a stakeholder

analysis; surveys; key informant interviews; focus groups; field visits and comparison groups. These data collection tools are discussed below.

14. The evaluator should engage in quantitative and qualitative analysis in responding to the principal evaluation questions and present the findings qualitatively or quantitatively as most appropriate. The evaluator should also identify comparison groups with similar geographical and socio-economic characteristics as the treatment groups to assess the counterfactual for the midline and endline evaluations. Baseline data for the comparison groups shall be collected as well.

#### **Data collection methods:**

##### *Comprehensive desk review*

The evaluator will compile, review and analyze background documents and secondary data/information related to the project. A list of background documentation for the desk review is included in Annex A.

##### *Stakeholder analysis*

The evaluator will identify the different stakeholders involved in the project:

- 8 national partners in Asia, the Pacific and Africa.
- Partners:
  - In Asia: UNESCAP, GISTDA, and the Association of Southeast Asian Nations (ASEAN).
  - In the Pacific: the Commonwealth Secretariat and The Pacific Community (SPC).
  - In East Africa, the Intergovernmental Authorities for Development (IGAD) and in particular its Climate Prediction and Application Centre (ICPAC) will remain the main partner. Other Agencies based in Nairobi.
  - In West Africa: the Economic Community of West African States (ECOWAS) will serve as main catalyst for regional participation.

##### *Survey(s)*

With a view to maximizing feedback from the widest possible range of project stakeholders, the evaluator shall develop and deploy a survey(s) following the comprehensive desk study to provide an initial set of findings and allow the evaluator to easily probe during the key informant interviews.

##### *Key informant interviews*

Based on stakeholder identification, the evaluator will identify and interview key informants. The list of global focal points is available in Annex B. In preparation for the interviews with key informants, the consultant will define interview protocols to determine the questions and modalities with flexibility to adapt to the particularities of the different informants, either at the global or at the national level.

##### *Focus groups*

Focus groups should be organized with selected project stakeholders at the national and regional levels to complement/triangulate findings from other collection tools.

##### *Field visit*

A field visit to at least one country by region either by the lead evaluator or by national consultants (treatment countries) shall be organized if the COVID-19 related restrictions allow and the evaluator shall identify national informants, whom he/she will interview.

*Identify and interview key informants (national)*

Based on the stakeholder analysis, the evaluator will identify national informants, whom he/she or the national consultants will interview. The list of national focal points is available in Annex B.

*Comparison Groups (quasi-experimental design)*

A comparison of 'treatment' and 'comparison' groups shall be involved against a selection of outcome and impact level Log frame indicators to determine the extent of changes that are attributable to the project, being the difference between the two groups. A 'treatment' group is made up of people who are included in/affected by the project while the comparison group receives no intervention.

The comparison group is designed to be as similar to the treatment group as possible across a large number of characteristics. For example, when comparing with groups from other small island developing states, they need to be of similar geography, demographics, socio-economic status, level of education, development status, climate change vulnerability and risk of natural disasters etc. Potential groups can be matched based on, e.g., the average difference across key characteristics by using a 'propensity score matching'.

The evaluator should identify at least three to four comparison groups (one per region).

**Gender and human rights**

15. The evaluator should incorporate human rights, gender and equity perspectives in the evaluation process and findings, particularly by involving women and other disadvantaged groups subject to discrimination. All key data collected shall be disaggregated by sex and age grouping and be included in the draft and final evaluation report.
16. The guiding principles for the evaluation should respect transparency, engage stakeholders and beneficiaries; ensure confidentiality of data and anonymity of responses; and follow ethical and professional standards.

**Timeframe, work plan, deliverables and review**

17. The proposed timeframe for the baseline evaluation spans from October 2021 (initial desk review and data collection) to February 2022 (submission of final baseline evaluation report). An indicative work plan is provided in the table below.
18. The consultant shall submit a brief evaluation design/question matrix following the comprehensive desk study, stakeholder analysis and initial key informant interviews. The evaluation design/question matrix should include a discussion on the evaluation objectives, methods and, if required, revisions to the suggested evaluation questions or data collection methods. The Evaluation design/question matrix should indicate any foreseen difficulties or challenges in collecting data and confirm the final timeframe for the completion of the evaluation exercise.
19. Following data collection and analysis, the consultant shall submit a zero draft of the evaluation report to the evaluation manager and revise the draft based on comments made by the evaluation manager.



20. The draft evaluation report should follow the structure presented under Annex C. The report should state the purpose of the evaluation and the methods used and include a discussion on the limitations to the evaluation. The report should present evidence-based and balanced findings, including strengths and weaknesses, consequent conclusions and recommendations, and lessons to be learned. The length of the report should be approximately 20-30 pages, excluding annexes.

21. Following the submission of the zero draft, a draft report will then be submitted to the project management team to review and comment on the draft report and provide any additional information using the form provided under Annex D by 7 February 2022. Within one week of receiving feedback, the evaluator shall submit the final evaluation report. The target date for this submission is 14 February 2022.

22. Indicative timeframe: October 2021 – February 2022

Activity	October	November	December	January	February
Evaluator selected and recruited					
Initial data collection, including desk review, stakeholder analysis					
Evaluation design/question matrix					
Data collection and analysis, including survey(s), interviews and focus groups and field visit					
Zero draft report submitted to UNITAR					
Draft evaluation report consulted with UNITAR evaluation manager and submitted to Project Management					
Presentation of emerging findings					



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Project Management reviews draft evaluation report and shares comments and recommendations					
Evaluation report finalized and management response by Project Management					



**24. Measurable outputs/Deliverables/Schedule of Deliverables\*:**

<b>Deliverable</b>	<b>From</b>	<b>To</b>	<b>Deadline</b>
Evaluation design/question matrix	Evaluator	Evaluation manager	9 November 2021
Comments on evaluation design/question matrix	Evaluation manager	Evaluator	16 November 2021
Zero draft report	Evaluator	Evaluation manager	10 January 2022
Comments on zero draft	Evaluation manager	Evaluator	17 January 2022
Draft report	Evaluator	Evaluation manager	24 January 2022
Presentation of emerging findings	Evaluator	Project Management	24 January 2022
Comments on draft report	Project Management	Evaluation manager	7 February 2022
Final report	Evaluator	Evaluation manager	14 February 2022

\*Subject to review and adjustment on agreement between the consultant and the Evaluation Manager.

**Communication/dissemination of results**

25. The baseline evaluation report shall be written in English. The final report will be shared with all partners and be posted on an online repository of evaluation reports open to the public.

**Evaluation management arrangements**

26. The evaluator will be contracted by UNITAR and will report directly to the Director of the Strategic Planning and Performance Division and Manager of Planning, Performance Monitoring, and Evaluation Unit (PPME) ('evaluation manager').
27. The evaluation manager reports directly to the Executive Director of UNITAR and is independent from all programming related management functions at UNITAR. According to UNITAR's Monitoring and Evaluation Policy, in due consultation with the Executive Director/programme management, PPME issues and discloses final evaluation reports without prior clearance from other UNITAR Management or functions. This builds the foundations of UNITAR's evaluation function's independence and ability to better support learning and accountability.
28. The evaluator should consult with the evaluation manager on any procedural or methodological matter requiring attention. The evaluator is responsible for planning any meetings, organizing online surveys and undertaking administrative arrangements for any travel that may be required (e.g. accommodation, visas, etc.). The travel arrangements, if any, will be in accordance with the UN rules and regulations for consultants.

#### **Evaluator Ethics**

29. The evaluator selected should not have participated in the project's design or implementation or have a conflict of interest with project activities. The selected consultant shall sign and return a copy of the code of conduct under Annex F prior to initiating the assignment and comply with [UNEG Ethical Guidelines](#).

#### **Professional requirements**

30. The evaluator should have the following qualifications and experience:
  - MA degree or equivalent in international relations, political science, environmental science, development studies, evaluation or a related discipline. Training and/or experience in the area of GIS, disaster risk reduction and climate resilience and environmental preservation and food security would be a clear advantage.
  - At least 7 years of professional experience conducting evaluation in the field of capacity building, sustainable learning, GIS, disaster risk reduction and climate resilience and environmental preservation and food security.
  - Technical knowledge of the focal area.
  - Field work experience in developing countries.
  - Excellent research and analytical skills, including experience in a variety of evaluation methods and approaches.
  - Excellent writing skills.
  - Strong communication and presentation skills.
  - Cross-cultural awareness and flexibility.
  - Availability to travel.
  - Fluency in English.

#### **Annexes:**

**A: List of documents and data to be reviewed**

**B: List of Project Partners and Contact Points**

**C: Structure of evaluation report**

- D: Project logical framework**
- E: Audit trail**
- F: Evaluator code of conduct**

**Annex A: List of documents/data to be reviewed**

- Legal Agreement
- Project document
- Capacity needs assessments (broad and specific), once available
- CRED's disaster loss database EM-DAT
- National statistics for SDG indicators
- Any other document deemed to be useful to the evaluation

**Annex B: List of Contact Points (to be completed by project Management)**

Partners	
Organization	Focal Point

**Annex C: Indicative Structure of baseline evaluation report**

- i. Title page
- ii. Executive summary
- iii. Acronyms and abbreviations
1. Introduction
2. Project description, objectives and development context of the project in each country
3. Theory of change/project design logic
4. Methodology and limitations
5. Evaluation findings based on:
  - 5.1 Indicator specific narrative (contextual) information
  - 5.2 Quantitative measurements of each Logframe indicator (a table)
  - 5.3 Assessment of potential (suspected) negative and unintended (positive and negative) impacts
  - 5.4 Qualitative assessment of likelihood of achieving outcome and impacts
6. Conclusions
7. Recommendations, including on changes to Logframe (ToC?)
8. Lessons Learned
9. Annexes
  - 9.1 Terms of reference
  - 9.2 Survey/questionnaires deployed
  - 9.3 List of persons interviewed
  - 9.4 List of documents reviewed
  - 9.5 Evaluation question matrix
  - 9.6 Evaluation consultant agreement form and ethical pledge

### Annex D: Project Logical Framework

LEVEL	EXPECTED RESULT	INDICATORS	Indicator data				Data source of verification	Comments
			BASELINE Y0	TARGET Y1	TARGET Y2	FINAL TARGET YX		
IMPACT	Improved resilience to natural disasters and climate change in Africa and Asia & Pacific	SDG 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning  13.3.2 <i>Number of countries that have communicated the</i>	(Baseline=0)	<i>only measured at the end of the project</i>	<i>only measured at the end of the project</i>	<i>Evidence in each target country</i>	Impact stories, interviews with training participant and high-level stakeholders	Analysis of this indicator should be qualitative. It should demonstrate evidence that the target countries have taken relevant action regarding policies, plans, or projects as a result of enhanced capacity

