General Information

Fund	MPTF_00300: Infrastructure Resilience Accelerator Fund (IRAF)
FMP Record	MPTF_00300_00006: National surveys for infrastructure resilience geospatial databases to support exposure and hazard modelling for Kiribati, Tonga and Vanuatu
MPTFO Project Id	
Start Date	
End Date	

Applicants

Status	Contact Type	Name	e-mail	Position	Telephone
Active: 11-Jun-2023 6:14:00 PM	Project Manager	Eileen Turare	eileent@spc.int		

Signatories

Signature Process	Role	Name of Organization	Name	User Email
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Manual	Signatory	Director National Disaster Risk Management Office, Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications. Nuku'alofa, Tonga.	Mr. Mafua-'i-Vai'utukakau Maka	vaiutukakaumaka@gmail.com
Manual	Signatory	Director General Ministry of Internal Affairs Port Vila, Vanuatu.	Mr. Leith Veremaito	lveremaito@vanuatu.gov.vu
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Description

The proposal builds on and deepens ongoing collaboration between Kiribati, Tonga, Vanuatu and the regional implementing agency : The Secretariat of the Pacific Community (SPC) in the space of risk, exposure and hazard modelling for infrastructure, buildings and other economic assets.

The proposal includes five main components:

1. National surveys of asset data using field survey forms specially designed by SPC in consultation with the countries to collect asset infrastructure and settlements data needed for exposure and hazard modelling. This component will require adequate capacity and skills building. This will include training to conduct the survey, participatory mapping with communities of past hazard affected areas, rapid appraisal of asset and building construction types, materials and condition as well as the field data collection applications.
2. Collation, validation and cleaning of data to later be uploaded to a geodatabase. This step will require capacity and skills building to validate, collate, clean and upload the data to the geodatabase.
3. Establishment of local geonode databases, at the country level oR a single regional cloud based geodatabase to support backups during internet and power losses. This will require technical training with local ICT teams as well as GIS training for technical teams to be able to access and make use of the GIS data.
4. Exposure and hazard modelling based on datasets collected through collaborative surveys with local Government counterparts and SPC. This component also includes hazard models generated through SPC as well as participatory mapping. These data inputs can be used in generating risk and exposure models to assess potential loss and damage around a range of different natural hazard scenarios and average recurrence intervals as well as hazard models based on specific events (e.g. Tropical Cyclone Judy and Kevin or Tonga Hunga Ha'apai volcanic eruption).
5. Dissemination of learnings and operationalisation of outputs of datasets including Multihazard Early Warning System (MHEWS) mechanisms: participatory mapping of hazard areas, hazard models for sea level rise, storm surge inundation, maps of cyclone vulnerability based on topography, remote sensing for droughts. Many of these maps and knowledge products should be turned into knowledge products including maps to be disseminated to communities (community town, village halls, billboards etc...).

These five components build on SPC's track record in delivering similar outputs through the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), Pacific Risk Tool for Resilience (PARTneR), The Building Safety and Resilience in the Pacific (BSRP), Pacific Resilience Program (PREP) and other projects. SPC has a long history of building professional working relationships through our member countries in the Pacific region and a track record of delivering outcomes in the space of infrastructure, settlement, agriculture and utility resilience through the examples provided above and our programs more widely.

These five components were decided based on consultations with each of the countries and their immediate urgent needs as well as their long-term strategic aspirations. These components also feed into wider national policies and reporting requirements towards UNDRR, UNCCD and align with the Sendai Framework, SAMOA Pathway and a series of relevant Sustainable Development Goals. These alignments will be outlined in greater depth through the submission.

A core part of this proposal is the capacity building, upskilling and the empowerment of Indigenous groups, gender equality and social inclusion elements. This proposal from SPC ensures that the leadership team for the proposal itself, the leadership of the implementing team, and the leadership of the Government agencies has been focused on local and Indigenous Pacific Islander practitioners in this space. The project also includes indicators for women's participation in the training and upskilling in areas relevant to the technical skills, science to policy and wider leadership in Disaster Risk Management (DRM). As a result, this proposal from SPC has an intrinsic value of ensuring a sustainable long-term uptake of the skills and development that will stay in the region rather than leading to skills and brain drain. It will also support a future generation of women in the data and policy for disaster risk reduction and infrastructure resilience space.

Universal Markers	**Gender Equality Marker**	**Risk**		
	• GEM2 - GEWE is a significant objective of the Key Activity's overall intent	• Low Risk		
Fund Specific Markers	**THEMATIC FOCUS**	**Themes** • POLICIES, REGULATORY FRAMEWORKS • STRENGTHENING DATA FOR DECISION MAKING INCLUDING IMPACT BASED EARLY WARNING SYSTEM		
	GEOGRAPHICAL WINDOWS	**Geographical Funding windows** • Small Island Developing States (IRIS)		
	SECTORAL FOCUS	**PRIMARY SECTORS IN FOCUS** • Telecommunication (including MHEWS) • Power/Energy • Transport • Water		
	ELIGIBILITY TO RECEIVE IRAF FUNDING	**ELIGIBILITY CRITERIA - SELECT RELEVANT CRITERIA APPLYING TO YOUR ORGANIZATION -ATTENTION UN ORGANIZATIONS : ONLY SELECT n/a)** • LEGAL REGISTRATION: Your organization has a current and valid legal registration document, or evidence that demonstrates that such registration is possible. • Prevention of Sexual Exploitation, Harassment and Abuse (PSEAH): Your organization does not yet have such policy and/or established procedures, or is in the process of developing them, and may require support to establish these.		
	HAZARD SCOPE	**Hazards** • Not applicable (n/a)		
Geographical Scope	**Geographical Scope**	**Name of the Region**	**Region(s)**	**Country**
	• Regional	• Pacific Island Countries and Territories (PICTs including Kiribati, Tonga, Vanuatu)	• Oceania	

Participating Organizations and their Implementing Partners	**UN Participating Organizations**	**Government/ Multilateral/ NGO/ Other**	**New Entities**	**Implementing Partners**
			• SPC	Secretariat of the Pacific Community (SPC) 1. Office of te Beritítenti (Office of the President) Kiribati. 2. National Emergency Management Office (NEMO) Tonga 3. Department of Urban Affairs and Planning (DUAP) Vanuatu

Programme and Project Cost	**Participating Organization**	**Amount (in USD)**	**Comments**
	Budget Requested		
	SPC	$750,000.00	
	Total Budget Requested	**$750,000.00**	
	Tranches		

Tranche 1		Tranche 2		Tranche 3	
SPC (20%) **Total:**	$150,000.00 **$150,000.00**	SPC (50%) **Total:**	$375,000.00 **$375,000.00**	SPC (30%) **Total:**	$225,000.00 **$225,000.00**

	Other Sources (Parallel Funding)		
	SPC	$270,000.00	In-kind human resources. This refers to the complementary outputs from other relevant projects and their associated costs.
	Total	**$1,020,000.00**	

Thematic Keywords	• Early warning systems • Nature Based Solutions • Innovation	
Programme Duration	**Anticipated Start Date**	01-Nov-2024
	Duration (In months)	24
	Anticipated End Date	01-Nov-2026

Narratives

Title	Text

Qualification of the Participating Organization: Mission & mandate	**1. Qualification and references of the Implementing Organization** **Mission / Mandate:** **Introduce your organization general mandate and/or mission statement** **Mission** To progress all Pacific peoples' rights and well-being through science and knowledge, guided by our deep understanding of Blue Pacific contexts and cultures. **Vision** We are voyaging towards a resilient Pacific. A region of peace, harmony and prosperity, where all our people and communities live safe, free, healthy sustainable and productive lives. As wayfinders, our paths are intertwined with the culture, environment and resources of our Blue Pacific Continent. We recognise our role as stewards of our Pacific Ocean and are responding with urgent collective action to the threat of climate change. **About** Our unique organisation covers more than 20 sectors. We are renowned for knowledge and innovation in such areas as fisheries science, public health surveillance, geoscience and conservation of plant genetic resources for food security. Further info: https://www.spc.int/about-us
Qualification of the Participating Organization: Organization geographical coverage	**SPC member countries where SPC has been working and supporting resilient and inclusive infrastructure systems development for more than 5 years.** The Cook Islands, Fiji, Kiribati, The Northern Marianna Islands, New Caledonia, Palau, Papua New Guinea , the Pitcairn Islands, French Polynesia, Tokelau, Tonga, Tuvalu, Niue, the Marshall Islands, the Federated States of Micronesia, Wallis and Futuna, Nauru, The Solomon Islands, American Samoa, Vanuatu and Samoa. Specific to this proposal, we have been working in a relevant infrastructure resilience space with Kiribati, Tonga and Vanuatu which are the proposed countries for this project.
Qualification of the Participating Organization: Thematic expertise relevant to the project	**Thematic expertise relevant to the project:** ***i) Summarize why your organization is applying to be an Implementing partner with the CDRI IRAF and the funding window for Small Islands States*** We are applying for SPC to be an implementing partner with the CDRI IRAF for the following five reasons 1. SPC is the primary science and technical advisory body for the Pacific region 2. SPC has a demonstrated track record in working collaboratively with Pacific Island Countries and Territories (PICTs) in providing scientific and technical advice relevant to the objectives of IRIS including supporting national priorities and objectives for resilient infrastructure. 3. SPC proposes for Kiribati, Tonga, Vanuatu which have been ranked as (18, 2 and 1) most climate vulnerable countries in the world, respectively (DFAT, 2021)). 4. For this project, we intend to build on the recent (post-COVID) work, SPC has done on supporting Vanuatu's national priorities and objectives for resilient infrastructure. We also intend to build upon the recent post covid work in Tonga after the Tonga Hunga Ha'apai volcanic eruption. Furthermore, we build on our ongoing collaborations with Kiribati through our work on coastal risk analysis. 5. SPC has demonstrated a track record in exposure modelling including the steps of asset data collection, hazard data generation and the overlaying of the two datasets to generate models of exposure and risk. ***ii) Provide a brief overview of your organization's experience in working in resilient and inclusive infrastructure system development. Describe your track record, technical expertise and experience relevant to the project under submission including when relevant in Small Island Developing States*** SPC has relevant experience as shown through the following five examples: 1. Pacific: Catastrophe Risk Assessment and Financing Initiative (PCRAFI I and II) projects https://www.gfdrr.org/en/pacific-catastrophe-risk-assessment-and-financing-initiative-phase-3 supporting national governments in five countries: Vanuatu, Tonga, Solomon Islands, Cook Islands and Samoa in the collection of asset datasets through surveys that can be used as inputs into exposure and risk modelling. 2. PARTneR I and II projects: the Pacific Risk Tool for Resilience (PARTneR) http://star.gsd.spc.int/meeting_docs/presentations/Session7-3_PARTneRPacificRiskTool4Resilience_WilliamsS.pdf for the generation of hazard datasets and tools to estimate risk and average annual loss figures under various natural hazard scenarios. 3. Pacific Resilience Program (PREP) projects https://gem.spc.int/projects/prep for assessment of coastal bathymetry using Light and Detection Ranging (LiDAR) technologies to support the generation of coastal hazard models. 4. The Building Safety and Resilience in the Pacific project (BSRP) https://bsrp.gsd.spc.int/ . The Building Safety and Resilience in the Pacific project (BSRP) is a €19.36 million project supported by the European Union and implemented by the Pacific Community (SPC). This project directly responds to the African Caribbean & Pacific (ACP) group of states and the European Union's (EU) priorities identified under the 2009 European Union strategy for Supporting Disaster Risk Reduction. BSRP has worked with National Governments across 14 Pacific Island Countries and Timor Leste as well as communities, civil society organisations, utility companies and the private sector. 5. Digital Earth Pacific (DEP) https://www.spc.int/DigitalEarthPacific which supports PICTs including Vanuatu to make use of remote sensing and satellite data to monitor infrastructure assets and natural hazard impacts as well as other useful ancillary data.

