Independent State of Samoa
Ministry of Foreign Affairs and Trade
Ministry of Finance
Ministry of Natural Resources and Environment
Secretariat of the Pacific Regional Environment Programme

Independent State of Samoa
Project for Capacity Building on Climate Resilience in the Pacific

Final Report
(Training Program on Climate Change)

January 2023

Japan International Cooperation Agency
(JICA)

Pacific Consultants Co., Ltd.
Japan Weather Association
Oriental Consultants Global Co., Ltd.

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List of Abbreviations

Abbreviation	Formal Name
AE	Accredited Entity
AR5	5th Annual Report
AR6	6th Annual Report
CBCRP-PCCC	Project for Capacity Building on Climate Resilience in the Pacific
CBD	Convention of Biological Diversity
CCA	Climate Change Adaptation
CFAN	Climate Finance Access Network
CIS	Climate Information Service
CMS	Course Management System
C/P	Counter Part
CSIRO	Commonwealth Scientific and Industrial Research Organization
DECEM	Department of Environment, Climate Change & Emergency Management
DRR	Disaster Risk Reduction
EbA	Ecosystem-based Adaptation
EbM	Ecosystem-based Management
ENSO	El Niño-Southern Oscillation
EPS	Ecological Purification Systems
ESM	Earth System Model
ESRAM	Ecosystem and Socio-economic Resilience Analysis and Mapping
EWARS	Early Warning, Alert and Response Systems
FRDP	Framework for Resilient Development in the Pacific
GCF	Green Climate Fund
GGGI	Global Green Growth Institute
GHG	Greenhouse gas
GEF	Global Environment Facility
GIS	Geographical Information System
IGES	Institute for Global Environmental Strategies
IPCC	Intergovernmental Panel on Climate Change
IPO	Interdecadal Pacific Oscillation
ITCZ	Intertropical Convergence Zone
IVA	Integrated Vulnerability Assessment
JICA	Japan International Cooperation Agency
KJWA	The Koronivia Joint Work on Agriculture
LDC	Least Developed Country
M&E	Monitoring and Evaluation
MJO	Madden Julian Oscillation
MP4	MPEG-4 Part 14
MRV	Measurement, Reporting and Verification
NAP	National Adaptation Plan
NDA	National Designated Authority
NDC	Nationally Determined Contributions
PACRES	The Pacific Adaptation to Climate Change and Resilience
PACCSAP	Pacific-Australia Climate Change Science and Adaptation Planning
PCCC	Pacific Climate Change Center
PCCSP	Pacific Climate Change Science Program
PDO	Pacific Decadal Oscillation

PDM	Project Design Matrix
PICOF	The Pacific Islands Climate Outlook Forum
PICTs	Pacific Islands Countries and Territories
PIF	Pacific Islands Forum
PRIF	Pacific Regional Infrastructure Facility
RCP	Representative Concentration Pathways
SIDS	Small Island Developing States
SPC	Pacific Community
SPCZ	South Pacific Convergence Zone
SPREP	Secretariat of the Pacific Regional Environment Programme
SPTO	Pacific Tourism Organization
UNFAO	Food and Agriculture Organization of the United Nations
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
UON	The University of New Castle
USP	University of the South Pacific
WaSH	Water, Sanitation and Hygiene
WHO	World Health Organization
WGI	Working Group I
WGII	Working Group II

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Project Formulation Handbook

Executive summary

1. Background and objectives

Pacific island countries and territories (PICTs) are extremely vulnerable to natural disasters and climate change such as sea level rise and faced to urgent needs to strengthen activities on adaptation to climate change. However, there are some concerns and challenges such as lack of the capacity on prediction and impact assessment of climate change which are necessary for reviewing the adaptation plans focusing on disaster risk reduction and resilience and lack of the capacity to access to climate finance including the Green Climate Fund (hereinafter referred to as "GCF"). Capacity development of human resources who can deal with these challenges and the establishment of regional center which can implement these activities are urgently needed. Under this background, JICA has launched a Technical Assistant project named "Project for Capacity Building on Climate Resilience in the Pacific" (hereinafter referred to as the "Project") from July 2019 under the cooperation with the Secretariat of the Pacific Regional Environment Programme (hereinafter referred to as "SPREP") to strengthen the functions of the Pacific Climate Change Center (hereinafter referred to as "PCCC") which was constructed by Japanese grant assistance as a center for training on climate change. This consultancy contracted work (Training Program on Climate Change) (hereinafter referred as “the work”) assisted the PCCC to provide regional training to relevant ministries and agencies in the field of climate change in PICTs about climate change impact assessment, adaptation and mitigation in disaster risk reduction, ecosystem, water, food, tourism, health sector, and strategic project planning utilizing climate funds and environmental and social considerations and gender issues in the project. The purpose and expected outputs of the work are as follows.

Overall Goal

Capacities on climate resilience in the Pacific region are enhanced through establishment of training function of Pacific Climate Change Center (PCCC) as stated in the Vision for PCCC.

Project Purpose

Training function of PCCC is operationalized by enhanced its capacities in the areas of climate change (adaptation, access to finance and mitigation) in the Pacific region.

Outputs

Output 1: Regular training program on climate change adaptation is established by PCCC.

Output 2: Regular training program on improvement of access to climate finance is established by PCCC.

Output 3: Ad-hoc training program on mitigation is established by PCCC.

2. Project implementation structure and scope of the consultancy contract work

The project implementation structure of Japanese side was consisted of two long-term experts and contracted consultants (short-term expert). Two (2) experts were dispatched for overall project management and coordination from July 2019 to the end of the project. Their work included the training concept and module development, identification of lecturers from third countries through the SPREP/PCCC network, administration of the PCCC e-learning platform, project monitoring, public relations activities, etc. A total of 15 experts were also dispatched as short-term experts to provide technical support for the development and implementation for different training courses. While the first training course [1] in November 2019 was implemented solely by the Remote Sensing Technology Center of Japan (RESTEC), and the rest of the 11 training courses were developed and implemented by the Joint Venture of consultant companies headed by Pacific Consultants Co., Ltd.

Table-1 JICA long-term experts

Name	Role	Period
Ms. Masako Ogawa	Chief Advisor	16 July 2019 to 17 January 2023
Mr. Yuji Ueno	Project Coordinator	1 July 2019 to 31 December 2022

[1] The first training named "Hazard and Risk Assessment in Coastal Area Management by using Remote Sensing Technology" was carried out in-person from 11 to 15 November 2019. 26 participants participated and 24 participants completed the course.

Table-2 JICA short-term experts

Name	Duties	Organization
Mr. Yoshihiro Mizuno	Leader	Pacific Consultants
Mr. Koji Kuroiwa	Climate Science	Japan Weather Association
Mr. Yusuke Yamazaki	DRR1	Pacific Consultants
Dr. Daiki Tsujio	DRR2	Pacific Consultants
Mr. Takuya Shiraishi	Ecosystem	Oriental Consultants Global
Mr. Kazushige Mizui	Water	Pacific Consultants
Mr. Yasuki Shirakawa	Tourism	ALMEC Corporation
Dr. Akampumuza Precious	Health	Japan Weather Association
Mr. Eiko Watatsu	Agriculture	Oriental Consultants Global
Mr. Tetsuya Yoshida	Climate Finance	Oriental Consultants Global
Mr. Muneo Matsukawa	Gender and social inclusion	Japan Weather Association
Ms. Ayase Yazaki	Administrator	Pacific Consultants

This report is the final report for the work. A separate "Project Completion Report" will be available on the JICA Library Portal.

2. Activities and Results

The work was originally planned to start from February 2020 to the end of June 2022. However, due to the travel restriction caused by the pandemic of COVID-19 from the beginning of 2020, the activities of the work were severely restricted. Therefore, the project period was extended to the end of January of 2023, and it was decided to implement an online training program instead of in-person training program. In addition, it was decided that the following three contents to be addressed by the project during the project period as result of discussion with the SPREP.

- To develop an Open learning course utilizing the materials of the executive training program
- To develop a Project formulation Handbook to assist to access to climate finance
- To provide a mentoring service to support to access to climate finance

Below is the summary of the training courses.

Table-4 Summary of the training courses

No.	Course name	Date	No. of Participants
2	Climate Science – observed climate change and future climate projections	16 - 25 September 2020	Nominations: 52 Completion: 40
3	Understanding Access to Climate Finance, Part 1: Essential aspects for access to climate finance	12 Nov. – 7 Dec. 2020	Nominations: 44 Completion: 32
4	Understanding Access to Climate Finance, Part 2: Gender, social inclusion, and safeguards	23 Nov. – 23 Dec. 2020	Nominations: 44 Completion: 20
5	Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) through structural approaches	8 Mar. – 20 Mar. 2021	Nominations: 54 Completion: 35
6	Ecosystem-based Adaptation and Mitigation	23 Jun. – 28 Jul. 2021	Nominations: 59 Completion: 41
7	Climate Resilience and Food Production Systems – agriculture and coastal fisheries	20 Sept. – 15 Oct. 2021	Nominations: 77 Completion: 39
8	Enhancing Climate Resilience in Tourism in the Pacific	24 January – 18 February 2022	Nominations: 44 Completion: 28

9	Enhancing Climate Resilience and Safe Water Access in Rural Areas in the Pacific	2-27 May 2022	Nominations: 73 Completion: 56
10, 11	Understanding Access to Climate Finance: Part 3 & 4: Project planning and management	4 July – 12 August 2022	Nominations: 62 Completion: 30
12	Health Systems and Climate Change: Enhancing Resilient and Low-carbon Development in the Pacific	29 August – 6 October 2022	Nominations: 55 Completion: 24

Below is the list of activities and results of the above activities.

Table-5 Activities and Results of the work (Summary)

Activities and Results	
Overall	• 11 online training courses were developed and implemented. • 39 external experts who have knowledge and expertise of Pacific were identified as lectures • 345 participants completed the training courses. • It was confirmed through a six-month follow-up survey and/or online interview for the participants that approximately 70% of them utilized the knowledge and expertise which obtained through the training in their daily work after the training.
Activities related to Outcome 1	• Developed the training curriculum and materials on climate change adaptation in seven sectors such as climate science, disaster risk reduction, ecosystems, food, tourism, water, and health. • The training course on the sectors were implemented through online. • 263 participants completed the training courses (40 participants for climate science, 35 participants for disaster risk reduction, 41 participants for ecosystem, 39 participants for food, 28 participants for tourism, 56 participants for water, and 24 participants for health). • 24 external experts were identified as lecturers (2 expert for climate science, 1 experts for disaster risk reduction, 4 experts for ecosystem, 6 experts for food, 4 experts for tourism, 4 experts for water, 3 experts for health). • About 70% of the participants rated the training courses as excellent.
Activities related to Outcome 2	• Developed the training curriculum and materials on climate change adaptation in fours sectors: basic knowledge on climate finance; gender, social inclusion, and safeguards; project management, budget, and schedule; and project implementation, monitoring, and evaluation. • The training course on the sectors were implemented through online. • 82 participants completed the training courses (52 participants for Climate Fund 1&2, 30 participants for Climate Fund 3&4) • 8 external experts were identified as the lecturers (1 experts for basic knowledge of climate finance; 3 experts for gender, social inclusion and safeguards; 2 experts for project management, budget and schedule; and 3 experts for project implementation, monitoring and evaluation). • About 80% of training participants rated the training courses as excellent.
Activities related to Outcome 3	• Developed the training curriculum and materials on climate change adaptation in five sectors: ecosystems, food, tourism, water and health. • 188 participants completed the training courses (41 participants for ecosystem, 39 participants for food, 28 participants for tourism, 56 participants for water, 24 participants for health).

Activities and Results	
	• 12 external experts were identified as the lecturers (4 experts for ecosystem, 2 experts for food, 4 experts for tourism, 2 experts for health). • About 73% of training participants rated the training courses as excellent.
Open learning program development	• Developed an open learning program for whom want to learn the developed training materials of this project. Redesigned and revised some contents of the training courses to be able to do it by oneself. • Subjects included in the open learning program are the Disaster risk reduction, ecosystem, tourism, water, health and climate finance access (Part 3 and Part4).
Project Formulation Handbook development	• A Project Formulation Handbook that explains how to identify the issues and project components and promote project formulation utilizing problem and objective tree analysis and logical framework development for stakeholders in PICTs were developed. • The PCCC will utilize and disseminate it as one of the teaching materials in future training programs.
Providing Mentoring services to access to climate finance	• As a part of follow-up activities, the mentoring was conducted to support the participants to develop/improve the concept notes to link the issues and measures which were identified in the exercise of the executive course to activities (projects) utilizing climate finance such as GCF and other sources. The below three projects were received the mentoring service to develop/improve their concept note. 1) Solomon Islands: "Scaling up Ecosystem Based Adaptation to climate change in Solomon Islands". 2) PNG: Agriculture "Application of Sustainable Agriculture Practices for Smallholder farmers in the Southern Region Provinces of Papua New Guinea 3) PNG: Disaster Prevention and Infrastructure "Connecting Rural Farmers to the Urban Markets through Climate Resilient Roads and Bridges in Papua New Guinea • Online meetings for mentoring were held regularly. Through the mentoring, advice and comments from experts were provided to the participants how to improve the draft concept notes.

4. Challenges and lessons learned

(1) Means of holding training courses

This project utilized the PCCC e-Learning Platform[2] which was developed by SPREP/PCCC based on the CMS (Course Management System) and incorporated various ingenuities referring to other online training courses. Because of that, the training program was highly evaluated by the participants. On the other hand, there were requests for a hybrid training program that combines face-to-face training as well as online training.

(2) Training materials

[2] The PCCC e-Learning platform has been in operation since March 2021 and used from the Disaster risk reduction course.
It is developed utilizing a Moodle, an open-source e-learning platform, as a platform. It provides videos of lectures by experts, lecture materials in PDF format, the discussion forum, online lectures, and quizzes.
The training program on climate science and climate finance access (Part 1 and Part 2) implemented in 2020 were carried out utilizing several tools such as Google Drive, Zoom, and Slack to conduct live sessions, discussions, Q&A, and sharing of materials instead of the e-Learning platform.

The training materials were designed to include common contents related to "climate science," "adaptation," "mitigation," and "access to climate finance" for each of the targeted sectors, so that participants can learn the same themes and obtain the same outputs. The training materials were prepared by experts with knowledge and expertise of Pacific Island countries and territories (PICTs). And by reviewing the climate change strategies and policies of PICTs, wide range of important topics such as disaster risk reduction, ecosystems, water, tourism, and health in PICTs were covered in the training materials. It provides differentiation and added values to this training program compared to the other training program on climate change offered by other international organizations and institutions.
Group work on problem tree, Objective tree, and Logical framework development were implemented in the exercise. An exercise topic, template for the exercise, checklist for output and feedback for the exercise outputs from the experts through online meetings were provided. It highly received evaluation from the participants than for the other modules.
The scientific evidence, knowledge, case studies, and future projections of climate change in the Pacific region are constantly being updated. Therefore, the training materials should be regularly updated, and the training should be implemented fully taking into account the characteristics of PICTs.

(3) Human and related resources

Collaboration with various experts such as experts on climate science, climate finance and Ecosystem-based Adaptation (EbA) of SPREP, external experts and related institutions were carried out in the project. It is necessary to further strengthen the collaboration and obtain continuous cooperation for PCCC activities in the future.

(4) Utilizing the Project formulation handbook and outputs of the mentoring

The Project formulation handbook which was developed in the project and the findings obtained through the mentoring are assets that can be used continuously after the completion of this project. They can be widely utilized in future PCCC training activities. It is necessary for the PCCC to utilize and update these materials and findings by themselves.

4. Recommendations

In order to ensure effective and continuous implementation and further capacity building of the PCCC's training programs after the completion of the project, it is important to take into consideration the following.

- Update and add new contents to the training materials
- Provide continuous training program in a form of hybrid combining online and in-person training
- Promote the utilizing the training outputs in daily works including Monitoring and Evaluation (M&E)
- Provide continuous support for project formation
- Establish and strengthen the networks with participants, external experts, local institutions, and other donors
- Strengthen the structure of the PCCC Secretariat (e.g., securing human resources)
- Establish M&E system and methodology to ensure that training results are being utilized and support for their implementation

1. Project Summary

1.1 Background

The impacts of climate change have been occurred in many sectors such as water environment and water resources, natural disasters, ecosystems, food, health, and the economy around the world. And there are concerns that these irreversible impacts are likely to increase in the future. Therefore, not only mitigation which reduce greenhouse gas (GHG; hereafter referred to as "GHG") emissions, but also adaptation which adapt to the existing impacts and/or the projected impacts that would be unavoidable in the medium to long term is urgently required. Particularly, it is urgently required for PICTs which are extremely vulnerable to sea level rise and natural disasters caused by climate change to strengthen adaptation activities to tackle with climate change as soon as possible. However, they are facing the critical issues such as a lack of the capacity of climate change impact assessments which are necessary for planning and reviewing adaptation plans that focus on disaster prevention and resilience, a lack of the capacity to access to climate finance including the Green Climate Fund (hereinafter referred to as "GCF"). There are urgent needs to develop human resources to address these issues and to establish a regional center to implement adaptation measures. On the other hand, the common regional prioritized issues are presented and the effective utilization of resources and finance emphasizing not only individual responses but also regional partnership measures considering different needs, population, economic activities, and limited resources for development by country are suggested in the Framework for Resilient Development in the Pacific (FRDP) which was agreed as an integrated regional strategy by the Pacific Islands Forum (PIF).
Under this background, JICA has launched a Technical Assistant project named "Project for Capacity Building on Climate Resilience in the Pacific" (hereinafter referred to as the "Project") from July 2019 and cooperated with the Secretariat of the Pacific Regional Environment Programme (hereinafter referred to as "SPREP") to enhance the capacity of the Pacific Climate Change Center (hereinafter referred to as "PCCC").
Prior to this consultancy contract work (Training Program on Climate Change) (hereinafter referred to as "the work"), the first training program was carried out at the PCCC from November 11 to 16, 2019. 24 participants from 12 PICTs learned the basics of risk assessment and the use of remote sensing and geographic information systems (GIS) for coastal zone climate. The work provides regional training on climate change impact assessment, adaptation and mitigation measures in disaster risk reduction (hereinafter referred to as “DRR”), ecosystem, water, food, tourism, health sector, as well as strategic project planning and environmental and social considerations to access to climate finance to the officials of relevant ministries and agencies to the climate change in PICTs in the project.

1.2 Objectives and expected Results

The main objectives of the work are to establish a training function in the PCCC and to enhance understanding and the capacity of stakeholders in the Pacific region on climate change through training activities.

Overall Goal

Capacities on climate resilience in the Pacific region are enhanced through establishment of training function of Pacific Climate Change Center (PCCC) as stated in the Vision for PCCC.

Project Purpose

Training function of PCCC is operationalized by enhanced its capacities in the areas of climate change (adaptation, access to finance and mitigation) in the Pacific region.

Outputs

Output 1: Regular training program on climate change adaptation is established by PCCC.
Output 2: Regular training program on improvement of access to climate finance is established by PCCC.
Output 3: Ad-hoc training program on mitigation is established by PCCC.

1.3 Project implementation structure and scope of the consultancy contract work

The project implementation structure of Japanese side was consisted of two long-term experts and contracted consultants (short-term expert). Two (2) experts were dispatched for overall project management and coordination from July 2019 to the end of the project. Their work included the training concept and module development, identification of lecturers from third countries through the SPREP/PCCC network, administration of the PCCC e-learning platform, project monitoring, public relations activities, etc. A total of 15 experts were also dispatched as short-term experts to provide technical support for the development and implementation for different training courses. While the first training course in November 2019 was implemented solely by the Remote Sensing Technology Center of Japan (RESTEC), and the rest of the 11 training courses were developed and implemented by the Joint Venture of consultant companies headed by Pacific Consultants Co., Ltd.

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Mr. Yusuke Yamazaki	DRR1	Pacific Consultants
Dr. Daiki Tsujio	DRR2	Pacific Consultants
Mr. Takuya Shiraishi	Ecosystem	Oriental Consultants Global
Mr. Kazushige Mizui	Water	Pacific Consultants
Mr. Yasuki Shirakawa	Tourism	ALMEC Corporation
Dr. Akampumuza Precious	Health	Japan Weather Association
Mr. Eiko Watatsu	Agriculture	Oriental Consultants Global
Mr. Tetsuya Yoshida	Climate Finance	Oriental Consultants Global
Mr. Muneo Matsukawa	Gender and social inclusion	Japan Weather Association
Ms. Ayase Yazaki	Administrator	Pacific Consultants

This report is the final report for the work. A separate "Project Completion Report" will be available on the JICA Library Portal.

1.4 Summary of activities and results

The work was originally planned to start from February 2020 to the end of June 2022. However, due to the travel restriction caused by the pandemic of COVID-19 from the beginning of 2020, the project activities were severely restricted. Therefore, the project period was extended to the end of January of 2023, and it was decided to implement an online training program instead of in-person training program. In addition, it was decided that the following three contents to be addressed by the project during the project period as result of discussion with the SPREP.

- To develop an Open learning course utilizing the materials of the executive training program
- To develop a Project formulation Handbook to assist to access to climate finance
- To provide a mentoring service to support to access to climate finance

Below is the summary of the training courses.

Table 1-3 Summary of the training courses

No.	Course name	Date	No. of Participants
2	Climate Science – observed climate change and future climate projections	16 - 25 September 2020	Nominations: 52 Completion: 40
3	Understanding Access to Climate Finance, Part 1: Essential aspects for access to climate finance	12 Nov. – 7 Dec. 2020	Nominations: 44 Completion: 32
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6	Ecosystem-based Adaptation and Mitigation	23 Jun. – 28 Jul. 2021	Nominations: 59 Completion: 41
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8	Enhancing Climate Resilience in Tourism in the Pacific	24 January – 18 February 2022	Nominations: 44 Completion: 28
9	Enhancing Climate Resilience and Safe Water Access in Rural Areas in the Pacific	2-27 May 2022	Nominations: 73 Completion: 56
10, 11	Understanding Access to Climate Finance: Part 3 & 4: Project planning and management	4 July – 12 August 2022	Nominations: 62 Completion: 30
12	Health Systems and Climate Change: Enhancing Resilient and Low-carbon Development in the Pacific	29 August – 6 October 2022	Nominations: 55 Completion: 24

Below is the list of activities and results of the above activities.

Table 1-4 Activities and Results of the Project (Summary)

Activities and Results	
Overall	• 11 online training courses were developed and implemented. • 39 external experts who have knowledge and expertise of Pacific were identified as lectures • 345 participants completed the training courses. • It was confirmed through a six-month follow-up survey and/or online interview for the participants that approximately 70% of them utilized the knowledge and expertise which obtained through the training in their daily work after the training.
Activities related to Outcome 1	• Developed the training curriculum and materials on climate change adaptation in seven sectors such as climate science, disaster risk reduction, ecosystems, food, tourism, water, and health. • The training course on the sectors were implemented through online. • 263 participants completed the training courses (40 participants for climate science, 35 participants for disaster risk reduction, 41 participants for ecosystem, 39 participants for food, 28 participants for tourism, 56 participants for water, and 24 participants for health).

Activities and Results	
	• 24 external experts were identified as lecturers (2 expert for climate science, 1 experts for disaster risk reduction, 4 experts for ecosystem, 6 experts for food, 4 experts for tourism, 4 experts for water, 3 experts for health). • About 70% of the participants rated the training courses as excellent.
Activities related to Outcome 2	• Developed the training curriculum and materials on climate change adaptation in fours sectors: basic knowledge on climate finance; gender, social inclusion, and safeguards; project management, budget, and schedule; and project implementation, monitoring, and evaluation. • The training course on the sectors were implemented through online. • 82 participants completed the training courses (52 participants for Climate Fund 1&2, 30 participants for Climate Fund 3&4) • 8 external experts were identified as the lecturers (1 experts for basic knowledge of climate finance; 3 experts for gender, social inclusion and safeguards; 2 experts for project management, budget and schedule; and 3 experts for project implementation, monitoring and evaluation). • About 80% of training participants rated the training courses as excellent.
Activities related to Outcome 3	• Developed the training curriculum and materials on climate change adaptation in five sectors: ecosystems, food, tourism, water and health. • 188 participants completed the training courses (41 participants for ecosystem, 39 participants for food, 28 participants for tourism, 56 participants for water, 24 participants for health). • 12 external experts were identified as the lecturers (4 experts for ecosystem, 2 experts for food, 4 experts for tourism, 2 experts for health). • About 73% of training participants rated the training courses as excellent.
Open learning program development	• Developed an open learning program for whom want to learn the developed training materials of this project. Redesigned and revised some contents of the training courses to be able to do it by oneself. • Subjects included in the open learning program are the Disaster risk reduction, ecosystem, tourism, water, health and climate finance access (Part 3 and Part4).
Project Formulation Handbook development	• A Project Formulation Handbook that explains how to identify the issues and project components and promote project formulation utilizing problem and objective tree analysis and logical framework development for stakeholders in PICTs were developed. • The PCCC will utilize and disseminate it as one of the teaching materials in future training programs.
Providing Mentoring services to access to climate finance	• As a part of follow-up activities, the mentoring was conducted to support the participants to develop/improve the concept notes to link the issues and measures which were identified in the exercise of the executive course to activities (projects) utilizing climate finance such as GCF and other sources. The below three projects were received the mentoring service to develop/improve their concept note. 1) Solomon Islands: "Scaling up Ecosystem Based Adaptation to climate change in Solomon Islands". 2) PNG: Agriculture "Application of Sustainable Agriculture Practices for Smallholder farmers in the Southern Region Provinces of Papua New Guinea

Activities and Results	
	3) PNG: Disaster Prevention and Infrastructure "Connecting Rural Farmers to the Urban Markets through Climate Resilient Roads and Bridges in Papua New Guinea • Online meetings for mentoring were held regularly. Through the mentoring, advice and comments from experts were provided to the participants how to improve the draft concept notes.

2. Activities and results of the Output 1

2.1 Summary of the training course on climate change adaptation

The following training courses were developed and implemented as regular training programs on climate change adaptation.

Table 2-1 List of the training courses of the output1

No.	Course Name	Date	No. of participants	key external partners
2	Climate Science - observed climate change and future climate projections	16-25 Sep 2020	Nominations: 52 Completion: 40	University of Newcastle, Australia
5	Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) through structural approaches	8-20 Mar 2021	Nominations: 54 Completion: 35	Pacific Regional Infrastructure Facility (PRIF)
6	Ecosystem-based Adaptation and Mitigation	23 Jun - 28 Jul 2021	Nominations: 59 Completion: 41	N/A
7	Climate Resilience and Food Production Systems - agriculture and coastal fisheries	20 Sep-15 Oct 2021	Nominations: 77 Completion: 39	Food and Agriculture Organization of the United Nations (FAO)
8	Enhancing Climate Resilience in Tourism in the Pacific	24 Jan-18 Feb 2022	Nominations: 44 Completion: 28	Pacific Tourism Organisation (STPO)
9	Enhancing Climate Resilience and Safe Water Access in Rural Areas in the Pacific	2-27 May 2022	Nominations: 73 Completion: 56	SPC, Samoa Independent Water Schemes Association
12	Health Systems and Climate Change: Enhancing Resilient and Low-carbon Development in the Pacific	29 Aug-6 Oct 2022	Nominations: 55 Completion: 24	World Health Organization (WHO), University of Notre Dame, University of Gothenburg, University of Melbourne, USP

The PCCC e-Learning platform has been in operation since March 2021 and used from the Disaster risk reduction course. It is developed utilizing a Moodle, an open-source e-learning platform, as a platform. It provides videos of lectures by experts, lecture materials in PDF format, the discussion forum, online lectures, and quizzes. The training program on climate science and climate finance access (Part 1 and Part 2) implemented in 2020 were carried out utilizing several tools such as Google Drive, Zoom, and Slack to conduct live sessions, discussions, Q&A, and sharing of materials instead of the e-Learning platform.