		<i>strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions</i>						
		<i>Reduced human loss from natural disasters</i>  11.5.1 Number of deaths, missing persons and persons affected by disaster per	(Baseline= 2019 statistics from CRED's disaster loss database EM-DAT)	<i>only measured at the end of the project</i>	<i>only measured at the end of the project</i>	20% reduction  <i>From the baseline</i>	Global and national disaster losses databases and reports	Same magnitude and number of hazard events to occur in the same geographic locations compared to baseline year 2019

		<p>100,000 people</p> <p><i>Reduced economic damages from multi-hazards</i></p> <p>11.5.2 Direct disaster economic loss in relation to global GDP, including disaster damage to critical infrastructure and disruption of basic services</p> <p>(of the two regions)</p>				<p><i>(disaggregated by gender when possible)</i></p>	
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	Evidence from end-users and training beneficiaries demonstrating the benefit of UNOSAT's products and services on reducing disaster impact	i.1 Number of "impact stories" published on UNOSAT's website highlighting a beneficiary from a technical training	0	Africa: 1 impact story  Asia-Pacific: 1 impact story	4 impact stories  (1 in each sub-region: Nigeria, Kenya, Fiji, Thailand )	4 impact stories  (1 in each sub-region: Nigeria, Kenya, Fiji, Thailand)	Interviews with key informants	Participants from trainings are willing to be interviewed and featured on UNOSAT's website
		i.2 Number of "impact stories" published on UNOSAT's website highlighting the impact technical backstopping	0	0	Africa: 1 impact story  Asia-Pacific: 1 impact story	Africa : 1 impact story  Asia-Pacific: 1	Interviews with key informants	Sufficient requests are submitted to UNOSAT on a yearly basis from beneficiary organizations

		activities have had on partner agencies' and member states' efforts				impact story		
OUTCOME 1	Strengthened knowledge, skills and awareness on the use of geospatial applications and tools for decision making	1.a Percentage of trained technical participants successfully meeting learning objectives	Male: 0% Female: 0%	Male: 75% Female: 75%	Male: 80% Female: 80%	Male: 80% Female: 80%	Training records, including assessment scores	Assumptions:  Selected participants successfully complete training  Training participants have had the opportunity to use skills
		1.b Percentage of trained technical stakeholders confirming application of knowledge and skills from the training	Male 0% Female: 0%	Male 60% Female: 60%  *survey submitted at the end of year	Male 60% Female: 60%  *survey submitted at the end of year	Male 60% Female: 60%  *survey submitted at the	Male 60% Female: 60%  *survey submitted at the	Surveys administered to training beneficiaries

						end of year		
		1.c Percentage of high-level stakeholders in member states and regional institutions surveyed agreeing or strongly agreeing to the benefit of geospatial applications solutions for decision making	Male: 0% Female: 0%	Male: 60% Female: 60%	Male: 70% Female: 70%	Male: 70% Female: 70%	Surveys administered to stakeholders / Interviews with select gov. focal points	
<i>OUTPUT 1.1</i>	In-country capacity development trainings delivered to technical officials	1.1.1 Number of In-Country Technical Trainings	0	8 trainings  <i>1 training (face-to-face,</i>	8 trainings  <i>1 training</i>	8 trainings	Project activity reports, Training	Assumptions:  Logistic support and required equipment are provided by target countries while cost of

		delivered per year		<i>distance learning, or blended) per country</i>	<i>(face-to-face, distance learning, or blended) per country</i>	<i>1 training (face-to-face, distance learning, or blended) per country</i>	evaluation reports	training is covered by the project
								Country focal points are able to select participants respecting the gender ratio proposed
		1.1.2 Number of key national/regional institutions targeted as beneficiaries per training	0	Africa: 3  Asia-Pacific: 6	Africa: 3  Asia-Pacific: 6	Africa: 3  Asia-Pacific: 6		The number of participants remains unchanged, as the trainings seek to target the same audience to go more in-depth

		1.1.3 Number of participants per training	0	16 per training  (8 M: 8 F)	16 per training  (8 M: 8 F)	16 per training  (8 M: 8 F)	
OUTPUT 1.2	Awareness raising events delivered to stakeholders	1.2.1 Number of awareness raising events organized or attended by project management team per year	0	4 events  <i>1 per sub-regional hub (Nigeria, Kenya, Thailand, Fiji)</i>	4 events  <i>1 per sub-regional hub (Nigeria, Kenya, Thailand, Fiji)</i>	4 events  <i>1 per sub-regional hub (Nigeria, Kenya)</i>	Awareness on the importance of geospatial applications across thematic areas is already quite high, thus these awareness raising events will act more as outreach events highlighting the project's results and potentially reaching out to new interested beneficiaries

						<i>a, Thailand, Fiji)</i>		
		1.2.2 Number of key national/regional agencies or institutions at each event	0	Africa: 10  Asia-Pacific: 10	Africa: 10  Asia-Pacific: 10	Africa: 10  Asia-Pacific: 10		
		1.2.3 Number of attendees at each event	0	30 per event  (15 M: 15 F)	30 per event  (15 M: 15 F)	30 per event  (15 M: 15 F)		
OUTCOME 2	Knowledge and skills are sustained, thereby enhancing evidence-	2.a Percentage of trained	(Baseline: Training and capacity	Male: 60 %	Male: 60 %	Male: 60 %	Surveys administered to	Support from senior government officials to use

	based decision making amongst training beneficiaries	technical stakeholder's "regularly" or "often" applying geospatial information technology in their respective home institutions/or ganizations	needs assessments )	Female: 60%	Female: 60%	Female: 60%	stakeholders and training participants	acquired skills in the day by day work.
<i>OUTPUT 2.1</i>	Ad-hoc technical backstopping provided to stakeholders in the two regions	2.1.1 Number of ad-hoc technical backstopping provided to national/regional key stakeholders per year	0	8 in total  (1 per target country)	8 in total  (1 per target country)	8 in total  (1 per target country)	Project activity reports, users feedback reports	Technical backstopping activities act as on-the-job application of skills through ad-hoc technical assistance

<i>OUTPUT 2.2</i>	A knowledge hub is created, acting as the portal for training resources and the Community of Practice	2.2.1 Knowledge hub and community of practice are established for cross regional collaboration	0	1 knowledge platform established			Project activity reports, users feedback reports, website statistics on the knowledge hub	Training participants are willing to join and participate actively in the community of practice
OUTCOME 3	Strengthened knowledge and skills on accessing climate finance	3.a Percentage of national stakeholders in the three partner countries who feel informed (“very informed” in surveys) about accessing climate funds	Male: 0% Female: 0%	Male: 50% Female: 50%	Male: 60% Female: 60%	Male: 60% Female: 60%	Surveys with select government focal points	There will be climate finance advisors in the Pacific region to assist stakeholders in applying for climate funds
<i>OUTPUT 3.1</i>	Support to proposals writing to climate financing mechanisms is	3.1.1 Number of proposals prepared with the support of	0	2 proposals	4 proposals	6 proposals	Project documents collected by climate	This climate finance work package is building off of UNOSAT’s extensive experience in the Pacific.

	provided to partner countries	climate finance advisors		(in the Pacific region)	pos als  (in the Pacific region)	(in the Pacific region)	finance advisors  climate finance technical backstopping logs	UNOSAT hopes to continue to leverage the presence of climate finance advisors to support member states in the region.
Activities	<ul style="list-style-type: none"> <li>• WP100: Overall project management and coordination.</li> <li>• WP200: Design and Implementation of regional/national training &amp; capacity development/ awareness raising events in the use of geospatial information for effective disaster risk reduction in target countries in Asia &amp; Pacific and Africa.</li> <li>• WP300: Implementation of sustainability mechanisms through the knowledge platform, community of practice, and technical backstopping (on the job training).</li> <li>• WP400: Climate finance advisor</li> </ul>							

**Annex E: Evaluation Audit Trail Template**

*(To be completed by Project Management to show how the received comments on the draft report have (or have not) been incorporated into the evaluation report. This audit trail should be included as an annex in the evaluation report.)*

**To the comments received on (date) from the evaluation of the “Strengthening Capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa” project**

*The following comments were provided in track changes to the draft evaluation report; they are referenced by institution (“Author” column) and track change comment number (“#” column):*

<b>Author</b>	<b>#</b>	<b>Para No./ comment location</b>	<b>Comment/Feedback on the draft evaluation report</b>	<b>Evaluator response and actions taken</b>

## Annex F: Evaluation Consultant Code of Conduct and Agreement Form\*

### The evaluator:

1. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
2. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
3. Should protect the anonymity and confidentiality of individual informants. He/she should provide maximum notice, minimize demands on time, and respect people's right not to engage. He/she must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. He/she are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
4. Sometimes uncovers evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. He/she should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
5. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, he/she must be sensitive to and address issues of discrimination and gender equality. He/she should avoid offending the dignity and self-respect of those persons with whom he/she comes in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, he/she should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
6. Is responsible for his/her performance and his/her product(s). He/she is responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
7. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

### Evaluation Consultant Agreement Form<sup>83</sup>

#### Agreement to abide by the Code of Conduct for Evaluation in the UN System

**Name of Consultant:** José Antonio Cabo Buján

**Name of Consultancy Organization** (where relevant): \_\_\_\_\_

**I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.**

Signed at *Mexico City* on *February 2<sup>nd</sup>, 2021*

Signature: \_\_\_\_\_

\*This form is required to be signed by each evaluator involved in the evaluation.