Qualification of the Participating Organization: Human Resources	**Presence and number of employees with relevant expertise in resilient infrastructure system development:** *Indicate how many technical experts, men and women, are currently employed by your organization and what is their respective field of expertise in relation to the project under submission.* SPC has more than 600+ staff across the Pacific including offices in Suva, Fiji and Noumea, New Caledonia, Tonga, Vanuatu, Federated States of Micronesia and others. In terms of the most relevant divisions of SPC, this proposal draws on expertise from the Disaster and Community Resilience Program (DCRP) and the Geoscience Energy and Maritime (GEM) Divisions (100+ people). More specifically, the proposal draws on the expertise of 12 staff members from the different teams as mentioned: 1. Litea Biukoto – Program Manager, DRM, exposure, risk, data management, GIS, Pacific frameworks, Loss and Damage 2. Sachindra Singh - Software engineer and digital architect, programming, EO, geodatabase. 3. Eileen Turare - Project Manager, Disaster Risk Management (DRM), exposure, risk, geology. 4. Judith Giblin – Coastal Risk Analyst, oceanography, data analytics, GIS, exposure and hazards, 5. Thompson Auri – Survey Team leader, data collection, GPS, GNSS, RTK, drone pilot, GIS, mapping. 6. Orisi Naivalurua – Research and technical officer, GIS, project management, survey data collection. 7. Kaliopate Tavola – GIS developer, analysis, validation, data analytics, survey data collection, mapper. 8. Merelita Lewabete – GIS developer, analysis, validation, survey data collection, mapper. 9. Nicholas Metherall – Earth observation and technical data collection officer, hydrology, forestry, GIS. 10. Navneet Lal – Communications officer, videography, photography, graphic design, communications. 11. Amelia Ledua – Data management officer, information systems, ICT and records management.
Qualification of the Participating Organization: Portfolio analysis	**Portfolio analysis** *Indicate what is the current size of your organization portfolio (USD amount) and the number of programs managed over the last 5 years.* SPC has almost close to 200 active projects on an annual basis. The table provided highlights the budget and expenditure for the portfolio. | **USD**						| |---|---|---|---|---|---|---| | **Budget** | **2018** | **2019** | **2020** | **2021** | **2022** | **Total** | | Core | 17,909,889 | 17,909,889 | 17,799,667 | 17,964,111 | 17,704,111 | 89,287,667 | | Programme | 9,217,889 | 9,651,778 | 9,626,556 | 12,866,778 | 20,262,778 | 61,625,778 | | Project | 63,220,889 | 61,566,778 | 58,109,556 | 60,670,333 | 74,016,333 | 317,583,889 | | **Total** | **90,348,667** | **89,128,444** | **85,535,778** | **91,501,222** | **111,983,222** | **468,497,333** | | | | | | | | | | **Expenditure** | | | | | | | | Core | 15,298,667 | 13,857,458 | 14,842,357 | 15,656,520 | 17,366,872 | 77,021,873 | | Project/Prog | 71,919,072 | 67,262,687 | 54,854,916 | 55,305,031 | 81,212,292 | 330,553,998 | | **Total** | **87,217,739** | **81,120,144** | **69,697,272** | **70,961,551** | **98,579,164** | **407,575,871** | Budget and expenditure in USD across SPC portfolio

Project justification: Needs assessment and Rationale (Word limit 1000)	**Problem gap analysis including vulnerability analysis and landscape analysis and baseline** **Regional gap analysis:** **Based on SPC's experience working in the region with Kiribati, Tonga and Vanuatu, five common technical gaps have been identified :** 1. Infrastructure and settlement asset data to support decision makers at the local to national levels 2. Hazard data to support decision makers from the local to national levels 3. ICT database infrastructure and capacity to host geodatabases and visualisations to support decision and policy makers in these countries. 4. Support for more staff and particularly women in the space of disaster risk management data for resilient infrastructure and settlements. 5. Skills and capacity in GIS for mapping out assets, infrastructure, settlements and hazards. This includes staffing resourcing dedicated to this technical space. **In addition three policy areas were also identified as gaps:** 1. Science-to-policy interface gaps including means of bridging the data on assets to policy decision makers. It is difficult to know the updated near real time asset construction type, materials and condition for assets. This makes it difficult for decision makers to prioritise projects to the most vulnerable or critical infrastructure in need of maintenance or replacement. 2. Furthermore clear understanding of hazards data to be communicated to policy makers. Most hazard data is communicated in vague and general terms. This project seeks instead to provide more concrete outputs including geospatial maps that highlight the number of buildings and critical infrastructure assets within hazard areas. This will better support policies and programs to respond adequately. 3. Loss and damage figures. There are not yet sufficient exposure and hazard models to generate annual average loss, replacement costs as inputs into total loss and damage. This reduces the ability of Pacific Island Countries and Territories (PICTs) including Kiribati, Tonga and Vanuatu to advocate for loss and damage. **Climate vulnerability analyses at the national levels:** **Vanuatu** In the past SPC has completed detailed biophysical analyses of climate risks in particular areas of Vanuatu including the collection of asset data and the modelling of various hazard events. In particular, SPC has completed a range of tropical cyclone hazard / windspeed models and storm surges for Vanuatu. Overall, SPC is well placed to build on this demonstrated track record of past projects to support the exposure modelling and hazard modelling of critical infrastructure for Vanuatu. Vanuatu has a total land area of 12,281 km2 and a maximum elevation of 1,877m above sea level (PACCSAP, 2020). Based on past climate change risk reports and vulnerability analysis from UNESCAP, Vanuatu has been ranked globally as the country most vulnerable to natural disasters (2020). The average annual loss of natural disasters in Vanuatu is approximately USD 166.96 million making up 20.67% of Vanuatu's total GDP of USD 807.60 million. Further reports have shed light on the sea level rise, cyclone, and storm surge risks faced by Vanuatu (IISD, 2023). The recent events of 2023 highlight the urgency of progressing work on resilient infrastructure in Vanuatu. For example, the impacts of Tropical Cyclones Kevin and Judy and 6.5 magnitude earthquake in March 2023 impacted over 80% of the population of Vanuatu (IISD, 2023), much of which located around the foreshore/coastal areas. These recent events and more over the past decades have again highlighted the severe climate risk and vulnerability of Vanuatu. Between 1990 and 1999, Vanuatu experienced more cyclones than any other Pacific country, at an average of 2.6 cyclones annually (Climate Change Knowledge Portal, 2023). Average annual loss due to natural disasters has reached 20.67% of total GDP for Vanuatu (PACCSAP, 2020). **Tonga** In the past SPC has completed detailed biophysical analyses of climate risks in particular areas of Tonga including the collection of asset data and the modelling of various hazard events. For Tonga, SPC has completed a range of tropical cyclone hazard / windspeed models including for TC Harold. Overall, SPC is well placed to build on this demonstrated track record of past projects to support the exposure modelling and hazard modelling of critical infrastructure for Tonga. Tonga has a total landmass of 749 km2 with a maximum elevation of 1033 m in the smaller island group of Ha'apai (PACCSAP, 2020). Based on the same climate vulnerability, Tonga has been ranked as the second most vulnerable country in the world. With the recent impacts of the Tonga Hunga Ha'apai volcanic eruption at the beginning of 2022. The event had ripple effects resulting tsunami and storm surge events. Many of the coastal and low-lying communities in Tonga have been particularly vulnerable. The average elevation in Tonga is relatively low in the most populated areas including the main island of Tongatapu which has a maximum elevation of 70 metres above sea level. As a result, Tonga is particularly exposed to storm surges and tsunamis. Cyclones have also had severe impacts on Tonga historically with Cyclone Gita knocking down the Parliamentary Building in February 2018. Tonga also has a high likelihood of earthquake events given the location in one of the highest density areas of underwater volcanoes. Average annual loss due to natural disasters has reached 18.20% of total GDP for Tonga (PACCSAP, 2020). **Kiribati** Kiribati is the 18th most vulnerable country according to the assessment (PACCSAP, 2020). The landscape is made up of 811 km2 and is low-lying with a highest elevation of 81 metres (PACCSAP, 2020). According to WHO, Kiribati is especially vulnerable to sea level rise putting coastal populations under increasing risk of storm surge and coastal flooding hazards. Under high emissions scenarios, these threats are expected to be intensified even further (WHO, 2017). Sea level rise hazard maps could serve Kiribati in better modelling the potential future loss and damage for infrastructure and buildings (World Bank, 2022). Average annual loss due to natural disasters has reached 3.77% of total GDP for Kiribati (PACCSAP, 2020). **Opportunities and potential synergies and complementarity with other ongoing activities** In implementing this project, there are a range projects with synergies and complementarity to the proposed initiative. For example, while the PCRAFI II project sought to support capacity building in the collection of asset datasets including infrastructure and buildings, the PARTneR II project generates hazard datasets. By building on these projects and the work of this proposal in collecting more inputs into asset and hazard datasets, we are able to generate more comprehensive exposure and hazard modelling of infrastructure and buildings in Kiribati, Tonga and Vanuatu. **Reflecting on lessons learnt and good practices from other experiences in the region or globally** In terms of lessons learnt and good practices, we have already been able to learn from the PCRAFI II project evaluations and lessons learnt workshops conducted in both Tonga and Vanuatu and at the regional level. In terms of these lessons, some of the high-level examples include the following: • We found that surveys can be effectively scaled-up across different parts of these PICTs through 'training of trainers' capacity building delivered with SPC for local government staff who can then later roll out the surveys more widely. • Any surveys conducted in PICTs should be led through local government coordinating agencies in conjunction with relevant local district and or village units. • The project will also build towards gender indicators including numbers of women involved in the capacity building and training elements of the program. This will contribute towards the longer term indirect outcome of supporting women in the space of data for disaster risk reduction. • Besides these lessons, the team have also been able to learn more regional and global lessons through workshops with the World Bank on exposure modelling. This has enabled the team to conduct detailed 'checks and balances' against national datasets including census and local unit costs of construction to ensure that the asset datasets and exposure for infrastructure and buildings are validated and made as accurate as possible. This further allows for more accurate modelling of exposure, hazards and the economic scale of loss and damage.
Project Goal (Word limit 100)	Enhance government capacities to apply risk exposure data to inform decision making on resilient infrastructure development, operations, and maintenance.