2.2 Climate science

2.2.1 Training material development

Training materials were prepared based on the training structure and syllabus developed through coordination between SPREP, PCCC and JICA long-term experts. The training structure and syllabus are shown below. In developing the syllabus, the existing initiatives and resources (tools, modules, materials, and related regional training contents) were reviewed to ensure alignment with these initiatives and to add value to the training materials. Completion of the course was based on participation in all sessions and completion of all activities, including self-assessment.

Table 2-2 Training structure (Climate Science)

Item	Contents	Form
Self-paced leaning contents (Module 1-2)	Three modules were prepared as self-paced learning contents. Participants learned the distributed materials (PPTs) by themselves.	PPT, PDF, etc.
QA	Participants can ask questions about the training materials to the experts at preferable timing.	Email
Virtual session	Online summary lecturer by the experts, question and answer session and discussions among the participants were conducted. Presentation of group work outputs and feedback from the experts were also conducted.	Zoom
Group work	Participants discussed and completed the exercise as a group.	Zoom
Self-assessment	Quiz on understanding of the topics covered in the training	Utilize the Google function

Table 2-3 Training syllabus (Climate Science)

Module 1. Demonstrate knowledge of climate science and impact of climate change		
	1. 1Basics of climate change	
		Basics of climate change will be presented to provide an accurate understanding about climate change to the participants. i. What is weather and climate? ii. What is climate change? iii. Climate system and the factors affecting climate change (drivers) iv. Climate variability.
	1.2 Observed climate change (global)	
		Observed climate change in the world and their updates based on Intergovernmental Panel on Climate Change (IPCC) reports and WMO information.
	1.3 Observed climate changes (regional)	
		Past and present weather/climate in the region will be presented with a focus on observed climate change. Those may be discussed based on the outcomes of PCCSP/ PACCSAP, their updates and recent findings. i. Observed climate change in the Pacific (e.g. outcomes of PCCSP/PACCSAP) ii. Uncertainties and knowledge gaps
	1.4 Impact of Climate change on the Pacific region	
		Some of the key impacts of changing climate on the sectors such as water, biodiversity, food and natural resource, infrastructure, tourism and health.
Module 2. Projections of climate change		
	2.1 Projected climate change (global)	
		Climate projections given in IPCC's 5th Annual Report (AR5) and special reports will be outlined.
	2.2 Projected climate change (regional)	
		Regional- to country-scale projection of climate change will be presented based on the results from regional climate models and downscaling. Interpretation of those outputs will be discussed.
3. group work		
	Participants are expected to discuss the impact of climate change on their respective countries and produce a list of impact on relevant sectors.	

The following experts were identified through the SPREP/PCCC network as lecturers to prepare the training materials and deliver lectures.

Table 2-4 List of the experts (Climate Science)

Name	Organization	Module in charge
Dr. Koji Kuroiwa	JICA short-term expert	Module 1.2, Module 2.1
Dr. Andrew Magee	Centre for Water, Climate and Land (CWCL), University of Newcastle, Australia	Module 1.1, Module 2.2
Mr. Salesa Nihmei	Pacific Met. Desk Partnership, Climate Change Resilience, SPREP	Module 1.4

In addition to the above training materials, a Learner's Guide which explain how to learn the training materials and a Guidance note for group work which explain how to conduct the exercise activities were prepared and distributed in coordination with JICA's long-term experts.
A list of prepared training materials is attached as appendixes.

2.2.2 Request for nomination of participants

An official letter (Circular) containing a General Information (GI) which described the background, objectives, prospective participants, modules, logistics, etc. of the training course was prepared and sent with the training agenda and nomination form from SPREP to the climate change focal points of PICTs to request to nominate participants.

2.2.3 Organizing training

(1) Schedule and Participants

The training was implemented as online training from September 2 to September 27, 2020. 52 participants from 14 countries participated the training course and 40 participants completed the course.

Table 2-5 Schedule (Climate Science)

Date	Contents
16-25 September 2020	First virtual session (September 16) Second virtual session (September 22) Group Work (September 23-24) Third virtual session (September 25)
25-29 September 2020	self-assessment

Table 2-6 List of Participants (Climate Science)

Name of country and territory	No of participants	Name of country and territory	No of participants	Name of country and territory	No of participants
Cook Islands	4	Niue.	5	Tuvalu	4
Fiji	3	Palau	1	Timor-Leste	6
Federated States of Micronesia	4	Papua New Guinea	5	Tonga	5
Kiribati	3	Samoa	3	Vanuatu	5
Nauru	2	New Caledonia	3	Tokelau	5
					Total 52

(2) 1st virtual session

In the first virtual session, the expert summarized the Module 1 followed by a question-and-answer session with the participants.

Table 2-7 Agenda of the 1st virtual session (Climate Science)

Time	Contents	Speaker
13:00 - 13:10	Opening prayer Remarks by representative of SPREP	Ms. Tagaloa Cooper-Halo, CCR SPREP
13:10 - 13:20	Introduction of the CBCRP-PCCC Training Course including its main objectives and expected outcomes. Outline of the training program for 16-25 September and details of the virtual session 1.	Dr. Koji Kuroiwa
13:20 - 13:40	Introduction of participants	Participants
13:40 - 14:55	Brief review of Module 1 and key topics ✓ 1-1. basics of climate change (10 min. presentation and 5 min. Q&A) ✓ 1-2. Observed climate change (global) (5 min. presentation and 5 min. Q&A) ✓ Observed climate change (regional) (10 min. presentation and 5 min. Q&A) ✓ Impact of Climate change on the Pacific region change (15 min. presentation and 5 min. Q&A) Discussion on observed climate change and impact of climate change on the countries and territories.	Dr. Andrew Magee Dr. Koji Kuroiwa Dr. Andrew Magee Mr. Salesa Nihmei Facilitated by Dr. Koji Kuroiwa
14:55 - 15:00	Guideline on the next steps.	Dr. Koji Kuroiwa

The following questions were raised from the participants. The experts answered the questions.

- What are some of the specific impacts of the MJO (Madden-Julian Oscillation) on climate?
- Please explain the impact of El Niño and La Niño on climate.
- Which of the various forecast scenarios (Representative Concentration Pathways: RCPs) best applies to your country?
- What is the projected impact of the spread of the novel corona infection on GHG emissions?
- Are there any examples of projected overproduction of crops as an impact on climate change?
- What are some of the impacts of volcanic activity on climate change?

The participants discussed phenomenon occurred in their countries as climate change impacts, and the following comments were raised.

- Cool nights are decreasing. Sea level rise is noticeable. Cyclones have had a significant impact on the ecosystem. The rainy season is delayed.
- It is heavily affected by climate change, with sea level rise, rainfall changes, temperature changes, and ocean acidification all having an impact on all sectors.
- In 2014, local climate indicators have been established to identify climate change and climate variability according to the traditional knowledge and practices of local communities. The Pacific Decadal Oscillation (PDO) has had a significant impact on precipitation in the region, with results to date assuming a direction of decreasing precipitation in the future.

(3) 2nd virtual session

In the 2nd virtual session, the expert summarized the Module 2 materials followed by a question-and-answer session with the participants.

Table 2-8 Agenda of the 2nd virtual session (Climate Science)

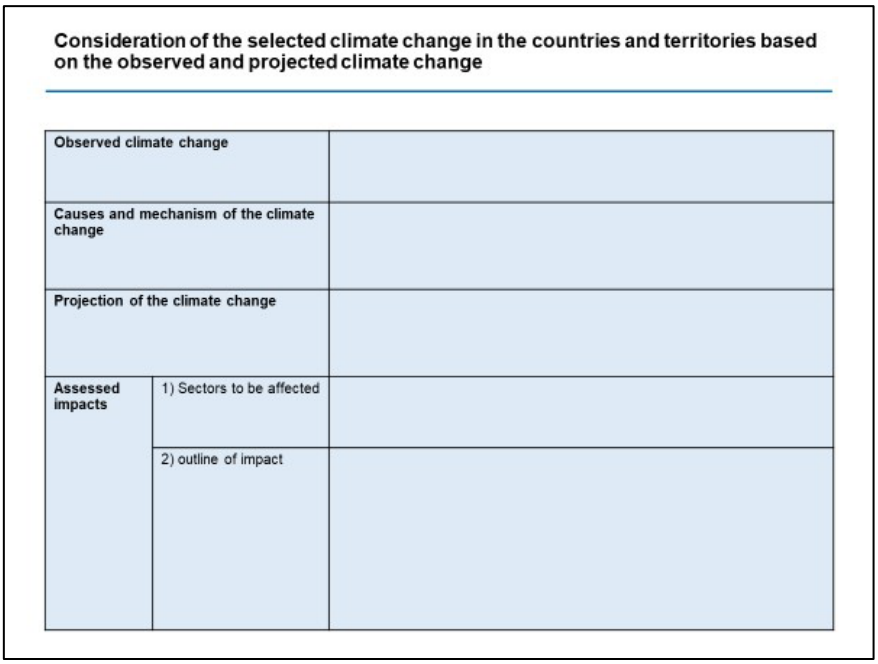
Time	Contents	Speaker
13:00 - 13:15	Introduction of the outline of the training program for 16-25 September and details of the virtual session 2.	Ms. Masako Ogawa Dr. Koji Kuroiwa
13:15 - 14:40	Brief review of Module 2 and key topics ✓ 2.1 Projected climate change (global) (10 min. presentation and 5 min. Q&A) ✓ 2.2 Projected climate change (regional) (10 min. presentation and 5 min. Q&A) Discussion on projection of climate change	Dr. Koji Kuroiwa Dr. Andrew Magee Facilitated by Mr. Yoshihiro Mizuno
14:40 - 15:00	Guidance on the group work. Closing	Mr. Mizuno

(4) Group work

The online group work was carried out during September 23-24, 2020. The participants were divided into six groups (taking into account the time difference of the countries so that the participants could attend easily) and conducted the group work for an hour. In the online group work, the participants prepared a report about "Climate Change and its Impacts in Countries and territories" based on their knowledges obtained from the previous self-paced learning and the online lectures while exchanging opinions with other participants.

Table 2-9 Agenda for Group Work (Climate Science)

Time	Contents	Speaker
5 min.	Introduction of the group work	Mr. Mizuno
10 min.	Discussion-I: "select the climate change that is considered to most seriously affect your countries/territories and discuss causes and mechanism of the climate change"	All
10 min.	Discussion-II: " discuss the projection of the selected climate changes in your countries/territories "	All
10 min.	Discussion-III: "assessing the impact of the selected climate change considering its current status and future projection"	All
20 min.	Discussion-IV: "produce a report of discussion"	All
5 min.	Review of the group work, and closing	All



Consideration of the selected climate change in the countries and territories based on the observed and projected climate change

Observed climate change		
Causes and mechanism of the climate change		
Projection of the climate change		
Assessed impacts	1) Sectors to be affected	
	2) outline of impact	

Figure 2-1 Report Template for Online Group Work

(5) 3rd virtual session

The outputs of the group work were presented followed by a question-and-answer session.

Table 2-10 Agenda of the 3rd virtual session (Climate Science)

Time	Contents	Speaker
13:00- 13:05	Introduction of the 3rd virtual session	JICA Short-term expert
13:05-14:05	Presentation on the output of group work (10 min. for each group)	Representatives of the groups
14:05-14:40	Discussion on the presentations	All
14:40-15:00	Introduction of quiz and evaluation of the program. Conclusion	JICA Short-term expert

2.2.4 Evaluation of the training courses

Sixty-five percent of training participants (n=25/35, as of April 18, 2021) rated the overall contents and sessions as excellent. They also positively rated the training materials, resources, and structure. Major evaluation comments from the participants are shown in below.

- The following elements should be included in future training materials
  - Climate Variable Anomalies in the Pacific Ocean and their Causes
  - Downscaling model
  - Information on studies and research on the effects of climate change
  - How to mainstream climate science into national policy
  - Methods of communicating science to residents
- Group work should be targeted in each country, or countries that are similarly affected should work together, etc.
- Internet connection sometimes drops out.
- Regarding the number of participants, more participants should be allowed per country.

2.3 Disaster risk reduction sector

2.3.1 Training material development

Training materials were prepared based on the training structure and syllabus developed through coordination between SPREP, PCCC and JICA long-term experts. The training structure and syllabus are shown below. In developing the syllabus, the existing initiatives and resources (tools, modules, materials, and related regional training contents) were reviewed to ensure alignment with these initiatives and to add value to the training materials. Completion of the course was based on participation in all sessions and completion of all activities, including self-assessment.

Table 2-11 Training Structure (DRR sector)

Item	Contents	Form
Pre-assessment	Before the training, the participants assess their understanding on climate change and its impacts and other issues in the target sector by themselves.	Utilize e-Learning platform function
Self-paced leaning contents (Module 1-3)	Three modules were prepared as self-paced learning contents. Participants learned the videos and reference materials on the e-Learning platform by themselves.	Video (MP4), PDF
Discussion Forum	Discussion Forum for each module on the site were prepared. Some discussion topics were prepared by the experts and participants were requested to share the situation in their own countries about the topics. Participants also can post their questions and discussion topics on the Forum. Experts responded to the questions.	Utilize e-Learning platform function
Practice quiz	Three questions (multiple-choice quiz) were prepared for each sub-module and the participants were required to answer the questions.	Utilize e-Learning platform function
Live summary lecture and Q&A session	A brief explanation of the training materials for self-paced learning was provided by the experts followed by a question-and-answer session.	Utilize Zoom
Quiz for Module1 & 2	Ten questions (multiple-choice quiz) on the Modules 1 and 2 were prepared and the participants must answer the questions (Pass by attaining 80% or more).	Utilize e-Learning platform function
Exercise	Participants discuss and complete exercises as group-work exercise. The outputs should be submitted to the secretariat for review by the experts.	Face-to-face, Zoom, etc.
Live Consultation	Live consultation on the exercise outputs were conducted including country presentations, feedback and advice from the experts.	Utilize Zoom
Pot-assessment	At the end of the training, the participants assess their understanding on climate change and its impacts and other issues in the target sector and confirm their achievement.	Utilize e-Learning platform function
Course evaluation	The participants evaluate the training course.	Utilize e-Learning platform function

Table 2-12 Training Syllabus (DRR sector)

Module 1. Understanding the vulnerability of structures		
	1.1 Climate and non-climate impacts on structures	
		Section 1.1 explains basic knowledge related to disaster risk and climate change and some examples of climate change impacts and non-climate impacts. Training materials present: - Key concepts and definitions that relate to disaster risk and adaptation to climate change, such as exposure, hazard, vulnerability, and risk of climate change change presented in IPCC AR5. - It will focus on temperature rise, precipitation pattern change, sea level rise and tropical cyclones that are most relevant to DRR as a hazard and some cases of those impacts in the Pacific. It will focus on temperature rise, precipitation pattern change, sea level rise, and tropical cyclones that are most relevant to DRR as a hazard and some cases of those impacts in the Pacific. - Non-climate hazards to structures, such as volcanic eruption, earthquakes and tsunami. The cause and difference with climate impact are explained.
	1.2 Basic knowledge of the vulnerability assessment of structures	
		Section 1.2 introduces methodologies, data/information to assess vulnerability of structures referencing examples including those in Pacific regions. Training materials present: - Overview of climate change impacts on buildings such as strong wind, flooding and focal points to assess vulnerability of buildings - Outline of coastal disaster including coastal flooding, storm surge, wave & swell, and coastal erosion. - Types of coastal protection structures/ rigid/ semi-rigid/ dynamic and offshore structures as well as non-structural measures and eco-based approaches approaches. - Design forces for coastal protection structure: tide/ storm surge/ waves/ other factors. - Focal points to assess vulnerability of coastal protection structure: location/ management/ design condition/ related facilities
Module 2. Climate Change Adaptation (CCA) and DRR activities focusing on structural approaches		
	2.1 Buildings	
		Section 2.1 provides an overview of the fundamentals of land use planning - principles and process. Then, from land use plans and zoning laws, how buildings are planned and designed considering disasters will be explained. Examples in Pacific regions are also introduced. Training materials present: - Overview on the broad strokes of land use planning and a micro focus on how to make buildings more resilient - Recent updating building codes and their implications to improve resilience - Case studies and challenges in implementing the building code, land use legislation, zooning and planning in the Pacific region - -Capacity gaps in the construction industry to implement and build disaster resilient buildings
	2.2 Coastal protection structure	
		Section 2.2 explains adaptation options of coastal protection including non-structural measures to respond projected climate change impacts. And examples in Pacific regions are also presented. Training materials of this section explain: - Projection of design force change due to climate change including sea level rise, cyclone & storm surge and wave & swell. - Impacts to coastal protection structure by sea level rise/ intensification of cyclones, precipitation, and other factors.

		- Adaptation options: development/ improvement of coastal structure/ non-structural measures - Examples and challenges in the Pacific region as current coastal protection work and consideration for future climate change adaptation.
Module 3. Problem and Objective trees and Logical framework		
	3.1 Project objectives	
		Section 3.1 shows participants how to use problem trees and objective trees and how these are used to craft the logical framework, as well as the theory of change. change. Training materials of this section explain: - Problem tree analysis: defining core problem, direct causes and effects, secondary causes; - Objectives tree: identify the means of achieving a desired result or output at the end of a project, indicating the longer-term outcomes and impacts that the project can contribute to; and - Logical framework: identify goal, purpose, outputs, activities, inputs, design summary, performance targets, monitoring mechanisms, and assumptions and risks.
	3.2 Exercise	
		Each country group executes problem tree analysis by identifying core problems related to CCA and DRR. This exercise is followed by formulation of objective trees and development of a logical framework of the project/program related to CCA and DRR.

The following experts were identified through the SPREP/PCCC network as lecturers to prepare the training materials and deliver lectures.

Table 2-13 List of the experts (DRR sector)

Name	Organization	Module in charge
Dr. Koji Kuroiwa	JICA short-term expert	Module 1.1
Dr. Jane Romero	Pacific Regional Infrastructure Facility (PRIF)	Module 1.2, Module 2.1
Dr. Daiki Tsujio	JICA short-term expert	Module 1.2, Module 2.2
Dr. Peter King	Institute for Global Environmental Strategies (IGES)	Module 3.1
Mr. Tetsuya Yoshida	JICA short-term expert	Module 3.1, Module 3.2

Pre-assessment and Post-assessment were prepared by the JICA long-term experts as follows.

Table 2-14 Pre-assessment (DRR sector)

No.	Question	How to answer
1	Please describe your motivation to attend the training programme.	comments
2	How would you rate your overall knowledge regarding climate change adaptation (poor to excellent)?	Multiple choice (Poor, Fair, Good, Excellent)
3	Please state key challenge(s) for your government/agency/institution in implementing strategies, policies, and plans related to climate change adaptation.	comments
4	Please describe how you expect to apply the knowledge and the skills acquired in the training programme.	comments
5	How would you rate your current level of knowledge regarding on key concepts and definitions that relate to disaster risk and adaptation to climate change	Multiple choice (Poor, Fair, Good, Excellent)
6	How would you rate your current level of knowledge regarding on the vulnerability assessment of structures	Multiple choice (Poor, Fair, Good, Excellent)
7	How would you rate your current level of knowledge regarding on climate change adaptation and disaster risk	Multiple choice (Poor, Fair, Good, Excellent)

	reduction activities on focusing on buildings	
8	How would you rate your current level of knowledge regarding on climate change adaptation and disaster risk reduction activities focusing on coastal protection structures protection structures	Multiple choice (Poor, Fair, Good, Excellent)
9	How would you rate your current level of knowledge regarding on how to prepare a logical framework or results management framework	Multiple choice (Poor, Fair, Good, Excellent)

Table 2-15 Post-assessment (DRR sector)

No.	Question	How to answer
1	How would you rate your current level of knowledge regarding on key concepts and definitions that relate to disaster risk and adaptation to climate change	Multiple choice (Poor, Fair, Good, Excellent)
2	How would you rate your current level of knowledge regarding on the vulnerability assessment of structures	Multiple choice (Poor, Fair, Good, Excellent)
3	How would you rate your current level of knowledge regarding on climate change adaptation and disaster risk reduction activities on focusing on buildings	Multiple choice (Poor, Fair, Good, Excellent)
4	How would you rate your current level of knowledge regarding on climate change adaptation and disaster risk reduction activities focusing on coastal protection structures protection structures	Multiple choice (Poor, Fair, Good, Excellent)
5	How would you rate your current level of knowledge regarding on how to prepare a logical framework or results management framework	Multiple choice (Poor, Fair, Good, Excellent)

After coordination with the JICA long-term experts, the following discussion topics were set for the discussion forum.

Table 2-16 Discussion Topics (DRR sector)

Module	Topics
1.1	Disaster risk in your countries/territories, "What is the most critical disaster risk of climate change in your countries/territories? Please identify ONE critical risk, and explain relevant hazard, exposure, vulnerability and impacts."
1.2	-Topic1: Vulnerability assessment, "Do you have experiences or examples of vulnerability assessments in the areas where climate hazards are anticipated in your country/territory?" -Topic2: Major disaster to structures, "What are the major issues of buildings and coastal structures caused by climate change in your country/territory?"
2.1	-Topic1: Similar example with the Lautoka city's project, "If you know similar example (study, plan, implementation) in your country/territory, If you know similar example (study, plan, implementation) in your country/territory, please share information. -Topic2: 15-minute city, "Please share your opinion, can this concept work in your city or town in the Pacific." -Topic3: Building code which could effectively address climate change risks, "Please share your ideas on the standard/regulation of the building code. Building code which could effectively address climate change risks." -Topic4:

	Challenges on the building code enforcement, "Please share what challenges you would face in enforcing the building code and how they could Challenges on the building code enforcement, "Please share what challenges you would face in enforcing the building code and how they could be addressed.
2.2	Adaptation options, "Which adaptation options for coastal protection have been implemented in your country/territory?"
3.1	-Topic1: Problem trees analysis, logical framework development: "Do you have experiences of problem trees analysis or logical framework development?" -Topic2: Maladaptation: "Do you have experiences of "maladaptation"?

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the practice quiz.

Table 2-17 Practice quiz (DRR sector)

Module	Quiz	Options & Correct answer
1.1	Which of the following statement/status describes "Exposure" used in IPCC/AR5?	A) The presence of people in places that could be adversely affected. B) The availability of extreme weather information is limited for urban areas. C) Intensity of tropical cyclones is projected to increase
	What was the increase rate of the global mean sea level for 2006-2015?	A) 2.4 mm/year B) 3.6 mm/year C) 4.8 mm/year
	Which of the following statements is correct?	A) Average rainfall is projected to increase, which may cause heat stress on structures. B) Extreme temperatures that occur once every 20 years on average are projected to increase, which may influence the quality of concrete. C) Many small islands will experience historical extreme sea-level rise, which may cause king tide
1.2	Which of the following statements is NOT correct when implementing a vulnerability assessment?	A) To assess future exposure, studies on both weather/climate and socio-economic changes are implemented B) Study on operating conditions of facilities can be ignored, because the structures are always maintained as planned C) Past records of inundation and its damage to the structures are collected to assess future sensitivity
	Which of the following statements on the focal points of vulnerability assessment of coastal structures is correct?	A) Design condition of coastal protection structure is adequately decided only by the past records of effects by sea level and storm surges B) Even issues of coastal structure are minor after large waves, retrofit of structure is always needed to implement C) If adequately maintained, structures can often significantly exceed their intended design life
	How long wavelength of storm wave is in general?	A) Several decimal meters to several hundred meters B) Several km to several hundred km C) A few seconds to several tens of seconds
2.1	Which of the following sentences does NOT explain about risk-informed land use planning?	A) Risk information needs to be provided to planners in a fit-for-purpose format B) It is a rational and judicious approach of allocating available land resources to different uses and functions balancing the needs of various B) It is a rational and

		judicious approach of allocating available land resources to different uses and functions balancing the needs of various C) It highlights the role of land use plans to control or prevent development in extreme risk areas, and to mitigate risk in existing developments.
	When considering locations for a new building, where will be ideal?	A) on a floodplain B) on a stable ground clear of obstructions C) closely below a mountain slope
	Which of the following actions is NOT a good method for widely enforcing the Building code?	A) The national building code should not be revised even enough science evidences become available. B) Develop the manual in local language C) Hold training programs targeting building professionals, builders
2.2	Which is a dynamic change for coastal protection structure caused by extreme events?	A) Coastal Erosion B) Wave & Storm Surge C) Sea Level Rise
	Which of the following statements is correct?	A) A rock revetment is formed using a geotextile filter fabric placed on a formed backshore slope and a geotextile pillow filled with sand B) Seabees are pattern-placed, hexagonal, interlocking units. C) Geotextile containers are overlain by a cushioning layer of small rock.
	Which is NOT a hard type adaptation measure in coastal protection?	A) Implementation of beach nourishment and erosion countermeasures B) Monitoring of sea conditions C) Development of resilient coastal dike
3.1	In formulating a project why is it important to distinguish between cause and effect?	A) It is important to know who to blame for the cause of the problem. B) Project funding agencies want to achieve the maximum effect for a minimum amount of money C) Identifying causes helps to specify the means to solve the core problem, while knowing the effects helps to identify the goals or targets of a project
	If you are applying for climate change funds, why not assume that climate change is the core problem?	A) The funding agency may reject the project proposal because you have not considered other possible causes B) Other critical causes could be overlooked, ultimately leading to project failure and a waste of resources C) You may miss the valuable opportunity of brainstorming with the project beneficiaries.
	Why is it necessary to transform the problem tree into an objectives tree?	A) Because an adaptation project should have an objective not only problems B) Because the project should be designed to solve all the problems C) Because the causes help to identify the activities and the effects help to identify the outcomes and impacts, all important elements of the project design

Note: Underlined choices are correct answers.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the Quiz for Module 1 & 2.