<sup>83</sup>[www.unevaluation.org/unegcodeofconduct](http://www.unevaluation.org/unegcodeofconduct)

## Annex 2: List of persons interviewed

Country/ Office location	Affiliation	Position	First Name	Last Name	Email
Bhutan	Department of Survey & Mapping, National Land Commission	Director	Tenzin	Namgay	<a href="mailto:tenzinnamgay@nlcs.gov.bt">tenzinnamgay@nlcs.gov.bt</a>
Lao PDR	Department of Disaster Management (DDM)-Ministry of Labour and Social Welfare (MoLSW)	Director	Phonesava nh	Saysomphe ng	<a href="mailto:saysomphengp@gmail.com">saysomphengp@gmail.com</a>
Bangladesh	Department of Disaster Management (DDM)-Ministry of Disaster Management and Relief (MoDMR)	Deputy Director	Netai Chandra Dey	Sarkar	<a href="mailto:netai@mail.com">netai@mail.com</a>
Fiji	Ministry of Economy	Climate Change Adaptation Specialist (CCAS)	Shivanal S.	Kumar	<a href="mailto:shivanal.kumar@economy.gov.fj">shivanal.kumar@economy.gov.fj</a>
Europe (HQ in Geneva)	UNOSAT	Project Director	Einar	Bjorgo	<a href="mailto:einar.bjorgo@unitar.org">einar.bjorgo@unitar.org</a>
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## Annex 4: Evaluation question matrix

### Evaluation Matrix

José Antonio CABO BUJÁN

November 2021

### Background

The United Nations Institute for Training and Research (UNITAR)'s United Nations Satellite Center (UNOSAT) has implemented activities to strengthen capacities for using geospatial information technologies in Asia and East Africa since 2011. UNOSAT has recently implemented a project to strengthen national capacities to address disaster risk reduction (DRR) and climate change resilience in Fiji, Solomon Islands, and Vanuatu (CommonSensing project), which will conclude at the end of March 2022.

Based on this experience, UNOSAT has designed an intervention to be implemented in eight countries in Africa, Asia and the Pacific, with focus on strengthening capacities in the use of geospatial information for improved resilience in Asia-Pacific and Africa. The project aims to improve resilience in Africa and the Asia – Pacific regions using geo-spatial information technologies through training and tailored geospatial solutions.

As part of the project's evaluation plan, the UNITAR Planning, Performance Monitoring, and Evaluation Unit has commissioned a baseline evaluation. This evaluation will run in parallel with the project's needs assessment. As both reviews will include contacting the same stakeholders, the baseline evaluator and the project team will carefully coordinate both activities to avoid stakeholder fatigue and confusion and maintain the integrity and independence of the evaluation.

### Evaluation purpose

The purpose of the **baseline** evaluation is to, considering UNOSAT prior projects, validate the project strategy and provide a baseline against which the project's progress can be measured and evaluated.

The specific objectives of the evaluation are:

- To validate the project's theory of change: results chain, assumptions, and risks;
- To assess the project's implementation strategy;
- To map other similar or synergetic interventions implemented by national or international organizations;
- To validate the adequacy of the log frame, including the indicators, means of verification, and underlying risks and assumptions;
- To measure the baselines for the project's log frame indicators;
- To collect counterfactual information comparing non-intervention peer countries
- To identify (a) viable alternative(s) to the project to achieve the intended developmental results.

### Scope and approach

The evaluation will cover the project theory of change for the eight implementation countries: Bhutan, Bangladesh, Fiji, Nigeria, Lao PDR, the Solomon Islands, Uganda, and Vanuatu. The project intends to strengthen capacities to use geospatial information for disaster risk reduction in Lao PDR, Bangladesh, and Uganda, climate change impact monitoring in Fiji, the Solomon Islands, and Vanuatu, and improve management of natural resources in Bhutan and Nigeria. UNOSAT implemented capacity development activities in the three Pacific Small Island Developing States (SIDS) in the framework of the CommonSensing Project (2018-2022). The project will also engage climate finance experts to enhance the national capacities to access climate funds in these three countries, such as the Adaptation Fund or the Green Climate Fund.

The evaluation will establish the baseline measures for the project's log-frame indicators for 2020 or the latest year for which data is available.

The evaluator will incorporate human rights, gender, and equity perspectives in the evaluation process and findings, particularly by involving women and other disadvantaged groups subject to discrimination, e.g., indigenous groups if applicable in the implementation countries. Key data collected will be disaggregated by sex and age groupings.

The evaluation will adhere to UNITAR and the UNEG ethical standards for assessments, guaranteeing confidentiality and anonymity of responses.

## Methodology

The evaluation will use desk review for data and document analysis and collect primary data from project stakeholders through individual interviews, focus group discussion, and surveys.

The evaluation will follow a participatory approach and engage a range of project stakeholders, primarily, project team members, project national focal points, officials in the beneficiary countries, particularly those involved in disaster risk reduction, climate change adaptation, natural resource management, and climate finance (only in the Pacific countries). The evaluation will also contact staff at UN country offices involved with those national counterparts, which could also help identifying civil society organizations engaged in disaster and risk management and mitigation.

At a later stage the evaluation may include officials of UNOSAT partner regional and international organizations: the Economic and Social Commission for Asia and the Pacific (UNESCAP), the Geo-Informatics and Space Technology Development Agency (GISTDA), the Association of Southeast Asian Nations (ASEAN), the Pacific Community Secretariat (SPC), the Intergovernmental Authorities for Development (IGAD), and the Economic Community of West African States (ECOWAS).

Thirdly, the evaluation will also coordinate with the project implementation team and national focal points engaged by the project.

The evaluator will use primary data collection to corroborate and triangulate documentary information and secondary data desk review. Based on a stakeholder analysis, potential informants will be administering questionnaires, or invited to individual semi structured interviews, and focus groups. Key informants will include officials in the treatment countries and peer, non-intervention countries (control). Control countries will be at least one per treatment region: Africa (Nigeria and Uganda), South and Southeast Asia (Bhutan, Bangladesh and Lao PDR), and the Pacific (Fiji, Solomon Islands and Vanuatu).

Estimating between two and four officials and at least 10 questionnaire answers per country, between 192 and 384 people could be reached by the baseline evaluation.

Questionnaires will serve to establish baseline capacity for using GIT for disaster risk reduction, climate change adaptation, or natural resource management. Thus, survey questionnaires will be structured as a scorecard to obtain a baseline value per beneficiary/ counterfactual organization and establish a tentative target value for the end of the project.

The evaluator will also identify and collect baseline data from non-intervention peer-countries with similar geographical and socio-economic characteristics as the treatment groups to assess the counterfactual for the midline and end-line evaluations.

The evaluation will not require field visits by the principal evaluator, as data and stakeholders can be accessed by online means. Project associates or national consultants will be engaged in Lao PDR.

## Challenges and risks

A large number of stakeholders, between 192 and 384 (including surveys) in intervention and control countries will need to be reached, estimating a 25% response rate to the questionnaires. Moreover, questionnaires and interviews are perception-based.

The project inception phase (needs assessment) will be running in parallel to the baseline evaluation. Independently contacting the same stakeholders could cause confusion, fatigue, and a high non-response rate.

Considering the timeframe for the data collection stage, three strategies could be implemented to mitigate the non-response rate, respondent fatigue and delays in scheduling the interviews:

1. Expand the data collection time until mid-February;
2. Coordinate closely with the project team and needs assessment activities to motivate and avoid respondent fatigue;
3. Engage country offices of other UN agencies involved with the same national counterparts as the project's target beneficiaries;
4. Triangulate perception-based data from questionnaires and interviews with data from the document review and other sources.

The baseline evaluation will use English as the primary language in interviews and questionnaires. We anticipate most respondents to be able to be interviewed or respond a questionnaire in English. Should this not be the case, then the evaluation will seek the support of the project national focal points. Engaging project staff or officials linked to the project implementation will not compromise the independence and objectivity of the evaluation. This is a baseline evaluation which, other than establishing the baseline will make supporting recommendations to enhance the project strategy.

Logframes and other forms of results frameworks are living documents. Baseline data will be collected based on the latest logframe provided by Project Management and for potential alternative indicators as suggested by the evaluator. It can however not be guaranteed that full comparability to baseline data is possible at later stage in case Project Management decides to make further changes to the Logframe prior to the Midline or Endline evaluation.

For collecting counterfactual data, informants may be less motivated to contribute as their respective country is not part of the project's intervention.

Identifying alternatives is based on assumptions of comparability and the anticipated impact. They may however entail major differences in suitability for country context, funding and resources required, etc.

## Evaluation questions

The seven evaluation questions included in the terms of reference follow. Methods, indicators and key assumptions are listed in the evaluation matrix following this section.

### I) baseline measures

1. What are the **existing capacities** in applying GIT and Earth Observation in the thematic areas?
  - a. Are there any existing capacities to analyze geospatial data and information for disaster risk reduction, climate change adaptation or natural resource or biodiversity management?
  - b. What is the use of GIT in stakeholder's respective national institutions/organizations?
2. What is the countries' and stakeholders' respective institutions/organizations current access of climate funding? (Only for Fiji, Solomon Islands and Vanuatu)

### II) intervention strategy

3. Does the **project strategy** address the identified challenges in a manner consistent with national priorities, United Nations principles and strategies, the Sustainable Development Goals (SDGs) and other relevant international commitments (e.g., Nationally Determined Contributions (NDCs), the Samoa Pathway)?

4. Is the project strategy the most cost-effective means of delivering the intended benefits?
  - a. To what extent have lessons from previous experience from UNITAR and other organizations been incorporated into the project's design?
  - b. Have alternative designs been considered and evaluated?
  
5. How is the **project strategy** coherent with other ongoing or planned interventions, the use of GIT or the thematic areas?
  - a. What other institutions/organizations/ knowledge platforms/e-learning/communities of practice in countries are already intervening in the project's area of intervention? Is there any collaboration exchange among them?
  - b. What are the potential synergies/ overlaps/ contradictions with other ongoing or planned interventions?
  
6. How does the **project strategy** respond to gender and human rights issues, including equitable access and indigenous groups rights?
  
7. How does the **project strategy** address the continuity of project results at beneficiary organizations (sustainability)?

### III) theory of change and logframe

8. What is the possible contribution/attribution of the project outputs and outcomes to the intended impact?
  - a. Is the results chain logically linked and based on sound assumptions?
  - b. Are the suggested impact indicators valid and measurable?
  - c. Have all risks been identified, and mitigation strategies developed

**EQ1: What are the existing capacities in applying GIT and Earth Observation in the thematic areas?**

- Are there any capacities to analyse geospatial data and information in for disaster risk reduction, climate change adaptation or natural resource or biodiversity management?
- What is the use of GIT in stakeholder’s respective national institutions/organizations?