Project Objectives (Word limit 100)	By the end of the project countries will have: 1. Through increased knowledge, capacity and resources be better equipped to increase the resilience and inclusivity of their existing critical infrastructure systems, to also contribute to and inform future critical infrastructure systems. 2. Enhance technical expertise and skills of local stakeholders (government, academia, and practitioners) in data collection, data analysis and visualization, and application of risk data to disaster resilient infrastructure. 3. Enhance Multihazard Early Warning Systems and response mechanisms for critical infrastructure and settlements through exploring appropriate risk models.
Project Key deliverables (Word limit 250)	• (1) An Inception Report covering Kiribati, Tonga and Vanuatu. • (2) Report of findings of analytical mapping of the legal frameworks, policies and strategies conducive for the integration of both disaster and climate risk in different infrastructure sectors(as identified in the Inception meetings) for Kiribati, Tonga and Vanuatu. • (3) Training of local stakeholders in Kiribati, Tonga and Vanuatu on field data collection applications and storage. • (4) Conduct field surveys of infrastructure, buildings, settlements and other economic assets in Kiribati, Tonga and Vanuatu. • (5) Training on information products and data visualization consolidated and disseminated to local stakeholder. • (6) A mapping and assessment of resources and tools for disaster and climate risks including an analysis of the communication and knowledge management systems to allow science to succesfully inform decisions or policy; • (7) A capacity building plan targeting critical sectors that contribute to building resilient infrastructure in the application of science to policy development and programming. that includes the Communication and Knowledge Management training as a tool (to inform the science to policy interface) • (9) Final Report on MHEWS Assessment in Kiribati, Tonga and Vanuatu • (10) Final report on technical outputs of exposure and hazard model to government. • (11) Evaluation report. (may form part of item 10 - tbc at the inception with countries)
Project Approach and Methodology (Word limit 1000)	Not applicable under the first call for Proposals

Project Expected Impacts (Word limit 500)	

Regional impacts on Kiribati, Tonga and Vanuatu:

Support local Government counterparts in Kiribati, Tonga and Vanuatu in collecting survey data to build a national inventory of infrastructure and spatial data. This includes geotagged survey points for each infrastructure asset and building. Each building and housing survey point includes 32 physical properties or fields of data to assess the vulnerability and resilience of each building. The surveys will also gather data on a range of infrastructural assets including roads, bridges, ports, airports, utilities including telecommunications, water, fuel and electricity infrastructure. If selected, the support from IRIS will enable Vanuatu to scale-up surveys to cover infrastructure and building asset datasets commenced at the local township scale to cover the wider national scale.

The generation of a national-scale infrastructure and building asset database for use in exposure and hazard modelling. With support from IRIS, this data collection will form the baseline national inventory for all infrastructure at the national level for Kiribati, Tonga and Vanuatu. The collection of this asset data is the foundational step in planning for infrastructure resilience and disaster risk management for ICT and Multi-Hazard Early Warning Systems. The project will also have regional impacts in terms of monitoring across the region through the EWS capacity building. For example:

Multihazard early warning systems (MHEWS)

In terms of Goal G of the Sendai Framework, the project supports Multihazard Early Warning Systems through the following means:

Disaster risk knowledge based on the systematic collection of data and disaster risk assessments.

Detection, monitoring, analysis and forecasting of the hazards and possible consequences

Dissemination and communication, by an official source, of authoritative, timely, accurate and actionable warnings and associated information on likelihood and impact.

Preparedness at all levels to respond to the warnings received.

The work of SPC including our remote sensing skills training, community-based mapping, setting up of tidal gauges, tropical cyclone hazard modelling all contributes to early warning systems.

Furthermore our work through PREP on LiDAR drone flight for bathymetry and elevation will help build more accurate flood model, tsunami, storm surge inundation and other hazard models and maps to be disseminated to the community.

Impact based Early Warning Systems based on World Meteorological Organisation (WMO) guidelines to meet Sendai Framework goals.

This project if selected, would provide a vehicle to help bring together all these different areas of EWS capacity and help us disseminate these skills and capacity to Kiribati, Tonga and Vanuatu more effectively.

Impacts for Kiribati

In terms of Kiribati, 100% of the population live 1km from the coast (118,749 people). This means that this total population will benefit from the information generated through this proposal including the asset data collection of buildings and sea level rise maps. The project may also develop evacuation routes to support Early Warning Systems (EWT) and responses. Storms, floods and maritime accidents are the greatest sources of economic loss from natural hazards in Kiribati. The project may support Kiribati in reducing these average annual losses which make up 3.77% of GDP. For example, through the asset and hazard mapping, light can be shed on particularly vulnerable infrastructure or buildings that are need of repairs. This could have a major impact on infrastructure in Kiribati. There is still only limited skills and capacity in GIS and remote sensing for asset mapping, exposure and hazard modelling and early warning systems. As a result, the skills and training that SPC can build in-country will have a significant additional value for the country. Particularly for the emergency management portfolio of the Office of the Beretitenti. The project also aims to support a quota of at least 50% women in the capacity and skills building components. This may indirectly contribute towards more expertise in the area of effective climate risk and data-driven decision making. This will contribute towards the longer-term indirect outcome of supporting women in the space of data for disaster risk reduction.

Impacts for Tonga

The project will support data collection of buildings including both residential and non-residential (commercial, industrial, public). The project will also support the generation, validation and dissemination of sea level rise maps. This may be useful information especially for coastal communities (84% of the population who live 1 km from the coast in Tonga which is equivalent to approximately 89,040 people). The sea level rise maps and storm surge risk maps can also be validated and disseminated to local communities (100% of the population lives within 5 km of the coast or approximately 106,000 people). The survey will also cover the critical infrastructure for Tonga such as roads including evacuation roads, bridges, air strips, ports, utilities. The project will support a range of staff and ministries. The long-term outcomes of this support will be the reinforcement of the Ministry of Finance (MoF) and NEMO's capacity to work across Government (Ministry of Infrastructure, Ministry of Lands, Tonga Geological Services, to build a robust infrastructure and building asset database. This will include training and capacity building for more than 20 staff across Government in Tonga including more than 10 women at various levels of seniority. There is still only limited skills and capacity in GIS and remote sensing for asset mapping, exposure and hazard modelling and early warning systems particularly within NEMO and the Ministry of Infrastructure (MoI) and Meteorological Services in Tonga. As a result, the skills and training that SPC can build in-country will have a significant additional value for the country. This will also enable more effective climate risk and data-driven decision making. This will also allow the relevant ministries of Tonga to, in the long run, develop risk data driven programs and policies for resilient infrastructure. Furthermore, with these datasets, in the long run Tonga will be in a better place to advocate for its own loss and damage positions in high level talks.

Impacts for Vanuatu

Through technical support to build this national inventory geodatabase, the project seeks to strengthen knowledge and partnerships for mainstreaming and integrating urban and foreshore spatial planning to increase resilience to natural disasters and climate change. These partnerships include the work with DUAP (Foreshore Development Unit) and other various Government agencies in Vanuatu including the Ministry of Lands and Natural Resources (MLNR), Department of Local Authorities (DLA), the Port Vila Municipality Council (PVMC) and the Shefa Provincial Council who have already joined the preliminary surveys and capacity building training from SPC. These proposed surveys have the potential to cover infrastructural assets including roads, bridges, ports, airports, utilities including telecommunications, water, fuel and electricity infrastructure across the country. The training and capacity building delivered through this project aims to directly build the capacity of more than 20 government staff members and through training of the trainers indirectly support the training and capacity building of more than 50+ others including students from the University of the South Pacific campus of Vanuatu. More specifically, the project will support capacity building in technical geospatial and leadership opportunities for women in the Department of Urban Affairs and Planning of the Government of Vanuatu including capacity building and opportunities to join the Pacific GIS and Remote Sensing Conference (PGRSC 2023). In particular, the newly appointed GIS Officer Sharon Rose Boe. The Settlements Programs officer, Devny Toa and the Deputy, Jenny Nasak. In addition, much of the work under the DUAP - Foreshore Development Unit will be informed in terms of regulating foreshore developments and ensuring asset exposure is kept at a reasonable level as well as legislations are adhered to. Furthermore, capacity building workshops in the operationalization of the data (developed) towards practical outputs including reports, briefings, GIS maps and decision-making tools. This will enable the staff within the Government of Vanuatu to make more effective use of the datasets. This will also enable more effective climate risk and data-driven decision making. Supporting post-disaster national assessment efforts to collect datasets about impacts of Tropical Cyclones Kevin and Judy. This impact data will be used as inputs for the generation of more accurate fragility curves and damage functions for exposure and hazard modelling. This may have the potential to support the population affected by the recent impacts of the cyclones and earthquake which affected 80% of the population of Vanuatu (approximately 256,000 people).