Table 2-18 Quiz for Module1 & 2 (DRR sector)

No.	Questions	Choices and correct answers
1	Which statement is correct?	A) Risk refers to the potential occurrence of a natural or human-induced physical event or trend or physical impact that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources. B) Risk of climate-related impacts results from the interaction of climate-related hazards (including hazardous events and trends) with the B) Risk of climate-related impacts results from the interaction of climate-related hazards (including hazardous events and trends) with the vulnerability and exposure of human and natural systems C) Hazard refers to the effects on natural and human systems of extreme weather and climate events and of climate change.
2	Which incident correctly discusses the impact of strong winds?	A) Increasing incidence of river floods (including flush floods), landslides. B) Increasing coastal inundation and damaging land-based infrastructure. C) Increased stress on building loadings and materials leading to structural failure and loss of roofing.
3	Which statement on vulnerability assessment is NOT correct?	A) Vulnerability assessment is useful to know the current situation and identify critical issues/points caused by climate change in the target boundary/area. B) Vulnerability assessment is useful to know the projection of climate change. C) To conduct vulnerability assessment, information/data related to past and present climate trends and risks, future exposure to climate hazards and To conduct vulnerability assessment, information/data related to past and present climate trends and risks, future exposure to climate hazards and perturbations are necessary.
4	Which statement on vulnerability assessment is NOT correct?	A) If vulnerability differs within the target area, its spatial distribution shall be studied. B) Each item of vulnerability assessment must be evaluated quantitatively. C) Future sensitivity to climate change, community-based disaster management and land use regulation are examples of assessment items for C) Future sensitivity to climate change, community-based disaster management and land use regulation are examples of assessment items for vulnerability assessment.
5	Which design force for coastal protection structure is least affected by climate change?	A) Water level such as mean sea level, storm surge. B) Wave such as wave height, wave force and overtopping. C) Ground/soil
6	Which roof type could be the most vulnerable one against strong wind?	A) Shallow pitched roofs B) Gable roof C) Hipped roofs
7	Which statement on the building code is correct?	A) Building code provides information on materials, tools, equipment, and their specification to build houses/buildings. B) In general, all the existing buildings must be replaced by high resilience buildings when the Building code is enacted. C) To protect lives, health, and properties, the building code sets minimum standards/requirements for the site, equipment, structure, and uses of C) To protect lives, health, and properties,

		building code sets minimum standards/requirements for the site, equipment, structure, and uses of buildings.
8	Which shape of houses is desirable for emergency shelters?	A) almost symmetrical on all sides. B) long and narrow C) irregular
9	Which action is NOT appropriate for adaptation options on coastal structure?	A) To design coastal protection structure considering the change of external force on design by climate change. B) To raise the crest of the structure, using a crown wall or earth bund and additional Seabee units. C) The Geosynthetic Containers (GSC) revetments cannot generally be upgraded, except placing smaller sized GSC/rocks in front of the existing ones.
10	Which statement for the rock revetment is NOT correct?	A) Heavy construction equipment is not required to construct the rock revetment. B) A geotextile filter fabric is placed on a formed backshore slope. C) The high porosity provides a form of wave energy dissipation, and reduces the reflected wave and wave over toppin

Note: Underlined choices are correct answers.

The below six requirements were set as a condition to receive the certification of completion of the training course.

1. Post at least one opinion/question in any of the discussion forums
2. Pass the Quiz for Module 1 & 2 (attaining 80% or more)
3. Participate to Live summary session
4. Submit exercise outputs
5. Participate in live consultation on the output of the exercise
6. Submit course evaluation

2.3.2 Request for nomination of training participants

An official letter (Circular) containing a General Information (GI) which described the background, objectives, prospective participants, modules, logistics, etc. of the training course was prepared and sent with the training agenda and nomination form from SPREP to the climate change focal points of PICTs to request to nominate participants.

2.3.3 Organizing training

(1) Schedule and Participants

The training course for DRR was implemented during the following dates.

Table 2-19 Schedule (DRR sector)

Item	Date
Self-paced learning	March 8-19, 2021
Live summary session	March 18,19, 2021
Group exercise	March 22-25, 2021
Live consultation	March 29,30, 2021

54 participants from 12 countries and 1 territory[3] participated in the DRR training course. 26 participants were

[3] Although not a Japanese ODA recipient, SPREP member regions were also allowed to participate in the training at their own expense.

from the Department of Climate Change and 28 participants were from relative departments such as development coordination, national disaster management, meteorology, coastal management, infrastructure, public works, environment, etc. 35 participants completed the course.

Table 2-20 Number of participants (DRR sector)

Name of country and territory	No of participants	Name of country and territory	No of participants	Name of country and territory	No of participants
American Samoa	6	Nauru	2	Solomon Islands	5
Cook Islands	5	Palau	1	Timor-Leste	6
Fiji	4	Papua New Guinea	3	Tonga	3
Federated States of Micronesia	6	Samoa	4	Vanuatu	6
Kiribati	3				Total 54 persons

(2) Motivations and expectations for participation in the training course

Through the pre-assessment, the following motivations and expectations for participation in this training course were raised.

- To understand more climate change and disaster risk reduction, especially risk assessment approaches, adaptation options, case studies, and best practices
- To develop solutions and implement procedures to mitigate impacts and integrate adaptation strategies
- To build capacity on NAP planning and implementation, Problem tree, objective tree, and logical framework

(3) Live summary session

The schedule and agenda for the live summary session as below.

Table 2-21 schedule of the live summary session (DRR sector)

Date and time (Samoa time)	Countries and territories
March 18, 13:00-15:00	PNG, Solomon Islands, Timor-Leste, Vanuatu
March 19, 13:00-15:00	American Samoa, Cook Islands, Fiji, FSM, Kiribati, Nauru, Palau, RMI, Samoa, Tonga

Table 2-22 Agenda of the live summary session (DRR sector)

Time (Samoa time)	Contents
13:00 - 13:05	Introduction of the whole structure, objectives, expected outputs of the training
13:05 - 13:25	Self-introduction
13:25 - 13:40	Brief explanation of Module 1.2 and Q&A
13:40 - 14:10	Brief explanation of Module 2.1 and Q&A
14:10 - 14:40	Brief explanation of Module 2.2 and Q&A
14:40 - 14:55	Discussion on adaptation options of structures in the countries and territories
14:55 - 15:00	Introduction of next step and closing

The major questions raised by the participants during the live summary session were as below. The experts answered the questions in the session.

Table 2-23 List of major questions (DRR sector)

module	Question
Module 1.2	- About the Early warning systems and other non-hardware measures - About the maintenance of school buildings, access roads, and other shelters - How to design coastal structures to adapt to 20- and 50-year sea level rise projections
Module 2.1	- About lack of a National Building Code (NBC) - About the role of local governments and the organizations of engineers and architects in enforcing the NBC - About the use of traditional materials for certain types of buildings - About restrictions on the use of insurance on buildings - About risk assessment of buildings - About the compliance requirements for NBC to receive bank loan - About new climate laws and the legal requirement to review and update the NBC every five years - About risk-aware land use planning and master plans for integrated urban development
Module 2.2	- About the case studies on structural design and specification - About the use of local knowledge and involvement of local communities for the construction of structures - About rehabilitation and reconstruction of coastal structures

(4) Live consultation

Live consultations were carried out to provide feedback on the exercise outputs (Problem tress, Objective tress, Logical framework) from the experts. The schedule and agenda are shown in below.

Table 2-24 schedule of the live consultation (DRR sector)

Date and time (Samoa time)	Countries and territories
March 29. 13:00-15:00	Fiji, PNG, Solomon Islands, Timor-Leste, Vanuatu
March 30 13:00-15:00	American Samoa, Cook Islands, FSM, Kiribati, Nauru, Palau, RMI, Samoa, Tonga

Table 2-25 Agenda of the live consultation (DRR sector)

Time (Samoa time)	Contents
13:00 - 13:05	Introduction of the live consultation
13:05 - 14:35	Presentation of the outputs of group work - 10 min presentation of each group - 3 min comments from resource persons
14:35 - 14:55	Discussion on the presentations
14:55 - 15:00	Introduction of next step and closing

A summary of the feedback on the exercise outputs from the experts are shown in below.

1) Feedback on problem tree
- Issues that are occurred due to the climate change and its impacts should be set as core problem.
- Clarify the Climate rationale.
- Issues related to the measures addressed in the logical framework should be identified in the problem tree.
- Note the direction of the arrow in the problem tree.

2) Feedback on objective tree
- Objective tree should be created as a mirror of the problem tree.

3）Feedback on logical framework

- Clarify the difference between outcomes and outputs. Outcomes are long-term results and outputs are what will be achieved by the end of the project
- Activity should include not only capacity building activities such as training, but also investments, use of specific technologies, infrastructure development, etc., and should be as specific as possible.
- Clarify the distinction between new and existing activities.
- Clarify the Climate rationale.
- Baselines and targets should be as quantitative as possible.

2.3.4 Evaluation of training courses

Seventy-one percent of training participants (n=25/35, as of April 18, 2021) rated the overall content and sessions as excellent. They also positively rated the training materials, resources, and structure. Major evaluation comments from the participants are shown in below.

- The Participants learned a lot about building codes and the impact of climate change and other natural disasters on building structures.
- We learned the factors that should be taken into consideration for coastal conservation. It is useful for own work in the future.
- It would be more beneficial if more real-life examples were presented.
- It would be preferable that there was more time to discuss the logical Framework, as many were unfamiliar with its contents and how to enter information.

2.4 Ecosystem sector

2.4.1 Training material development

Training materials were prepared based on the training structure and syllabus developed through coordination between SPREP, PCCC and JICA long-term experts. The training structure and syllabus are shown below. In developing the syllabus, the existing initiatives and resources (tools, modules, materials, and related regional training contents) were reviewed to ensure alignment with these initiatives and to add value to the training materials. Completion of the course was based on participation in all sessions and completion of all activities, including self-assessment.

Table 2-26 Training Syllabus (Ecosystem sector)

Module 1. Understanding of climate risk and vulnerability of ecosystem		
	1.1 Climate and non-climate impacts on ecosystems	
		Section 1.1 explains basic knowledge on climate risk and impacts and observed and projected climate change and its impacts. Training materials present: - Understand key concepts to assess climate risk and impacts and definitions of the important terms, such as exposure, hazard, vulnerability, and risk of climate change presented in IPCC AR5; - Learn about observed and projected climate change and its impacts focusing on temperature rising, precipitation pattern change, sea level rise, ocean temperature and ocean acidification that are most relevant to ecosystems as threats and some cases of those impacts in the Pacific; and - Understand the difference between climate threats and non-climate threats which come from human factors, natural factors and human/natural factors.
	1.2 Basic knowledge of the vulnerability assessment of the ecosystem	
		Section 1.2 introduces methodology to assess vulnerability of ecosystems for community resilience, Ecosystem and Socio-Economic Resilience Analysis and Mapping (ESRAM). Training materials present: - Understand and have an overview of climate change impacts on ecosystems and assess the vulnerability of ecosystems; - Learn about and appreciate Ecosystem and Socio-Economic Resilience Analysis and Mapping (ESRAM) as an assessment tool for ecosystem vulnerability assessments; - Understand that ecosystem vulnerability to climate change impacts has implications for community resilience; and - Appreciate the role of natural ecosystems to build climate change resilience.
Module 2. Ecosystem-based adaptation and mitigation		
	2.1 Terrestrial and freshwater ecosystems	
		Section 2.1 provides an overview of the fundamentals of ecosystem-based adaptation and mitigation in terrestrial and freshwater ecosystems Key principles, challenges, co-benefits, outcome indicators and means of verification and barriers and enablers on the options below will be explained. Examples in Pacific regions are also introduced. Training materials present: - Understand the concept of EbA and Ecosystem-based Management (EbM) in the context of terrestrial and freshwater ecosystems - Acquire knowledge on the concept, benefits and co-benefits, elements of outcome indicators, issues and challenges of EbA and EbM options for forest and watershed & reservoir; and - Learn about examples in the Pacific.
	2.2 Marine and coastal ecosystems	
		Section 2.2 explains an overview of the fundamentals of ecosystem-based adaptation in marine and coastal ecosystems Key issues for success including, but not limited to, site and ecosystem characteristics, maximum biophysical thresholds, time frame and local

		community involvement on the three options, Examples in Pacific regions are also introduced. Examples in Pacific regions are also introduced. Training materials present:: - Understand the concept of EbA and EbM in the context of marine and coastal ecosystems; - Acquire knowledge on the concept, benefits and co-benefits, elements of outcome indicators, issues and challenges of EbA and EbM options for marine and coastal ecosystem; and - Learn about examples in the Pacific.
	2.3 EbA implementation: Cross-cutting issues and Approaches	
		Section 2.3 provides an overview of EbA implementation and the fundamentals of cross-cutting issues and approaches. and crosscutting issues, challenges, co-benefits, barriers, and measures to address and manage a project for the long term will be introduced. Examples from the Pacific will also be introduced. Training materials present: - Understand the holistic EBM approach and the evolution of EbA to build climate change resilience; - Appreciate that the resilience of natural ecosystems is important to community resilience; - Able to formulate EbA options and priorities implementation activities; - Learn from the case studies presented and appreciate the broad range of expertise required; and - Realize that EbA implementation has cross-cutting implications and has to be perceived in the long term.
Module 3. Problem and Objective trees and Logical framework		
	3.1 Project objectives	
		Section 3.1 shows participants how to use problem trees and objective trees and how these are used to craft the logical framework, as well as the theory of change. change. Training materials present: - Understand the importance of the theory of change and the logical framework in formulating a climate change project; and - Understand how to develop a problem tree, objective tree and logical framework.
	3. 2Exercise	
		Each country group executes problem tree analysis by identifying core problems related to climate change adaptation, mitigation and ecosystem approaches. This exercise is followed by formulation of objective trees and development of a logical framework of the project/program related to ecosystem-based adaptation and mitigation. This exercise is followed by formulation of objective trees and development of a logical framework of the project/program related to ecosystem-based adaptation and mitigation.

The following experts were identified through the SPREP/PCCC network as lecturers to prepare the training materials and deliver lectures. A list of the training materials prepared is attached as appendixes.

Table 2-27 List of experts (Ecosystem sector)

Name	Organization	Module in charge
Dr. Koji Kuroiwa	JICA short-term expert	Module 1.1
Mr. Fred Patison	Climate Change Finance Readiness Advisor, SPREP	Module 1.2, Module 2.3
Mr. Takuya Shiraishi	JICA short-term expert	Module 2.1
Mr. Peter Davies	Coastal and Marine Ecosystems Advisor, SPREP	Module 2.2
Mr. Nicolas Rocle	Marine Environment and Conservation Specialist, SPREP	Module 2.2
Mr. Herman Timmermans	PEBACC Project Manager	Module 2.2
Dr. Peter King	Institute for Global Environmental Strategies (IGES)	Module 3.1
Mr. Tetsuya Yoshida	JICA short-term expert	Module 3.1, Module 3.2

Pre-assessment and Post-assessment were prepared by the JICA long-term experts as follows.

Table 2-28 Pre-assessment (Ecosystem sector)

No.	Question	How to answer
1	Please describe your motivation to attend the training programme.	comments
2	How would you rate your overall knowledge regarding climate change adaptation (poor to excellent)?	Multiple choice (Poor, Fair, Good, Excellent)
3	What are key challenges for your government/ agency/ institution in implementing strategies, policies, and plans related to climate change? Please select up to 3 choices. - Insufficient political will and leadership. - Mainstreaming of climate change, less attention to climate change in sectors. - Coordination and governance arrangement within the same government level. - Coordination and governance arrangement with governments in a different level. - Lack of legal framework, policy, strategy, plan, etc. - Limited capacity in human resources and expertise including awareness in the central government. - Limited capacity in human resources and expertise including awareness in local governments. - Limited capacity in human resources and expertise including awareness in communities. - Limited financial sources within the government. - Limited access to the climate finance in the regional and international level. - Limited data, information and knowledge which can be easily used by officials and practitioners. - Others.	Multiple choice
4	If you choose "others" in the previous question or have additional comments, please provide your answer.	comments
5	How would you rate your current level of knowledge regarding on key concepts and definitions that relate to ecosystem-based adaptation and mitigation to climate change?	Multiple choice (Poor, Fair, Good, Excellent)
6	How would you rate your current level of knowledge regarding on the vulnerability assessment of the	Multiple choice (Poor, Fair, Good, Excellent)

	ecosystem?	
7	How would you rate your current level of knowledge regarding on ecosystem-based adaptation and mitigation focusing on terrestrial and freshwater ecosystems?	Multiple choice (Poor, Fair, Good, Excellent)
8	How would you rate your current level of knowledge regarding on ecosystem-based adaptation focusing on marine and coastal ecosystem?	Multiple choice (Poor, Fair, Good, Excellent)
9	How would you rate your current level of knowledge regarding on how to prepare a logical framework or results management framework	Multiple choice (Poor, Fair, Good, Excellent)

Table 2-29 Post-assessment (Ecosystem sector)

No.	Question	How to answer
1	How would you rate your current level of knowledge regarding on key concepts and definitions that relate to ecosystem-based adaptation and mitigation to climate change?	Multiple choice (Poor, Fair, Good, Excellent)
2	How would you rate your current level of knowledge regarding on the vulnerability assessment of the ecosystem?	Multiple choice (Poor, Fair, Good, Excellent)
3	How would you rate your current level of knowledge regarding on ecosystem-based adaptation and mitigation focusing on terrestrial and freshwater ecosystems?	Multiple choice (Poor, Fair, Good, Excellent)
4	How would you rate your current level of knowledge regarding on ecosystem-based adaptation focusing on marine and coastal ecosystem?	Multiple choice (Poor, Fair, Good, Excellent)
5	How would you rate your current level of knowledge regarding on how to prepare a logical framework or results management framework	Multiple choice (Poor, Fair, Good, Excellent)

After coordination with the JICA long-term experts, the following discussion topics were set for the discussion forum.

Table 2-30 Discussion Topics (Ecosystem sector)

Module	Topics
1.1	Please discuss the most significant climate change impact on ecosystems in your countries/territories.
1.2	Whether ESRAM has been implemented. What difficulties and/or possibilities are identified.
2.1	One barrier when adopting Ecosystem-based adaptation/mitigation measures in terrestrial and freshwater ecosystems of your countries/territories.
2.2	One barrier when adopting Ecosystem-based adaptation/mitigation measures in marine and coastal ecosystems of your countries/territories.
2.3	Why are EbA interventions cost-effective but require long term indicators?

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the practice quiz.

Table 2-31 Practice quiz (Ecosystem sector)

Module	Quiz	Options & Correct answer
1.1	Which of the following statement/status describes "Exposure" used in IPCC/AR5?	A) The presence of people in places that could be adversely affected. B) The availability of extreme weather information is limited for urban areas. C) Intensity of tropical cyclones is projected to increase
	What was the increase rate of the global mean	A) 2.4 mm/year B) 3.6 mm/year

	sea level for 2006-2015?	C) 4.8 mm/year
	Which of the following statements is NOT correct as the climate change impact to ecosystems?	A) Ocean acidification highly threats the coral reef ecosystem. B) Precipitation patterns change affects both terrestrial ecosystem and freshwater ecosystem. C) There is no linkage between marine and terrestrial ecosystems
1.2	What is an ESRAM?	A) A tool to assess vulnerability of ecosystems and socio-economic components. B) A tool to assess vulnerability of ecosystems only. C) A tool to assess vulnerability of socio-economic conditions only.
	Why is an ESRAM important?	A) To understand values of ecosystems only. B) To fully understand the vulnerability of ecosystems and ecosystem services and the socio-economic conditions that depend on them. C) It focuses mapping ecosystem services and the environment.
	What is an ecosystem valuation?	A) Valuation of the human impacts on ecosystems B) An economic valuation of ecosystem services based on current market values and related costs in reality. C) Cost of ecosystems on the economy
2.1	Which of the following statements on restoration of forest is correct?	A) As people's lives are more important than forests, no attention needs to be paid to the health of forest ecosystems when considering local communities' adaptation to climate change B) A sufficient quantity and quality of plants for reforestation is always provided by nature steadily. C) Reforestation on slope as an adaptation practice to prevent landslides will generate mitigation co-benefits as planted trees promote carbon C) Reforestation on slope as an adaptation practice to prevent landslides will generate mitigation co-benefits as planted trees promote carbon sequestration.
	Which of the following statements on agroforestry is NOT correct?	A) For integration of trees in introducing agroforestry, it is desirable to select tree species that provide valuable ecosystem services to local communities (e.g. timber, fuels, soil nutrition, and cultural goods). communities (e.g. timber, fuels, soil nutrition, and cultural goods). B) Agroforestry is always less profitable than monocultures which allow farmers to increase efficiency in planting, managing, and harvesting. C) Unsecured or ambiguous land tenure is often an issue that results in confusion about land delineation and discouragement of people to introduce or C) Unsecured or ambiguous land tenure is often an issue that results in confusion about land delineation and discouragement of people to introduce or continue agroforestry practices.
	Which of the following statements on riparian buffers is NOT correct?	A) Riparian buffer is also considered as an option of Ecosystem-based Disaster Risk Reduction (Eco-DRR) for its function to buffer flood water, slow the flow and absorb excess water. flow and absorb excess water. B) Riparian buffers provide shade along waterways, which help reduce sunlight, avoid an increase in water temperature and curb the growth of invasive aquatic plants. C) Success of riparian buffers depends only on buffer

		zone width and slope of the adjacent field.
2.2	Which of the following statements is NOT true?	A) Mangroves cannot attenuate wave energy during storm events, that's why shoreline protection by hard defenses is most cost-efficient B) Marine spatial planning and coordination is an example of EbA option for coastal and marine issues C) Dikes to prevent coastal erosion have been preferred so far but have negative impacts on coastal ecosystems and associated services
	In which conditions are mangroves able to keep pace with sea-level rise?	A) If there is a detailed management plan and/or a marine spatial planning relevant with regional and national institutional frameworks B) If the mangroves are able to adjust in a dynamic manner to sea-level rise and associated coastline changes, for example by building up soil levels B) If the mangroves are able to adjust in a dynamic manner to sea-level rise and associated coastline changes, for example by building up soil levels C) Only if a human intervention is provided (e.g. through planting new seeds and propagules) to help mangroves play their role and deliver the ecosystem services services
	What is usually called a "ridge-to-reef approach" in Small Island Developing States?	A) A top-down approach for coastal and marine ecosystems conservation and restoration B) A systemic approach acknowledging linkages and inter-connections between land, water and coastal systems C) A scientific approach dealing island topography, geography and marine geology.
3.1	In formulating a project why is it important to distinguish between cause and effect?	A) It is important to know who to blame for the cause of the problem. B) Project funding agencies want to achieve the maximum effect for a minimum amount of money C) Identifying causes helps to specify the means to solve the core problem, while knowing the effects helps to identify the goals or targets of a project
	If you are applying for climate change funds, why not assume that climate change is the core problem?	A) The funding agency may reject the project proposal because you have not considered other possible causes B) Other critical causes could be overlooked, ultimately leading to project failure and a waste of resources C) You may miss the valuable opportunity of brainstorming with the project beneficiaries.
	Why is it necessary to transform the problem tree into an objectives tree?	A) Because an adaptation project should have an objective not only problems. B) Because the project should be designed to solve all the problems C) Because the causes help to identify the activities and the effects help to identify the outcomes and impacts, all important elements of the project design

Note: Underlined choices are correct answers.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the Quiz for Module 1 & 2.

Table 2-32 Quiz for Module1 & 2 (Ecosystem sector)

No.	Questions	Choices and correct answers
1	Which statement is NOT correct?	A) Risk of climate-related impacts results from the interaction of climate-related hazards (including hazardous events and trends) with the A) Risk of climate-related impacts results from the interaction of climate-related hazards (including hazardous events and trends) with the vulnerability and exposure of human and natural systems B) Vulnerability refers to the propensity or predisposition to be adversely affected. C) Exposure refers to the effects on natural and human systems of extreme weather and climate events and of climate change
2	Which statement for projected climate change is NOT correct?	A) In general, the contrast between wet and dry regions and between wet and dry seasons of the change in precipitation will increase B) Both the average intensity of TCs and the TC frequency are projected to increase C) Continued carbon uptake by the ocean by 2100 is virtually certain to exacerbate ocean acidification
3	Which statement is correct?	A) Definition of EbA is the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change. effects of climate change B) EbA refers to an integrated, holistic approach to achieving environmental, social and economic goals combining land use and development planning with environmental protection and production needs with environmental protection and production needs C) EbA refers to an assessment methodology to provide a baseline overview of ecosystems and ecosystem services and their vulnerability to climate change impacts to inform subsequent adaptation options and interventions impacts to inform subsequent adaptation options and interventions
4	Which statement is correct?	A) Undertake a total economic valuation to define the economic value of key ecosystem services is not necessary for the ESRAM B) Actions of tightening of policy and legislations and introducing incentives are not the major steps of the ESRAM process C) Mapping key ecosystems and related ecosystem services (where possible), including high-use areas and/or major threats based on existing spatial data is not objective of the ESRAM study
5	Which statement is NOT correct?	A) Forests absorbed certain amount of CO2 released from fossil fuel burning B) Forests play important roles such as regulate ecosystems, protect biodiversity, play an integral part in the carbon cycle, support livelihoods, supply goods and services that can drive sustainable growth C) Forest ecosystems are threatened only by precipitation and temperature pattern change
6	Which statement is NOT correct?	A) Agroforestry is a brand new idea in the pacific Islands B) A well-planned protected area network without barriers and obstacles between protected areas is necessary for designing forest protected area C) Transferring ownership of larger areas of common forest to local communities is one of the important factors to success of afforestation and reforestation
7	Which statement is NOT correct?	A) Coral reefs, seagrass, mangroves and coastal vegetation attenuate wave energy protecting shorelines during storm events

		B) It remains to be seen whether ocean warming affects coral bleaching C) Role of coastal and marine ecosystems in protecting shorelines is extremely important because 90% of Pacific Islanders live within 5 km of the coast (excluding PNG)
8	Which statement is NOT correct?	A) Requires community buy-in and active participation is an important principle for EbA B) Ad-hoc and fragmented coastal and marine planning is one of the challenges to success EbA in coastal and marine areas C) Monitoring and adaptive management are not necessary to manage for uncertainty of EbA in coastal and marine areas
9	Which statement is NOT correct?	A) Marine Spatial Planning is one of the management strategies of EbA B) Marine Spatial Planning focuses on the land side of the coastal zone, typically encompassing the coastal plain as well as the near shore marine environment. environment C) Planting coastal vegetation to reduce storm surge has multiple benefits such as reducing coastal flooding, fish habitat and nursery habitat increasing and sediment stabilization etc.
10	Which statement is NOT correct?	A) Using local expertise and experience is not a useful measure in the EnA interventions B) EbA interventions will need long term indicators C) Livelihood options such as eco-tourism and sustainable land use are an integral part of EbA interventions

Note: Underlined choices are correct answers.

The below six requirements were set as a condition to receive the certification of completion of the training course.

1. Post at least one opinion/question in any of the discussion forums
2. Pass the Quiz for Module 1 & 2 (attaining 80% or more)
3. Participate to the Live summary session
4. Submit exercise outputs
5. Participate to the Live consultation on the output of the exercise
6. Submit course evaluation

2.4.2 Request for nomination of training participants

An official letter (Circular) containing a General Information (GI) which described the background, objectives, prospective participants, modules, logistics, etc. of the training course was prepared and sent with the training agenda and nomination form from SPREP to the climate change focal points of PICTs to request to nominate participants.

2.4.3 Organizing training

(1) Schedule and Participants

The training course for Ecosystem sector was carried out during the following dates.