<b>Assumption to be assessed</b>	<b>A1.1: GIT is understood by concerned government officials as a useful tool for disaster risk reduction or natural resource management</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Government officials/ organizations use or plan to use GIT for disaster risk reduction, climate change adaptation,</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• National strategy documents</li> <li>• Annual work plans from concerned government organizations</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• UNITAR staff</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in both implementation and comparison countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• FGD with UNITAR-UNOSAT staff</li> </ul>
<b>Assumption to be assessed</b>	<b>A1.2: The national regulatory framework clearly allocates responsibilities in disaster risk reduction/ climate change adaptation/ natural resource management and (if applicable) the use of GIT for the referred thematic areas</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• The national policy and regulatory frameworks define responsibilities among national and subnational agencies for the thematic areas and the use of GIT.</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• National strategy documents</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in both implementation and comparison countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> </ul>
<b>Assumption to be assessed</b>	<b>A1.3: GIT is being used as a tool in disaster risk reduction (preparedness, response), natural resource management</b>

<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• There are some existing capacities in the thematic areas and/ or GIT.</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Reports/data produced for or by the concerned government organizations</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• Officials at target organizations in both implementation and comparison countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• <b>Survey (scorecard) to officials in target/ counterfactual organizations</b></li> </ul>

**EQ2: What is the countries' and stakeholders' respective institutions/organizations current access of climate funding? (Only for Fiji, Solomon Islands and Vanuatu)**

<b>Assumption to be assessed</b>	<b>A7.1: The country has a designated authority/ focal point for international funds, e.g., GEF, GCF or AF</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• The country has a designated authority/ focal point for international funds, e.g., GEF, GCF or AF</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• National strategy documents</li> <li>• Project documents from GEF, GCF or AF funded projects</li> <li>• UNITAR staff</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in both implementation and comparison countries</li> <li>• CommonSensing project documentation</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• FGD with UNITAR-UNOSAT staff</li> </ul>
<b>Assumption to be assessed</b>	<b>A7.2: The country has the capacity to implement additional international funding for climate change adaptation and mitigation</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• There are national strategies, policies or plans for climate change adaptation and mitigation</li> <li>• There is a clear designated authority or focal point for the implementation of internationally funded projects</li> <li>• The designated authority has sufficient technical and fiduciary capacity for the implementation of internationally funded projects</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• National strategy documents, particularly national disaster risk reduction strategy, climate change adaptation policies, biodiversity action plans, nationally determined contributions, and spatial planning policies</li> <li>• Other relevant studies used to understand the context, including those</li> </ul>

	<p>produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</p> <ul style="list-style-type: none"> <li>• UNITAR staff</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in both implementation and comparison countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• FGD with UNITAR-UNOSAT staff</li> </ul>

**EQ3: Does the project strategy address the identified challenges in a manner consistent with national priorities, United Nations principles and strategies, the SDGs and other relevant international commitments (e.g., NDCs, the Samoa Pathway)?**

<b>Assumption to be assessed</b>	<b>A2.1: The project strategy is consistent and contributes to national priorities</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Extent to which national project strategy is consistent with the application of GIT and Earth Observation in the thematic areas</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• National strategy documents, particularly national disaster risk reduction strategy, climate change adaptation policies, biodiversity action plans, nationally determined contributions, and spatial planning policies</li> <li>• Needs assessment</li> <li>• Annual work plans from concerned government organizations</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• UNITAR staff</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in both implementation and comparison countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• FDG with UNITAR-UNOSAT staff</li> </ul>
<b>Assumption to be assessed</b>	<b>A2.2: The project strategy is consistent and contributes to the United Nations Sustainable Development Framework (UNSDF) SDGs and other international commitments</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• The project strategy refers to and is aligned with the United Nations Sustainable Development Framework (UNSDF) SDGs and other international commitments</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• UNSDF, national SDG reports, Common Country Analysis</li> <li>• United Nations national representation (RCO or UNCT)</li> </ul>

	<ul style="list-style-type: none"> <li>• Officials at target organizations in both implementation and comparison countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants at the UNCTs</li> </ul>

**EQ4: Is the project strategy the most cost-effective means of delivering the intended benefits?**

- To what extent have lessons from previous experience from UNITAR and other organizations been incorporated into the project’s design?
- Have alternative designs been considered and evaluated?

<b>Assumption to be assessed</b>	<b>A4.1: The project strategy is the most effective means of delivering the intended benefits (increased capacity to use geospatial solutions)</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Different project strategies have been conceived and analysed based on cost per unit increased capacity</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Relevant project documents, and project evaluation documents, such as midline and end line evaluation of the CommonSensing project, management response and implementation of recommendations</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• UNITAR staff</li> <li>• Officials at target organizations in both implementation and comparison countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• FGD with UNITAR-UNOSAT staff</li> </ul>

**EQ5: How is the project strategy coherent with other ongoing or planned interventions | the use of GIT or the thematic areas?**

- To what extent have lessons from previous experience from UNITAR and other organizations been incorporated into the project’s design?
- What other institutions/organizations/ knowledge platforms/e-learning/communities of practice in countries are already intervening in the project’s area of intervention?
- What are the potential synergies/ overlaps/ contradictions with other ongoing or planned interventions?

<b>Assumption to be assessed</b>	<b>A3.1: The project strategy incorporates lessons from other UNITAR/ other organizations interventions</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Extent to which project strategy incorporates lessons learned from other UNITAR/ other organizations interventions</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Relevant project documents, and project evaluation documents, such as midline and end line evaluation of the CommonSensing project, management response and implementation of recommendations</li> </ul>

	<ul style="list-style-type: none"> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• UNITAR staff</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in both implementation and comparison countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• FGD with UNITAR-UNOSAT staff</li> </ul>
<b>Assumption to be assessed</b>	<b>A3.2: The project strategy has considered potential synergies and risks of overlapping activities</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Mapping of interventions and relevant stakeholders has been included in the project strategy</li> <li>• The project strategy has considered potential synergies and design mitigation strategies for the risk of overlapping activities</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Relevant project documents, and project evaluation documents</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• UNITAR staff</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in both implementation and comparison countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants from UN resident agencies country offices</li> </ul>

**EQ6: How does the project strategy respond to gender and human rights issues, including equitable access and indigenous groups' rights?**

<b>Assumption to be assessed</b>	<b>A4.1: The project strategy addresses gender issues</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Extent to which gender issues have been incorporated into the project strategy</li> <li>• Availability of gender disaggregated data</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• National gender strategy documents, especially regarding disaster risk reduction, climate change adaptation, and biodiversity and natural resources management</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• UNITAR staff</li> </ul>

	<ul style="list-style-type: none"> <li>• Regional and international project partners</li> <li>• Officials at target organizations in both implementation and comparison countries</li> <li>• Civil society organizations</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• Interviews with civil society organizations</li> <li>• FGD with UNITAR-UNOSAT staff</li> </ul>
<b>Assumption to be assessed</b>	<b>A4.2: The project strategy addresses human rights issues</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• The project strategy has incorporated human right issues, particularly access to civil protection, health, education services and stewardship and co-management by local and indigenous communities</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Relevant government strategy papers</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• UNITAR staff</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in both implementation and comparison countries</li> <li>• Civil society and academic organizations</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• Interviews with civil society organizations</li> <li>• FDG with UNITAR-UNOSAT staff</li> </ul>

**EQ7. How does the project strategy address the continuity of project results at beneficiary organizations (sustainability)?**

<b>Assumption to be assessed</b>	<b>A5.1: Beneficiary organizations have sufficient budgetary allocation or access to external funding to continue the application of technical solutions, access to learning platform and technical backstopping</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Extent to which budget allocation or access to external funding enables beneficiary organizations to continue the application of technical solutions, access to learning platform and technical backstopping</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Expenditure reviews,</li> <li>• AWP's and strategic plans of beneficiary organizations</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil</li> </ul>

	<p>society organizations, academia, and the United Nations.</p> <ul style="list-style-type: none"> <li>• Regional and international project partners</li> <li>• Officials at target organizations in implementation countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> </ul>
<b>Assumption to be assessed</b>	<b>A5.2: The national regulatory and policy framework enables the application of technical solutions, access to learning platform and technical backstopping</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• The national regulatory and policy framework enables the application of technical solutions, access to learning platform and technical backstopping</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Relevant government documents</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• UNITAR staff</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in implementation countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• Interviews with civil society organizations</li> <li>• FGD with UNITAR-UNOSAT staff</li> </ul>

**EQ8: What is the possible contribution/attribution of the project outputs and outcomes to the intended impact?**

- **Is the results chain logically linked and based on sound assumptions?**
- **Are the suggested impact indicators valid and measurable?**
- **Have all risks been identified, and mitigation strategies developed?**

<b>Assumption to be assessed</b>	<b>A6.1: The results chain is logically linked and based in sound assumptions</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Activities and outputs will lead to the intended outcomes and contribute to the impacts</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Project document</li> <li>• Relevant project documents, and evaluation reports</li> <li>• Other relevant studies used to understand the context, including those produced by national or subnational government organizations, civil society organizations, academia, and the United Nations.</li> <li>• Regional and international project partners</li> <li>• UNITAR staff</li> <li>• Officials at target organizations in implementation countries</li> </ul>

<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• FGD with UNITAR-UNOSAT staff</li> </ul>
<b>Assumption to be assessed</b>	<b>A6.2: The log frame indicators adhere to SMART criteria</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Indicators are specific, measurable, achievable, relevant and time-bound</li> <li>• Data collection for indicators in implementation and counterfactual countries is based on existing mechanisms, e.g., regular national censuses or statistical reports</li> <li>• Data not contained in existing national/ international monitoring mechanisms is cost-effective</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Government and international statistical databases</li> <li>• Other relevant studies, censuses and databases.</li> <li>• UNITAR staff</li> <li>• Regional and international project partners</li> <li>• Officials at target organizations in implementation and counterfactual countries</li> <li>• Officials in statistical agencies in implementation and counterfactual countries</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• Interviews with key informants at beneficiary organizations</li> <li>• Interviews with key informants at counterfactual organizations</li> <li>• Interviews with key informants in partner international and regional organizations</li> <li>• FGD with UNITAR-UNOSAT staff</li> </ul>
<b>Assumption to be assessed</b>	<b>A6.3: The project strategy identifies all relevant risks and devises feasible, cost-effective mitigation strategies for those risks</b>
<b>Indicators/Criteria</b>	<ul style="list-style-type: none"> <li>• Risks have been identified and rated</li> <li>• Mitigation strategies have been developed</li> <li>• Mitigation strategies are cost-effective and consistent with the project strategy</li> </ul>
<b>Sources of information</b>	<ul style="list-style-type: none"> <li>• Project document, logframe and monitoring plan if available</li> <li>• UNITAR staff</li> </ul>
<b>Methods for data collection</b>	<ul style="list-style-type: none"> <li>• Desk review</li> <li>• FDG with UNITAR-UNOSAT staff</li> </ul>

## Annex 5: Evaluation consultant agreement form and ethical pledge

### The evaluator:

8. Must present information that is complete and fair in its assessment of strengths and weaknesses so that decisions or actions taken are well founded.
9. Must disclose the full set of evaluation findings along with information on their limitations and have this accessible to all affected by the evaluation with expressed legal rights to receive results.
10. Should protect the anonymity and confidentiality of individual informants. They should provide maximum notice, minimize demands on time, and respect people's right not to engage. Evaluators must respect people's right to provide information in confidence, and must ensure that sensitive information cannot be traced to its source. Evaluators are not expected to evaluate individuals, and must balance an evaluation of management functions with this general principle.
11. Sometimes uncover evidence of wrongdoing while conducting evaluations. Such cases must be reported discreetly to the appropriate investigative body. Evaluators should consult with other relevant oversight entities when there is any doubt about if and how issues should be reported.
12. Should be sensitive to beliefs, manners and customs and act with integrity and honesty in their relations with all stakeholders. In line with the UN Universal Declaration of Human Rights, evaluators must be sensitive to and address issues of discrimination and gender equality. They should avoid offending the dignity and self-respect of those persons with whom they come in contact in the course of the evaluation. Knowing that evaluation might negatively affect the interests of some stakeholders, evaluators should conduct the evaluation and communicate its purpose and results in a way that clearly respects the stakeholders' dignity and self-worth.
13. Is responsible for his/her performance and his/her product(s). They are responsible for the clear, accurate and fair written and/or oral presentation of study imitations, findings and recommendations.
14. Should reflect sound accounting procedures and be prudent in using the resources of the evaluation.