There will be a range of impacts from providing technical support for DUAP to set up a (GeoNode) web-based map with data stored online on the cloud as a data management system portal for Vanuatu. Then through Application Programming Interface (API) mechanisms, all the datasets can be displayed as visual media to support analysis and decision-makers. This technical support will ensure that data is stored and managed for the long term. In terms of the physical infrastructure needed for this ICT and early warning systems, this will include GPU server hardware to support the storage of data. The long-term outcomes of this support will be the reinforcement of DUAP as a leading institution with the capacity to develop risk data driven programs and policies for resilient infrastructure.

Contribution to the Sustainable Development Goals (SDGs)

SDG5: Achieve gender equality and empower all women and girls:

The project will integrate gender roles into the project outputs to ensure that a significant portion of the leaders, local participants in the project and those involved in capacity and skills building are women. The intended long-term outcome will be a strengthened cohort of women working in the space of resilient infrastructure and data driven planning for disaster risk management.

SDG9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation:

The innovation delivered through this project includes the participatory collection of survey data for infrastructure and building assets for exposure and hazard modelling. The team will continue work with specialised forms to collect data on different infrastructure assets and buildings. SPC will also support the participating countries to develop systems for data storage, management and visualisation. This will allow our country counterparts to make asset and hazard (risk) data driven decisions. In doing so, the project supports planning and policies for resilient infrastructure in the context of exposure to specific hazards.

SDG11: Make cities and human settlements inclusive, safe, resilient and sustainable:

SPC has already been working with Kiribati, Tonga and Vanuatu in asset data collection. A large portion of this has been focused on buildings including residential buildings. For every building data point collected in the survey forms, 32 different attributes are collected. These attributes shed light on construction types, materials of foundation, walls, structure and roof as well as the condition of the various components of the building. By collecting this data the local government agencies in Kiribati, Tonga and Vanuatu will have a substantial geodatabase to be able to see which buildings and settlements are in need of greater support in terms of social welfare, infrastructure and services.

SDG13: Take urgent action to combat climate change and its impacts:

In terms of combatting the impacts of climate change, it is important to first understand what these impacts may look like. The hazard modelling component of this project will support local country government's to have access to geospatial hazard layers developed for various natural disasters and climate changes including but not limited to sea level rise models, storm surge and flood models, tropical cyclone windspeeds, earthquake vulnerability and others. With access to these layers, the Governments in Kiribati, Tonga and Vanuatu will have a strengthened ability to take action to climate change and its impacts.

SDG17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development:

This proposal constitutes a series of partnership both between SPC and the Governments of Kiribati, Tonga and Vanuatu and also between the countries themselves as the lessons learned will be shared between these countries. The lessons learned will relate to achieving SDGs 5, 9, 11, 13 and 17 as mentioned.

Project Alignment/Complementarity with Global, Regional & National Commitments (Word limit 500)

Contribution to Samoa Pathway

This proposal contributes to the Samoa Pathway in five main ways:

1. It supports the Pacific SIDS of Kiribati, Tonga and Vanuatu in having the information and data needed to advocate and present their position more strongly at high level talks particularly in discussions around potential legal action around 'loss and damage'. Since they will be better able to actually quantify what has been loss and the level of damage for infrastructure, settlements and wider economies.
2. This will serve as a precedent of best practices that can be useful for other SIDs more widely across other regions. This regional (multi-country project) will support the three countries to learn together and also be an example of South-to-South learning and sharing within the Pacific Region. This will allow other countries to also learn from this precedent when generating other future regional models of learning and sharing in alignment with the Samoa Pathway.
3. The project also contributes a range of hazard models including Sea Level Rise which has been recognised as a priority area in the Samoa Pathway document (UN, 2014). The project will thus support Pacific SIDS to better plan the development of their infrastructure amidst future sea level rise scenarios.
4. This project reaffirms SIDS leadership in improving planning around resilience of infrastructure in SIDS. This will be supported through the capacity building, training and partnerships built at the regional level.
5. Furthermore, the project will reinforce the Samoa Pathway's commitments to gender equality through the gender indicators introduced in this project to support women in the space of data for disaster risk reduction.

Habitats for humanity / UN-HABITAT, UNDP, resilient communities global frameworks etc...

This project directly contributes to frameworks of habitats for urban, peri-urban and rural areas.

The surveys proposed through this project will collect building geotag data for each building in settlements : urban, peri-urban and rural areas. For each building survey teams will answer 32 questions. These surveys have been designed through consultation over many years with each of the member countries as well as with experts in exposure and hazard modelling. The data includes the following areas:

1. Foundation type
2. Wall type
3. Structure type
4. Windows
5. Roof
6. Utilities

As well as the materials, construction type, condition.

Project Contribution to the Sendai Framework for Disaster Risk Reduction targets (Word limit 500)

Sendai Framework

Contribution to the Sendai Framework for Disaster Risk Reduction targets

- By collecting the national survey data, the project strengthens the ability of Kiribati, Tonga and Vanuatu to be able to report on the Sendai Framework global targets : particularly global target C on C1 - direct disaster economic losses including but not limited to C3 including productive assets, C4 including housing and settlements, C5 critical infrastructure and C6: cultural heritage.
- This project will also support global target B around reducing impacts on the total population since the settlements will be mapped against hazard risk and future planning of settlements and critical infrastructure can be made in relation to hazard models to reduce climate risk and population losses in future.
- The national surveys and geodatabase will further support Target D to substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience. The surveys and geodatabase will cover key roads, transport, evacuation routes, bridges, power, water and fuel utilities. The survey will also cover schools and health facilities. The data captured can be used to assess the construction type, materials, condition and then their overall exposure and vulnerability to various hazard types. For example, different foundation types and conditions may not be able to withstand certain flood or earthquake scenarios. In other cases different roof slopes, materials may have different levels of vulnerability to different cyclone windspeeds. This project will support Governments in Kiribati, Tonga, Vanuatu to make data-informed decisions about how they identify vulnerable infrastructure and how they might wish to build the resilience of these assets.
- This information will contribute towards target E of enabling these countries to have more data needed to ensure that they can build up local and national level disaster risk reduction strategies as summarised in Goal E of the Sendai Framework. This will also ensure that these strategies are grounded in the realities on the ground based on the surveys and national inventory datasets visualised through the geodatabases.

Project Gender Equality and Social Inclusion (GESI) plan (Word limit 500)	**Gender equality and social inclusion plan** The Pacific has been receiving significant infrastructure financing from the various development partners in the region, and this is only set to continue to increase with time. This would be the continued efforts to maintain the region's growth, eradicate poverty, and respond to disaster risk and climate change. Casting a gender lens on infrastructure through a risk lens is an important element in making that contribution towards resilience. Some of the infrastructure sectors have developed gender related policies, networks, or programs specific to the sector. Some examples are listed below: • Launch of the Pacific Energy and Gender (PEG) Network (2022) • Launch of the Pacific Energy and Gender (PEG) Network Strategic Gender Action Plan 2020 -2030 (PEGSAP). • Pacific Women in Power (PWIP) Program (2023). • Pacific Women in Geospatial (PWG) Network (2021). The proposal also includes an indicator for women's proportion % of participation in the upskilling, capacity building workshops. The target set for this indicator in this proposal is 50% of all participants. This will contribute towards the longer term indirect outcome of supporting women in the space of data for disaster risk reduction and resilient infrastructure. Returns on infrastructure investments will continue to drive the Pacific region forward in terms of economic and social development, however will not be fully realised if gender is not successfully mainstreamed throughout all infrastructure project phases. Gender-sensitive and inclusive infrastructure has the potential to contribute to various aspects of empowerment. The training opportunities provided through infrastructure projects serve as a pathway for achieving economic empowerment. By intentionally considering the needs of women and other marginalized groups in the design and execution of such projects, their empowerment has positive effects on the entire society. Consequently, the integration of gender considerations promotes accountability and empowers not only women and men but also marginalized adolescent girls and boys, who often face greater marginalization in the Pacific region. The training provided in this project aims to contribute to this objective.
Project Sustainability strategy (Word limit 500)	The project aims to up-skill people in-country as well as regional staff to be able to scope, assess, produce, and utilise the tools, data and database for resilience in infrastructure focused on risk informed decisions. Building on lessons learnt from the PCRAFI and PARTneR projects is a key element in enabling long-term sustainability. The tools and processes that will be built upon to develop a national-scale infrastructure and building asset database for use in exposure and hazard modelling will be embedded within the relevant Government Departments of the partner countries throughout the project with the intention that sufficient capacity and depth is built so as to continue to effectively use the tools to produce decision-relevant information. **Peer-to-peer support** developed over the course of the project will be built through the Communities of Practice, National Steering Committees, and Technical Support Networks both within, between countries and regionally. Both the country counterpart and SPC will use MS Teams and Zoom platforms to facilitate virtual resources, online training, support, peer-to-peer learning, and collaboration with Pacific partners. These platforms will be used to develop, mentor, and share collective learning and a networking mechanism to support practitioners. A further output of the project if selected, would include a regional level 'lessons-learned' workshop which would allow for South-to-South learning among the three participating countries and SPC. This has also been requested by the proposing countries (i.e. Kiribati). In the Pacific region, there is often a high turnover of staff and labour mobility within the government ministries. While care will be taken to ensure those participating in capacity building initiatives are in relevant positions at the time of training, it is acknowledged that they are likely to move onto other roles in the future. This is also seen as a potentially positive outcome where capacity building results in promotion for personnel involved, and the overall pool of trained personnel in the region is expanded. To the extent possible, contracts for services that allow collaborating ministries to use their own procurement systems will be used. This will allow for greater local ownership. This Action will invest in assets that will be formally handed over to beneficiaries in accordance with SPC policy. This will include ensuring they have maintenance plans in place, and budget available to implement those plans. Acknowledging that there could possibly be delays in utilizing country procurement systems, there will need to be a firm understanding and emphasis placed upon the prioritization of such tasks within that ministry. A significant focus of this project is to strengthen institutional systems through intentional capacity building. Through the effective use of these systems, collaborating agencies will be more resilient to changing conditions and future uncertainties. **Vanuatu** For Vanuatu, we will work with DUAP which has a strong mandate in this space and is part of the Ministry of Internal Affairs. This Ministry has influence on the local level government agencies. This work supports their mandate to progress the National Sustainable Development Plan (NDSP) for Vanuatu 2030. More specifically, the project will support capacity building in technical geospatial and leadership opportunities for women in the Department of Urban Affairs and Planning of the Government of Vanuatu including capacity building and opportunities to join the Pacific GIS and Remote Sensing Conference (PGRSC 2023). In particular, the newly appointed GIS Officer Sharon Rose Boe. The Settlements Programs officer, Devny Toa and the Deputy, Jenny Nasak. In addition, capacity building workshops in the operationalization of the data (developed) towards practical outputs including reports, briefings, GIS maps and decision-making tools. This will enable the staff within the Government of Vanuatu to make more effective use of the datasets. This will also enable more effective climate risk and data-driven decision making. **Kiribati** For Kiribati, there may be a range of activities that would support capacity for sustainable long-term uptake adoption. For example, Improvement in MHEWS: including but not limited Sea Level Rise maps developed as hazard models can be contributed to Kiribati. This has been a long-term high priority for Kiribati and will therefore be a strong incentive for buy-in to this project. The survey asset data for critical infrastructure and community settlements will be overlayed on top of the sea level rise maps to show the exposure. This is a high priority area for Kiribati. Takena Redfern who first proposed a project for Kiribati to IRIS will be a key champion for this project in driving it forward and ensuring sustainability. **Tonga** Lastly, the long-term outcomes of this project in Tonga will support the reinforcement of the Ministry of Finance (MoF) and NEMO's capacity to work across Government (Ministry of Infrastructure, Ministry of Lands, Tonga Geological Services, to build a robust infrastructure and building asset database. This will include training and capacity building for more than 20 staff across Government in Tonga including more than 10 women at various levels of seniority. This will also enable more effective climate risk and data-driven decision making. Because we are working through MEIDECC as well as with the Ministry of Finance, this will ensure that the whole-of-government will be more likely to support this project. This is because these Ministries hold convening power and significant influence in Tonga. The project's ongoing engagements regionally and with Pacific governments will require input and an understanding from all parties involved on the factors that contribute to sustainability to position efforts for long-term success.