Table 2-33 Training Schedule (Ecosystem sector)

Item	Date
Self-paced learning	June 23 - July 6, 2021
Live summary session	July 6, 2021
Group exercise	July 7-21, 2021
Live consultation	July 26-28, 2021

59 participants from 11 countries participated in the training course. 28 participants were from the Department of Climate Change, and the others were from relevant departments such as environment, natural resources, biodiversity conservation, meteorology, energy, etc. 41 participants completed the course.

Table 2-34 Number of participants (Ecosystem sector)

Name of country and territory	No of participants	Name of country and territory	No of participants	Name of country and territory	No of participants
Fiji	7	Niue	5	Tonga	11[4]
Federated States of Micronesia	5	Samoa	2	Tuvalu	3
Kiribati	6	Solomon Islands	3	Vanuatu	8
Nauru	2	Timor-Leste	7	Total 59 persons	

(2) Motivations and expectations for participation in the training course

Through the pre-assessment, the following motivations and expectations for participation in this training course were raised.

- To identify how EbA can contribute to the development of national policies, reports, climate change strategies and action plans
- To learn how EbA can increase community-level climate resilience
- To learn how ecosystems have been affected by climate change and how to adapt to sustain natural resources
- To share knowledge with other PICTs on their own challenges and solutions to the impacts of climate change
- To learn about ESRAM and its relevance in the Pacific

(3) Live summary session

Live summary session was carried out on July 6, 2021 from 13:00-15:00 (Samoa time).

Table 2-35 Agenda of the live summary session (Ecosystem sector)

Time (Samoa time)	Contents
13:00 - 13:05	Introduction of the whole structure, objectives, expected outputs of the training
13:05 - 13:25	Self-introduction
13:25 - 13:45	Brief explanation of Module 1.2 and Q&A
13:45 - 14:05	Brief explanation of Module 2.1 and Q&A
14:05 - 14:25	Brief explanation of Module 2.2 and Q&A
14:25 - 14:45	Brief explanation of Module 2.3 and Q&A
14:45 - 15:00	Brief introduction of week 3-4, Photo session, Closing

The major questions raised by the participants during the live summary session were as below. The experts answered the questions in the session.

Table 2-36 List of the major questions (Ecosystem sector)

module	question
Module 1.2	- About the time required to finalize the developed documentation - About the funding to conduct the assessment - About the methodology for integrating ESRAM and IVA implementation - Can the ESRAM tool also be linked to the Red List Ecosystem Assessment Tool (promoted by IUCN)? - About case studies of projects that have implemented ESRAM
Module 2.1	- How to consider the nature of the waterfront - About the waterfront buffer zone use approach
Module 2.2	- About key messages and best practices to gain buy-in and support at the national and community levels for communication and awareness
Module 2.3	- About rainwater utilization in the installation of water storage tanks - How to replicate best practices - About EbA Implementation Feasibility for Green Parking Lot Project

(4) Live consultation

Live consultations were carried out to provide feedback on the exercise outputs (Problem tress, Objective tress, Logical framework) from the experts. The schedule and agenda are shown in below.

Table 2-37 Schedule of the Live consultation (Ecosystem sector)

Date and time (Samoa time)	Countries and territories
July 26 14:00-16:00	Fiji, Solomon Islands, Timor-Leste, Vanuatu
July 27 13:00-15:00	Niue, Samoa, Tonga
July 28 14:00-16:00	FSM, Kiribati, Tuvalu

Table 2-38 Agenda of the live consultation (Ecosystem sector)

Time (Samoa time)	Contents
5 min.	Introduction of the live consultation
90 - 100 min.	Presentation of the outputs and feedbacks - 10 min presentation of each group - 5 min comments from resource persons - 5 min for Q&A
10 - 20 min.	discussion
5 min.	Introduction of next step, Closing

A summary of the feedback on the exercise outputs from the experts are shown in below.

1) Feedback on problem tree
- Clarify the Climate rationale.
- Consider multiple causes and consequences to build a logical framework
- Traditional knowledge covered in the logical framework should also be discussed in the problem tree
- Note the direction of the arrows in the problem tree and check the overall logic

2) Feedback on objective tree
- Desired result should be indicated as one result, not multiple results
- Ensure that the contents of the problem tree and objective tree are in a pairwise relationship

3) Feedback on logical framework
- Activities related to the outputs should be described in detailed as much as possible
- Outcomes and outputs need to be differentiated. To be more specific outputs
- Consider not only education and awareness-raising, but also the development and strengthening of

regulations and systems as measures to be taken
- Baseline is important information that describes the current situation
- Consistency of targets and indicators is important. Targets should be set based on project content and process
- Setting indicators enable to grasp the achievement
- Monitoring activities need to be set considering the balance with the budget

2.4.4 Evaluation of training courses

Seventy-six percent (n=32/42, as of August 13, 2021) of the participants rated the overall contents and sessions as excellent and positively rated the training materials, resources, and structure. Major evaluation comments are listed below.

(1) About training materials
- Some of the sounds of the movies were quite low. It would be nice to have more detailed explanations and examples in the video.
- Sharing other types of readings (materials) related to the theme would be good

(2) Contents
- More explanation of exemplary project case studies would be helpful. Case studies of each model should be provided for better understanding
- Including more practical scenarios for EbA/EbM would be helpful so that participants with less assessment skills can learn from the participating countries

(3) About the virtual session
- It is important to ensure that teams from different countries do not miss any of the virtual sessions

(4) About the exercise
- More time should be allocated for the group exercises so that participants can confidently fill out the indicators and other items in the proposal
- The exercise can proceed more efficiently if team leaders are selected in advance or if each country selects a group leader to coordinate group activities

(5) About the e-Learning platform
- It would be fine if the email notifications of posted discussions less (too many received)
- Function of the e-learning platform should be demonstrated before the course starts so that some participants who really need it can easily access it

(6) Future training programs
- It is recommended that this training course be held every two years to reaffirm the importance of EbA and EbM
- It is proposed to conduct a refresher course after one year

2.5 Food sector

2.5.1 Training material development

Training materials were prepared based on the training structure and syllabus developed through coordination between SPREP, PCCC and JICA long-term experts. The training structure and syllabus are shown below. In developing the syllabus, the existing initiatives and resources (tools, modules, materials, and related regional training contents) were reviewed to ensure alignment with these initiatives and to add value to the training materials. Completion of the course was based on participation in all sessions and completion of all activities, including self-assessment.

Table 2-39 Training Syllabus (Food sector)

Module 1. Understanding climate risks and vulnerability of food production systems		
	1.1 Climate and non-climate impacts on food production systems	
		Section 1.1 explains basic knowledge on climate risk and impacts and observed and projected climate change and its impacts. Training materials present: - Understand key concepts to assess climate risk and impacts and definitions of the important terms, such as exposure, hazard, vulnerability, and risk of climate change. - Learn about observed and projected climate change and its impacts focusing on temperature rising, precipitation pattern change, sea level rise, ocean temperature and ocean acidification that are most relevant to food production systems as hazards and some cases of those impacts in the Pacific. - Understand the difference between climate hazards and non-climate hazards which come from human factors, natural factors and human/natural factors.
	1.2 GHG emission from food production systems	
		Section 1.2 explain potential GHG emissions from food production systems and current GHG emissions and policies related to mitigate GHG emissions from emissions from food production systems in the Pacific. Training materials present: - Understand potential GHG emissions from food production systems - Learn about the current GHG emissions form food production systems in the Pacific - Understand Climate Change Mitigation Policies on Food production in the Pacific such as INDC/NDC and national climate change policies
Climate mitigation and adaptation options for food production systems		
	2.1 The nexus of climate change, gender and agriculture and key international decisions under the United Nations Framework Convention on Climate Change (UNFCCC)	
		Section 2.1 provides an overview of the fundamentals of ecosystem-based adaptation and mitigation in terrestrial and freshwater ecosystems Key Key principles, challenges, co-benefits, outcome indicators and means of verification and barriers and enablers on the options below will be explained. Examples in Pacific regions are also introduced. Training materials present: - Understand an overview of interlinkages between climate change, agriculture, food security, nutrition and gender - Learn the concept and importance of Koronivia Joint Work on Agriculture - Learn the importance of integrating gender consideration into climate policy and action through the Lima Work Programme on Gender and its Enhanced Gender Action Plan. - Understand the significant role of women in food production and the negotiations under the UNFCCC to ensure the Pacific women are part of the Understand the significant role of women in food production and the negotiations under the UNFCCC to ensure the Pacific women are part of the decision-making process.
	2.2 Adaptation and mitigation options of agriculture	
		Section 2.2 explains adaptation and mitigation options of food production systems including climate smart agriculture, and adaptation and mitigation co-benefits. Case studies in the PICs are also introduced.

		Training materials present: - Understand climate smart agriculture approaches on: ➢ Improved soil carbon, soil health and soil fertility under grassland and cropland as well as integrated systems, including water management; ➢ Improved nutrients use and manure management towards sustainability and resilience; ➢ Improved livestock management systems ➢ Improvement of facilities for cultivation, storage and primary processing
	2.3 Adaptation options of coastal fisheries	
		Section 2.3 provides an overview of adaptation options of coastal fisheries. Examples from the Pacific will also be introduced. Training materials present: - Understand adaptation concepts and experiences in Pacific coastal fisheries
	2.4 Climate information services	
		Section 2.4 provides an overview of adaptation options utilizing climate information services. Examples from the Pacific will also be introduced. Training materials present: - Understand the concept of Climate Information Services and acquire knowledge on the concept and benefits of climate services of available examples in the The Pacific - Learn about a national example of CIS which support resilient food production systems Section 2.3 provides an overview of adaptation options of coastal Examples from the Pacific also
3.	Problem and Objective trees and Logical framework	
	3.1 Project objectives	
		Section 3.1 shows participants how to use problem trees and objective trees and how these are used to craft the logical framework, as well as the theory of change. Training materials of this section explain: - Problem tree analysis: defining core problem, direct causes and effects, secondary causes; - Objectives tree: identify the means of achieving a desired result or output at the end of a project, indicating the longer-term outcomes and impacts that the project can contribute to; and - Logical framework: identify goal, purpose, outputs, activities, inputs, design summary, performance targets, monitoring mechanisms, and assumptions and risks.
	3. 2Exercise	
		Each country group executes problem tree analysis by identifying core problems related to climate change mitigation/adaptation on food production systems. This exercise is followed by formulation of objective trees and development of a logical framework of the project/program related to mitigation and/or adaptation activities for food production systems. This exercise is followed by formulation of objective trees and development of a logical framework of the project/program related to mitigation and/or adaptation activities for food production systems.

The following experts were identified through the SPREP/PCCC network as instructors to prepare training materials and deliver lectures.

Table 2-40 List of the experts (Food sector)

Name	Organization	Module in charge
Dr. Koji Kuroiwa	JICA short-term expert	Module 1.1
Ms. Eiko Watatsu	JICA short-term expert	Module 1.2
Ms. Malia Talakai	Food and Agriculture Organization of the United Nations (FAO)	Module 2.1 Module 2.2
Dr. Siosiua Moala Halavatau	FAO	Module 2.2
Ms. Mele Tauati	FAO	Module 2.3
Ms. Jessica Sanders	FAO	Module 2.3
Mr. Philip Malsale	SPREP	Module 2.4
Mr. Sunny Seuseu	SPREP	Module 2.4
Dr. Peter King	Institute for Global Environmental Strategies (IGES)	Module 3.1
Mr. Tetsuya Yoshida	JICA short-term expert	Module 3.1, Module 3.2

The following experts assisted with the case studies in Modules 2.2 and 2.3.

Module 2.2:
Dr. Kenneth Cokanasiga, Independent consultant;
Mr. Teema Biko, Independent consultant;
Mr. Sala Sagato, Independent consultant;
Mr. Kabuati Nakabuta, Government of Kiribati;
Dr. Rohit Lal, Government of Fiji;
Mr. Vunivesi Minoneti, Government of Tonga;
Mr. Matio Lonalona, Government of Tuvalu;
Mr. Taniela Hoponoa, FAO;
Ms. Temwanoku Ioakim, FAO.
Module 2.3:
Mr. Magele Etuati Ropeti, Government of Samoa

Pre-assessment and Post-assessment were prepared by the JICA long-term experts as follows.

Table 2-41 Pre-assessment (Food Sector)

No.	Question	How to answer
1	Please describe your motivation to attend the training programme.	comments
2	How would you rate your overall knowledge regarding climate change adaptation (poor to excellent)?	Multiple choice (Poor, Fair, Good, Excellent)
3	What are key challenges for your government/ agency/ institution in implementing strategies, policies, and plans related to climate change? Please select up to 3 choices. - Insufficient political will and leadership. - Mainstreaming of climate change, less attention to climate change in sectors. - Coordination and governance arrangement within the same government level. - Coordination and governance arrangement with governments in a different level. - Lack of legal framework, policy, strategy, plan, etc. - Limited capacity in human resources and expertise including awareness in the central government. - Limited capacity in human resources and expertise	Multiple choice

	including awareness in local governments. - Limited capacity in human resources and expertise including awareness in communities. - Limited financial sources within the government. - Limited access to the climate finance in the regional and international level. - Limited data, information and knowledge which can be easily used by officials and practitioners. - Others.	
4	If you choose "others" in the previous question or have additional comments, please provide your answer.	comments
5	How would you rate your current level of knowledge regarding climate and non-climate impacts on food production systems?	Multiple choice (Poor, Fair, Good, Excellent)
6	ow would you rate your current level of knowledge regarding GHG emissions from food production systems?	Multiple choice (Poor, Fair, Good, Excellent)
7	How would you rate your current level of knowledge regarding the nexus of climate change, gender and agriculture and key international decisions under How would you rate your current level of knowledge regarding the nexus of climate change, gender and agriculture and key international decisions under the UNFCCC?	Multiple choice (Poor, Fair, Good, Excellent)
8	How would you rate your current level of knowledge regarding adaptation and mitigation options of agriculture?	Multiple choice (Poor, Fair, Good, Excellent)
9	How would you rate your current level of knowledge regarding adaptation options of coastal fisheries?	Multiple choice (Poor, Fair, Good, Excellent)
10	How would you rate your current level of knowledge regarding climate information services?	Multiple choice (Poor, Fair, Good, Excellent)
11	How would you rate your current level of knowledge regarding on how to prepare a logical framework or results management framework?	Multiple choice (Poor, Fair, Good, Excellent)

Table 2-42 Post-assessment (Food sector)

No.	Question	How to answer
1	How would you rate your current level of knowledge regarding climate and non-climate impacts on food production systems?	Multiple choice (Poor, Fair, Good, Excellent)
2	ow would you rate your current level of knowledge regarding GHG emissions from food production systems?	Multiple choice (Poor, Fair, Good, Excellent)
3	How would you rate your current level of knowledge regarding the nexus of climate change, gender and agriculture and key international decisions under How would you rate your current level of knowledge regarding the nexus of climate change, gender and agriculture and key international decisions under the UNFCCC?	Multiple choice (Poor, Fair, Good, Excellent)
4	How would you rate your current level of knowledge regarding adaptation and mitigation options of agriculture?	Multiple choice (Poor, Fair, Good, Excellent)
5	How would you rate your current level of knowledge regarding adaptation options of coastal fisheries?	Multiple choice (Poor, Fair, Good, Excellent)
6	How would you rate your current level of knowledge regarding climate information services?	Multiple choice (Poor, Fair, Good, Excellent)
7	How would you rate your current level of knowledge regarding on how to prepare a logical framework or results management framework?	Multiple choice (Poor, Fair, Good, Excellent)

After coordination with the JICA long-term experts, the following discussion topics were set for the discussion forum.

Table 2-43 Discussion Topics (Food Sector)

Module	Topics
1.1	Please discuss the most significant climate change impact on food production systems in your countries/territories.
1.2	Please discuss the major GHG emission sources in food production systems in your countries/territories.
2.4	Have your country used Climate Information Services for agriculture or coastal fisheries - If YES, please briefly introduce the example and the value of the services. - If NO, please discuss a barrier for adopting the services.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the practice quiz.

Table 2-44 Practice quiz (Food sector)

Module	Quiz	Options & Correct answer
1.1	Which of the following statement/status describes "risk" used in IPCC risk-based concepts?	A) The presence of people in places that could be adversely affected. B) Risk results from the interaction of vulnerability, exposure, and hazard C) Climate-related physical events or trends or their physical impacts.
	Which of the following ranges is most likely for the global mean surface temperature at the end of the 21st century if the people do not take any action to reduce the emissions of greenhouse gases (GHGs)? The following range is most likely for the global mean surface temperature at the end of the 21st century if the people do not take any action to reduce the emissions of greenhouse gases (GHGs)?	A) 4°C - 5°C B) 6°C - 7°C C) 2°C - 3°C
	Which of the following statements is NOT correct as projected impacts on the PICTs agriculture?	A) Increased intensity of cyclones could result in significant damage to agriculture and ecosystem B) Climate change could increase the risk of crop and livestock pests and diseases C) There is negligible uncertainty in estimates of impact
1.2	Which of the following factors are correct as emission sources of the food production system?	A) Electricity generation B) Municipal waste treatment C) Livestock manure management
	Which of the following gasses are NOT major GHG missions from	A) CO_2 B) CH_4 C) N_2 O

	Livestock?	
	Which of the following shares of emissions is due to agriculture and related land use in total global emissions?	A) 10% B) 20%. C) 40%.
2.1	What is the KJWA?	A) It is an agreement under the Convention of Biological Diversity (CBD) that integrates soils, nutrient use, water, livestock, methods of assessing adaptation and social economic dimensions of climate change B) It is an agreement to continue business as usual in the agriculture land sector in addressing climate change C) It is a landmark agreement under the United Nations Framework Convention on Climate Change (UNFCCC) that integrates soils, nutrient use, water, livestock, methods of assessing adaptation and social economic dimensions of climate change D) All of the above
	Which topic is under the KJWA?	A) Vulnerability of fisheries to climate change B) Impacts of Covid-19 on agriculture globally C) Methods and approaches for assessing adaptation, adaptation co-benefits and resilience; D) None of the above
	Which is the correct statement that describes the role of women in agriculture production and climate actions?	A) Women play a significant role in agriculture production and on climate change actions B) There is growing evidence that neglecting the large 'gender gap' that persists in agricultural productivity and development in most countries carries with it substantial costs. development in most countries carries with it substantial costs C) The lack of women's access to essential agriculture development resources does not only increase hardships for women, it places an extra C) The lack of women's access to essential agriculture development resources does not only increase hardships for women, it places an extra burden on the entire agriculture sector, the broader economy and society as a whole. D) All of the above
2.4	Which of the following statements is correct?	A) Climate information service mainly stands for the function of user interface B) Climate information services can provide information that help with decision making at the user or sector level. C) It is not possible to obtain data/information in line with your needs from National Meteorological Services in your countries
	Which of the following statement is NOT correct	A) PICOF is used as a forum to develop consensus on the state of the climate during the past 6 months B) The climate review that is included in the Regional Statement is very useful for planning and is available on line via the website provided on the screen C) PICOF does not develop outlook or forecasts of tropical cyclones because of lack of data

	Which of the following statements for VFCS (Vanuatu Framework for Climate Service) is NOT correct?	A) This framework identifies the need as ensuring climate services for Vanuatu focusing on climate change and agriculture B) This framework identifies the need for the development, through key stakeholder consultation, of tailored climate products. C) This framework identifies the need for improvements to and formalization of mechanisms for communicating and disseminating climate information.
3.1	In formulating a project why is it important to distinguish between cause and effect?	A) It is important to know who to blame for the cause of the problem. B) Project funding agencies want to achieve the maximum effect for a minimum amount of money C) Identifying causes helps to specify the means to solve the core problem, while knowing the effects helps to identify the goals or targets of a project
	If you are applying for climate change funds, why not assume that climate change is the core problem?	A) The funding agency may reject the project proposal because you have not considered other possible causes B) Other critical causes could be overlooked, ultimately leading to project failure and a waste of resources C)You may miss the valuable opportunity of brainstorming with the project beneficiaries.
	Why is it necessary to transform the problem tree into an objectives tree?	A) Because an adaptation project should have an objective not only problems B) Because the project should be designed to solve all the problems C) Because the causes help to identify the activities and the effects help to identify the outcomes and impacts, all important elements of the project design

Note: Underlined choices are correct answers.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the Quiz for Module 1 & 2.

Table 2-45 Quiz for Module1 & 2 (Food Sector)

No.	Questions	Choices and correct answers
1	Which of the following statements is NOT correct?	A) The rate of sea-level rise in the pacific is projected to be lower than in other parts of the world. B) More frequent extreme rainfall events are projected for Kiribati, Nauru, Papua New Guinea, Solomon Islands and Vanuatu. C) It is very likely that rainfall variability related to the El Nino-Southern Oscillation (ENSO) is projected to be amplified by the second half of the It is very likely that rainfall variability related to the El Nino-Southern Oscillation (ENSO) is projected to be amplified by the second half of the 21st century in the Shared Socio-economic Pathways (SSP) 2-4.5, SSP3-7.0 and SSP5-8.5 scenarios.
2	Which of the following statements is NOT correct?	A) At lower latitudes, decreases in crop productivity are projected for even relatively small local mean temperature increases of 1°-2°C, A) At lower latitudes, decreases in crop productivity are projected for even relatively small local mean temperature increases of 1°-2°C, because crops at these latitudes are already close to their maximum heat tolerance. B) Climate change and ocean acidification are projected to have a greater range of direct and indirect effects on distribution and

		abundance of demersal B) Climate change and ocean acidification are projected to have a greater range of direct and indirect effects on distribution and abundance of demersal fish and invertebrates in the Western and Central Pacific Ocean. C) Higher sea surface temperatures, extreme events, and ocean acidification affect coral reefs and other habitats and will reduce harvests from C Higher Sea Surface Temperatures, extreme events, and ocean acidification affect coral reefs and other habitats and will reduce harvests from small-scale, coastal fisheries by up to 50% by 2050 under Representative Concentration Pathways (RCP) 8.5.
3	Which of the following statements is NOT correct?	A) Reducing the use of fertilizers that can be converted and released as greenhouse gases is one of mitigation measures. B) Share of GHG emissions from agriculture and related land use in all PICTs is relatively higher than world average. C) There are some countries which describe mitigation actions on food production in their NDCs and climate change related policies and plans
4	Which of the following statements is NOT correct?	A) Gender equality is central to achieving food security for all by raising levels of nutrition, improving agricultural productivity and natural A) Gender equality is central to achieving food security for all by raising levels of nutrition, improving agricultural productivity and natural resource management, improving the lives of rural people, reducing climate change impacts, building resilience and adapting to the impacts of climate change. B) The Koronivia Joint Work on Agriculture (KJWA) is a landmark agreement that integrates soils, nutrient use, water, livestock, methods for assessing adaptation, and the socio-economic and food security dimensions of climate change. C) Agriculture and food systems are a huge part of the climate solution and business as usual is encouraged.
5	Which of the following statements is NOT correct related to the KJWA?	A) Vulnerability of fisheries to climate change is discussed as a single critical topic. B) The Subsidiary Body for Scientific and Technological Advice and Subsidiary Body for Implementation, one of two permanent subsidiary bodies to the B) The Subsidiary Body for Scientific and Technological Advice and Subsidiary Body for Implementation, one of two permanent subsidiary bodies to the UNFCCC, lead the process, and the consisted bodies provide advice, technical input and expertise. C) The Financial Mechanism and other funds under the UNFCCC provide funding and decide on eligibility criteria.
6	Which of the following statements is NOT correct for climate smart agriculture and livestock?	A) Trees, forests, fruits, and traditional nutritious crops are longer term carbon sinks. B) Considering nutrient use and manure management are not necessary. C) Use of genotypes better suited to the prevailing and future climates is one adaptation option
7	Which of the following features explains the disadvantage of Hydroponics?	A) Suitable against low soil fertility B) Harvest multiple times C) High Initial cost
8	Which of the following statements is NOT	A) Climate change negative impacts on fisheries include declining fish production, damages to ecosystem services so on. B) The climate-related disaster which has caused the largest impacts

	correct?	on coastal fisheries is hydrological disaster such as flood and landslide. C) Climate change will impact fisheries across the 4 dimensions of food security such as availability of aquatic foods, stability of supply, access to aquatic foods, utilization of aquatic products and the nutritional benefits produced. C) Climate change will impact fisheries across the 4 dimensions of food security such as availability of aquatic foods, stability of supply, access to aquatic foods, utilization of aquatic products and the nutritional benefits produced.
9	Which of the following measures is NOT correct?	A) Management and restoration of vegetation in catchments are not efficient adaptation options for fisheries. B) Sustainment of coastal demersal fish and invertebrates are examples of adaptation options in the fisheries sector. C) Extending the shelf life of fish catches is not considered as adaptation option
10	Which of the following statements is NOT correct?	A) Early Action Rainfall (EAR) Watch is to provide the Pacific Red Cross Regional Branch with simplified division scale seasonal rainfall outlooks and rainfall status information on a monthly basis for disaster risk reduction purposes. B) Early Action Rainfall (EAR) Watch does not provide drought information. C) Early Action Rainfall (EAR)Watch provides a summary of recent rainfall patterns, particularly the status of the rainfall and the outlook for the coming months.

Note: Underlined choices are correct answers.

The below six requirements were set as a condition to receive the certification of completion of the training course.

1. Post at least one opinion/question in any of the discussion forums
2. Pass the Quiz for Module 1 & 2 (attaining 80% or more)
3. Participate to the Live summary session
4. Submit exercise outputs
5. Participate to the Live consultation on the output of the exercise
6. Submit course evaluation

2.5.2 Request for nomination of training participants

An official letter (Circular) containing a General Information (GI) which described the background, objectives, prospective participants, modules, logistics, etc. of the training course was prepared and sent with the training agenda and nomination form from SPREP to the climate change focal points of PICTs to request to nominate participants.

2.5.3 Organizing training

(1) Schedule and Participants

The training course for Food sector was carried out during the following dates.

Table 2-46 Training Schedule (Food Sector)

Item	Date
Self-paced learning	September 20 - October 3, 2021
Live lecture	September 23,28, 2021
Group exercise	October 4-8, 2021
Live consultation	October 13-15, 2021

77 participants from 11 countries and 1 territory participated in the food sector training. 21 participants were from the Department of Climate Change, 48 participants were from relevant departments such as agriculture, fisheries, meteorology and local government development, and 8 participants were from NGOs and private companies. 10 participants had participated in previous trainings (climate finance, disaster management, natural ecosystems, etc.) 39 participants completed the course.

Table 2-47 Number of participants (Food sector)

Name of country and territory	No of participants	Name of country and territory	No of participants	Name of country and territory	No of participants
American Samoa	9	Niue.	2	Timor-Leste	8
Fiji	13	Papua New Guinea (PNG)	8	Tonga	8
Federated States of Micronesia (FSM)	8	Samoa	8	Tuvalu	5
Kiribati	4	Solomon Islands	2	Vanuatu	2
					Total 77 persons

(2) Motivations and expectations for participation in this training course

Through the pre-assessment, the following motivations and expectations for participation in this training course were raised.