### Evaluation Consultant Agreement Form<sup>84</sup>

#### Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of Consultant: Jose Antonio Cabo Bujan

Name of Consultancy Organization (where relevant): \_\_\_\_\_

**I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation and I declare that any past experience, of myself, my immediate family or close friends or associates, does not give rise to a potential conflict of interest.**

Signed at Ciudad de México on 10/10/2021



Signature: \_\_\_\_\_

<sup>84</sup>[www.unevaluation.org/unegcodeofconduct](http://www.unevaluation.org/unegcodeofconduct)



ETHICAL GUIDELINES FOR EVALUATION  
**PLEDGE OF ETHICAL CONDUCT IN EVALUATION**



By signing this pledge, I hereby commit to discussing and applying the UNEG Ethical Guidelines for Evaluation and to adopting the associated ethical behaviours.



**INTEGRITY**

I will actively adhere to the moral values and professional standards of evaluation practice as outlined in the UNEG Ethical Guidelines for Evaluation and following the values of the United Nations. Specifically, I will be:

- **Honest and truthful** in my communication and actions.
- **Professional**, engaging in credible and trustworthy behaviour, alongside competence, commitment and ongoing reflective practice.
- **Independent, impartial and incorruptible**.



**ACCOUNTABILITY**

I will be answerable for all decisions made and actions taken and responsible for honouring commitments, without qualification or exception; I will report potential or actual harms observed. Specifically, I will be:

- **Transparent regarding evaluation** purpose and actions taken, establishing trust and increasing accountability for performance to the public, particularly those populations affected by the evaluation.
- **Responsive** as questions or events arise, adapting plans as required and referring to appropriate channels where corruption, fraud, sexual exploitation or abuse or other misconduct or waste of resources is identified.
- **Responsible** for meeting the evaluation purpose and for actions taken and for ensuring redress and recognition as needed.



**RESPECT**

I will engage with all stakeholders of an evaluation in a way that honours their dignity, well-being, personal agency and characteristics. Specifically, I will ensure:

- **Access** to the evaluation process and products by all relevant stakeholders – whether powerless or powerful – with due attention to factors that could impede access such as sex, gender, race, language, country of origin, LGBTQ status, age, background, religion, ethnicity and ability.
- **Meaningful participation and equitable treatment** of all relevant stakeholders in the evaluation processes, from design to dissemination. This includes engaging various stakeholders, particularly affected people, so they can actively inform the evaluation approach and products rather than being solely a subject of data collection.
- **Fair representation** of different voices and perspectives in evaluation products (reports, webinars, etc.).



**BENEFICENCE**

I will strive to do good for people and planet while minimizing harm arising from evaluation as an intervention. Specifically, I will ensure:

- **Explicit and ongoing consideration** of risks and benefits from evaluation processes.
- **Maximum benefits** at systemic (including environmental), organizational and programmatic levels.
- **No harm**. I will not proceed where harm cannot be mitigated.
- **Evaluation makes an overall positive contribution** to human and natural systems and the mission of the United Nations.

I commit to playing my part in ensuring that evaluations are conducted according to the Charter of the United Nations and the ethical requirements laid down above and contained within the UNEG Ethical Guidelines for Evaluation. When this is not possible, I will report the situation to my supervisor, designated focal points or channels and will actively seek an appropriate response.

José Antonio Cabo Buján

01/11/2021

(Signature and Date)

## Annex 6: Capacity Scorecard

### Capacity scorecard and interview guidelines

The capacity development scorecard is patterned after the [UNDP-GEF capacity scorecard for environmental projects](#) and summarizes in one number (between zero and a maximum score of 18) the baseline capacities for engagement with GIT in the project's thematic areas, access and use GIT information and management and implementation of GIT solutions. The scorecard will be applied again at the midterm and final evaluation. To complement the score and gain understanding on the capacity needs and current use of GIT, qualitative, semi-structured interviews will be used.

The proposed capacity development scorecard has three main limitations: i) "I do not know"-type responses are assigned a value of zero. However, the scorecard and interviewees selection have been designed to minimize the risk of no response; ii) the number of stakeholders filling in it may vary per country. The scorecard does not weight the values per number of responses; and iii) the instrument is subjective by nature. Some respondents may be more conservative than others. This limitation is addressed by triangulating the responses with secondary data.

The scorecard is designed to collect information on indicators based on the latest version of the logframe in Annex 8.

#### Capacity development scorecard for the utilization of GIT for disaster risk reduction/ climate change adaptation<sup>85</sup>/ natural resource management

Question	Answer score
1. Awareness on the use of GIT for disaster risk reduction/ natural resource management	
1.1. Awareness on the use of GIT for disaster risk reduction/ natural resource management	
a. My organization does not think of GIT as a useful tool for disaster risk reduction or natural resource management	0
b. My organization/ I am aware about GIT as a useful tool for disaster risk reduction or natural resource management but do not use it systematically	1
c. My organization/ I use GIT but we have some limitations in implementing GIT-based solutions	2
d. My organization/ I am aware about GIT as a useful tool and we are/ I am actively implementing related solutions	3
Clarifications to the answers above (if needed)	
Examples of data collection issues	
2. GIS work flow	
2.1. Data collection	
a. My organization does not collect data systematically and does not verify data quality	0
b. My organization has limitations in systematic collection of data and assessing data quality	1

<sup>85</sup> No logframe indicators reference currently the use of a scorecard for climate finance related data.

c. My organization systematically collects and verifies data, with some limitations	2
d. My organization's method for data collection is reliable.	3
Clarifications to the answers above (if needed) Examples of data collection issues	
2.2. Data digitization	
a. Data collected by my organization is not digitized, it is done in paper format	0
b. My organization is planning to digitize data	1
c. My organization has started digitizing data, but it is not systematically.	2
d. All data collected by my organization is digitized	3
Clarifications to the answers above (if needed) Examples of digitization issues	
2.3. Data repository	
a. My organization does not have a data repository	0
b. My organization is planning to create a data repository	1
c. My organization has started adding data to a repository	2
d. All of my organization's data is in a repository	3
Clarifications to the answers above (if needed) Examples of data repository issues	
2.4. Data shared among ministries/ government agencies	
a. We do not share data with other ministries	0
b. Data is sometimes shared but not systematically and comes with bureaucratic difficulty	1
c. Data is shared between ministries	2
d. Data is shared easily and even encouraged to save time and resources	3
Clarifications to the answers above (if needed) Examples of data sharing issues	
2.5. Access to data	
a. My organization does not have access to digitized geographical data	0
b. My organization has access to GIS data but with insufficient coverage/ resolution	1
c. My organization has a GIS data repository but with insufficient coverage/ resolution	2
d. My organization has a GIS data repository with adequate coverage/ resolution	3
Clarifications to the answers above (if needed) Examples of issues related to data access	
2.6. Data use	
a. My organization uses GIT/ GIS data to disaster assessment/ early warning/ land management/ pollution control but not systematically	0
b. My organization systematically uses GIT/ GIS data to disaster assessment/ early warning/ land management/ pollution control	1
c. My organization has somehow improved service delivery through the sytematic employ of GIT/ GIS-based solutions for disaster assessment/ early warning/ land management/ pollution control	2

d. My organization has significantly improved service delivery through the systematic employ of GIT/ GIS-based solutions for disaster assessment/ early warning/ land management/ pollution control	3
Clarifications to the answers above (if needed) Examples of issues related to data access	
2.7. Efficiency	
a. My organization's GIS workflow has severe inefficiencies and/ or limitations (This may be a challenging thing to ask/ acknowledge in some cultural settings// My organization needs to improve its workflow)	0
b. My organization's GIS workflow has limitations, but we have somewhat increase productivity/ efficiency in the last year, and we spent less time in any task (open space for examples and clarifications at the end)	1
c. My organization complete tasks in the allotted time without additional resources (again, this may be culturally insensitive and people may want to show that they deliver)	2
d. My organization has improved service delivery through the systematic employ of GIT/ GIS-based solutions for disaster assessment/ early warning/ land management/ pollution control	3
Clarifications to the answers above (if needed) Examples of efficiency and workflow	
3. Sustainable use of land resources (for Bhutan)	
3.1. Standardized GIS method for land management	
a. My organization does not have a standardized GIS method for land management.	0
b. Some staff in my organization used GIS methods for land management but this is not standardized.	1
c. My organization is creating a standardized GIS method for land management	2
d. My organization has a standardized GIS method for land management.	3
Clarifications to the answers above (if needed) Examples of GIS method for land management	
3.2. Standardized method for releasing public land	
a. No, we don't have a standardizes method for releasing public land	0
b. My organization is plannig to introduce a standardized method for releasing public land	1
c. My organization is using GIS to create a method of releasing public land	2
d. Yes, my organization has created a standardized method to release public land thanks to GIS	3
Clarifications to the answers above (if needed) Examples of releasing public land	
3.3. Field surveys using EpiCollect	
a. No, my organization does not use EpiCollect in field surveys	0
b. My organization is planning to and learning how to use EpiCollect in field surveys	1
c. My organization uses EpiCollect in field surveys, but not systematically	2