Project Implementation (Word Limit 500)

Project Management Structure:

Overall responsibility of the project will be with the Director of SPC's Geoscience, Energy & Maritime (GEM) Division. The day-to-day management and implementation of the activities will be under the direction of the Project Manager, with reporting arrangements to the Deputy Director, Disaster Community Resilience Programme (DCRP) through the Disaster Risk Team Leader who will have supervisory and oversight responsibilities for the project.

Parallel financing / co financing

We will provide in kind co-financing hours of HR resourcing equivalent to 270,000 USD. This refers to the human resource hours for the staff who have been allocated to this project including the complementary outputs from other relevant projects and their associated job budget codes / cost centres.

Project management arrangements will operate on two levels between the key parties:

The Project Governance Group- which consists of country counterpart and IP's core project group. This Governance Group will meet biweekly on the project activities, implementation, project management and reporting. These meetings will consist of a Project Manager, and Implementation Officers from the country counterpart and the IP. This group will:

- Review, progress and make decisions on project activities.
- Sets-up working groups on specific tasks.
- Progresses project management activities and reporting, including monitoring and evaluation and communication activities.
- Discusses any issues or challenges arising.

The Project Management Group- which includes monthly meetings between the IRIS representative, and Country and SPC's Project Managers. This group will:

- Review progress on project activities.
- Examine output and outcome progress and budget spending.
- Discuss project monitoring, evaluation, communications and sustainability.
- Discuss links and opportunities with other related activities, especially those funded by IRIS.

Table. Roles and position for implementation

The project will rely on an existing team for implementation of the project. The following personnel and roles have been identified and are as follows in the table below:

Role/Position	Description	Recruitment Status
Lead Project Manager (SPC)	Coordination of SPC team/country staff, additionally overall strategic planning for the project.	To be recruited Existing staff – SPC,
National Coordinator (VU, TO, KI)	Coordination of country stakeholders and ensuring the timely and efficient implementation of project activities in country.	To be recruited
Implementation Officer (VU, TO, KI)	Survey capacity building team leader involved in conducting survey training. Coordination of surveys and workplan implementation with country Government.	Existing staff – SPC, and VU, TO, KI
GIS & Mapping Officer (VU, TO, KI)	GIS survey grid planning, building and infrastructure ID planning, development of maps and data validation & cleaning.	Existing staff – SPC, and VU, TO, KI
Finance and Admin Officer (VU, TO, KI)	support to financial and administrative planning, monitoring and reporting, audit and budgetary controls, monitoring of projects requirements and support for procurement of services related to the project.	To be recruited Existing staff – SPC, GEM
Communications Officer (x1)	provide advice and guidance on communications and change plans for projects; draft content, social media posts and layering out of reports for publication; whilst liaising with relevant stakeholders to provide effective communications for project works.	Existing staff – SPC, GEM
Monitoring & Evaluation (M&E) Officer (VU, TO, KI)	Monitor all project activities, expenditures and progress towards achieving the project output; Monitor and evaluate overall progress on achievement of results; Monitor the sustainability of the project's results; Conduct capacity assessment on existing monitoring and evaluation system.	Existing staff – SPC, GEM

Stakeholder Coordination Arrangement:

Stakeholder coordination will include close collaboration between SPC and PIC governments and other multi-lateral, non-government and private sector entities in the 3 countries. Lead and support collaboration ministries at country level have been identified. Financial support and co-ordinational responsibilities will be delivered to the following:

Country	Lead Government Ministry	Technical Support Ministries

Vanuatu	Department of Urban Affairs & Planning (DUAP), Ministry of Internal Affairs (MOIA)	Department of Lands, Ministry of Lands & Natural Resources (MLNR), Department of Local Authorities (DLA, MOIA), Port Vila City Council (PVCC, DLA, MOIA), Vanuatu National Statistics Office (VNSO), Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Energy, Environment and National Disaster Management (MOCCA), Ministry of Infrastructure & Public Utilities (MIPU), Office of the Prime Minister (DSPPAC).
Tonga	National Emergency Management Office (NEMO), Ministry of Meteorology, Energy, Information, Disaster Management, Environment, Climate Change and Communications (MEIDECC)	Ministry of Lands & Natural Resources (MLNR, GIS Unit), Ministry of Infrastructure (MOI), Ministry of Finance (MOF), Ministry of Agriculture, Food and Forests (MAFF), Tonga Statistics Department (TSD).
Kiribati	Office of Te Beretitenti (President), Climate Change & DRM Unit.	Ministry of Environment, Lands and Agricultural Development, Ministry of Information, Communications & Transport (MICT – Digital Transformation Office), Kiribati Meteorological Services.

Modalities

The modalities to be used are listed below in line with SPC policies. Actual modalities to be used will be negotiated with collaborating agencies during the inception phase of the project once country and regional plans are finalized.

- Technical Assistance (TA) - SPC will provide direct technical support and expertise to 3 countries (eg. Providing advice, training or undertaking assessments/surveys)
- Grants
- Mentoring

Project Timeline (Word Limit 500)	Please refer to Workplan tab.
Project Procurement plan	NA - the project proposal and budget does not intend to procure any goods or services over 100,000 USD in value. As a result, we will not be requiring a procurement plan for that value. However, SPC has a procurement policy and a procurement section. Our team has also completed procurement training and will be able to follow the due protocols of probity and keep all records required for reporting purposes.

SDG Targets

Target	Description
Main Goals	
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
TARGET_9.1	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all
TARGET_9.5	9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending
TARGET_9.a	9.a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States
TARGET_9.b	9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities
TARGET_9.c	9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	
TARGET_11.1	11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
TARGET_11.3	11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
TARGET_11.5	11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	
TARGET_17.18	17.18 By 2020, 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
Secondary Goals	
Goal 13. Take urgent action to combat climate change and its impacts2	
TARGET_13.1	13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

SDG Indicators

Indicator Code	Description
C110101	11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing
C110502	11.5.2 Direct economic loss in relation to global GDP, damage to critical infrastructure and number of disruptions to basic services, attributed to disasters
C200304	13.1.2 Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015–2030

Indicator Code	Description
C200305	13.1.3 Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies
C090502	9.5.2 Researchers (in full-time equivalent) per million inhabitants
C090b01	9.b.1 Proportion of medium and high-tech industry value added in total value added

Contribution to SDGs

Participating Organization	% TARGET_11.5	% TARGET_9.a	% TARGET_13.1	% TARGET_11.3	% TARGET_9.b	% TARGET_9.1	% TARGET_17.18	% TARGET_9.5	% TARGET_11.1	% TARGET_9.c	% Total
SPC	5	8	12	8	10	5	15	15	10	12	100
Total contribution by target	**5**	**8**	**12**	**8**	**10**	**5**	**15**	**15**	**10**	**12**	
Project contribution to SDG by target	**5**	**8**	**12**	**8**	**10**	**5**	**15**	**15**	**10**	**12**	**100**