- To deepen knowledge of climate resilience in agriculture and fisheries and how this knowledge can be applied to develop and implement digital technology solutions by the private sector
- To obtain better understanding of climate change impacts in the target sector and how other PICTs have been addressing food production increasing.
- To learn new ways and find tools to incorporate climate change aspects into existing resource management frameworks
- To improve knowledge and skills in aquaculture and coastal fisheries to develop good concept notes

(3) Live summary session

Live summary sessions were carried out at 13:00-15:00 (Samoa time) on July 6, 2021.

Table 2-48 Agenda of the Live summary session for Module 2.2 (Food sector)

Date: September 23, 2021

Time (Samoa time)	Contents
13:00 - 13:10	Introduction of the training program
13:05 - 14:30	Introduction to Climate Smart Agriculture adaptation and mitigation options & Case studies
14:30 - 14:55	Adaptation mitigation co-benefits of using integrated approaches
14:55 - 15:00	Brief introduction of Week 2 and 3, Photo session, Closing

Table 2-49 Agenda of the Live summary session for Module 2.3 (Food sector)

Date: September 28, 2021

Time (Samoa time)	Contents
13:00 - 13:10	Introduction of the training program
13:05 - 14:10	Introduction to adaptation concepts in Pacific coastal fisheries Experiences in coastal fisheries adaptation - Samoa case study
14:20 - 14:30	Brief introduction of Week 3 - 4, Photo session, Closing

The major questions raised by the participants during the live summary session were as below. The experts answered the questions in the session.

Table 2-50 List of major questions (Food sector)

module	question
Module 2.2	- About the most significant impacts of climate change - About case study on Desalination Systems for Agriculture - About availability of coconut koa for soil water retention - On vulnerability analysis at the community level - About benefits of slurry for plant growth - About use of Invasive Species as a countermeasure to climate change
Module 2.3	- About development in coastal areas, especially in mangrove habitats - About the effects of climate change and the impact of oil spills and other pollution with respect to the demand for fish consumption. - About dried fish and other fish preservation methods recommended as adaptation options (e.g., changes in quality, nutritional value, etc.) - About approaches and challenges in applying organizational approaches to implementing fishing ordinances to communities and others. - About importance of traditional knowledge in fisheries and DRR, and challenges in using it - On data showing the percentage of damage inflicted on coastal areas by overfishing and other factors in coastal areas

(4) Live consultation

Live consultations were carried out to provide feedback on the exercise outputs (Problem tress, Objective tress, Logical framework) from the experts. The schedule and agenda are shown in below.

Table 2-51 Schedule of the Live consultation (Food sector)

Date and time (Samoa time)	Countries and territories
October 13 13:00-15:00	Fiji, PNG, Timor-Leste, Vanuatu
October 14 13:00-15:00	American Samoa, Niue, Samoa, Tonga
October 15 14:00-16:00	FSM, Kiribati, Solomon Islands, Tuvalu

Table 2-52 Agenda of the Live consultation (Food sector)

Time (Samoa time)	Contents
5 min.	Introduction of the live consultation
90 - 100 min.	Presentation of the outputs and feedbacks - 10 min presentation of each group - 5 min comments from resource persons - 5 min for Q&A
10 - 20 min.	discussion
5 min.	Introduction of next step, Closing

A summary of the feedback on the exercise outputs from the experts are shown in below.

1) Feedback on problem tree
   - Be more specific about the contents of each box
   - Similar causes should be reorganized and integrated
   - Clarify the link between core problem and climate change
   - A stakeholder analysis may be required to determine what the various stakeholders consider to be the issues

2) Feedback on objective tree
   - Be more specific about the contents of each box
   - Note the direction of the arrow in the objective tree

3) Feedback on logical framework
   - Clarify how to address the core problem in the problem tree
   - Clarify the content of the activity that leads to the output
   - Clarify the relationship to the contents identified in the objective tree
   - Baseline is important information, so be as specific as possible
   - Activity should be described in as much detail as possible
   - New regulations and law revisions on marine pollution and invasive species response, etc. could also be included in output and activity
   - Outcomes and Outputs need to be differentiated. Describe outputs as the expected results of project implementation
   - Inclusion of women in the target is good
   - Content should be able to show climate rationale clearer.

2.5.4 Evaluation of training courses

Seventy-four percent (n=29/39, as of November 10, 2021) of the training participants rated the overall contents and sessions as excellent and positively rated the training materials, experts, and structure. Major evaluation comments from the participants are listed below.

(1) About the training materials and contents
   - It would be better to incorporate topics and video clips on the relevance of coastal fisheries management and climate change to the Antarctic

(2) Live summary session and live consultation
   - It would be better if the live consultation time was longer to allow more time for Q&A with the experts

(3) About the exercise
   - It would be nice to be able to review the comments from the experts after the live consultation.
   - How about assigning a facilitator to work with each group to assist with the exercises and to see the level of participation of the participants?
   - It would be nice if there is a mechanism to ensure that all participants actively participate in the exercises

(4) Training period and submission deadline
   - The period of the training should be longer, as the participants must learn the training materials while their daily works. Particular, the exercises require a lot of time and effort.

(5) Follow-up activities
   - It would be nice if the participants could receive consultation from experts on the preparation of the logical framework and application for funds to the GCF continuously after the training.
   - Wish to attend a similar course of training for further capacity building

2.6 Tourism sector

2.6.1 Training material development

Training materials were prepared based on the training structure and syllabus developed through coordination between SPREP, PCCC and JICA long-term experts. The training structure and syllabus are shown below. In developing the syllabus, the existing initiatives and resources (tools, modules, materials, and related regional training contents) were reviewed to ensure alignment with these initiatives and to add value to the training materials. Completion of the course was based on participation in all sessions and completion of all activities, including self-assessment.

Table 2-53 Training Syllabus (Tourism sector)

Module 1. Understanding of risks of climate change impacts on tourism sector		
	1.1 Risks of climate change impacts on tourism	
		Section 1.1 explains basic knowledge on climate risk and impacts and observed and projected climate change and its impacts. Training materials present: - Understand key concepts to assess climate risk and impacts and definitions of the important terms, such as exposure, hazard, vulnerability, and risk of climate change. - Learn about observed and projected climate change and its impacts focusing on temperature rising, precipitation pattern change, sea level rise, ocean temperature and ocean acidification that are most relevant to food production systems as hazards and some cases of those impacts in the Pacific. - Understand the climate change impact on the tourism sector.
	1.2 Basic knowledge of business implication of climate change	
		Section 1.2 explains basic knowledge of business implication of climate change. Training materials present: - Understand the relations between climate change and business activities. - Learn about physical risks on business activities and the benefits of physical risk identification and assessment. - Comprehend observed impacts of climate change on the tourism sector in the Pacific.
	1.3	GHG emissions from the tourism sector
		Section 1.3 explains the current Greenhouse Gas (GHG) emissions and Nationally Determined Contribution (NDC) related to mitigate GHG emissions from the emissions from the tourism sector in the Pacific. Training materials present: - Understand the current GHG emissions form the tourism sector in the Pacific. - Learn about the sectors including tourism in NDCs in the Pacific by taking an example of Samoa.
Module 2. Opportunities of the tourism to respond to climate change		
	2.1 Possible options for the tourism sector to respond to climate change	
	2.1.1	Ecosystems-based approaches: coast, ocean, lake, forest, and mountain
		Section 2.1 explains ecosystem-based approaches with focus on marine, coastal and terrestrial ecosystems as one of the possible options for the tourism Section 2 1 explains ecosystem-based approaches with focus on marine, coastal and terrestrial ecosystems as one of the possible options for the tourism sector to respond to climate change. Training materials present: - Understand the concept of EbA and the relevant approaches such as Nature-based Solutions and Ecosystem-based Management.

		- Comprehend the importance and benefits of mainstreaming EbA and other related concepts into into climate change and sustainable development and (touristic) sector policies, taking examples in the Pacific.
	2.1.2	Resilient and low-carbon infrastructures, facilities and information management
		Section 2.1.2 explains resilient and low-carbon infrastructures, facilities and information management. Training materials present: - Understand the latest global and regional efforts including PSTPF and what that entails for key stakeholder groups. - Lean about practical opportunities where tourism can contribute to resilience building and GHG emission reduction in the built environment and transport.
	2.1.3	Business risk management and recovery
		Section 2.1.3 explains climate risk identification/assessment and management referring to COVID-19 recovery. Training materials present: - Understand climate-related risks to be considered in relation to your business activities. - Learn about the steps to identify and assess climate-related risks. - Comprehend climate risk management in your business activities.
	2.2 Enhancing mainstreaming climate change in the national tourism strategy and plan	
		Section 2.2 explains mainstreaming climate change in the national tourism strategy and plan. Training materials present: - Understand the importance of alignment of national tourism develop policies and plans with existing tourism climate change frameworks for a sustainable and resilient tourism sector.
Module 3. Problem and Objective trees and Logical framework		
	3.1 Project objectives	
		In formulating a climate change project, the theory of change and the logical framework are key elements. They are described as tools for logic that connect causes and effects. Development of problem and objective trees will help to uncover these connections. Section 3.1 Shows participants how to develop problem trees and objective trees and how these are used to craft the logical framework, as well as the theory of change. change. Training materials present: - Understand the importance of the theory of change and the logical framework in formulating a climate change project - Understand how to develop a problem tree, objective tree and logical framework
	3. 2Exercise	
		Each country group executes problem tree analysis by identifying core problems related to climate change mitigation/adaptation on tourism. exercise is followed by formulation of objective trees and development of a logical framework of the project/program related to mitigation and/or This exercise is followed by formulation of objective trees and development of a logical framework of the project/ program related to mitigation and/or adaptation activities for tourism.

The following experts were identified through the SPREP/PCCC network as instructors to prepare training materials and deliver lectures.
In addition, the videos, lecture slides and notes for this training course material were translated into French and shared on the PCCC e-Learning platform.

Table 2-54 List of the experts (Tourism sector)

Name	Organization	Module in charge
Dr. Koji Kuroiwa	JICA short-term expert	Module 1.1
Mr.Yasuki Shirakawa	JICA Short-term Expert	Module 1.2, Module 2.1.3
Ms. Vanda Faasoa-Chan Ting	SPREP	Module 1.3
Mr. Nicolas Rocle	SPTO	Module 2.1.1
Mr. Semi Qamese	SPTO	Module 2.1.1
Ms. Christina Leala Gale	SPTO	Module 2.1.1, Module 2.1.2
Ms. Azarel Mariner-Maiai	SPREP	Module 2.1.3
Ms. Sera Domoni Baleisolomone	Six Senses Fiji	Modul 2.1.2
Ms. Yvette Kerslake	SPREP	Modul 2.2
Dr. Peter King	Institute for Global Environmental Strategies (IGES)	Module 3.1 Module 3.2
Mr. Tetsuya Yoshida	JICA short-term expert	Module 3.1, Module 3.2

Pre-assessment and Post-assessment were prepared by the JICA long-term experts as follows.

Table 2-55 Pre-assessment (Tourism sector)

No.	Question	How to answer
1	Please describe your motivation to attend the training programme.	Comments
2	How would you rate your overall knowledge regarding climate change adaptation and mitigation (poor to excellent)?	Multiple choice (Poor, Fair, Good, Excellent)
3	What are key challenges for your government/ agency/ institution in implementing strategies, policies, and plans related to climate change? Please select up to 3 choices - Insufficient political will and leadership. - Mainstreaming of climate change, less attention to climate change in sectors. - Coordination and governance arrangement within the same government level. - Coordination and governance arrangement with governments in a different level. - Lack of legal framework, policy, strategy, plan, etc. - Limited capacity in human resources and expertise including awareness in the central government. - Limited capacity in human resources and expertise including awareness in local governments. - Limited capacity in human resources and expertise including awareness in communities. - Limited financial sources within the government. - Limited access to the climate finance in the regional and international level. - Limited data, information and knowledge which can be easily used by officials and practitioners. - Others.	Multiple choice
4	If you choose "others" in the previous question or have additional comments, please provide your answer.	Comments
5	How would you rate your current level of knowledge regarding climate and non-climate impacts on tourism?	Multiple choice (Poor, Fair, Good, Excellent)
6	How would you rate your current level of knowledge regarding GHG emissions from tourism?	Multiple choice (Poor, Fair, Good, Excellent)

7	How would you rate your current level of knowledge regarding ecosystems-based approaches: marine, coastal and terrestrial?	Multiple choice (Poor, Fair, Good, Excellent)
8	How would you rate your current level of knowledge regarding resilient and low-carbon infrastructures, facilities and Information management?	Multiple choice (Poor, Fair, Good, Excellent)
9	How would you rate your current level of knowledge regarding business risk management and recovery?	Multiple choice (Poor, Fair, Good, Excellent)
10	. How would you rate your current level of knowledge regarding enhancing mainstreaming climate change in the national tourism strategy and plan?	Multiple choice (Poor, Fair, Good, Excellent)
11.	How would you rate your current level of knowledge regarding on how to prepare a logical framework or results management framework?	Multiple choice (Poor, Fair, Good, Excellent)

Table 2-56 Post-assessment (Tourism sector)

No.	Question	How to answer
1	How would you rate your current level of knowledge regarding climate and non-climate impacts on tourism?	Multiple choice (Poor, Fair, Good, Excellent)
2	How would you rate your current level of knowledge regarding GHG emissions from tourism?	Multiple choice (Poor, Fair, Good, Excellent)
3	How would you rate your current level of knowledge regarding ecosystems-based approaches: marine, coastal and terrestrial?	Multiple choice (Poor, Fair, Good, Excellent)
4	How would you rate your current level of knowledge regarding resilient and low-carbon infrastructures, facilities and Information management?	Multiple choice (Poor, Fair, Good, Excellent)
5	How would you rate your current level of knowledge regarding business risk management and recovery?	Multiple choice (Poor, Fair, Good, Excellent)

After coordination with the JICA long-term experts, the following discussion topics were set for the discussion forum.

Table 2-57 Discussion Topics (Tourism Sector)

Module	Topics
1.1	Please discuss the most significant observed climate change in your country/territory.
1.2	Please discuss the most significant climate-related risks and possible opportunities of the tourism sector in your country/territory.
1.3	Please discuss the major GHG emission sources in the tourism sector in your country/territory. And please share emission data if available.
2.1.1	Please discuss: i) the example of Ecosystem-based adaptation/mitigation measures, and ii) one barrier when adopting these measures in the tourism sector in your country/territory.
2.1.2	Have your country/territory introduced resilient and low-carbon infrastructures, facilities and information management in the tourism sector? - If YES, please briefly introduce the example and its benefits - If NO, please discuss a barrier to adopting these measures
2.1.3	Do you have similar experiences or examples of identifying and assessing climate-related risks for tourism in your country/territory? --> If YES, what is the most difficult part during the identification and assessment process? --> If NO, what steps would you take to enhance resilience of the tourism sector in your county/territory?
2.2	Please discuss one barrier for mainstreaming climate change into the tourism sector.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the practice quiz.

Table 1. 2-1 Practice quiz (tourism sector)

Module	Quiz	Options & Correct answer
1.1	Which of the following statements is NOT correct?	A) Climate change and global warming refer to different physical phenomena. B) Greenhouse effect arose from human activities during the Industrial Revolution C) Water vapor also has a greenhouse effect
	Which of the following statements is correct about projected change in surface temperature of the Pacific in the 21st century?	A) The magnitudes of warming over the equatorial Pacific will be about 70% of the global average for 2081-2100 B) Surface temperature of the Pacific will warm at a faster rate than the global average C) In the western Pacific, changes of the surface temperature will be around 1 to 2 degrees at the end of the 21st century
	Which of the following statements is NOT correct about projected sea-level rise?	A) The upper estimate of sea-level rise at 2150 according to IPCC/AR6 is about 2 meters B) Sea-level could rise by 15 meters or more at 2300 C) Sea-level will continue to rise unless global temperatures go down by the end of this century
1.2	Which statement is NOT correct regarding climate-related risks on business activities?	A) Climate-related risk on business activities is consisted from two categories such as physical risks and transition risks as defined in the TCFD. recommendations B) Physical risks may have financial impacts for business activities, such as direct damage to assets and indirect impacts from supply chain disruption C) Transition risk stands for longer-term shifts in climate pattern that may cause sea level rise or chronic heat waves
	Which statement is NOT correct regarding the benefits of identifying and assessing climate-related risks?	A) Cost saving B) Understand how to estimate GHG emissions C) Enhance company's reputation
	Which statement is NOT correct regarding TCFD?	A) TCFD developed voluntary, consistent climate-related financial disclosures that are recommended to be adopted only for large scale companies B) Governance, strategy, risk management, metrics and targets are core elements of recommended climate-related disclosures by TCFD. C) TCFD recommends to evaluate and disclose financial impacts of climate change
1.3	Which of the following activities are major GHG emissions in the tourism sector?	A) Transport B) Goods C) Food and Beverage
	Which of the following activities is NOT correct as mitigation activities in the tourism sector of PICTs?	A) Only SAMOA specifically has the Tourism Sector as one of the sectors in their Enhanced NDC B) All PICTs clearly indicate mitigation activities of the tourism sector in their NDC C) Various activities such as utilizing renewable energy, mangrove replanting and rehabilitation, utilizing more

		energy efficiency transport can boost mitigation activities in tourism sector
	Which of the following statements is NOT correct for energy audit?	A) Energy audits need to be carried out in order to accurately identify areas where GHG emission reductions can be achieved from B) Energy Audits will provide them with recommendations on avenues to reduce their consumption and in turn reduce their GHG emissions. C) Without energy audit, all mitigation activities shall not be carried out
2.1.1	Which of the following statements is NOT correct as for EbA?	A) Ecosystem-based adaptation (EbA) integrates the use of biodiversity and ecosystem services into an overall strategy to adapt to the adverse impacts of climate change of climate change B) Ecosystem-based adaptation uses the sustainable management, conservation, and restoration of ecosystems to provide services that enable people to adapt to both current climate variability and long-term change. B) Ecosystem-based adaptation uses the sustainable management, conservation, and restoration of ecosystems to provide services that enable people to adapt to both current climate variability and long-term change C) Actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges
	Which of the following statements is NOT correct for EbA?	A) EbA solutions address current and future climate change impacts (e.g. floods, droughts, storms) on human wellbeing through a sustainable management of ecosystems and the services they provide of ecosystems and the services they provide B) EbA solutions cannot offer opportunities for the mitigation of greenhouse gas emissions C) EbA promote ecological, economic and/or social benefits to the tourism sector
	Which of the following statements is NOT correct for explanation of EbM?	A) Ecosystem-based Management is an integrated management approach relying on the interactions within an entire ecosystem that includes human beings and activities B) Ecosystem-based Management is mainly focused on the biophysical components of an ecosystem. C) Ecosystem-based Management includes the following core characteristics such as placed-based (ecologic criteria), cross-sectoral, adaptive and flexible, proactive and Inclusive and collaborative
2.1.2	Which of the following statements is correct for the regional efforts on tackling for climate change in the Pacific?	A) No activities have been made so far B) There were very few initiatives reveal the importance for the tourist accommodation sector to shift to renewable energy C) The Pacific Sustainable Tourism Policy Framework provided a clear pathway for advancing sustainable tourism planning and development
	Which of the following statements are NOT correct for	A) Promote the use of natural ventilation B) Information management does not work well as an action for climate change

	opportunities for tourism to respond to resilience building and GHG emission reduction?	C) Transition to greener energy supply e.g. use of solar power, wind etc.
	Which of the following statements is NOT correct for opportunities for tourism to respond to resilience building and GHG emission reduction?	A) Promote partnerships with cruise liners with credible sustainability policies B) Educate and raise awareness on the importance of reducing emissions C) Pursue comfort and attracting tourists only
2.1.3	Which statement is NOT correct regarding important view points for effective management of climate-related risks?	A) Integrate outputs of climate-related risk analysis into business visions and strategies of the company B) Place issues on climate change as a "company-wide theme" under the leadership of the CEO, and set up a cross-sectional unit or division to enhance actions to climate change C) Rely on a single person in the company who has considerable experience and expertise in climate change
	Which statement is NOT correct regarding potential impacts of climate-related (physical) risks on accommodation businesses in PICs?	A) Cost for buildings and facilities would be increased, for example, because of renovation works to prepare for cyclone/flooding B) Revenue would be decreased, for example, because of high energy prices with the carbon tax. C) Cost for buildings and facilities would be increased, for example, because of installation and operation of air conditioner for guest rooms under hotter temperature and extremes. temperature and extremes
	Which statement is NOT correct regarding steps to identify and assess climate-related risks?	A) Step 1 is to summarize past and current climate impact as well as future climate projection of your business area B) Step 2 is to list potential climate-related risks which are directly or indirectly related with your business C) Step 3 is to assess potential business impacts of each risk identified in Step 2, and this should be done only by the management or owner of the company.
2.2	Which of the following statements is NOT correct for necessary things on mainstreaming climate change into tourism policies?	A) Integration of climate change risks into local destination level planning and management processes at Tourism development areas B) Disaster preparedness and response plans covering both tourism and local populations in an integrated way C) Enhancing the capacity of the related government institutions of tourism sector only
	Which of the following statements is NOT correct for JNAP?	A) PICs have taken steps to develop and implement an integrated action plan, or Joint National Action Plan (JNAP), for climate change (CC) and disaster risk management (DRM). B) The Joint National Adaptation Plans (JNAPs) process was established under the Cancun Adaptation Framework (CAF). C) Some pacific island countries have opted to review their existing JNAPs for prioritized actions including activities for Tourism e.g., Cook Islands 2nd Joint National Action

		Plan - A sectoral approach to climate change and Disaster Risk management
	Which of the following statements is NOT correct for NDCs in the Pacific?	A) Most PICs have submitted their NDC's and 5 countries have updated or submitted 2nd NDC and have included Tourism as a key sector B) By implementing and monitoring energy efficiency programs for appliances to reduce GHG emissions in the tourism sector is included in the Second NDC of Samoa C) Introducing electric vessels is included in the Vanuatu's NDC as emission reductions measure

Note: Underlined choices are correct answers.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the Quiz for Module 1 & 2.

Table 2-58 Quiz for Module1 & 2 (Tourism sector)

No.	Questions	Choices and correct answers
1	Which of the following statements is correct about observed sea-level changes?	A) Global mean sea-level rose by 0.30 meter over 1901-2018. B) It was found that the global mean sea-level rose at a rate of 2.9 millimeter/year from 2013 to 2021. C) El-Niño Southern Oscillation (ENSO) can cause a difference in the rate of relative sea-level rise between islands.
2	Which of the following is common in climate projections of temperature and precipitation?	A) The increasing trend is clear in high latitudes. B) The increasing trend is significant in the equatorial Pacific. C) Both increasing and decreasing trends are projected across the globe.
3	Which is NOT discussed as a benefit of identifying and assessing climate-related risks?	A) Cost saving B) Understanding how to estimate GHG emissions C) Enhancing company's reputation
4	Which statement is NOT correct regarding climate-related risks and impacts to tourism businesses?	A) The major climate-related risk on tourism businesses in Pacific Island Countries is "heat wave" caused by gradual increase of average temperature. of average temperature. B) Various climate-related risks exist in Pacific Island Countries, such as storm surge, coastal flood, coastal erosion and drought. C) Tourism is often said as a climate-dependent industry, and impacts of climate-related risks on tourism businesses are very wide.
5	Which of the following statements is NOT correct for an energy audit?	A) Energy audits need to be carried out in order to accurately identify areas where GHG emission reductions can be achieved. B) Energy audits will provide them with recommendations on avenues to reduce their consumption and in turn reduce their GHG emissions. C) Without energy audits, all mitigation activities shall not be carried out.
6	Which of the following statements is NOT relevant for ecosystem-based adaptation?	A) Ecosystem-based adaptation integrates the use of biodiversity and ecosystem services into an overall strategy to adapt to the adverse impacts of climate change. B) Ecosystem-based adaptation uses the sustainable management, conservation, and restoration of ecosystems to provide services that enable people to B) Ecosystem-based adaptation uses the sustainable management, conservation, and restoration of ecosystems to provide services that enable people to adapt to both current climate variability and long-term change.

		C) Actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively.
7	Which of the following statements is correct for the regional efforts on tackling climate change in the Pacific?	A) No activities have been made so far. B) There were very few initiatives reveal the importance for the tourist accommodation sector to shift to renewable energy sources. C) The Pacific Sustainable Tourism Policy Framework provided a clear pathway for advancing sustainable tourism planning and development.
8	Which of the following statements is NOT correct for opportunities for tourism to respond to resilience building and GHG emission reduction?	A) Promote partnerships with cruise liners with credible sustainability policies. B) Educate and raise awareness on the importance of reducing emissions. C) Pursue comfort and attracting tourists only.
9	Which statement is NOT correct regarding important view points for effective management of climate-related risks?	A) Integrate outputs of climate-related risk analysis into business visions and strategies of the company. B) Place issues on climate change as a "company-wide theme" under the leadership of the CEO, and set up a cross-sectional unit or B) Place issues on climate change as "company-wide theme" under leadership of the CEO, and set up a cross-sectional unit or division to enhance actions to climate change. C) Rely on a single person in the company who has considerable experience and expertise in climate change.
10	Which of the following statements is NOT correct for NDCs, NAPs and JNAPs in the Pacific?	A) Most Pacific Island Countries have submitted their NDC's and 5 countries have updated or submitted their 2nd NDC's and have A) Most Pacific Island Countries have submitted their NDC's and 5 countries have updated or submitted their 2nd NDC's and have included Tourism as key sector. B) No country has opted to use their existing Joint National Adaptation Plans for climate change and disaster risk management. C) It is very important for the tourism industry to participate in the workshops led by the Climate Change Focal Point to develop NDCs and NAPs and to It is also important to ensure that these activities are appropriate for the tourism context and that they are implemented It is also important to ensure that these activities are appropriate for the tourism context and that they are implemented.

Note: Underlined choices are correct answers.

The below six requirements were set as a condition to receive the certification of completion of the training course.

1. Post at least one opinion/question in any of the discussion forums
2. Pass the Quiz for Module 1 & 2 (attaining 80% or more)
3. Participate to the Live summary session
4. Submit exercise outputs
5. Participate to the Live consultation on the output of the exercise
6. Submit course evaluation

2.6.2 Request for nomination of training participants

An official letter (Circular) containing a General Information (GI) which described the background, objectives, prospective participants, modules, logistics, etc. of the training course was prepared and sent with the training agenda and nomination form from SPREP to the climate change focal points of PICTs to request to nominate participants.

2.6.3 Organizing training

(1) Schedule and Participants

The training course for Tourism sector was carried out during the following dates.

Table 2-59 Training Schedule (Tourism sector)

Item	Date
Self-paced learning	January 26 - February 6, 2022
Live summary lecture	February 3, 2022
Group exercise	February 7-11, 2022
Live consultation	February 16-18, 2022

44 participants from 10 countries and 2 territories participated in the tourism sector training course. 12 participants were from climate change departments and 32 participants were from tourism-related departments, including chambers of commerce. 9 participants had also participated in other areas of training prior to the training course in question. 28 participants completed the course.

Table 2-60 Number of Participants (Tourism Sector)

Name of country and territory	Number of participants	Name of country and territory	Number of participants	Name of country and territory	Number of participants
Fiji	6	Nauru	2	Solomon Islands	1
French Polynesia	1	New Caledonia	1	Timor-Leste	10
Kiribati	2	Niue.	7	Tokelau	2
Republic of Marshal Islands	5	Samoa	6	Tuvalu	1
					Total 44 persons

(2) Motivations and expectations for participation in this training course

Through the pre-assessment, the following motivations and expectations for participation in this training course were raised.