d. My organization uses EpiCollect in field surveys, but not systematically	3
Clarifications to the answers above (if needed)	
Examples	
3.4. Web app	
a. My organization does not use the Webapp in decision making	0
b. My organization has sometimes used the Webapp in decision making with limited results	1
c. My organization uses the Webapp to support decision-making	2
d. The Webapp has significantly improve my organization's decision-making	3
Clarifications to the answers above (if needed)	
Examples	
4. Climate finance	
4.1. Capacity to prepared informed proposals	
a. Proposals for climate finance are prepared by external help (consultants) at the donor's request	0
b. My organization proactively seeks finance but requires hiring external help (consultant) to prepare proposals	1
c. My organization proactively seeks finance and prepares proposals, but without systematic use of risk/ GIS/ GIT data	2
d. My organization proactively seeks finance and prepares proposals, with systematic use of risk/ GIS/ GIT data	3
Clarifications to the answers above (if needed)	
Examples of proposal development	
4.2. Role of data in proposal's success	
a. Proposals don't need inclusion of risk/ GIS data other than general statements	0
b. Some risk/ GIS data is necessary for project proposals	1
c. GIS/ risk data repositories are useful to prepare proposal, increasing the likelihood of funding	2
d. GIS/ risk data repositories are necessary to prepare proposal, increasing the likelihood of funding	3
Clarifications to the answers above (if needed)	
Examples of use of data in proposal development	
4.3. Informed proposals likelihood of funding	
a. Proposals are funded exclusively according to donor's decisions	0
b. Inclusion of data in the proposal does not increase its approval/ funding chances	1
c. Inclusion of data in the proposal somewaht increases its approval/ funding chances	2
d. Inclusion of data in the proposal significantly increases its approval/ funding chances	3
Clarifications to the answers above (if needed)	
Examples	
5. Sustainability	
5.1. Sustainability of the capacity development installed by the project	
a. My organization has no capacity development activities for GIS/ GIT	0

b. My organization has some capacity development activities for GIS/ GIT	1
c. My organization has an internal capacity development program for GIT/ GIS, but it does not completely cover our needs	2
d. My organization has a satisfactory internal capacity development program for GIT/ GIS	3
Clarifications to the answers above (if needed)	
Examples of capacity development activities/programme	
5.2. Access to knowledge platform/ Backstopping mechanism	
a. My organization has no access to knowledge platforms/ backstopping mechanisms for GIS/ GIT	0
b. My organization has some access to knowledge platforms/ backstopping mechanisms for GIS/ GIT	1
c. My organization has access to knowledge platforms/ backstopping mechanisms for GIS/ GIT, but they do not completely cover our needs	2
d. My organization has access to satisfactory knowledge platforms/ backstopping mechanisms for GIS/ GIT	3
Clarifications to the answers above (if needed)	
Examples of knowledge platform / backstopping mechanism	
5.3. Sufficient budgetary allocation or access to external funding to continue the application of technical solutions	
a. My organization doesn't have adequate resources to maintain a GIS/ GIT program or the requirements have not been assessed	0
b. My organization knows the budgetary needs for maintaining a GIS/ GIT program but resources are insufficient	1
c. My organization has identified funding sources for maintaining a GIS/ GIT program but they are insufficient	2
d. My organization has access to adequate resources to maintain a GIS/ GIT program	3
Clarifications to the answers above (if needed)	
Examples	
6. Gender and vulnerable groups (indigenous peoples/ forest dwellers/ subsistence farmers/ slum dwellers etc, following national classifications)	
6.1. Collection and application of gender/ vulnerable groups disaggregated data	
a. Data in my organization is not disaggregated by sex and it is not considered a priority.	0
b. Data in my organization is not disaggregated by gender/ vulnerable groups but there is awareness on its importance	1
c. Data is sometimes disaggregated by gender/ vulnerable groups in my organization but not systematically.	2
d. My organization requires to disaggregate data by gender/ vulnerable groups systematically.	3
Clarifications to the answers above (if needed)	
Examples	
6.2. Gender/ vulnerable groups issues have been incorporated into climate risk and DRR strategies in climate finance proposals	
a. Gender issues are not incorporated in plans and strategies in my organization.	0

b. Gender issues have somewhat been incorporated in my organization, but not systematically.	1
c. Gender issues along with other socially vulnerable groups have been take into consideration in planning and strategies in my organization.	2
d. Gender issues along with other socially vulnerable groups are fully incorporated into plans and strategies in my organization.	3
Clarifications to the answers above (if needed) Examples	

## Annex 7: Guidelines for semi-structured interviews

### **Guidelines for semi-structured interviews with technical officials of beneficiary organizations on GIT for disaster risk reduction/ climate change adaptation/ natural resource management**

- Please explain the role of your organization and other relevant actors/ partners/ stakeholders in in disaster risk reduction/ climate change adaptation/ natural resource management. Please cite which specific national targets/ policies/ strategies does your organization contribute to.  
To what extent is GIT considered/ used as a tool in disaster risk reduction/ climate change adaptation/ natural resource management?

*EQ1.2 The national regulatory framework clearly allocates responsibilities in disaster risk reduction/ climate change adaptation/ natural resource management and (if applicable) the use of GIT for the referred thematic areas*

*EQ 2.1 The project strategy is consistent and contributes to national priorities*
- Please explain how your organization plans to use/ uses GIT for disaster risk reduction/ climate change adaptation/ natural resource management.

*EQ1.3 GIT is being used as a tool in disaster risk reduction (preparedness, response), natural resource management*
- How do you assess the role of your organization in gender and human rights?

*EQ 4.1 The project strategy addresses gender issues*

*EQ 4.2 The project strategy addresses human rights issues*
- What external support has your organization received related to GIT for disaster risk reduction/ climate change adaptation/ natural resource management. Are there other on-going initiatives that you are aware of?

*A3.1: The project strategy incorporates lessons from other UNITAR/ other organizations interventions*

*A3.2: The project strategy has considered potential synergies and risks of overlapping activities*
- What would be necessary for your organization to effectively use GIT for disaster risk reduction/ climate change adaptation/ natural resource management?

*EQ 6.1: The results chain is logically linked and based on sound assumptions*

*EQ 6.3: The project strategy identifies all relevant risks and devises feasible, cost-effective mitigation strategies for those risks*
- What budgetary allocations and/or how much access does your organization have to external funding for the application of technical GIT solutions?

*EQ 5.1: Beneficiary organizations have sufficient budgetary allocation or access to external funding to continue the application of technical solutions, access to learning platform and technical backstopping*

7. How do you assess training retention and capacity development at your organization? What resources does your organization have for training/career development. To what extent is your organization's technical work force stable?

*EQ 5.1: Beneficiary organizations have sufficient budgetary allocation or access to external funding to continue the application of technical solutions, access to learning platform and technical backstopping*

**Guidelines for semi-structured interviews with technical officials of beneficiary organizations on climate change financing/ implementation of climate change related external projects**

1. Please explain the role of your organization and other relevant actors/ partners/ stakeholders in climate change financing/ implementation of climate change related external projects. Please cite which specific national targets/ policies/ strategies does your organization contribute to.

*EQ 7.1: The country has a designated authority/ focal point for international funds, e.g., GEF, GCF or AF*

2. How do you assess the role of your organization in gender and human rights?

*EQ 4.1 The project strategy addresses gender issues*

*EQ 4.2 The project strategy addresses human rights issues*

3. What external support has your organization received related to climate change financing/ implementation of climate change related external projects. Are there other on-going initiatives that you are aware of?

*A3.1: The project strategy incorporates lessons from other UNITAR/ other organizations interventions*

*A3.2: The project strategy has considered potential synergies and risks of overlapping activities*

4. What would be necessary for your organization to effectively access climate change financing or implement climate change related external projects?

*EQ 6.1: The results chain is logically linked and based in sound assumptions*

*EQ 6.3: The project strategy identifies all relevant risks and devises feasible, cost-effective mitigation strategies for those risks*

5. Does your organization plan to effectively access climate change financing or implement climate change related external projects?

*EQ 5.1: Beneficiary organizations have sufficient budgetary allocation or access to external funding to continue the application of technical solutions, access to learning platform and technical backstopping*

6. How do you assess training retention and capacity development at your organization? What resources does your organization have for training/career development. To what extent is your organization's technical work force stable?

*EQ 5.1: Beneficiary organizations have sufficient budgetary allocation or access to external funding to continue the application of technical solutions, access to learning platform and technical backstopping*

### Annex 8: Updated logframe including revisions and baseline measures as of September 2022.

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
ALIGNMENT	Alignment to sustainable development frameworks, including the SDGs and the Sendai Framework	<p>SDG 13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</p> <p><i>13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions</i></p>	(Baseline=0)	<i>N/A, only measured at the end of the project</i>	<i>N/A, only measured at the end of the project</i>	Evidence for each target country	Impact stories, interviews with training participant and high-level stakeholders	Analysis of this indicator should be qualitative. It should demonstrate evidence that the target countries have taken relevant action regarding policies, plans, or projects as a result of enhanced capacity

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
		Sendai Framework indicator:  G5. Number of countries that have accessible, understandable, usable and relevant disaster risk information and assessment available to the people at the national and local levels.	(Baseline=0)	<i>N/A, only measured at the end of the project</i>	<i>N/A, only measured at the end of the project</i>	Evidence in each target country	Impact stories, interviews with training participant and high-level stakeholders	Analysis of this indicator should be qualitative. It should demonstrate evidence that the target countries have taken relevant action regarding policies, plans, or projects as a result of enhanced capacity
IMPACT	Enhanced resilience to natural hazards and climate change in Africa and Asia & Pacific	<i>Improved disaster risk management</i>  i.1 Disaster risk management is improved through the systematic incorporation of geographical information in risk informed decision making (Bangladesh, Lao PDR, Uganda)	Measures from inception reports	<i>N/A, only measured at the end of the project</i>	200 per cent increase in scorecard results.  Measures per country.		Scorecard results  and  Survey and interviews	Assumption: average work time varies, but averages are being used
		<i>Improved quality of data and analyses</i>	Measures from	<i>N/A, only measured at the end</i>			200 per cent increase in scorecard results.	Scorecard results