List of documents

Document	Document Type	Document Source	Document Abstract	Document Date	Classification	Featured	Status	Modified By	Modified On
SPC CDRI Prodoc signed SPC 28 October 2024.pdf	Pro Doc	Project	Prodoc signed by SPC	28-Oct-2024	Internal	No	Finalized	sophie.baranes@undp.org	31-Oct-2024 2:25:25 PM
SPC CDRI Prodoc signed Tonga 30 Oct 2024.pdf	Pro Doc	Project	Signed Prodoc by Tonga Government	30-Oct-2024	Internal	No	Finalized	sophie.baranes@undp.org	31-Oct-2024 1:40:15 PM
SPC CDRI Kiribati Signed Prodoc 22 October.pdf	Lessons Learned/Review Report	Project	Prodoc signed Kiribati govenrment representative	22-Oct-2024	Internal	No	Finalized	sophie.baranes@undp.org	22-Oct-2024 3:48:04 AM
SPC CDRI Vanuatu Signed Prodoc 17 Oct.pdf	Pro Doc	Project	Prodoc signed by Vanuatu Government Representative	17-Oct-2024	Internal	No	Finalized	sophie.baranes@undp.org	22-Oct-2024 3:47:30 AM
IPR SPC CDRI Signed.pdf	Other Docs	Project	THe Intellectual Property Rights document signed between SPC and CDRI on deliverables pertaining to the project.	05-Aug-2024	External	No	Finalized	eileent@spc.int	06-Aug-2024 12:17:36 AM
6. Budget - Pacific - IRIS IRAF regional multi-country proposal.xlsx	Other Docs	Project	6. Budget - Pacific - IRIS IRAF regional multi-country proposal (still needs to be finalised with the countries)	13-Jun-2023	Internal	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:41:42 AM
1.0. SPC_PacificRegional_AttachmentsList.pdf	Other Docs	Project	1.0. Attachment list	16-Jun-2023	External	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:35:46 AM
5. Timeline - Pacific - IRIS IRAF regional multi-country proposal.xlsx	Other Docs	Project	5. Timeline - Pacific - IRIS IRAF regional multi-country proposal (still needs to be finalised with countries)	12-Jun-2023	Internal	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:34:35 AM
4. HACT Micro SPC.pdf	Other Docs	Project	4. HACT Micro SPC	12-Jun-2023	Internal	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:31:50 AM
3c. Letter of endorsement from Vanuatu.pdf	Other Docs	Project	3c. Letter of endorsement from Vanuatu	14-Jun-2023	Internal	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:29:54 AM
3b. Letter of endorsement from Tonga.pdf	Other Docs	Project	3b. Letter of endorsement from Tonga	10-Jun-2023	Internal	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:28:01 AM
3a. Letter of endorsement from Kiribati.pdf	Other Docs	Project	3a. Letter of endorsement from Kiribati	16-Jun-2023	Internal	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:25:55 AM
2c. PARTneR II - Hazard Risk Analysis (PARTneR 2.0) Proposal-June	Progress report	Project	2c. Eligibility - PARTneR II - Hazard Risk Analysis (PARTneR 2.0) Proposal-June	10-Jun-2023	Internal	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:23:19 AM
2b. BSRP I and II - CROP Partners meeting Dec 21.pdf	Evaluation report	Project	2b. Eligibility - BSRP I and II - CROP Partners meeting Dec 21	09-Jun-2023	Internal	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:19:41 AM
2a. BSRP Annex I - Description of Action.pdf	Progress report	Project	2a. Eligibility - BSRP Annex I - Description of Action	01-Jun-2023	Internal	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:15:59 AM
1a. ImplementingOrganisation_LegalRegistration_SPC_Governance_Compendium_5th.pdf	Other Docs	Project	1.a Eligibility - Legal Registration Document of SPC	01-Jun-2023	External	No	Finalized	nicholasm@spc.int	16-Jun-2023 2:15:45 AM

Project Results

Outcome	Output	Description
IRAF OUTCOME 3 - Countries have increased access to knowledge and resources to increase the resilience and inclusivity of their existing and future critical infrastructure systems by 2030		IRAF Output 3.1 : Small Island Developing States are equipped with knowledge and resources to increase the resilience and inclusivity of their existing and future critical infrastructure systems by 2030.

<table>
<tr><th>Outcome</th><th>Output</th><th>Description</th></tr>
<tr><td></td><td colspan="2">No outputs available.</td></tr>
<tr><td>Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure.</td><td></td><td></td></tr>
<tr><td></td><td>Gap analysis of the legal and policy framework for disaster / climate resilient infrastructure systems to identify recommendations to strengthen use and application of risk data.</td><td>This output includes a series of workshops and consultations with critical infrastructure ministries and disaster risk and climate risk national ministries. This includes the inception meetings that will be held with countries to go through the project proposal with them. inception meetings are to ensure SPC and the countries are on the same page with the implementaiton of activities. IT is also an opportunity for the countries to provide an update on the current context and so that we can work out how we can work and implement the activity and still deliver the results stated.This will include the current frameworks and policies and strategies that speak to both disaster and climate risk and infrastructure.It will also map any exisiting gender policies, and how they address women in the climate, disaster and infrastructure sectors. THis activity will include consultations and mapping of existing data survey landscape with relevant stakeholders only.This output will include consultations and participatory mapping with relevant stakeholders in each country (at national and subnational level) to map the different types of data that exist, their purpose, surveys to be conducted, and the kinds of data to come out of it, as well as exisiting databases | storage capacity. The improved evidence base is a long term output of the cumulative work done.</td></tr>
<tr><td></td><td colspan="2">Activities
<table>
<tr><th>Title</th><th>Description</th><th>Lead Participating Organization</th><th>Participating Organization</th><th>Other Organizations</th></tr>
<tr><td>Cross sectoral consultations and workshops</td><td>This will start with inception meetings that need to be held with countries at the start of project, to go through the project proposal with them. So the inception meetings are to ensure SPC and the countries are on the same page with the implementaiton of what activities and get an update on the current context to inform implementation. This will also include the evaluation lessons learnt workshop</td><td>SPC -</td><td></td><td>Kiribati
Tonga
Vanuatu</td></tr>
<tr><td>National mapping of the landscape of disaster and climate risk and infrastructure resilience policies, strategies, frameworks, data, stakeholders to contribute to an improved evidence base. This includes the presentation of Mapping Results workshop</td><td>This activity the mapping of the current frameworks and policies and strategies that speak to both disaster and climate risk and infrastructure.It will also map any exisiting gender policies, and how they address women in the climate, disaster and infrastructure sectors. THis mapping will be done through consultations and mapping the landscape of existing asset infrastructure data held with critical infrastructure sectors, and other related relevant stakeholders only.This output will include consultations with relevant stakeholders in each country (at national and subnational level) to map the different types of data that exist, their purpose, surveys to be conducted, and the kinds of data to come out of it, as well as exisiting databases | storage capacity. The improved evidence base is a long term output of the cumulative work done.</td><td>SPC -</td><td></td><td>Kiribati
Tonga
Vanuatu</td></tr>
</table></td></tr>
<tr><td></td><td>Enhancing local capacity in Kiribati, Tonga and Vanuatu for collecting field survey data, as well as accessing and using existing exposure data on infrastructure, buildings, settlements and other economic assets.</td><td>The results from the consultations above may include information gathered from the surveys combined with hazard models and these should include information products disseminated back to stakeholders consulted. This can be monitored through the number of data visualisation (maps) disseminated to stakeholders and communities (i.e. tsunami evacuation area maps). and training will be completed by SPC with each of the partner government agencies.
The training, informed by consultations, will be conducted and followed by field surveys in each of the countries to collect further data on infrastructure, buildings, settlements and other economic assets including construction type, material, condition ther key
information required for exposure and hazard modelling.</td></tr>
</table>

Outcome	Output	Description
	Activities	

Title	Description	Lead Participating Organization	Participating Organization	Other Organizations
Training activities undertaken in Kiribati, Tonga and Vanuatu for national inventories of infrastructure, buildings, settlements and other economic assets.	This will include training to conduct the survey, participatory mapping with communities of past hazard affected areas, rapid appraisal of asset and building construction types, materials and condition as well as the field data collection applications.	SPC -		Kiribati Tonga Vanuatu
Practical surveys undertaken by Kiribati, Tonga and Vanuatu for national inventories of infrastructure, buildings, settlements and other economic assets.	The training, informed by consultations, will be conducted and followed by field surveys in each of the countries to collect further data on infrastructure, buildings, settlements and other economic assets including construction type, material, condition ther key information required for exposure and hazard modelling.	SPC -		Kiribati Tonga Vanuatu

	Capacity building in the application of exposure data on climate and disaster risks, for technical officers and decision makers in sectors related to critical infrastructure	Science is crucial to informing decisions, as well as to the development of policy. However in many cases scientist it can seem like scientists are speaking different languages to that of policy or decision makers (or vice versa), often making that interface between scientists and decision makers a challenging one. THis output will explore the current science policy and science decision making interface in each of the countries. A targeted mapping and assessment (informed by the initial mapping above)of what currently existis in terms of resources and tool in the identified relevant local institiution who has a role to play int he disaster and climate risk space will be done including an analysis of the communication and knowledge management systems that will allow this interface to take place. This will identify the entry points in the governance structure of government and what has worked previously to allow science to succesfully inform decisions or policy. It will also identify the challenges experienced or what has not worked. The gender analyis will map and document any previous, current, and planned gender initiatives in the disaster and climate risk space. This will then inform gaps or opportunities to address to which targeted aspects of this work can be address through training activities. Based on the above assessments and gender analysis, target capacity building activities on the application of exposure data in exposure modelling to inform decisions that inform resilient infrastructure. Through all the training activities, we will have a target quote / portion % of women participants from each of the Ministries and other stakeholders being represented.