- To understand climate change and its impact on the tourism sector and mitigation and adaptation practices in the Pacific region
- To learn how to make climate resilience more resilient and profitable in the face of limited resources
- To develop human resources for GCF project development, chambers of commerce and private sector, including tourism on the island and in the region
- To build a network and obtain new knowledge on strategies of other Pacific Island countries and regions on climate change and sustainable efforts to mitigate the effects of climate change

(3) Live summary session

Live summary sessions were carried out on February 3, 2022. The agenda is as follows

Table 2-61 Agenda of the live summary session (Tourism sector)

Time (Samoa time)	Contents
13:00 - 13:10	Introduction of the training program
13:05 - 13:30	Module 2.1.1 Presentation and Q&A
13:30 - 13:55	Module 2.1.2 Presentation and Q&A
13:55 - 14:10	Module 2.1.3 Presentation and Q&A
14:10 - 14:20	Module 2.2 Presentation and Q&A
14:20 - 14:30	Brief introduction of Week 3, Photo session, Closing

The major questions raised by the participants during the live summary session were as below. The experts answered the questions in the session.

- About how EbA will affect the tourism industry.
- About whether there is another plant that could replace the mangroves.
- About the effectiveness of hybrid seawalls (gray infrastructure).
- About EBA for Small Island Developing States.
- About the recommendations of the Pacific Sustainable Tourism Framework. Have you been able to collect data on emissions and carbon offsets in the tourism sector?
- On the possibility of including non-climatic influences such as Covid as a risk.

(4) Live consultation

Live consultations were carried out to provide feedback on the exercise outputs (Problem tress, Objective tress, Logical framework) from the experts. The schedule and agenda are shown in below.

Table 2-62 Schedule of the live Consultation (Tourism sector)

Date and time (Samoa time)	Countries and territories
February 15 13:00-15:00	Fiji, Kiribati, Timor-Leste
February 16 13:00-15:00	Niue, Samoa, Tokelau, RMI

Table 2-63 Agenda of the live consultation (Tourism sector)

Hours.	Contents
5 min.	Introduction of the live consultation
100 min.	Presentation of the outputs and feedbacks - 10 min presentation of each group - 5 min comments from resource persons - 5 min for Q&A
10 min.	discussion
5 min.	Introduction of next step, Closing

A summary of the feedback on the exercise outputs from the experts are shown in below.

1) Feedback on Problem tree
- Be more specific about the contents of each box (e.g., target audience, issues being addressed, etc.)
- Clearly distinguish between direct and indirect causes for cause
- Core problem should be set in consideration of whether it is a problem that the project really wants to solve or not
- Note the direction of the arrow in the problem tree.
- No more than one element or sentence in a box

2) Feedback on objective tree
- Objective tree should be mirrored with problem tree
- No more than one element or sentence in a box
- The content of each box in the objective tree should be a positive statement
- To concretize desired result

3）Feedback on logical framework

- Logical framework should be formulated based on the objective tree
- Private sector's activities related to climate change mitigation and adaptation may also be considered
- It is good to incorporate activities that actually lead to GHG emission reductions
- Baseline and indicator should be specific and relevant
- Incorporating elements other than activities such as capacity building would be nice
- It would be good to clarify the relevance and impact with the national and other tourism policies
- Outcomes and outputs need to be differentiated
- Contents of activity should be as specific as possible

2.6.4 Evaluation of training courses

Sixty-one percent of training participants (n=17/28, as of March 21, 2022) rated the overall content and sessions as excellent. Training materials, resources, and structure were also rated positively. Major evaluation comments from participants are listed below.

- Learned more about climate change and its impacts as they relate to the tourism sector. Particularly, they were able to learn lessons for preparing, adjusting, and resilience to climate change in the tourism sector.
- It would be nice if more reference materials for each training material are shared. Also it would better if there is more assistance and practice to develop the problem tree, objective tree, and logical framework
- Would like to know more examples from other Pacific Island countries
- Live summary sessions and live consultation sessions are long. It would be good to consider limiting the number of presenters and time and increasing the number of sessions

2.7 Water Sector

2.7.1 Training material development

Training materials were prepared based on the training structure and syllabus developed through coordination between SPREP, PCCC and JICA long-term experts. The training structure and syllabus are shown below. In developing the syllabus, the existing initiatives and resources (tools, modules, materials, and related regional training contents) were reviewed to ensure alignment with these initiatives and to add value to the training materials. Completion of the course was based on participation in all sessions and completion of all activities, including self-assessment.

Table 2-64 Training Syllabus (Water sector)

Module 1. Understanding of climate change risks and vulnerabilities of rural water access		
		Module 1 explains basic knowledge on climate risk and impacts and observed and projected climate change and its impacts. Training contents presents: - Understand key concepts to assess climate risk and impacts and definitions of the important terms, such as exposure, hazard, vulnerability, and risk of climate change. - Learn about observed and projected climate change and its impacts focusing on temperature rising, precipitation pattern change, sea level rise, ocean temperature and ocean acidification that are most relevant to water resources as hazards and some cases of those impacts in the Pacific. Understand the climate change impact on the water sector.
Module 2. Adaptation and mitigation options with innovative approaches		
	2.1	Technical solutions for safe water access from water source to households
		This lecture explains Pacific freshwater sources, including groundwater, surface water and rainwater, and their assessment, development, and their assessment, development, monitoring and management. Training material presents: -How to identify and manage water resources? tools, surveys and data. -What innovative technologies, devices and tools are available to deliver and monitor safe water for households - cases: Ecological Purification Systems (EPS) in Fiji -How renewable energy can be used to reduce the use of fossil fuels? & What innovative devices and solutions are available to encourage water and energy saving? What innovative devices and solutions are available to encourage water and energy saving? -Use of Climate Information Services
	2.2 Community-based management for rural safe water access: Case study in Samoa	
		This lecture explains case of community-based management of water schemes in Samoa. The series of lecture materials will present the key themes, The series of lecture materials will present the key themes, institutions, challenges, solutions and plans of rural water schemes including village water committees and the Association. Training material presents: - Learn about the context, institutions and initiatives of community-based management of water systems in Samoa - Considers any relevant information and initiatives for each country's safe water access based on its own contexts and initiatives
	2.3	Projects in the Pacific
		"Enhancing the Climate Resilience of vulnerable island communities in the Federated States of Micronesia" (Adaptation Fund). "Managing Coastal Aquifers in Selected Pacific SIDS" (Global Environment Facility)

		"South Tarawa Water Supply Project" in Kiribati (Green Climate Fund) "Addressing Climate Vulnerability in the Water Sector (ACWA) in the Marshall Islands" (Green Climate Fund).
Module 3. Project formulation and management		
	3.1 Problem and Objective trees and Logical Framework	
	3.1.1 Project objectives	
		In formulating a climate change project, the theory of change and the logical framework are key elements. They are described as tools for logic that connect causes and effects. Development of problem and objective trees will help to uncover these connections. Section 3.1 Shows participants how to develop problem trees and objective trees and how these are used to craft the logical framework, as well as the theory of change. change. Training material presents: - Understand the importance of the theory of change and the logical framework in formulating a climate change project - Understand how to develop a problem tree, objective tree and logical framework
	3.1.2	Group exercise 1 on project logical framework
		Each country group executes problem tree analysis by identifying core problems related to climate change mitigation/adaptation on rural safe water access. This exercise is followed by formulation of objective trees and development of a logical framework of the project/program related to mitigation This exercise is followed by formulation of objective trees and development of a logical framework of the project/program related to mitigation and/or adaptation activities for rural safe water access. The lecture explains the preparation of exercise and how to develop problem tree, objective tree and logical framework. also introduced.
	3.2 Project management, schedule and budget	
	3.2.1 Fundamentals of project management, schedule and budget planning	
		Module 3.2.1 explains significant elements you have to take into consideration in planning a project to help you plan and manage a project in a more smooth and and comprehensive way. Training material presents: - Understanding key elements for project planning, including project cycle, components of project planning, work breakdown structure, project budget, and risk management. - Understanding the important components of project planning to avoid critical failures during execution of the project.
	3.2.2	Group Exercise 2 on project schedule and budget
		Each country group executes the following three exercises by using the provided template including Logical Framework of hypothetical project: 1) activity formulation; 2) schedule planning; and 3) budget planning. The lecture explains exercise rational, outcomes, and outputs, as well as which sheets and columns should be filled through group discussion.

The following experts were identified through the SPREP/PCCC network as instructors to prepare training materials and deliver lectures.

Table 2-65 List of the experts (Water sector)

Name	Organization	Module in charge
Dr. Koji Kuroiwa	JICA short-term expert	Module 1
Mr. Peter Sinclair	SPC	Module 2.1 Modul 2.3
Dr. Mat Francis	Moerk Water Solutions Asia Pacific Pty Ltd	Module 2.1
Mr. Kazushige Mizui	JICA short-term expert	Module 2.1
Mr. Filipe Batiwale	Department of Water and Sewerage, Fiji Ministry of Infrastructure and Meteorological Services	Module 2.1
Ms. Clarissa Therese Laulala	Samoa Independent Water Schemes Association	Modul 2.2
Mr. Richard Moufa	Project Manager, Department of Environment, Climate Change & Emergency Management (DECEM), FSM	Modul 2.3
Mr. Joshua Chappelow	Project Manager, Ministry of Infrastructure and Sustainable Energy, Government of Kiribati	Modul 2.3
Dr. Koji Kumamaru	Project Manager, UNDP Marshall Islands	Modul 2.3
Dr. Peter King	Institute for Global Environmental Strategies (IGES)	Module 3.1
Mr. Tetsuya Yoshida	JICA short-term expert	Module 3.1, Module 3.2

Pre-assessment and Post-assessment were prepared by the JICA long-term experts as follows.

Table 2-66 Pre-assessment (Water sector)

No.	Question	How to answer
1	Please describe your motivation to attend the training programme.	Comments
2	How would you rate your overall knowledge regarding climate change adaptation (poor to excellent)?	Multiple choice (Poor, Fair, Good, Excellent)
3	What are key challenges for your government/ agency/ institution in implementing strategies, policies, and plans related to climate change Please select up to 3 choices. - Insufficient political will and leadership. - Mainstreaming of climate change, less attention to climate change in sectors - Coordination and governance arrangement within the same government level. - Coordination and governance arrangement with governments in a different level. - Lack of legal framework, policy, strategy, plan, etc. - Limited capacity in human resources and expertise including awareness in the central government. - Limited capacity in human resources and expertise including awareness in local governments. - Limited capacity in human resources and expertise including awareness in communities. - Limited financial sources within the government. - Limited access to the climate finance in the regional and international level	Multichoice

	- Limited data, information and knowledge which can be easily used by officials and practitioners. - Others.	
4	If you choose "others" in the previous question or have additional comments, please provide your answer.	Comments
5	How would you rate your current level of knowledge regarding climate and non-climate impacts on water?	Multiple choice (Poor, Fair, Good, Excellent)
6	How would you rate your current level of knowledge regarding technical solutions for safe water access from water source to households?	Multiple choice (Poor, Fair, Good, Excellent)
7	How would you rate your current level of knowledge regarding community-based management for rural safe water access?	Multiple choice (Poor, Fair, Good, Excellent)
8	How would you rate your current level of knowledge regarding how to develop problem and objective trees and logical framework?	Multiple choice (Poor, Fair, Good, Excellent)
9	How would you rate your current level of knowledge regarding project management, schedule and budget?	Multiple choice (Poor, Fair, Good, Excellent)

Table 2-67 Post-assessment (Water sector)

No.	Question	How to answer
1	How would you rate your current level of knowledge regarding climate and non-climate impacts on water?	Multiple choice (Poor, Fair, Good, Excellent)
2	How would you rate your current level of knowledge regarding technical solutions for safe water access from water source to households?	Multiple choice (Poor, Fair, Good, Excellent)
3	How would you rate your current level of knowledge regarding community-based management for rural safe water access?	Multiple choice (Poor, Fair, Good, Excellent)
4	How would you rate your current level of knowledge regarding how to develop problem and objective trees and logical framework?	Multiple choice (Poor, Fair, Good, Excellent)
5	How would you rate your current level of knowledge regarding project management, schedule and budget?	Multiple choice (Poor, Fair, Good, Excellent)

After coordination with the JICA long-term experts, the following discussion topics were set for the discussion forum.

Table 2-68 Discussion topics (Water sector)

Module	Topics
1.	Please read the following sections of the IPCC AR6 reports, and find out and discuss the most relevant and important information for your country's water resources and safe water access: - Section 12.4.7 Small Islands (pages from 12-86 to 12-93) of the Working Group I (WGI) report; - Cross Chapter Box Atlas 2: Climate Information relevant to water resources in Small Islands (pages from Atlas-97 to Atlas-101) of the WGI report; - Section 4.5.3 Projected risks to water, sanitation and hygiene (WaSH) (pages from 4-82 to 4-83) of the Working Group II (WGII) report - Section 15.3.4 Observed impacts and projected risks on human systems (pages from 15-23 to 15-32) of the WGII report.
2.1	-Topic1: From the presentations in Module 2.1, which knowledge, information and/or technologies are you interested in most and would you consider replicating in From the presentations in Module 2.1, which knowledge, information and/or technologies

	are you interested in most and would you consider replicating in Please discuss one or two themes you would like to replicate and the reason why you consider so. -Topic2: Please share the innovative solutions in your country's safe water systems, such as technologies, devices, tools, institutional arrangement, Please share the innovative solutions in your country's safe water systems, such as technologies, devices, tools, institutional arrangement, governance, and management systems.
2.2	-Topic 1: Please share your experience in community-based management for safe water access, such as ownership arrangements, community engagements, and support from associations or national institutions. from associations or national institutions. -Topic 2: Please share your experiences of gender and social inclusions in rural or independent water systems. -Topic 3: Please share the key challenges and solutions in rural or independent water systems in your country.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the practice quiz.

Table 2-69 Practice quiz (Water sector)

Module	Quiz	Options & Correct answer
1.1	Which of the following statements describes ENSO and El Niño most correctly?	A) ENSO is a generic word to describe various unusual phenomena occurring under the El Niño condition. B) The warm pool is shifted to the east during El Niño. C) Trade winds strengthen and the sea surface warms in the western equatorial Pacific during El Niño.
	Which of the following is common in projections of temperature and precipitation?	A) The increasing trend is significant in the equatorial Pacific. B) The increasing trend is clear in high latitudes. C) Both increasing and decreasing trends are projected across the globe.
	Which of the following statements is NOT correct about climate change impacts on the water sector?	A) More frequent or intense floods will affect the infrastructure and operation of water systems. B) High sea-level rise will lead salt water intrusion in coastal areas and will cause salinization of groundwater. C) High water temperature will not cause water quality problems such as an overabundance of nutrients, eutrophication, and algal blooms.
2.1	Which of the following contaminants cannot be removed by using membrane filtration?	A) Physical (e.g. suspended solids) B) Biological C)Chemical
	Which of the following water supply processes requires the most energy?	A) Transmission B) Water intake C) Water treatment (purification)
	Which of the following statements is NOT correct to develop and manage water resources?	A) Understanding the amount of water required per day for different purposes is critical in the development of water sources. B) Chemistry of heavy metals is a common water quality parameter of interest in the Pacific. C) Water resource mapping is useful in identifying and

		quantifying the extents of useful ground water resources for future development by the community
2.2	Which solution is NOT recommended to correspond to the challenges on ownership arrangement?	A) To promote community awareness, involvement and participation B) Government agencies develop a plan of water resources only by themselves C) To reinforce existing revenue or pursue other means of revenue
	Which one is the correct combination of technical considerations for reducing the burden of O&M?	A) Water supply system (WSS) design, workmanship, quality materials B) Quality materials, quality vehicles, and quality workmanship. C) Supervision of construction works, water supply system design, quality vehicles
	Which part of the water supply does the Drinking Water Safety Plan (DWSP) encompass?	A) From intake to storage tank B) From storage tank to consumer C) From water catchment to consumer

Note: Underlined choices are correct answers.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the Quiz for Module 1 & 2.

Table 2-70 Quiz for Module1 & 2 (Water sector)

No.	Questions	Choices and correct answers
1	Which is the correct statement about climate risk?	A) The sole measure is to control exposure to reduce climate risks because neither vulnerability nor hazard cannot be reduced. and loss to property, and loss to property, infrastructure, livelihoods, service provision, ecosystems, and environmental resources. B) Vulnerability means the propensity or predisposition to be adversely affected. C) Exposure can be reduced by reduction of GHG emissions.
2	Which of the following statements is NOT correct about climate change impacts on the water sector?	A) Increases in water temperature will increase dissolved oxygen and could lead to thermal pollution. B) Warmer temperatures increase evaporation which will lead to drought and less availability of drinking water. C) More intense tropical cyclones will cause not only damage to the infrastructure of water systems but also water-borne diseases.
3	Which of the following statements is NOT correct?	A) Parameters measured for water resource quality in the Pacific include turbidity and hardness. B) Most rainwater-harvesting systems in the Pacific for the connected roof area are >70% for gutter coefficient. C) Water resource mapping is useful in quantifying the extent of usable groundwater resources for future development.
4	Which of the following technologies does not remove salt from feedwater?	A) Reverse Osmosis B) Solar Still C) Nanofiltration
5	Which of the following statements is NOT correct?	A) A thin freshwater lens, which floats on the underlying seawater due to density differences, is recharged by seawater from the bottom B) Climate information is one of the important monitoring parameters.

		C) Monitoring should be performed on a regular basis, quarterly/monthly at established localities/stations to develop long-term time series data.
6	Which of the following monitoring methods is the most important to ensure tank water is safe to drink?	A) Salinity measurements B) pH measurements C) Microbiological testing
7	Which of the following statements is NOT correct?	A) There are numerous water supply equipment that uses solar energy from a portable scale to a mini plant. B) Changing the packing in the faucet to moderate the water flow, water-saving shower head and toilet basin are very simple measures and the least B) Changing the packing in the faucet to moderate the water flow, water-saving shower head and toilet basin are very simple measures and the least C) PV modules on the sea face have difficulties in the structural durability under higher waves or wind.
8	Which of the following statements is NOT correct about community-based management of water systems?	A) Disaster preparedness puts the highest priority on the execution of an emergency plan. B) Operation and maintenance support mechanisms to the water committees can include not only village and community by-laws but also national laws. C) The ownership arrangement may face challenges of the misconception of responsibilities despite the national law formalizing its arrangement.
9	Which of the following statements is NOT explained as a benefit of the Drinking Water Safety Plan?	A) A comprehensive integrated approach to water supply management B) Promoting the installation of energy-saving technologies C) Supporting application for funding
10	Which option is the most relevant for O&M financing options?	A) Donor-funded project procurement. B) Independent water schemes association registrations. C) Rural facility fund

Note: Underlined choices are correct answers.

The below six requirements were set as a condition to receive the certification of completion of the training course.

1. Post at least one opinion/question in any of the discussion forums
2. Pass the Quiz for Module 1 & 2 (attaining 80% or more)
3. Participate to the Live summary session
4. Submit exercise outputs
5. Participate to the Live consultation on the output of the exercise
6. Submit course evaluation

2.7.2 Request for nomination of training participants

An official letter (Circular) containing a General Information (GI) which described the background, objectives, prospective participants, modules, logistics, etc. of the training course was prepared and sent with the training agenda and nomination form from SPREP to the climate change focal points of PICTs to request to nominate participants.

2.7.3 Organizing training

(1) Schedule and Participants

The training course for Water sector was carried out during the following dates.

Table 2-71 Training Schedule (Water Sector)

Item	Date
Self-paced learning	May 2-7, 2022
Live summary lecture	May 10, 2022
Group exercise	May 11-20, 2022
Live consultation	May 24-26, 2022

73 participants from 12 countries participated in the water sector training. 14 participants were from climate change departments and 59 participants were from water-related departments (about 20 participants from technical also participated). 10 participants had already attended to the previous training course. 56 participants completed the course.

Table 2-72 Number of participants (Water sector)

Name of country and territory	No of participants	Name of country and territory	No of participants	Name of country and territory	No of participants
Fiji	8	Niue.	5	Timor-Leste	5
Federated States of Micronesia	11	Palau	3	Tonga	9
Kiribati	8	Papua New Guinea	1	Tuvalu	8
Nauru	3	Samoa	7	Vanuatu	5
					Total 73

(2) Motivations and expectations for participation in this training course

Through the pre-assessment, the following motivations and expectations for participation in this training course were raised.

- Water supplies have been reduced due to drought in many areas. There is also a lack of knowledge on how to maintain water supply systems. We would like to know good ways to ensure water supply.
- To understand climate change and its impact on the water sector and strengthen our capacity to introduce appropriate policies and mechanisms.
- To improve the approach of our own Ministry of Water Resources from examples in other Pacific Island countries and regions.
- To develop skills to form financial support to address the water resource needs of people in the country

(3) Live summary session

Live summary sessions were carried out on May 6, 2022. The agenda is as follows

Table 2-73 Agenda of the live summary (Water sector)

Time (Samoa time)	Contents
13:00 - 13:05	Introduction of the training program
13:05 - 13:45	Module 2.1 Presentations and Q&A
13:45 - 14:10	Module 2.2 Presentation and Q&A
14:10 - 14:30	Brief introduction of Module 3, Photo session, Closing

The major questions raised by the participants during the live summary session were as below. The experts answered the questions in the session.

- About calculation Methods for Rainwater Utilization
- About an applicability of ecological purification systems to stormwater treatment
- About status of the latest rainfall data for each of the Pacific Islands
- About effect of portable water purifiers on heavy metals derived from volcanic rocks in groundwater
- About the Financing Approach to Community Based Management in Samoa
- Request to share guidelines for community-based management
- About frequency of reviews performed by DWSP
- How to support the community after the project ends
- About methods of securing water sources
- About setting standards for Water Quality Testing in Rural Areas
- About the IWSA's Water Quality Standards for Drinking Water

(4) Live consultation

Live consultations were carried out to provide feedback on the exercise outputs (Problem tress, Objective tress, Logical framework) from the experts. The schedule and agenda are shown in below.

Table 2-74 Schedule of the live consultation (Water sector)

Date and time (Samoa time)	Countries and territories
May 24 13:00-15:00	Fiji, PNG, Timor-Leste, Vanuatu
May 25 13:00-15:00	Niue, Samoa, Tonga, Tuvalu
May 26 13:00-15:00	FSM, Kiribati, Nauru, Palau

Table 2-75 Agenda of the live consultation (Water sector)

Hours.	Contents
5 min.	Introduction of the live consultation
100 min.	Presentation of the outputs and feedbacks - 10 min presentation of each group - 5 min comments from resource persons - 5 min for Q&A
10 min.	discussion
5 min.	Introduction of next step, Closing

A summary of the feedback on the exercise outputs from the experts are shown in below.

1）About Schedule

- Some activities, such as system design and implementation, and the development and implementation of action plans, may take longer than three months. Project goals and activities should be reviewed to ensure that an appropriate time frame is set for each activity
- Regarding the content of activities, it is necessary to carefully consider the relationship between the preceding and following activities and set the timing of the start of activities. (e.g., training on water management systems can start without waiting for the completion of activities related to the legal system; it is better to implement water-related systems at an earlier stage rather than in the final year of the project)

2）Budget

- There is a need to align the balance between the activities and the budgeted amount
- If consultants or other consultants are to be hired, the unit cost of consultant fees, the cost as a percentage of the overall project budget, and the cost assumptions for the activities should be considered.
- In some cases, large expenses are assumed for capacity building
- If the project involves the installation of equipment or facilities, the cost of the equipment itself as

well as the cost of its installation should be assumed

2.7.4 Evaluation of training courses

Sixty-four percent (n=35/56, as of June 10, 2022) of the training participants rated the overall content and sessions as excellent and positively rated the training materials, resources, and structure. Major evaluation comments from participants are listed below.

- It would be nice if there is a technical examples and exercises on Module 1 and 2. Though aspects such as scheduling and budgeting are important, the technical capacity to implement a particular device is also important.
- It seems that the one month is short for training because the participants should conduct the training in parallel with daily work
- It would be better to have a longer Q&A session in the live summary lecture, or an opportunity to have a face-to-face Q&A session
- It would be nice if there is a mechanism to encourage participants to participate actively in group work
- It would be good to have site visits for better understanding
- The content of this training course should be ablet to use continuously so that persons and organizations that manage water resources can also learn

2.8 Health sector

2.8.1 Training material development

Training materials were prepared based on the training structure and syllabus developed through coordination between SPREP, PCCC and JICA long-term experts. The training structure and syllabus are shown below. In developing the syllabus, the existing initiatives and resources (tools, modules, materials, and related regional training contents) were reviewed to ensure alignment with these initiatives and to add value to the training materials. Completion of the course was based on participation in all sessions and completion of all activities, including self-assessment.

Table 2-76 Training Syllabus (Health sector)

Module 1. Understanding of risks of climate change impacts on human health and health services, and GHG emission from health services		
	1.1 Risks of climate change impacts	
		IPCC risk-based conceptual framework and updates of observed and projected climate change in the Pacific Training materials presents: - Understand key concepts to assess climate risk and impacts and definitions of the important terms, such as exposure, hazard, vulnerability, and risk of climate change. - Learn about observed and projected climate change and its impacts focusing on temperature rising, precipitation pattern change, sea level rise and tropical cyclones which are relevant to health systems in the Pacific. - Understand the climate change impact on the health systems.
	1.2 Vulnerability and adaptation assessment	
		Vulnerability and adaptation assessment of health care facilities in the context of climate change Training materials presents: - Understand key concepts to assess climate risk and impacts and definitions of the important terms, such as exposure, hazard, vulnerability, and risk of climate change. - Learn about observed and projected climate change and its impacts focusing on temperature rising, precipitation pattern change, sea level rise and tropical cyclones which are relevant to health systems in the Pacific. - Understand the climate change impact on the health systems.
	1.3 GHG emissions from health services	
		Training materials presents: - Understand what activities health services undertake, what the scope of carbon emissions means. - Understand how the carbon footprint is calculated and what actions can reduce carbon emissions from health services.
Module 2. Climate adaptation and mitigation options of health system		
	2.1 Health workforce: surveillance, assessment, risk communication and planning	
		Practicing Early Warning, Alert and Response Systems (EWARS): (1) Surveillance for Outbreak Prediction (2) Introduction of Outbreaks (3) The WHO-Spatio-temporal EWARS Framework (4) Risk mapping
	2.2 Module 2.2 Facilities and Infrastructures	
		Health system building blocks Health service activities Fundamental requirements for health system functions

		Goals of climate resilience and environmental sustainability
	2.3 Policies and regulation	
		Overview of international legal arrangements on climate change
Module 3. Project planning		
	3.1 Logical framework development	
		Project Objectives Learning outcomes: - Understand the importance of the theory of change and the logical framework in formulating a climate change project - Understand how to develop a problem tree, objective tree and logical framework Fundamentals of project planning Learning outcomes: - Understanding key elements for project planning, including project cycle, components of project planning, work breakdown structure, project schedule, and risk management. - Understanding the important components of project planning for successful execution of to the project and to avoid critical failures. Basics of M&E Learning outcomes: - Understanding key terminologies used in M&E and the application of the key terminologies in projects - Understanding when to develop and apply the key terminologies in the lifecycle of projects
	3.2 Exercise	
		Each country group executes problem analysis by identifying a core problem related to climate change mitigation/adaptation on health systems. exercise is followed by formulation of an objective tree and development of a logical framework of the project/program related to mitigation and/or This exercise is followed by formulation of an objective tree and development of a logical framework of the project/ program related to mitigation and/or adaptation activities for health.