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
		i.2 Accurate disaster assessments enable more efficient delivery of relief measures	inception reports	<i>of the project</i>	Measures per country. •		and Survey and interviews	Data is shared among ministries.
		<i>Increased efficiency in conducting analyses</i> i.3 Customized thematic applications enable stakeholders to work more efficiently in identifying climate and disaster related risks	Measures from inception reports	<i>N/A, only measured at the end of the project</i>	200 per cent increase in scorecard results.		Scorecard results and Survey and interviews	Assumption: average work time varies, but averages are being used
		<i>Government ministries have necessary tools and technical skills to address their priority concerns</i> i.4 Percentage of the needs assessed in the inception report that have been met	Measures from inception reports	<i>N/A, only measured at the end of the project</i>	40%	60%	Technical backstopping logs and interviews with key stakeholders  Project progress reports	It is understandable that not all priority areas mentioned in the inception report can be addressed
	Enhanced natural resource management	<i>Sustainable use of land resources</i>	Measures from	<i>N/A, only measured at the end</i>	200 per cent increase in scorecard results.		Scorecard results	

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
	for environmental conservation <i>(Bhutan)</i>	i.5 Improved effective monitoring of land and changes in ecosystem extent	inception reports	<i>of the project</i>	•		and  Survey and interviews	
Impact continued	Improved access to climate funds	i.6a Number of government-approved project proposals or concept notes that were developed with the support of the climate finance advisors (CFAs)	0	0	0	3  (1 per three Pacific countries)	Annual project update reports	Proposals that are put forward may not necessarily obtain funds
		i.6b No of those proposals that use GIT	0	0	0	3		
		i.7 Number of agencies that have been newly GCF accredited owed to CFA support	0	0	1	Cumulative: 3  (1 per three Pacific countries)	Annual project update reports	
OUTCOME 1	Strengthened knowledge, skills and awareness on the use of geospatial applications	1.a Percentage of trained technical participants	Male: 0%  Female: 0%	Male: 75%  Female: 75%	Male: 75%  Female: 75%	Male: 75%	Training records, including	Assumptions:  Selected participants successfully

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
	and tools for decision making	successfully meeting learning objectives <sup>86</sup>				Female: 75%	assessment scores	complete training
		1.b Percentage of trained technical stakeholders confirming application of knowledge and skills from the training	Male 0% Female: 0%	n/a	Male 60% Female: 60%  *Survey submitted at the end of year	Male 60% Female: 60%  *Survey submitted at the end of year	Surveys administered to training beneficiaries  Impact Stories	Training participants have had the opportunity to use skills  Awareness raising targets correct audiences. Senior government official attend events. Attendance lists are available and

<sup>86</sup> In this context, “successfully meeting learning objectives” means receiving a passing grade in the objective assessment.

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
		1.c Percentage of high-level stakeholders in member states and regional institutions surveyed agreeing or strongly agreeing to the benefit of geospatial applications solutions for decision making <sup>87</sup>	Male: 0%  Female: 0%	<i>N/A, measured until the second year.</i>	Male: 70%  Female: 70%	Male: 70%  Female: 70%	Surveys administered to stakeholders /  Interviews with select gov. focal points	willingness to participate in the survey.
	Demonstrated benefits of UNOSAT's trainings on reducing disaster and climate impact	1.d Number of "impact stories", published on UNOSAT's website, highlighting the impact of technical training on reducing disaster and climate impact	0	0	4 impact stories  <i>(By the end of the project period: one impact story per country)</i>	4 impact stories  <i>(By the end of the project period: one impact story per country)</i>	Impact Stories (Interviews with key informants)	Participants from trainings are willing to be interviewed and featured on UNOSAT's website
<b>OUTPUT 1.1</b>	In-country capacity development trainings	1.1.1 Number of In-Country Technical	0	8 trainings (introductory)	8 trainings (advanced) per year	8 trainings (ToT or	Project activity reports,	Assumptions:  Logistic support and

<sup>87</sup> This indicator can be captured either from awareness raising events that are organized by UNOSAT or by in-country focal points through interviews at specific demos with high-level stakeholders.

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
	delivered to technical officials	Trainings delivered per year		<i>1 training (face-to-face, distance learning, or blended) per country</i>	<i>1 training (face-to-face, distance learning, or blended) per country</i>	tool tutorials) per year  <i>1 training (face-to-face, distance learning, or blended) per country</i>	Training evaluation reports	required equipment are provided by target countries while cost of training is covered by the project  Country focal points are able to select participants respecting the gender ratio proposed
		1.1.2 Number of key national/regional institutions targeted as beneficiaries per training	0	Africa: 3  Asia-Pacific: 6	Africa: 3  Asia-Pacific: 6	Africa: 3  Asia-Pacific: 6		The number of participants remains unchanged, as the trainings

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
		1.1.3 Number of participants per training	0	16 per training  (8 M: 8 F)	16 per training  (8 M: 8 F)	16 per training  (8 M: 8 F)		seek to target the same audience to go more in-depth
OUTPUT 1.2	Awareness raising events delivered to stakeholders	1.2.1 Number of awareness raising events organized or attended by project management team per year	0	4 events	4 events per year  <i>1 per sub-regional hub (West Africa, East Africa, Pacific, Asia)</i>	4 events per year  <i>1 per sub-regional hub (West Africa, East Africa, Pacific, Asia)</i>		Awareness on the importance of geospatial applications across thematic areas is already quite high, thus these awareness raising events will act more as outreach events highlighting the project's results and potentially
		1.2.2 Number of key national/regional agencies or institutions at each event	0	Africa: 10	Africa: 10	Africa: 10		

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
				Asia-Pacific: 10	Asia-Pacific: 10	Asia-Pacific: 10		reaching out to new interested beneficiaries
		1.2.3 Number of attendees at each event	0	30 per event  (15 M: 15 F)	30 per event  (15 M: 15 F)	30 per event  (15 M: 15 F)		
		1.3.1 Number of articles published on the NORAD project	0	3 articles per year	3 articles per year	3 articles per year	Communications statistics	
		1.3.2 Total number of views on NORAD articles		100 views	100 views	100 views		
		1.3.3 Average number impressions on NORAD tweets		<i>N/A, measured until second year</i>	750 impressions	750 impressions		
		1.3.4 Engagement rate		<i>N/A, measured until second year</i>	2% average engagement strategy	2% average engagement strategy		
		1.3.5 Number of people reached on Facebook		<i>N/A, measured</i>				

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
		1.3.6 Average engagement on Facebook  1.3.7 Number of videos produced on the project		<i>until second year</i>  <i>N/A, measured until second year</i>  <i>N/A, measured until second year</i>	350 impressions on FB  20% engagement on FB	350 impressions on FB  20% engagement on FB  1 video by the end of the project period		
OUTCOME 2	Knowledge and skills are sustained, thereby enhancing evidence-based decision making amongst beneficiaries	2.a Percentage of trained technical stakeholder's "regularly" or "often" utilizing geospatial information technology in their respective home institutions/organizations <sup>88</sup>	(Baseline: Training and capacity needs assessments)	Male: 60 %  Female: 60%	Male: 60 %  Female: 60%	Male: 60 %  Female: 60%	Surveys administered to stakeholders that benefitted from technical backstopping	Support from senior government officials to use acquired skills in the day-by-day work.

<sup>88</sup> This indicator is different from 1.b, which tracks application of knowledge from capacity development trainings, whereas 2.a. measures the frequency of the use of GIT, whether through their own application or utilization of backstopping products.

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
	Demonstrated benefits of UNOSAT's services on reducing disaster and climate impact	2.b Number of "impact stories", published on UNOSAT's website, highlighting the impact of technical backstopping activities and geospatial solutions and tools have had on partner agencies' and member states' efforts	0	0	Africa: 1 impact story Asia: 1 Pacific: 1 impact story	Africa: 1 impact story Asia: 1 Pacific: 1 impact story	Impact Stories (Interviews with key informants)	Sufficient requests are submitted to UNOSAT on a yearly basis from beneficiary organizations
OUTPUT 2.1	Thematic geospatial platforms implemented to support decision making	2.1.1 Number of geospatial platforms or solutions implemented	0	<i>N/A, measured until second year</i>	8 in total (1 per target country)	Cumulative 8 in total (1 per target country)		8 geospatial platforms developed (1 for each target country). Year 2: implementation of the beta version for user testing
		2.1.2 Number of views to the geospatial platforms	0	<i>N/A, measured until second year</i>	100 views	100 views	Web-platform statistics	Year 3: final solutions (geospatial platforms) handed over.
		2.1.3 Number of visitors to the geospatial platforms			50 visitors	50 visitors		
OUTPUT 2.2	Ad-hoc technical backstopping provided	2.2.1 Number of ad-hoc technical backstopping provided to	0	16 in total	Cumulative	Cumulative	Project activity reports,	Technical backstopping activities act as

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
	to stakeholders in the two regions	national/regional key stakeholders per year		(2 per target country)	32 in total  (4 per target country)	64 in total  (8 per target country)	users feedback reports	on-the-job application of skills through ad-hoc technical assistance.  N. of technical backstopping listed are cumulative Year1 to Year 3
<i>OUTPUT 2.3</i>	A knowledge hub is created, acting as the portal for training resources and the Community of Practice	2.3.1 Knowledge hub and community of practice are established for cross regional collaboration	0	1 knowledge platform established			Project activity reports, users feedback reports, website statistics on the knowledge hub	Training participants are willing to join and participate actively in the community of practice
<i>OUTCOME 3</i>	Strengthened knowledge and skills on accessing climate finance	3.a Percentage of national stakeholders in the partner countries who feel better informed ("very informed" in surveys)	Male: 0%  Female: 0%	Male: 50%  Female: 50%	Male: 60%  Female: 60%	Male: 60%  Female: 60%	Surveys with select government focal points	There will be climate finance advisors in the Pacific region to assist stakeholders in

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
		about accessing climate funds	Update baseline with Endline survey results from CommonSensing project					applying for climate funds
		3.b Number of training workshops on development of climate proposals	0	0	3 (1 per three Pacific countries)	Cumulative: 6 (2 per three Pacific countries)	Workshop reports	
		3.c. Production of technical research papers (solar and use of satellite data & innovative financing mechanisms targeted at private sector investment)	0	0	1	Cumulative 2	Technical research papers	
		3.d. Learning exchange among participating countries	0	0	1	Cumulative 2	Learning exchange reports	

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
						(Pacific/ Global)		
<i>OUTPUT 3.1</i>	Stakeholders in the Pacific are provided technical support in applying for climate funds	3.1.1 Number of proposals prepared with the support of climate finance advisors	0	1 proposal	4 proposals  <i>(in the Pacific region)</i>	Cumulative  6 proposals  <i>(2 per Pacific region<sup>89</sup>)</i>	Project documents collected by climate finance advisors  climate finance technical backstopping logs	This climate finance work package is building off of UNOSAT's extensive experience in the Pacific. UNOSAT hopes to continue to leverage the presence of climate finance advisors to support member states in the region.
OUTCOME 4	Improved efforts toward attaining gender equity	4.a. All female participants achieve equal or more than their male counterparts in regard to the learning objectives to	Average in pre-assessment (to be collected)	Yes/No  and average by group	Yes/No  and average by group	Yes/No  and average by group	Project activity reports and training evaluation reports	Some participants may have more exposure to GIT than others

<sup>89</sup> One of the two proposals will use tools produced by the NORAD project, while the second will leverage the pipeline of proposals identified by the government.

Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
		ensure no one is left behind						
		4b Increase in knowledge on how to collect and apply gender disaggregated data		<i>N/A, measured until second year</i>	Yes/No	Yes/No	Surveys and interviews with stakeholders	Data collection by ministries cannot be controlled by the project, so this may be difficult to attain
		4.e Climate funding proposals address differential exposure, vulnerability, and impacts of hydrometeorological hazards on men, women, and vulnerable groups		<i>N/A, measured until second year</i>	Yes/No	Yes/No	Climate finance reports	
<b>OUTPUT 4.1</b>	Gender is mainstreamed in the project's activities	4.1.1 Gender responsive approaches have been taken to ensure equity of the project's activities		Yes/No	Yes/No	Yes/No	Project activity reports and training evaluation reports	Although steps may be taken to balance the ratio of male to female participants, it may still be difficult to achieve 50:50.
<ul style="list-style-type: none"> <li>WP100: Overall project management and coordination.</li> </ul>								

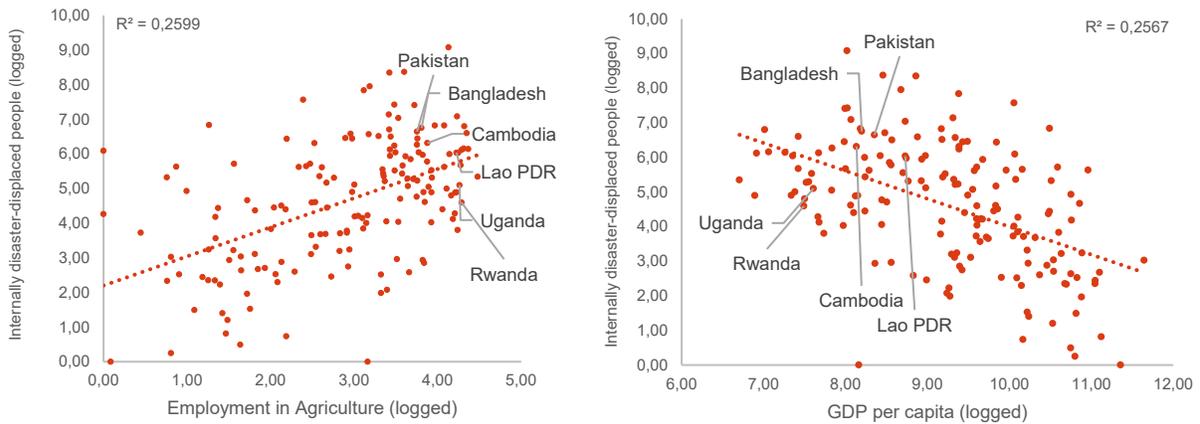
Level	Expected result	Indicators	Baseline Y0	Target Y1	Target Y2	Final target Y3	Data source of verification	Assumptions and other comments
Activities	<ul style="list-style-type: none"> <li>• WP200: Design and Implementation of regional/national training &amp; capacity development/ awareness raising events in the use of geospatial information for effective disaster risk reduction in target countries in Asia &amp; Pacific and Africa.</li> <li>• WP300: Implementation of sustainability mechanisms through the knowledge platform, community of practice, and technical backstopping (on the job training).</li> <li>• WP400: Climate finance advisor</li> </ul>							

## Annex 9: Counterfactual selection

### Disaster risk reduction

For the countries intending to improve their capacities in DRR (Bangladesh, Lao PDR, and Uganda), the INFORM risk index for physical vulnerability to floods is used. In these three countries, floods are the most important and recurrent disasters affecting most people and causing more damage. We select a peer/counterfactual country in the same region: Southeast Asia, South Asia, and East Africa for Lao PDR, Bangladesh, and Uganda, respectively, with the closest physical vulnerability to floods, score and have similar values for national income per capita and employment in agriculture. These two variables explain up to 50 per cent of the variance in disaster impact variables (relative number of people displaced due to disasters and relative number of affected people) and correlate with key drivers of vulnerability. The relative positions of the treatment and proposed counterfactuals on those variables (physical vulnerability to floods, per capita income, and employment in agriculture) are exposed in table 1 and figure 1.

**Figure 1. Relationship between the economic importance of agriculture and per capita income and impact of natural disasters<sup>90</sup>**



<sup>90</sup> Data from (International Labour Organization, 2021) and (The Internal Displacement Monitoring Centre, 2022)

**Table 1. Key disaster impact indicators for treatment and counterfactual countries. 2011-2021 annual means for people affected by disasters and disaster damage.**

Country	Inform physical exposure to floods index <sup>91</sup>	Mean annual people affected by floods (per 100,000 people) <sup>92</sup>	Mean annual damages (proportion of GDP%) <sup>93</sup>	Per capita income (current US\$) <sup>94</sup> 2020	Employment in agriculture (% of total employment) <sup>95</sup>
Lao PDR	9.1	2,451	0.110%	\$2,629.7	61%
Cambodia	9.5	2,812	0.740%	\$1,543.7	35%
Bangladesh	10.0	1,871	0.050%	\$1,961.6	38%
Pakistan	8.8	855	0.340%	\$1,188.9	37%
Uganda	5.1	81	0.002%	\$822.0	72%
Rwanda	4.4	49	0.050%	\$797.9	62%

### Natural resource management

To select counterfactuals for the two countries intending to improve capacity in natural resource management, we use Yale's University Environmental Performance Index (EPI). Using 32 performance indicators across 11 issue categories, the EPI ranks 180 countries on environmental health and ecosystem vitality. Ecosystem vitality reflects the status of ecosystems and flow services<sup>96</sup>. As preventing ecosystem degradation and loss of ecosystem services is the overarching goal of the two target countries, we select the two countries in their respective regions with the most similar EPI score, similar ecological characteristics (main ecosystems), similar achievement of biodiversity mainstreaming objectives (SDG indicator 15.9.1), and similar environmental challenges. To measure the achievement of biodiversity mainstreaming, we use Oxford's SDG tracker for SDG indicator 15.9.1: Ecosystem integration and biodiversity in planning<sup>97</sup>. This SDG is linked to the CBD's Aichi Biodiversity Targets and the post-2020 biodiversity targets framework to be released by the end of 2022. The Convention for Biological Diversity (CBD) classifies achievements for this target in five discrete categories: no national target, moving away from the target, on track to achieve, no progress, insufficient progress, and on track to exceed. For ecological similarities, we use the WWF ecoregions. The results are shown in Table 2 and figure 2. Figure 4 shows the correlation between the Ecosystem Vitality score and two socioeconomic variables, similar for target and counterfactual countries.

<sup>91</sup> (INFORM, 2022)

<sup>92</sup> (Guha-Sapir, Below, & Hoyois, 2022)

<sup>93</sup> Own calculation with data from (Guha-Sapir, Below, & Hoyois, 2022)

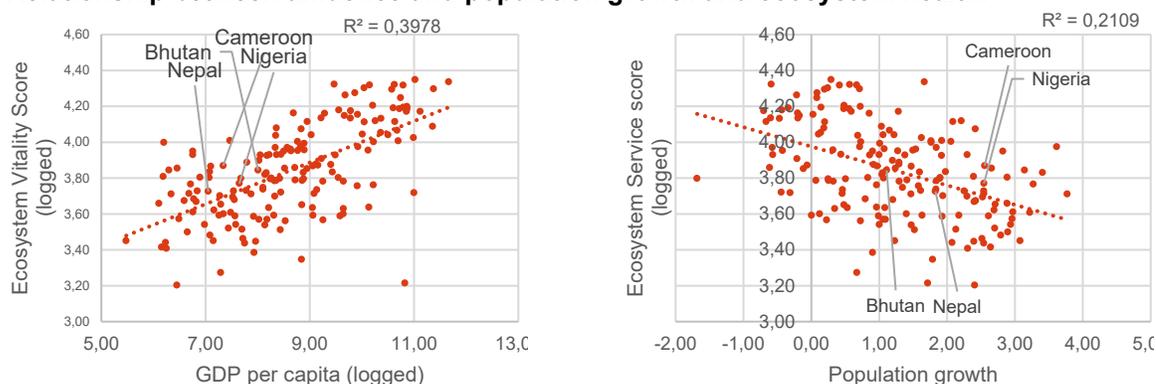
<sup>94</sup> (World Bank, 2022)

<sup>95</sup> (International Labour Organization, 2022)

<sup>96</sup> <https://epi.yale.edu/> (Wolf, Emerson, Esty, de Sherbinin, & Wendling, 2022)

<sup>97</sup> <https://sdg-tracker.org/> (Ritchie, Roser, Mispy, & Ortiz-Ospina, 2018)

**Figure 2. Relationship between affluence and population growth and ecosystem health.**



**Table 2. Key natural resource management indicators for treatment and counterfactual countries. Biomes**

Country	SDG 15.9.1	EPI Ecosystem Vitality Score	Population growth (annual%) <sup>98</sup>	GDP per capita (current US\$) 2020 <sup>99</sup>	Dominant biome in area of interest <sup>100</sup>
Bhutan	National target reflecting ABT2 exists, and progress is there, but at as insufficient rate	45.7	0.11	3,000.78	Temperate forests
Nepal	National target reflecting ABT2 exists, and progress is there, but at as insufficient rate	40.5	0.18	1,155.14	Temperate forests
Nigeria	National target reflecting ABT2 exists, and progress is on track to achieve it	42.4	0.25	2,097.09	Mangroves
Cameroon	National target reflecting ABT2 exists, and progress is there, but at as insufficient rate	46.9	0.26	1,537.1	Mangroves

<sup>98</sup> (United Nations Population Division, 2019)

<sup>99</sup> (World Bank, 2022)

<sup>100</sup> (Olson, et al., 2001)



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