Outcome	Output	Description			
	Activities				
	Title	**Description**	**Lead Participating Organization**	**Participating Organization**	**Other Organizations**
	Mapping and assessments of relevant local instituitions resources and tools to address disasater and climate risk. This will include Communication and Knowledge Management analysis and gender analysis of and climate risk & science to policy mapping	Science is crucial to informing decisions, as well as to the development of policy. However in many cases scientist it can seem like scientists are speaking different languages to that of policy or decision makers (or vice versa), often making that interface between scientists and decision makers a challenging one. THis output will explore the current science policy and science decision making interface in each of the countries. A targeted mapping and assessment (informed by the initial mapping above)of what currently existis in terms of resources and tool in the identified relevant local institiution who has a role to play int he disaster and climate risk space will be done including an analysis of the communication and knowledge management systems that will allow this interface to take place. This will identify the entry points in the governance structure of government and what has worked previously to allow science to succesfully inform decisions or policy. It will also identify the challenges experienced or what has not worked. The gender analyis will map and document any previous, current, and planned gender initiatives in the disaster and climate risk space. This will then inform gaps or opportunities to address to which targeted aspects of this work can be address through training activities.in addition mapping will include finding out risk, loss and damage existing exposure (asset critical infrastructure), hazard and vulnerability data,, map how decisions are made, what platforms, meeetings etc to inform the science to policy interface in the application of the data output that will inform critical infrastructure resilience.	SPC -		Kiribati Tonga Vanuatu
	Application of Exposure data in exposure modelling Training with Communication and Knowledge Management Training	Based on the above assessments and gender analysis, targeted capacity building activities on the application of exposure data in exposure modelling to inform decisions that inform resilient infrastructure will be held and capacity building activities in the application of exposure data. Through all the training activities, we will have a target quote / portion % of women participants from each of the Ministries and other stakeholders being represented. Based on the mapping targetd training will be developed to enahnce the interface between scientists and decision makers and will also include comms and km products on the outputs to communicate outputs that can inform planning for resilient infrastructure through the use of the application of the exposure data and model	SPC -		Kiribati Tonga Vanuatu
	Combined exposure and hazard models for Early Warning Systems in sectors related to critical infrastructure.	Disaster risk knowledge based on the systematic collection of data and disaster risk assessments. Detection, monitoring, analysis and forecasting of the hazards and possible consequences Dissemination and communication, by an official source, of authoritative, timely, accurate and actionable warnings and associated information on likelihood and impact. Preparedness at all levels to respond to the warnings received. The work of SPC including our remote sensing work contributes to early warning systems			

Outcome	Output	Description			
	Activities				
	Title	**Description**	**Lead Participating Organization**	**Participating Organization**	**Other Organizations**
	Technical outputs including assets and exposure models provided to the Governments	This includes exposure models developed and provided to governments of which technical staff will be hired to be part of the process for capacity building	SPC -		Kiribati Tonga Vanuatu
	Technical outputs including hazard models provided to the Governments	This includes hazard models developed and provided to governments of which technical staff will be hired to be part of the process for capacity building	SPC -		Kiribati Tonga Vanuatu

Signature Indicators

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
No signature indicators available.												

Imported Fund Outcome / Output Indicators

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
IRAF SIDS OUTPUT 3.1 -INDICATOR 1 (governance & information)		Nb. of SIDS countries with enhanced DRI inclusive policies, plans, standards and/or enhanced DRI gender and age disagregated and open-source datasets	CDRI IRAF annual report IRIS impact monitoring reports	Capacity	Yearly	Country	Number	0	2023	20 SIDS countries with enhanced DRI inclusive policies, plans, standards and/or enhanced DRI gender and age disagregated and open-source datasets	2026	**Outcome:** IRAF OUTCOME 3 - Countries have increased access to knowledge and resources to increase the resilience and inclusivity of their existing and future critical infrastructure systems by 2030

Project Indicators

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Number of participants involved in field survey asset and exposure data collection.		The number of participants involved in training for accessing and using the datasets gathered in the surveys.	Attendance sheets, records kept in reports to IRIS	Capacity	Every two years	Country	Number	30	2022	90	2025	**Outcome:** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Enhancing local capacity in Kiribati, Tonga and Vanuatu for collecting field survey data, as well as accessing and using existing exposure data on infrastructure, buildings, settlements and other economic assets.
	No components available.											

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Community consultation dissemination of knowledge product outputs: data visualisation (maps) disseminated to communities (i.e. tsunami evacuation area maps).		The results may include information gathered from the surveys combined with hazard models. These should include information products disseminated back to communities. This can be monitored through the number of data visualisation (maps) disseminated to communities (i.e. tsunami evacuation area maps).	Reports of community consultations, participatory map outputs recorded in report to IRIS	Beneficiaries	At closure	Country	Number	0	2023	18	2025	**Outcome:** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Enhancing local capacity in Kiribati, Tonga and Vanuatu for collecting field survey data, as well as accessing and using existing exposure data on infrastructure, buildings, settlements and other economic assets.
	No components available.											

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Community consultation outreach sessions.		The number of subnational community consultation sessions including two way learning and participatory mapping of assets and past hazards.	Reports of community consultations, participatory map outputs recorded in report to IRIS	Beneficiaries	Every two years	Country	Number	0	2023	12	2025	**Outcome:** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Enhancing local capacity in Kiribati, Tonga and Vanuatu for collecting field survey data, as well as accessing and using existing exposure data on infrastructure, buildings, settlements and other economic assets.
	No components available.											

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
The % proportion of women involved in the training and upskilling activities.		The percentage proportion of women involved in the technical upskilling and capacity building stages of the project. This includes technical training, science and data-policy communication and leadership skills transfer workshops.	Reports of workshops to be provided to IRIS	Capacity	Yearly	Country	Percentage	0	2023	50	2025	**Outcome:** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Capacity building in the application of exposure data on climate and disaster risks, for technical officers and decision makers in sectors related to critical infrastructure
	No components available.											

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
The number of skill building training courses facilitated through the project.		Skills building workshops will include 1) the survey training and surveys and 2) the accessing, downloading and using datasets training both held once for each country.	Reports of training sessions to be provided to IRIS.	Capacity	Yearly	Country	Number	0	2023	6	2026	**Outcome:** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Capacity building in the application of exposure data on climate and disaster risks, for technical officers and decision makers in sectors related to critical infrastructure
	Courses developed through the training	Number of coursebooks developed including (for formal education and or TVET based on maooing). SPC has already developed some example coursebooks and manuals for data collection and courses in QGIS training. This project will build upon this foundation by developing further coursebooks to cover Kiribati and the areas of exposure and hazard modelling.	Coursebooks to be provided to countries and IRIS	Other	Yearly	Global	Number	2	2023	6	2026	

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Number of local national level workshops to bring together various stakeholders from Government, and critical infrastructure sectors private sector (Chamber of Commerce) and civil society.		National level cross sectoral partnerships, meetings, workshops To be conducted	This would be documented in the reports to be shared with IRIS	Investment	Yearly	Country	Number	0	2023	6	2026	**Outcome:** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Capacity building in the application of exposure data on climate and disaster risks, for technical officers and decision makers in sectors related to critical infrastructure
	Number of different stakeholders present at workshops	Number of stakeholders across Government, private sector (Chamber of Commerce) and civil society.	To be recorded in attendance sheets and shared with IRIS via reports.	Investment	Yearly	Country	Number	0	2023	60	2026	
	Number of criticial insfrastructure sector participants present at meetings and workshops	The team will ensure that participants from critical infrastructure sectors are present.	attendence lists participant sign off sheets	Policy	Yearly	Country	Number	0	2023	50	2026	

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
No. of Exposure and Hazard Models provided to critical infrastructure ministries including in GIS data format		SPC will work with the partner country Government agencies to develop or strengthen EWS with application to critical infrastructure resilience The number of examples and case studies will be recorded in reports.	To be recorded in reports to IRIS	Other	Yearly	Country	Number	0	2023	3	2026	**Outcome :** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Combined exposure and hazard models for Early Warning Systems in sectors related to critical infrastructure.
	No components available.											

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Surveys at country levels		Surveys to gather additional asset and exposure data on critical infrastructure, buildings, utilities and other economic assets.	To be recorded in survey reports	Other	Every two years	Country	Yes/No	2	2023	5	2026	**Outcome :** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Enhancing local capacity in Kiribati, Tonga and Vanuatu for collecting field survey data, as well as accessing and using existing exposure data on infrastructure, buildings, settlements and other economic assets.
	Geonode geodatabases	Geonode geodatabases established for the participating countries (Kiribati, Tonga, Vanuatu).	To be recorded in report to IRIS	Capacity	Every two years	Country	Yes/No	0	2023	3	2026	

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Hazard data outputs provided to Government		Models of hazards provided to government including in GIS data format	To be recorded in geodatabases	Other	Every two years	Country	Yes/No	0	2023	3	2026	**Outcome:** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Combined exposure and hazard models for Early Warning Systems in sectors related to critical infrastructure.
	No components available.											

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
Inception meetings and report completed		SPC will hold inception meetings with each country to agree on activities and workplan	Inception report	Other	Yearly	Country	Number	0	2024	3	2025	**Outcome:** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Gap analysis of the legal and policy framework for disaster / climate resilient infrastructure systems to identify recommendations to strengthen use and application of risk data.
	No components available.											

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
No of relevant policies, frameworks and strategies that speak to climate disaster and infrastructure reveiwed.		Mapping of policies, frameworks, and strategies that speak to disaster and climate risk and infrastructure.	Presentation of mapping results to country in an agreed format / mode e.g report, or ppt presentatoin etc	Policy	Yearly	Country	Number	0	2024	3	2025	**Outcome :** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Gap analysis of the legal and policy framework for disaster / climate resilient infrastructure systems to identify recommendations to strengthen use and application of risk data.
	No components available.											

Indicator Title	Component Title	Description	Means of Verification	Category	Cycle	Scope	Value Type	Baseline Value	Baseline Year	Target Value	Target Year	Linked Outcome / Output
No. of infrastructure ministries engaged in the gap analysis and no. of infrastructure ministries high level representatives in the policy workshop.		The number of workshops with higher level policy and decision makers. Workshops and meetings will include inception meetings	Meeting minutes and Workshop reports and any progress of any action items.	Policy	Yearly	Country	Yes/No	0	2023	6	2026	**Outcome:** Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure. **Output:** Gap analysis of the legal and policy framework for disaster / climate resilient infrastructure systems to identify recommendations to strengthen use and application of risk data.
	No. of Ministerial Policy Briefings for critical infrastructure sectors	Gap analysis and mapping work to inform policy briefings to inform action	Policy briefings	Policy	Yearly	Country	Yes/No	0	2023	6	2026	
	No. of Ministries / Government agencies for critical infrastructure sectors involved in the project activities, present at the Government level workshops.	Presence of infrastructure ministries at meetings and input into discussions will be encouraged.	Workshop and meeting reports / minutes	Policy	Yearly	Country	Yes/No	0	2023	3	2026	

Risks

Event	Category	Level	Likelihood	Impact	Mitigating Measures	Risk Owner
Natural disaster	• Operational	High	Likely	Major	Risk management planning, buffers in timeline, options for tasks that can still be completed during a disaster.	All
Turnover in staff	• Organizational • Operational	Medium	Possible	Major	Adequate documentation, regular project meetings and recordings of all meetings and handover notes.	Implementing organisation and Government agencies.
Change in Government	• Political	Medium	Possible	Moderate	Awareness of electoral calendars and continuous dialogue with Government agencies.	SPC and government agencies.
Duplication of efforts with other stakeholders and projects	• Strategic • Financial • Operational	Low	Unlikely	Moderate	This will be mitigated through inception and mobilization and through consultation with various stakeholders.	SPC
Accident during field surveys	• Operational	Low	Unlikely	Minor	This will be mitigated through appropriate training of trainers to always provide briefings, safety measures, and contingency plans.	SPC and survey coordinating agencies.