The following experts were identified through the SPREP/PCCC network as instructors to prepare training materials and deliver lectures.

Table 2-77 List of the experts (Health Sector)

Name	Organization	Module in charge
Dr. Koji Kuroiwa	JICA short-term expert	Module 1.1
Dr. Kristie Ebi,	University of Washington	Module 1.1, Module 1.2
Dr.Akampumuza Precious	JICA short-term expert	Module 1.2
Ms. Victoria Faasili	Ministry of Health,Samoa	Module 1.2
Dr. Aditya Vyas	University of Notre Dame	Module 1.3
Dr. Peter King	Institute for Global Environmental Strategies (IGES)	Module 3.1
Mr. Tetsuya Yoshida	JICA short-term expert	Module 3.1, Module 3.2
Ms. Linda Vaike	Acting Project Team Leader & M&E Coordinator: PACRES-USP Component, USP	Module 3.1

Pre-assessment and Post-assessment were prepared by the JICA long-term experts as follows.

Table 2-78 Pre-assessment (Health sector)

No.	Question	How to answer
1	Please describe your motivation to attend the training programme.	Comments
2	How would you rate your overall knowledge on climate change adaptation and mitigation (poor to excellent)?	Multiple choice (Poor, Fair, Good, Excellent)
3	What are key challenges for your government/ agency/ institution in implementing strategies, policies, and plans related to climate change? Please select up to 3 choices. - Insufficient political will and leadership. - Mainstreaming of climate change, less attention to climate change in sectors. - Coordination and governance arrangement within the same government level. - Coordination and governance arrangement with governments in a different level. - Lack of legal framework, policy, strategy, plan, etc. - Limited capacity in human resources and expertise including awareness in the central government. - Limited capacity in human resources and expertise including awareness in local governments. - Limited capacity in human resources and expertise including awareness in communities. - Limited financial sources within the government. - Limited access to the climate finance in the regional and international level. - Limited data, information and knowledge which can be easily used by officials and practitioners. - Others.	Multiple choice
4	If you choose "others" in the previous question or have additional comments, please provide your answer.	Comments
5	How would you rate your current level of knowledge regarding "Understanding of risks of climate change impacts on human health and health services, and GHG emissions from health services"?	Multiple choice (Poor, Fair, Good, Excellent)
6	How would you rate your current level of knowledge regarding "Climate adaptation and mitigation options of health systems"?	Multiple choice (Poor, Fair, Good, Excellent)
7	How would you rate your current level of knowledge regarding "policies and regulations"?	Multiple choice (Poor, Fair, Good, Excellent)
8	How would you rate your current level of knowledge regarding "Logical framework development"?	Multiple choice (Poor, Fair, Good, Excellent)

Table 2-79 Post-assessment (Health sector)

No.	Question	How to answer
1	How would you rate your current level of knowledge regarding "Understanding of risks of climate change impacts on human health and health services, and GHG emissions from health services"?	Multiple choice (Poor, Fair, Good, Excellent)
2	How would you rate your current level of knowledge regarding "Climate adaptation and mitigation options of health systems"?	Multiple choice (Poor, Fair, Good, Excellent)
3	How would you rate your current level of knowledge regarding "policies and regulations"?	Multiple choice (Poor, Fair, Good, Excellent)

4	How would you rate your current level of knowledge regarding "Logical framework development"?	Multiple choice (Poor, Fair, Good, Excellent)

After coordination with the JICA long-term experts, the following discussion topics were set for the discussion forum.

Table 2-80 Discussion topics (Health sector)

Module	Topics
1.1	Please share scientific evidence or reports of observed and projected climate change in your country.
1.2	Please share cases of vulnerability and adaptation assessment of health systems in your country.
1.3	Please share experience or results of calculating healthcare carbon emissions in your country.
3.1	Please share experience and cases of project formation, implementation, monitoring and evaluation on climate adaptation/mitigation of health Please share experience and cases of project formation and implementation, monitoring and evaluation on climate adaptation/mitigation of health systems in your country, such as project title, donors/partners, stakeholders, challenges and lessons learned.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the practice quiz.

Table 2-81 Practice quiz (Health sector)

Module	Quiz	Options & Correct answer
1.1	Which of the following is NOT correct about the recently observed climate?	A) In the South-West Pacific region, 2020 was the second or third warmest year on record. B) 2020 was a relatively wet year over PNG, Solomon Islands, Vanuatu, Fiji, Tonga and Samoa, while many equatorial regions close to IDL were dry. C) PICs were affected straight by the El Niño events in 2020-21 and 2021-22.
	Which of the following statements is correct about ENSO and El Niño?	A) ENSO is a generic word to describe various unusual phenomena occurring under the El Niño condition. B) The warm pool is shifted to the east during El Niño. C) Trade winds strengthen and the sea surface warms in the western equatorial Pacific during El Niño.
	Which of the following is NOT correct about climate change impacts on health?	A) Infection diseases B) Heatstroke C) Water scarcity
1.2	The Vulnerability & Adaptation (V&A) assessment informs valuable information. The Vulnerability & Adaptation (V&A) assessment informs valuable information.	A) The magnitude and pattern of likely health risks attributable to climate change over the short and longer term B) Potentially severe or catastrophic impacts to individual health and to health systems when capacity to respond is overwhelmed C) Quantitative assessment results of the co-benefits on health that could result from climate change action D) Potential cost savings and other benefits of implementing such policies and programs
	Which of the following components is NOT related to the effective performance of climate	A) Skilled and empowered health workforce and decent working conditions B) Sustainable and safe management of water, sanitation and hygiene (WASH) and health care waste services

	adaptation of health facilities?	C) Energy supply from fossil fuel
	What are the main international climate resilience frameworks used by Samoa to develop its national climate resilience framework?	A) The WHO Climate Resilience Framework 2015 B) The Paris Agreement 2015 C) The Sendai Agreement for Disaster Risk Reduction 2015 - 2030 D) All of the Above
1.3	Which of the following is defined as 'scope3' in the Greenhouse Gas Protocol?	A) Indirect emissions from the generation of purchased energy, mostly electricity B) Indirect emissions that occur in producing and transporting goods and services, including the full supply chain C) Indirect emissions that occur in producing and transporting goods and services, including the full supply chain
	Which sector of the economy is the biggest contributor to carbon emissions from the health sector?	A) Pharmaceutical and chemical products B) Pharmaceutical and chemical products C) Generation and distribution of electricity, gas and heating or cooling and empowered health workforce and decent working conditions
	There are two main methods for calculating the carbon footprint of an organization. There are two main methods for calculating the carbon footprint of an organization.	A) Interrupted time series regression analysis B) Process-based lifecycle assessment C) Environmentally extended input-output analysis

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the Quiz for Module 1 & 2.

Table 2-82 Quiz for Module1 & 2 (Health sector)

No.	Questions	Choices and correct answers
1	Which of the following is correct about climate variability?	A) Climate variability refers to the occurrence of extreme weather events such as tropical cyclones. B) Climate variability is one of the significant consequences of climate change. C) El Niño-Southern Oscillation (ENSO) is a typical example of interannual climate variability in the tropics.
2	Which of the following is NOT included as the steps of climate vulnerability assessment in a healthcare facility?	A) Identify climate hazards of concern B) Assess current vulnerability for each of the hazards in each of the key components of health care facilities. C) Design climate resilient health facility
3	Which of the following are crucial components to assess the resilience of health facilities?	A) WASH, Building Infrastructure, and Communication. B) WASH, Building Infrastructure, and Roads C) Building Infrastructure, Water resource, and Communication.

4	The environmentally extended input-output analysis method for carbon foot printing can be described as:	A) 'Top down' assessment. B) 'Bottom up' assessment C) 'Upside down' assessment.
5	What is the purpose of regional surveillance?	A) To inform the WHO Regional Office. B) To get the consent of the region for your response C) To receive outbreak warnings from neighboring districts
6	What defines the outbreak indicator?	A) A change in the condition of temperature or humidity B) Hospitalized, lab-confirmed or in complicated disease symptoms, probable cases C) Outbreak rumours
7	Out of the four measurement metrics, which two measurements are specifically concerned with the "prediction performance of the tool?	A) Sensitivity and Specificity B) Sensitivity and Positive predictable Value (PPV) C) Positive predictable value (PPV) and Negative predictive value (NPV) D)Specificity and Negative predictive value (NPV)
8	Which of the following is a solution for achieving environmental sustainability when considering energy use in health care facilities?	A) Emergency response planning for climate-related disruptions to energy supply B) Increasing national gas and oil reserves C) Transitioning to renewable energy
9	Which of the following are the four fundamental requirements for proper functioning of health systems in response to climate change (as described by the World Health Organization)?	A) 1) Energy use; 2) infrastructure, technology and products; 3) water, sanitation, hygiene and health care waste; 4) Health workforce B) 1) energy use; 2) health system financing; 3) leadership and governance; 4) water, sanitation, hygiene and health care waste C) 1) green spaces; 2) virtual health care delivery; 3) health system financing; 4) health promotion
10	Which of the following are NOT the criteria to prioritize health adaptation options?	A) Magnitude of risk B) Cost benefit C) Size of affected population D) Level of vulnerability

Note: Underlined choices are correct answers.

The below seven requirements were set as a condition to receive the certification of completion of the training course.

1. Participation to the Live summary session (Module 1.2 and 1.3)
2. Participation to the Live summary session (Module 2.1)
3. Participation to the live summary session (Module 2.2 and 2.3)
4. Submission of exercise outputs

5. Participate to the Live consultation on exercise outputs
6. Pass the Quiz for Module 1 & 2 (80% or higher correct response rate)
7. Submit course evaluations

2.8.2 Request for nomination of training participants

An official letter (Circular) containing a General Information (GI) which described the background, objectives, prospective participants, modules, logistics, etc. of the training course was prepared and sent with the training agenda and nomination form from SPREP to the climate change focal points of PICTs to request to nominate participants.

2.8.3 Organizing training

(1) Schedule and Participants

The training course for Health sector was carried out during the following dates.

Table 2-83 Training Schedule (Health sector)

Item	Date
Self-paced learning	August 29 - September 16, 2022
Group exercise	September 19-30, 2022
Live consultation	March 29,30, 2021

55 participants from 7 countries participated in the health sector training. 6 participants came from climate change-related departments. 6 participants were from climate change-related departments, while the others came from health administration, meteorology, and energy-related departments. 24 participants completed the course.

Table 2-84 Number of Participants (Health sector)

Name of country and territory	No of participants	Name of country and territory	No of participants	Name of country and territory	No of participants
Fiji	10	Samoa	7	Federated States of Micronesia	5
Tonga	9	Nauru	1	Vanuatu	14
Niue.	9	Total 55 persons			

(2) Motivations and expectations for participation in this training course

Through the pre-assessment, the following motivations and expectations for participation in this training course were raised.

- The impact of climate change on public health has become even more apparent with the emergence of the COVID-19 pandemic and other infectious diseases worldwide, placing a significant strain on existing health care systems
- There is a lack of knowledge about the relationship between climate risk and health system vulnerability. To know what health professionals can do to address climate-sensitive diseases, and how health infrastructure can be developed to address climate risk
- In PICTs, there is a lack of understanding of policies and regulations for climate change mitigation in the health sector
- To obtain knowledge of climate change impacts on the health sector, climate change policy, adaptation, mitigation, innovative strategies, and project development
- To be involved in program implementation at the community level, including medical facility readiness planning, compliance inspections, communication, and alternative means of access development

- To strengthen human networks on climate change and health in the Pacific region

(3) Live summary session

Live summary sessions were carried out from September 13 to September 15, 2022. The agenda is as follows.

Table 2-85 Agenda of the live summary session (Health sector)

Date: September 13, 2022

Time (Samoa time)	Contents and speakers
1:00 - 1:05 pm	Opening, Introduction of the whole structure, objectives, expected outputs of the training
Module 1.2 Vulnerability and adaptation assessment	
1:05 - 1:50 pm	Introducing WHO guidelines: Climate change and health: vulnerability and adaptation assessment; and Checklists to Assess vulnerabilities in Health WHO guidelines: Climate change and health: vulnerability and adaptation assessment; and Checklists to Assess vulnerabilities in Health Care Facilities in the Context of Climate Change. Lectured by Dr. Akampumuza Precious, JICA short-term expert Q&A
Module 1.3 GHG emissions from health services	
1:50 - 2:30 pm	Health service activities Scope of greenhouse gas emission Carbon footprint of health Opportunities to reduce healthcare carbon emission Lectured by Dr Aditya Vyas, University of Notre Dame Q&A

Date: September 14, 2022

Time (Samoa time)	Contents and speakers
Module 2.1 Health workforce: surveillance, assessment, risk communication and planning	
2:30 - 4:00 pm	Practicing Early Warning, Alert and Response Systems (EWARS): (1) Surveillance for Outbreak Prediction (2) Introduction of Outbreaks (3) The WHO-Spatio-temporal EWARS Framework (4) Risk mapping Lectured by Dr. Laith Hussain, University of Gothenburg Q&A

Date: September 15, 2022

Time (Samoa time)	Contents and speakers
Module 2.2 Facilities and Infrastructures	
1:00 - 1:30 pm	Health system building blocks Health service activities Fundamental requirements for health system functions Goals of climate resilience and environmental sustainability Lectured by Dr. Aditya Vyas, University of Notre Dame Q&A
Module 2.3 Policies and regulation	
1:30 - 1:50 pm	Overview of international legal arrangements on climate change Lectured by Ms. Yvette Kerslake, Pacific Climate Change Centre Q&A

1:50 - 2:40 pm	Quality criteria for Health National Adaptation Plans (HNAPs) Lectured by Dr. Kathryn Bowen, University of Melbourne Q&A
Introduction of Module 3	
2:40 - 3:00 pm	Brief introduction of Module 3 - Project objectives, M&E - Group exercise 1: Problem and Objective trees analysis, Logical Framework development Photo session and closing

(4) Live consultation

Live consultations were carried out to provide feedback on the exercise outputs (Problem tress, Objective tress, Logical framework) from the experts. The schedule and agenda are shown in below.

Table 2-86 Schedule of the live consultation (Health sector)

Date and time (Samoa time)	Countries and territories
October 6 13:00-15:00	Fiji, Samoa and Tonga

Table 2-87 Agenda of the live consultation (Health sector)

Time (Samoa time)	Contents
5 min.	Introduction of the live consultation
100 min.	Presentation of the outputs and feedbacks - 10 min presentation of each group - 5 min comments from resource persons 5 min for Q&A
10 min.	discussion
5 min.	Closing

A summary of the feedback on the exercise outputs from the experts are shown in below.

1) Feedback on problem tree
- Use arrows to connect the boxes to clarify the cause-and-effect relationship of each box in the problem tree
- Clarify clearly the challenges posed by the effects of climate change

2) Feedback on objective tree
- Objective tree should be mirrored with the problem tree

3) Feedback on logical framework
- Outcomes and outputs need to be differentiated
- The activities should contain all tasks considered necessary for the project referring to the means shown in the objective tree.
- Regulatory reinforcement, infrastructure development, and equipment installation can also be included in outputs and activities.
- For indicators, it is recommended to set from those proposed by the GCF
- Indicators for mitigation should be in terms of tons of CO2 emission reduction
- Baseline should describe the current status and issues corresponding to the indicators

2.8.4 Evaluation of training courses

Seventy-five percent (n=18/24, as of 10/25/2022) of the training participants rated the overall content and sessions as excellent and rated positively the training materials, resources, and structure. Major evaluation comments from participants are listed below.

- The exercises took longer than expected and could not be completed within the time frame indicated in the anticipated schedule. It would be better to extend the time for the logical framework exercise which is an important topic
- There should be some exercises in a face-to-face style
- If the training courses offered by PCCC's accredited courses at the regional and national level, it will motivate participants more
- In the future, it would be good to have a case study of a single medical facility to actually evaluate its contribution to CO2 emission reduction

3. Activities and results of the Output 2

3.1 Summary of the training course on access to climate finance

The following training courses were developed and implemented as regular training programs on access to climate finance.

Table 3-1 List of training course of the output2

No.	Course Name	Date	No. of participants	key external partners
2	Understanding Access to Climate Finance, Part 1: Essential aspects for access to climate finance	12 Nov.- 7 Dec. 2020	Nominations: 44 Completion: 32	Institute for Global Environmental Strategies (IGES)
3	Understanding Access to Climate Finance, Part 2: Gender, social inclusion, and safeguards	23 Nov. - 23 Dec. 2020	Nominations: 44 Completion: 20	UN Women
9,10	Understanding Access to Climate Finance: Part 3 & 4: Project planning and management	4 July - 12 August 2022	Nominations: 62 Completion: 30	Climate Finance Access Network (CFAN), USP

The training course No. 2 and No.3 were conducted before the introduction of the PCCC e-Learning platform. Therefore, the training materials and relative materials were shared Google Drive. A software named Slack was used for Q&A sessions and the Live summary sessions and the Live consultations were conducted on Zoom. On the other hand, the training courses No. 9 and No. 10 were conducted using PCCC e-Learning platform.

3.2 Needs assessment

Needs assessments were conducted together with JICA long-term experts through online interviews with the relevant person of the following four Pacific Island countries in order to know their needs for the training program on access to climate finance prior to the consideration of the training content development.

Table 3-2 Summary of needs assessment

Date & Time	Countries	Person in charge
September 22, 2020 11:00-11:30	Cook Islands	Ms. Celine Vaineterepai Dyer, Climate Change Cook Islands, Office of the Prime Minister, Climate Change Coordinator
September 22, 2020 12:00-12:30	PNG	Mr. Ordy Wefin, Adaptation and Projects Division, Climate Change and Development Authority, Projects Officer
September 23, 2020 07:00-07:30	Samoa	Ms. Agnes Amy Wulf, Climate Change and GEF Division, Ministry of Natural Resources and Environment, Principal Climate Change, Policy Officer
September 23, 2020 12:00-12:30	Tuvalu	Ms. Loloma Kakala Homasi, Project Development Officer, Climate Change Department, Government of Tuvalu

The following current situation and the needs were identified through the assessment. It was decided to focus on how to contribute to the improvement of these issues in the training.

- There is a lack of basic knowledge of project planning and management, especially cost estimation,

budgeting, scheduling, resource management, as well as monitoring and evaluation of activities
- There is a lack of understanding of requirements and cross-cutting issues (in particular, gender, environment, safeguards, etc.) from climate finance that should be understood when accessing climate finance.

3.3 Objectives and overall structure of the training program

Based on the result of the needs assessment and the coordination among SPREP, PCCC and JICA long-term experts, the objectives and overall structure of the climate finance training program were established as follows.

<Purpose>

- Enhance participant's understanding what is required to access climate finance such as GCF, gender, etc.
- Strengthen practical knowledge and skills of project management during project planning and implementation

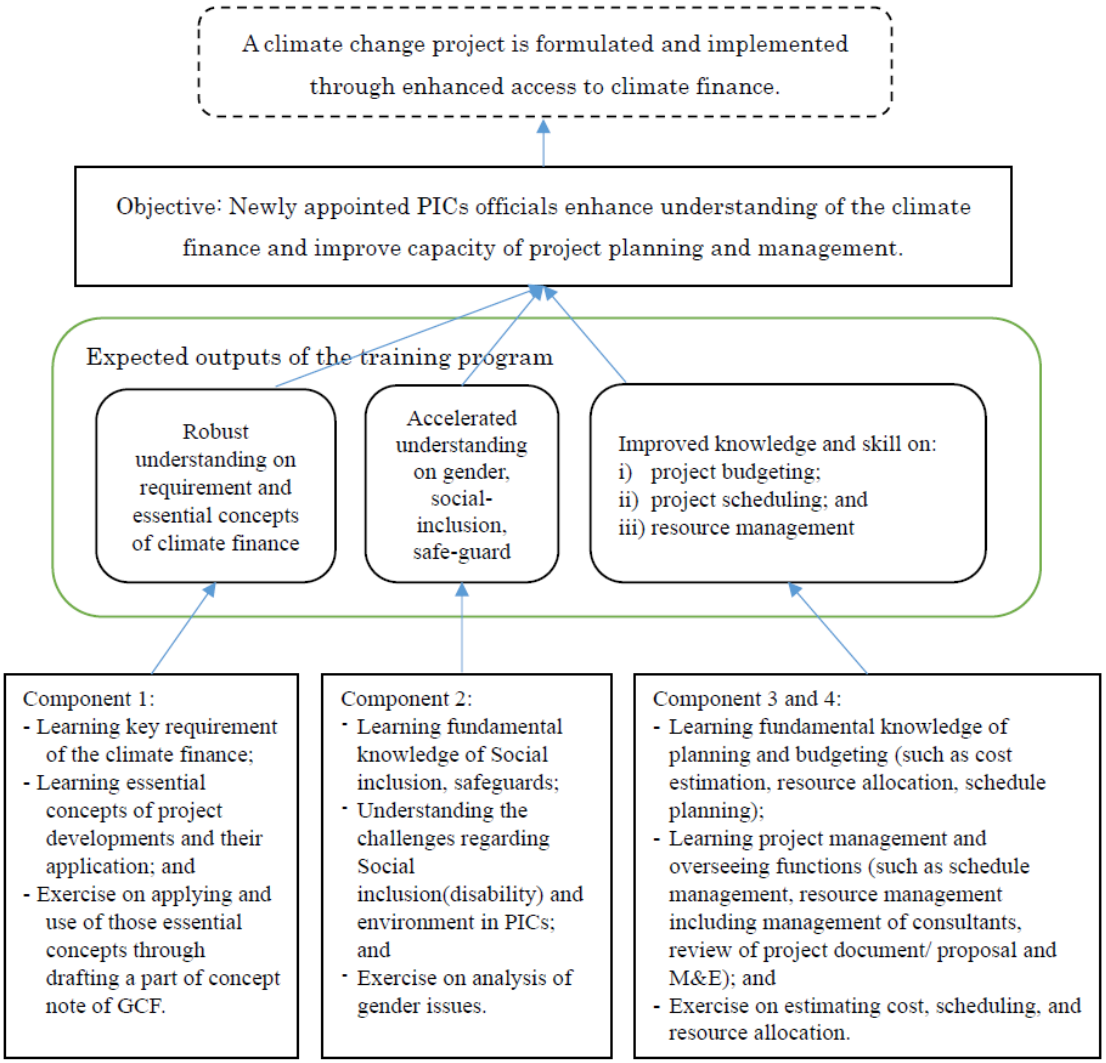


Figure 3-1 Structure of the training program

(Source: Virtual training program on Understanding Access to Finance, SPREP, https://www.sprep.org/circular/cir2090call-for-nominations-virtual-training-on-understanding-access-to-climate-finance-12-november-11-december-2020-pacific-climate-change-centre-sprep-apia-samoa)

It was decided to make the climate finance training program to consist of four climate finance training courses, as follows.

Part 1: Essential aspects for access to climate finance
Part 2: Gender, social inclusion and safeguards
Part 3: Project planning and budgeting
Part 4: Project management and overseeing functions

3.4 Access to Climate Financing (Part 1 and Part 2)

3.4.1 Training material development

Based on the training syllabus developed through coordination among SPREP, PCCC and JICA long-term experts, the "Essential aspects for access to climate finance (Climate finance Part 1)" to learn the key aspects of access to climate finance and the "Gender, social inclusion and safeguards (Climate finance Part 2)" to learn about gender and other issues were developed. Existing initiatives and resources (tools, modules, teaching materials, and content of relevant regional trainings) were reviewed to ensure linkages with these initiatives and to add value to the training materials in developing the training syllabus.

Table 3-3 Training structure (Access to climate finance, Part 1 and Part 2)

Item	Contents	Form
Pre-assessment	Before the training, the participants assess their understanding on climate change and its impacts and other issues in the target sector by themselves.	Utilize Google function
Self-paced leaning contents (Module 1-3)	Three modules were prepared as self-paced learning contents. Participants learned the distributed materials (PPTs) by themselves.	PPT etc.
Live chat QA	Participants used the Slack to conduct room discussions with experts on training materials and exercise assignments. A Live Q&A Chats was carried out on specific dates and times for intensive Q&A sessions.	Utilize Slack and email
Exercise	Participants discuss and complete exercises as group-work exercise. The outputs should be submitted to the secretariat for review by the experts.	Face-to-face, Zoom, etc.
Live Consultation	Live consultation on the exercise outputs were conducted including country presentations, feedback and advice from the experts.	Utilize Zoom
Pot-assessment	At the end of the training, the participants assess their understanding on climate change and its impacts and other issues in the target sector and confirm their achievement.	Utilize Google function
Course evaluation	The participants evaluate the training course.	Utilize Google function

Table 3-4 Training syllabus (Access to climate finance, Part 1)

Module 1. Strategies, policies and guidelines and supporting programs of climate finance		
	1.1 Basics of climate finance	
		Basic of climate finance will be presented to provide an accurate understanding about climate finance to the participants i. Background and definition of climate finance ii. Global landscape of climate finance: domestic budget, international public finance (including multilateral climate funds), private finance, blended finance

	1.2 Strategies, policies and guidelines and supporting programs of Multilateral climate fund: Green Climate Fund ("GCF")
	1.2.1 Strategies, policies and guidelines of GCF i. Main policies and result areas ii. Investment strategies and criteria (overview) iii. Approved projects in the PICTs iv. Application and approval process v. Supporting programs 1.2.2 Project Preparation Facility (PPF) This section will outline some of the requirements of the PPF application, including the budget, management fee, and contingency allowance. This section will outline some of the requirements of the PPF application, including the budget, management fee, and contingency allowance. 1.2.3 Concept notes Key elements of preparing a concept note (especially important for the Green Climate Fund) include explanation of the intended paradigm shift (GCF's overarching mandate), theory of change, country ownership, co-financing, sustainability, implementation arrangements etc. 1.2.4 Programmes versus projects This section will outline the differences between a programme and a project and why this might be important in the GCF country program. 1.2.5 Full project proposal and simplified approval process (SAP) GCF introduced the SAP to minimize the work needed to prepare the full project proposal and the 21 annexes that may be required. This section will outline the differences between the full proposal and SAP and why there may not be a significant advantage.
	1.3 Strategies, policies and guidelines and supporting programs of Multilateral climate fund: Adaptation Fund (AF)
	i. Strategic properties policies ii. Eligibility criteria iii. Approved projects in the PICTs iv. Application and approval process v. Supporting programs
Module 2. Essential concepts to formulate climate projects	
	2.1 Centrality of the climate rationale
	Climate change adaptation projects must be distinguished from normal development projects by indicating which climate change problem(s) are being Climate change adaptation projects must be distinguished from normal development projects by indicating which climate change problem(s) are being
	2.2 Adaptation options
	Multiple adaptation options are available, so the rationale for choosing the specific adaptation interventions must be transparent. This section will deal with appraisal and prioritization methods such as qualitative matrices, multi-criteria analysis, scenario analysis, and barrier assessment.
	2.3 project/programme objectives
	Use of problem trees and objective trees and how these are used to craft the Logical Framework (a first step in project formulation).
	2.4 Public participation
	All sources of funding insist on country ownership and inclusive, participatory approaches both during project preparation and implementation. This section will outline some of the key principles of public participation.
	2.5 Environmental and social safeguards

		All sources of funding place particular emphasis on ensuring that project interventions do no harm to the environment or the community. This session will outline the general approach to environmental and social safeguards from screening through to environmental and social management plans.
Module 3. Exercise		
	Participants are expected to undertake problem tree analysis and log-frame development including analysis of the climate rationale which can be the Participants are expected to undertake problem tree analysis and log-frame development including analysis of the climate rationale which can be the basis of a concept note for GCF.	