Budget by UNSDG Categories: Over all

Budget Lines	SPC (7%) *	Total
1. Staff and other personnel	$221,340.00	$221,340.00
2. Supplies, Commodities, Materials	$37,230.00	$37,230.00
3. Equipment, Vehicles, and Furniture, incl. Depreciation	$37,230.00	$37,230.00
4. Contractual services	$39,990.00	$39,990.00
5. Travel	$111,540.00	$111,540.00
6. Transfers and Grants to Counterparts	$167,400.00	$167,400.00
7. General Operating and other Direct Costs	$86,204.58	$86,204.58
Project Costs Sub Total	**$700,934.58**	**$700,934.58**
8. Indirect Support Costs	$49,065.42	$49,065.42
Total	**$750,000.00**	**$750,000.00**

Budget by UNSDG Categories: 2024

Budget Lines	Fiscal Year *	Description	SPC (7%) *	Total
1. Staff and other personnel	2024	SPC staff inputs and resourcing hours	$44,268.00	$44,268.00
2. Supplies, Commodities, Materials	2024	Includes all direct and indirect costs (e.g. freight, transport, delivery, distribution) associated with procurement of supplies, commodities, and materials. Office supplies should be reported as "General Operating".	$7,470.00	$7,470.00
3. Equipment, Vehicles, and Furniture, incl. Depreciation	2024	Establishing servers and maintenance for datasets for resilient infrastructure. It may also include rental vehicles, buses etc...	$7,470.00	$7,470.00
4. Contractual services	2024	Contracts, small value contractors.	$7,998.00	$7,998.00
5. Travel	2024	Travel for SPC staff to countries for the training and monitoring.	$22,260.00	$22,260.00
6. Transfers and Grants to Counterparts	2024	Funding for surveys including mobile data for uploads, survey equipment, GPS point uploads, water and safety first aid equipments etc...	$33,480.00	$33,480.00
7. General Operating and other Direct Costs	2024	Workshops and communication, awareness and knowledge management materials	$16,554.00	$16,554.00
Project Costs Sub Total			**$139,500.00**	**$139,500.00**
8. Indirect Support Costs			$9,765.00	$9,765.00
Total			**$149,265.00**	**$149,265.00**

Budget by UNSDG Categories: 2025

Budget Lines	Fiscal Year *	Description	SPC (7%) *	Total
1. Staff and other personnel	2025	SPC staff inputs and resourcing hours	$110,670.00	$110,670.00
2. Supplies, Commodities, Materials	2025	Includes all direct and indirect costs (e.g. freight, transport, delivery, distribution) associated with procurement of supplies, commodities, and materials. Office supplies should be reported as "General Operating".	$18,600.00	$18,600.00
3. Equipment, Vehicles, and Furniture, incl. Depreciation	2025	Software, server set up and maintenance, for datasets for resilient infrastructure. It may also include rental vehicles, buses etc...	$18,600.00	$18,600.00
4. Contractual services	2025	Contracts, small value contractors.	$19,995.00	$19,995.00
5. Travel	2025	Travel for SPC staff to countries for the evaluations. As well as transport for focal Government partners for the regional lessons learned workshop.	$55,800.00	$55,800.00
6. Transfers and Grants to Counterparts	2025	Funding for surveys including mobile data for uploads, survey equipment, GPS point uploads, water and safety first aid equipments etc...	$83,700.00	$83,700.00
7. General Operating and other Direct Costs	2025	Workshops and communication, awareness and knowledge management materials	$44,820.00	$44,820.00
Project Costs Sub Total			**$352,185.00**	**$352,185.00**
8. Indirect Support Costs			$24,652.95	$24,652.95
Total			**$376,837.95**	**$376,837.95**

Budget by UNSDG Categories: 2026

Budget Lines	Fiscal Year *	Description	SPC (7%) *	Total
1. Staff and other personnel	2026		$66,402.00	$66,402.00
2. Supplies, Commodities, Materials	2026		$11,160.00	$11,160.00
3. Equipment, Vehicles, and Furniture, incl. Depreciation	2026		$11,160.00	$11,160.00
4. Contractual services	2026		$11,997.00	$11,997.00
5. Travel	2026		$33,480.00	$33,480.00
6. Transfers and Grants to Counterparts	2026		$50,220.00	$50,220.00
7. General Operating and other Direct Costs	2026		$24,830.58	$24,830.58
Project Costs Sub Total			**$209,249.58**	**$209,249.58**

Budget Lines	Fiscal Year *	Description	SPC (7%) *	Total
8. Indirect Support Costs			$14,647.47	$14,647.47
Total			**$223,897.05**	**$223,897.05**

Performance-based Tranches Breakdown

Tranche			Total
Tranche 1	SPC (20%)	$150,000.00	$150,000.00
Tranche 2	SPC (50%)	$375,000.00	$375,000.00
Tranche 3	SPC (30%)	$225,000.00	$225,000.00
			$750,000.00

Results based budget

Outcome *	Output *	Activity *	Agency *	Budget (USD) *
Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure.			**Sub Total**	**$750,000.00**
	Gap analysis of the legal and policy framework for disaster / climate resilient infrastructure systems to identify recommendations to strengthen use and application of risk data.		**Sub Total**	**$155,000.00**
		Cross sectoral consultations and workshops	SPC (7%)	$85,000.00
		National mapping of the landscape of disaster and climate risk and infrastructure resilience policies, strategies, frameworks, data, stakeholders to contribute to an improved evidence base. This includes the presentation of Mapping Results workshop	SPC (7%)	$70,000.00
	Enhancing local capacity in Kiribati, Tonga and Vanuatu for collecting field survey data, as well as accessing and using existing exposure data on infrastructure, buildings, settlements and other economic assets.		**Sub Total**	**$175,000.00**
		Training activities undertaken in Kiribati, Tonga and Vanuatu for national inventories of infrastructure, buildings, settlements and other economic assets.	SPC (7%)	$75,000.00
		Practical surveys undertaken by Kiribati, Tonga and Vanuatu for national inventories of infrastructure, buildings, settlements and other economic assets.	SPC (7%)	$100,000.00
	Capacity building in the application of exposure data on climate and disaster risks, for technical officers and decision makers in sectors related to critical infrastructure		**Sub Total**	**$165,000.00**
		Mapping and assessments of relevant local instituitions resources and tools to address disasater and climate risk. This will include Communication and Knowledge Management analysis and gender analysis of and climate risk & science to policy mapping	SPC (7%)	$65,000.00
		Application of Exposure data in exposure modelling Training with Communication and Knowledge Management Training	SPC (7%)	$100,000.00
	Combined exposure and hazard models for Early Warning Systems in sectors related to critical infrastructure.		**Sub Total**	**$255,000.00**
		Technical outputs including assets and exposure models provided to the Governments	SPC (7%)	$120,000.00
		Technical outputs including hazard models provided to the Governments	SPC (7%)	$135,000.00
Total				**$750,000.00**

Programme Outcome Costs

Outcome	Output	Activity	Implementing Agent	Time Frame								
				2024	2025			2026				
				4	1	2	3	4	1	2	3	4
Enhanced technical capacity of local institutions in Kiribati, Tonga and Vanuatu to develop geospatial databases to support exposure and hazard modelling for resilient infrastructure.												
	Gap analysis of the legal and policy framework for disaster / climate resilient infrastructure systems to identify recommendations to strengthen use and application of risk data.											
		Cross sectoral consultations and workshops										
			SPC	☐	☐	☑	☑	☐	☐	☐	☐	☐
		National mapping of the landscape of disaster and climate risk and infrastructure resilience policies, strategies, frameworks, data, stakeholders to contribute to an improved evidence base. This includes the presentation of Mapping Results workshop										
			SPC	☑	☑	☑	☑	☐	☐	☐	☐	☐
	Enhancing local capacity in Kiribati, Tonga and Vanuatu for collecting field survey data, as well as accessing and using existing exposure data on infrastructure, buildings, settlements and other economic assets.											
		Training activities undertaken in Kiribati, Tonga and Vanuatu for national inventories of infrastructure, buildings, settlements and other economic assets.										
			SPC	☐	☐	☐	☐	☑	☑	☑	☐	☐
		Practical surveys undertaken by Kiribati, Tonga and Vanuatu for national inventories of infrastructure, buildings, settlements and other economic assets.										
			SPC	☐	☐	☐	☐	☑	☑	☑	☐	☐
	Capacity building in the application of exposure data on climate and disaster risks, for technical officers and decision makers in sectors related to critical infrastructure											
		Mapping and assessments of relevant local instituitions resources and tools to address disasater and climate risk. This will include Communication and Knowledge Management analysis and gender analysis of and climate risk & science to policy mapping										
			SPC	☑	☑	☑	☑	☐	☐	☐	☐	☐
		Application of Exposure data in exposure modelling Training with Communication and Knowledge Management Training										
			SPC	☐	☐	☐	☐	☑	☑	☑	☐	☐
	Combined exposure and hazard models for Early Warning Systems in sectors related to critical infrastructure.											
		Technical outputs including assets and exposure models provided to the Governments										

Outcome	Output	Activity	Implementing Agent	Time Frame								
				2024	2025				2026			
				4	1	2	3	4	1	2	3	4
			SPC	☐	☐	☐	☑	☑	☑	☑	☐	☐
		Technical outputs including hazard models provided to the Governments										
			SPC	☐	☐	☐	☑	☑	☑	☑	☐	☐

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