Table 3-5 Training syllabus (Access to climate finance, Part 2)

Module 1. Principles of gender, social inclusion, safeguards of GCF		
	1.1 Climate change impact on gender in Pacific Islands Countries (PICs)	
		i. Gender and climate change ii. Climate change impact in Fiji (Meta level, Macro and Meso levels and Micro level)
	1.2 Policies and relevant documents on gender equality and social inclusion	
		i. GCF Gender Equality and Social Inclusion (GESI) Policy ii. Mainstreaming GESI in GCF project iii. GESI-related documents for GCF Funding Proposals
	1.3 Environmental and social safeguards	
		i. Principles of environmental and social safeguards ii. Procedure of social safeguards
Module 2. Key aspects to address gender, social inclusion and environmental safeguard in PICs		
	2.1 Gender and social inclusion	
		This session will present key topics to support climate change practitioners in the Pacific islands region to integrate gender into their programmes and projects. The principles and practices proposed in the Pacific Gender & Climate Change Toolkit will be presented to address the needs of climate change professionals working in national governments, non-governmental organizations, regional and international organizations who are involved in climate change. professionals working in national governments, non-governmental organizations, regional and international organizations who are involved in Also, a case study on gender and social inclusion related to COVID-19 and TC Harold will be presented. Also, a case study on gender and social inclusion related to COVID-19 and TC Harold will be presented.
	2.2 Environmental safeguard	
		It will also present the current situation and issues on impacts to ecosystem in PICs. It will also present the current situation and issues on impacts to ecosystem in PICs caused by not only climate change but non-climate change activities that will be described in EIA report in the project. Those are essential information to develop concept note of project which will have environmental risks.
Module 3. Exercise		
	Participants are expected to undertake on Gender analysis which can be utilized for a concept note for GCF.	

The following experts were identified through the SPREP/PCCC network as lecturers to prepare the training materials and deliver lectures.

Table 3-6 List of the experts (Access to climate finance, Part 1 and Part 2)

Name	Organization	Module in charge
Mr. Tetsuya Yoshida	JICA short-term expert	Part 1: Module 1.1, Module 1.2.1, 1.3
Dr. Peter King	Institute for Global Environmental Strategies (IGES)	Part 1: Module 1.2.2,1.2.3,1.2.4 Module 2 Part 2: Module 1.3
Mr. Muneo Matsukawa	JICA short-term expert	Part 2: Module 1.1, 1.2
Ms. Mele Maualaivao	Country Manager Samoa, UN-WOMEN,	Part 2: Module 2.1
Dr Gregory Barbara	Environmental Assessment and Planning Officer, SPREP	Part 2: Module 2.2

3.4.2 Request for nomination of training participants

An official letter (Circular) containing a General Information (GI) which described the background, objectives, prospective participants, modules, logistics, etc. of the training course was prepared and sent with the training agenda and nomination form from SPREP to the climate change focal points of PICTs to request to nominate participants.

3.4.3 Organize training (Access to climate finance, Part 1 and Part 2)

(1) Schedule and Participants

The training course on Access to climate finance, Part 1 and Part 2 were carried out from November 12 and December 23, 2020. 44 participants from 12 island countries and territories participated.

Table 3-7 Training Schedule (Access to climate finance, Part 1 and Part 2)

Item	Access to Climate Finance part1	Access to Climate Finance part2
Self-paced learning	November 12-23, 2020	November 23, 2020-. December 8
Live chat & QA	November 19, 2020	December 3, 2020
Live consultation	November 24,26,27, 2020 December 7, 2022	December 9-11, 2020 December 14,16,23, 2022

Table 3-8 Number of Participants (Access to climate finance, Part 1 and Part 2)

Name of country and territory	No of participants	Name of country and territory	No of participants	Name of country and territory	No of participants
Federated States of Micronesia	5	Niue.	4	Solomon Islands	5
Fiji	4	Papua New Guinea	5	Tonga	1
Kiribati	6	Republic of Marshal Islands	1	Tuvalu	4
Nauru	1	Samoa	2	Vanuatu	6
					Total 44

(2) Motivations and expectations for participation in this training course

Through the pre-assessment, the following motivations and expectations for participation in this training course were raised.

- To further understand how to access climate finance, including GCF, through effective proposal

development
- To understand climate finance concepts, rules and processes
- To understand the background, overview, and structure of the GCF
- To deepen knowledge of gender, social inclusion, and protection principles

(3) Questions from participants

The following questions were raised regarding the materials and exercises. The experts answered those questions.

- How to create a log frame based on the elements extracted in the problem tree
- About definition of "secondary cause
- About definition of "objects, outcomes, outputs" in Log frame
- About differences between normal development projects and climate-related projects
- About requirements from national and international funds related to climate change adaptation and mitigation projects
- How to demonstrate the lack of domestic and international funding in project proposals
- How to justify travel and workshop organization costs for investment projects
- About conditions required for requests for assistance related to the PPF
- About timing of proposals for scaling up/scaling across current/ongoing projects

(4) Live consultation

1) Access to climate finance, Part 1

Live consultations were carried out to provide feedback on the exercise outputs (Problem tress, Objective tress, Logical framework) from the experts. The schedule and agenda are shown in below.

Table 3-9 Schedule of the live consultation (Access to climate finance, Part 1)

Time (Apia time)	24th Nov.	26th Nov.	27th Nov.	2nd Dec.	7th Dec.
12:00	Solomon Islands	FSM	-	-	Niue.
13:00	Kiribati	Nauru	Samoa	Vanuatu	-
15:00	PNG	Tuvalu	Fiji	-	-

Table 3-10 Agenda of the live consultation (Access to climate finance, Part 1)

Time	Contents	Speaker
00:00 - 00:02	Opening	Ms. Ogawa
00:02 - 00:05	Self-introduction	All
00:05 - 00:15	Explanation of outputs by representative of participants	Participant
00:15 - 00:50	Feedback from Dr. Peter King and Mr. Tetsuya Yoshida discussion	Dr. King Mr. Yoshida
00:50 - 00:55	Explanation on the next steps - request of post-assessment of Essentials - revision of the outputs and its submission (voluntary) - brief introduction of Gender/Social inclusion/Safeguards training program	Mr. Mizuno
00:55 - 01:00	Photo session and closing	Ms. Ogawa

2) Access to climate finance, Part 2

Live consultations were carried out to provide feedback on the exercise outputs (Problem tress, Objective tress, Logical framework) from the experts. The schedule and agenda are shown in below.

Table 3-11 Schedule of the live consultation (Access to climate finance, Part 2)

Time (Apia time)	9th Dec.	10th Dec.	14th Dec.	16th Dec.	23rd Dec.
12:00	Solomon Islands	FSM	-	-	-
13:00	Kiribati	-	-	PNG	Vanuatu
14:00	-	-	-	-	-
15:00	-	-	Fiji	-	-

Table 3-12 Agenda of the live consultation (Access to climate finance, Part 2)

Time	Contents	Speaker
00:00 - 00:02	Opening	Ms. Ogawa
00:02 - 00:15	Explanation of outputs by representative of participants	Participant
00:15 - 00:50	Feedback from Mr. Muneo Matsukawa discussion	Mr. Matsukawa
00:50 - 00:55	Explanation on the next steps - request of post-assessment of Part 2: Gender etc. - revision of the outputs and its submission (voluntary) - evaluation of training program (Part 1 and Part 2).	Mr. Mizuno
00:55 - 01:00	Photo session and closing	Ms. Ogawa

3.4.4 Evaluation of training courses

Seventy-six percent of the participants rated the overall training as excellent and rated positively the training materials, reference materials, and training delivery system. The major evaluation comments from the participants are listed below.

- Content should include monitoring, evaluation (M&E) and learning, and development of a centralized information system
- It is better to set longer training period considering the amount of training materials
- The timing of the training should be communicated in advance at the beginning of the year so that participants can take into account it in the annual plan and prepared in advance
- Would like to have the training on access to climate finance annually

3.5 Access to climate finance, Part 3 and Part 4

3.5.1 Training material development

Based on the syllabus developed through coordination among SPREP, PCCC and JICA long-term experts, the "Project Planning, Budgeting and Scheduling (Climate Finance Part 3)" and "Project Execution, Monitoring and Evaluation (Climate Finance Part 4)" courses were developed. The existing initiatives and resources (tools, modules, materials, and content of related regional trainings) were reviewed to ensure alignment with these initiatives and to add value to the training materials in the syllabus development.

Table 3-13 Training structure (Access to climate finance, Part 3 and Part 4)

Item	Contents	Form
Pre-assessment	Before the training, the participants assess their understanding on climate change and its impacts and other issues in the target sector by themselves.	Utilize e-Learning platform function
Self-paced leaning contents (Modules 3.1-3.3, 4.1-4.3)	Three modules were prepared as self-paced learning contents. Participants learned the videos and reference materials on the e-Learning platform by themselves.	Video (MP4), PDF
Draft Project Formulation Handbook	A draft of the Project Formulation Handbook was shared. Participants were requested to post their opinions in the discussion forum about the handbook.	PDF File
Discussion Forum/Question board	Discussion Forum for each module on the site were prepared. Some discussion topics were prepared by the experts and participants were requested to share the situation in their own countries about the topics. Participants also can post their questions and discussion topics on the Forum. Experts responded to the questions.	Utilize e-Learning platform function
Practice quiz	Three questions (multiple-choice quiz) were prepared for each sub-module and the participants were required to answer the questions.	Utilize e-Learning platform function
Final Quiz for Part 3 & 4	Ten questions (multiple-choice quiz) on the Modules 1 and 2 were prepared and the participants must answer the questions (Pass by attaining 80% or more).	Utilize e-Learning platform function
Group Exercise 1 & 2	Participants discuss and complete exercises as group-work exercise. The outputs should be submitted to the secretariat for review by the experts.	Face-to-face, Zoom, etc.
Live Consultation	Live consultation on the exercise outputs were conducted including country presentations, feedback and advice from the experts.	Utilize Zoom
Pot-assessment	At the end of the training, the participants assess their understanding on climate change and its impacts and other issues in the target sector and confirm their achievement.	Utilize e-Learning platform function
Course evaluation	The participants evaluate the training course.	Utilize e-Learning platform function

Table 3-14 Training Syllabus (Access to climate finance, Part 3 and Part 4)

Part 3: Project planning, budgeting and scheduling		
	3.1 Facilitation for project planning	
		This submodule aims to follow-up the Part 1 training in November 2020, particularly on problem and objective analysis and logical framework development. This submodule aims to follow-up the Part 1 training in November 2020, particularly on problem and objective analysis and logical framework development. The following learning materials are provided: - On-line materials (presentation videos and reading materials) on problem and objectives analysis and logical framework development; and - Draft project formulation handbook for essentials of project planning. Participants are expected to review the draft project formulation handbook and provide inputs of their own countries' good practices and Their inputs and exchange with experts and other participants will be encouraged through the Their inputs and exchange with experts and other participants will be encouraged through the "Discussion Forum" of the PCCC e-learning platform. Based on inputs and insights from participants, project secretariat will revise the handbook and share updated version with participants after the Based on inputs and insights from participants, project secretariat will revise handbook and share updated version with participants after the training program, so that participants can play as facilitator of project planning in their countries by using this handbook.
	3.2 Project schedule and budget,	
		The following learning materials are provided: i) Project schedule Milestones and deliverables of a project, work breakdown structure (WBS) ii) Project budget Key elements of a project budget, project budgeting process, key budget items for climate change related projects, cost planning, basic formulas for project budgeting, annual budgets and multi-year budget
	3.3 Group Exercise 1	
		Groups of participants from the same county are expected to work on project scheduling and budgeting. Materials and tools provided: i) Introduction of Group Exercise 1; ii) hypothetical project framework including outcomes, output and activities iii) project schedule template; and iv) budget template including cost categories, indicative unit costs of each cost category. Outputs expected from participants through group exercise 1: i) Based on the selected hypothetical project (Safe water access or EbA), sub-activities and necessary inputs as well as their schedule/length of works are identified and presented in the project schedule template; and ii) Appropriate cost categories for each sub-activities and their budgets are calculated and presented in the budget template. The following learning materials are provided: i) Project schedule Milestones and deliverables of a project, work breakdown structure (WBS) ii) Project budget Key elements of a project budget, project budgeting process, key budget items for climate change related projects, cost planning, basic formulas for project budgeting, annual budgets and multi-year budget
Part4. project execution, monitoring and evaluation		
	4.1 Project management	

		The following learning materials are provided: - Fundamentals on project management including project life cycle, quality management, risk management and contingency planning. - Major challenges of project implementation and possible solutions.
	4.2 Monitoring and Evaluation: from basic to practice	
		The following learning materials are provided: i) Basics of M&E - Key terminologies and their definition: indicators, assumption, means of verification, baseline, targets, and assumptions. - Key concepts of evaluation: process, impact, cost effectiveness, and behavioral changes. - Clarification of difference between "indicators for policy and strategies" and "indicators for projects" ii) M&E plan required for a project proposal for climate finance - Introduction of M&E plan of GCF project proposal - Tips and important consideration to identify appropriate indicators and means of verification according to the project outcome, outputs and Tips and important consideration to identify appropriate indicators and means of verification according to the project outcome, outputs and activities. - Tips and important consideration to present clear language of assumptions - Tips and important consideration to execute good evaluation (mid-term, final and post projects) based on monitored data and information. iii) Additional information: Regional initiative to measure climate resilience - M&E framework for the Framework for Resilient Development in the Pacific (FRDP) - Case studies of climate resilience measurements in Fiji, Kiribati, Tonga and Vanuatu
	4.3 Group Exercise 2	
		Groups of participants from the same county are expected to work on developing a monitoring and evaluation plan for the selected hypothetical project (logical framework) of Group Exercise 1. Materials and tools provided: i) Introduction of Group Exercise 2; ii) template of M&E plan Outputs expected from participants through group exercise 2: Based on the selected hypothetical project of Group Exercise 1 (logical framework), monitoring and evaluation plan including monitoring items, indicators, monitoring timing and evaluation methods are identified and presented in the monitoring and evaluation plan template

The following experts were identified through the SPREP/PCCC network as lecturers to prepare the training materials and deliver lectures.

Table 3-15 List of the experts (Access to climate finance, Part 3 and Part 4)

Name	Organization	Module in charge
Dr. Peter King	Institute for Global Environmental Strategies (IGES)	Module 3.1
Mr. Tetsuya Yoshida	JICA short-term expert	Module 3.1 Module 4.1
Mr. Lano Fonua	CFAN Advisor (Tonga), GGGI	Module 3.2
Mr. Fred Siho Patison	PCCC	Module 3.2
Ms. Linda Vaike	Acting Project Team Leader & M&E Coordinator: PACRES-USP Component, USP	Module 4.2 i)
Ms. Christine Serreyn	CFAN Advisor, GGGI	Module 4.2 ii)
Mr. Semi Qamese	Acting Project Manager, PACRES	Module 4.2 iii)

Pre-assessment and Post-assessment were prepared by the JICA long-term experts as follows.

Table 3-16 Pre-assessment (Access to climate finance, Part 3 and Part 4)

No.	Question	How to answer
1	Please describe your motivation to attend the training programme.	Comments
2	How would you rate your overall knowledge on project planning and management (poor to excellent)?	Multiple choice (Poor, Fair, Good, Excellent)
3	What are key challenges for your government/ agency/ institution in implementing strategies, policies, and plans related to climate change? Please select up to 3 choices. - Insufficient political will and leadership. - Mainstreaming of climate change, less attention to climate change in sectors. - Coordination and governance arrangement within the same government level. - Coordination and governance arrangement with governments in a different level. - Lack of legal framework, policy, strategy, plan, etc. - Limited capacity in human resources and expertise including awareness in the central government. - Limited capacity in human resources and expertise including awareness in local governments. - Limited capacity in human resources and expertise including awareness in communities. - Limited financial sources within the government. - Limited access to the climate finance in the regional and international level. - Limited data, information and knowledge which can be easily used by officials and practitioners. - Others.	Multiple choice
4	If you choose "others" in the previous question or have additional comments, please provide your answer.	Comments
5	How would you rate your current level of knowledge regarding facilitation for project planning (e.g., problem and objective analysis and logical framework development)?	Multiple choice (Poor, Fair, Good, Excellent)
6	How would you rate your current level of knowledge regarding project scheduling and budgeting?	Multiple choice (Poor, Fair, Good, Excellent)
7	How would you rate your current level of knowledge project management (e.g., project life cycle, quality management, risk management and contingency planning)? planning)?	Multiple choice (Poor, Fair, Good, Excellent)
8	How would you rate your current level of knowledge regarding project monitoring and evaluation?	Multiple choice (Poor, Fair, Good, Excellent)

Table 3-17 Post-assessment (Access to climate finance, Part 3 and Part 4)

No.	Question	How to answer
1	How would you rate your current level of knowledge regarding facilitation for project planning (e.g., problem and objective analysis and logical framework development)?	Multiple choice (Poor, Fair, Good, Excellent)
2	How would you rate your current level of knowledge regarding project scheduling and budgeting?	Multiple choice (Poor, Fair, Good, Excellent)
3	How would you rate your current level of knowledge project management (e.g., project life cycle, quality management, risk management and contingency planning)? planning)?	Multiple choice (Poor, Fair, Good, Excellent)
4	How would you rate your current level of knowledge regarding project monitoring and evaluation?	Multiple choice (Poor, Fair, Good, Excellent)

After coordination with the JICA long-term experts, the following discussion topics were set for the discussion forum.

Table 3-18 Discussion topics (Access to climate finance, Part 3 and Part 4)

Module	Topics
3.1	After reading the draft project formulation handbook, please share your ideas on the following topics. Your input on all topics is welcome but please Your input on all topics is welcomed but please post it on at least one topic. 1 Please share your country's good practices and experiences regarding i) problem analysis, ii) objective analysis, and iii) logical framework development. 2 Please share additional key tips or necessary consideration for effective facilitation of three steps for project formulation: i) problem analysis, ii) objective analysis; and iii) logical framework development. 3 As a practitioner and facilitator for the project formulation, how will you use this handbook? Please share with whom and for what purpose you will use it.
4.2	Please share your experience, challenges and solutions regarding Monitoring and Evaluation (M&E) planning and implementation.

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the practice quiz.

Table 3-19 Practice quiz (Access to climate finance, Part 3 and Part 4)

Module	Quiz	Options & Correct answer
4.2	Which is the correct description of an impact?	A) Long-term outcomes of a project B) Activities that lead to outputs C) Processes that lead to outputs
	Which of the following can be considered as an outcome?	A) 20 people trained B) 45 people present at a conference C) Increased knowledge of climate science
	The key question "How well were resources used in the project?" is most relevant to...	A) monitoring B) evaluation C) both monitoring and evaluation

After coordinating with the JICA long-term experts, the following questions which were prepared by the experts were set as the Quiz for Module 1 & 2.

Table 3-20 Quiz for Module1 & 2 (Access to climate finance, Part 3 and Part 4)

No.	Questions	Choices and correct answers
1	In formulating a project, why is it important to distinguish between cause and effect?	A) It is important to know who is to blame for the cause of the problem. B) Project funding agencies want to achieve the maximum effect for a minimum amount of money. C) Identifying causes helps to specify the means to solve the core problem while knowing the effects helps to identify the goals or targets of a project.
2	Which of the following is NOT a tip for making a strong Core Problem statement?	A) To state the problem as a negative condition or reality that may encompass several underlying causes. B) To state specific thing being unavailable or the solution being absent. C) To ensure ownership by a stakeholder as problem identification focuses on what is happening and to whom.
3	Which is correct about the project life cycle?	A) Main activities are carried out during the project execution phase based on the scope and schedule defined during the project planning phase.

		B) Project objectives and scope are defined during the project initiation phase. C) Problem and objective analysis is usually conducted during the project planning phase.
4	Which response is NOT appropriate to take against negative risks (threats)?	A) Avoid B) Mitigate C) Ignore .
5	Which is NOT correct about a logical framework?	A) A logical framework summarizes the intended results of a project B) A logical framework provides assurance to stakeholders that the project is making progress towards its goals and objectives. C) A logical framework improves the planning, implementation, monitoring and evaluation of projects.
6	What percentage of a project's budget should generally be spent on M&E?	A) 5-10%. B) 20%. C) 50-60%.
7	Which is referred to as the sources of data/information that are used to monitor project targets?	A) Assumptions B) Means of Verification C) Quantitative indicators
8	The following are 6 steps to develop a monitoring plan. Which is the correct order of these steps? 1. Preparing the monitoring plan (template) 2. Measuring the baseline and target 3. Setting the monitoring arrangements 4. Choosing the indicators 5. Detailing the specifics around data sources, collection methods and tools, the frequency, etc. 6. Defining the indicators	A) 1-2-3-4-5-6 B) 1-4-6-2-5-3 C) 1-3-6-2-5-4
9	What are the elements of an evaluation plan?	A) Key evaluation questions, frequency and evaluation budget B) Key evaluation questions, data source and data collection method C) Data sources, data collection methods/tools, frequency, budget and resources
10	Which is NOT correct about M&E?	A) A thoughtful and well-planned M&E plan is a key document to present your project to funding organizations. B) Developing an M&E plan is an iterative process and requires the engagement of multiple project stakeholders. C) It is best to develop your own M&E templates and guidelines to meet the M&E requirements of climate funding organizations.

Note: Underlined choices are correct answers.

The below six requirements were set as a condition to receive the certification of completion of the training

course.

1 Post at least one opinion/question in either discussion forum 3.1 or 4.2
2 Participated in the Live summary session 3.2 and 4.3
3 Submit exercise outputs (1 and 2)
4 Participate in the Live consultation
5 Pass the Final Quiz for Parts 3 & 4 (attaining 80% or more)
6 Submit course evaluations

3.5.2 Request for nomination of training participants

An official letter (Circular) containing a General Information (GI) which described the background, objectives, prospective participants, modules, logistics, etc. of the training course was prepared and sent with the training agenda and nomination form from SPREP to the climate change focal points of PICTs to request to nominate participants.

3.5.3 Organizing training

(1) Schedule and Participants

The trainings for Access to climate finance (Part 3 and Part 4) were carried out from July 4 to August 12, 2022. 62 participants from 11 countries participated. 39 participants were from climate change-related departments and 23 participants were from other related departments. 30 participants completed the course.

Table 3-21 Schedule (Access to climate finance, Part 3 and Part 4)

Item	Access to Climate finance Part3	Access to Climate finance Part4
Self-paced learning	July 4-8, 2022	July 25-29, 2022
Group Exercise	July 11-15, 2022	August 1-5, 2022
Live consultation	July 20-22, 2022	August 10-12, 2022

Table 3-22 Number of participants (Access to climate finance, Part 3 and Part 4)

Name of country and territory	No of participants	Name of country and territory	No of participants	Name of country and territory	No of participants
Fiji	2	PNG	4	Tonga	6
FSM	4	Samoa	1	Tuvalu	10
Kiribati	9	Solomon Islands	7	Vanuatu	11
Niue.	5	Timor-Leste	3		
					Total 62

(2) Motivations and expectations for participation in this training course

Through the pre-assessment, the following motivations and expectations for participation in this training course were raised.

- To obtain knowledge on how to apply for GCF and other climate funds, how to write concept notes, and how to check the correct formulas and procedures.
- To enhance project management skills, including costing, budgeting, scheduling, resource management, consultant management methods, and monitoring and evaluation.
- To learn how to support the private sector, the source of the country's economy
- To learn about budget planning and M&E

(3) Live consultation

1) Exercise output1

Live consultations were carried out to provide feedback on the exercise outputs (Problem tress, Objective tress, Logical framework) from the experts. The schedule and agenda are shown in below.

Table 3-23 Schedule of the live consultation (Access to climate finance, Part 3 and Part 4)

Date and time (Samoa time)	Countries and territories
July 20 13:00-15:00	PNG, Solomon Islands, Vanuatu
July 21 13:00-15:00	Niue, Tonga, Tuvalu
July 22 13:00-15:00	FSM, Kiribati, Timor-Leste

Table 3-24 Agenda of the live consultation (Access to climate finance, Part 3 and Part 4)

Time (Samoa time)	Contents
5 min.	Introduction of the live consultation
100 min.	Presentation of the outputs and feedbacks - 10 min presentation of each group - 5 min comments from resource persons 5 min for Q&A
10 min.	discussion
5 min.	Introduction of Part 4, Closing

A summary of the feedback on the exercise outputs from the experts are shown in below.

a) About logical framework
- Ensure that a single sub-activity does not contain multiple actions
- Clarify the organization responsible for the activity
- Do not include project management tasks (e.g., contracting/sourcing local consultants) in sub-activities
- Carefully consider what actions can be taken to achieve outputs and targets
- Ensure that the same sentence or activity is not used in an activity and sub-activity

b) About schedule
- Multiple activities can be implemented in parallel. This may reduce delays in project implementation
- Keep in mind that procurement may take time
- Some activities may require a long period of time, so be sure to plan appropriately so as not to overlap too much with each other

c) About budget
- Keeping project management costs at an appropriate level within the total budget
- The total budget should be balanced with the number of beneficiaries and the efficiency of the project should be taken into account. The balance between the activities and the budget amount must be consistent
- Must be able to provide a clear explanation of budget calculations

d) About consultant
- Hiring a consulting firm rather than an individual consultant may also improve efficiency.
- Ensure that spending (percentage) on consultants is not too high
- Ensure adequate resources for targeted outcomes and activities.

2) Exercise output2

Live consultations were carried out to provide feedback on the results (Monitoring and Evaluation plan) from experts. The schedule and agenda are shown below.

Table 3-25 Schedule of the live consultation (Access to climate finance, Part 3 and Part 4)

Date and time (Samoa time)	Countries and territories
August 10 13:00-15:00	Vanuatu
August 11 13:00-15:00	Solomon Islands, Tonga, Tuvalu
August 12 13:00-15:00	FSM

Table 3-26 Agenda of the live consultation (Access to climate finance, Part 3 and Part 4)

Time (Samoa time)	Contents
5 min.	Introduction of the live consultation
100 min.	Presentation of the outputs and feedbacks - 10 min presentation of each group - 5 min comments from resource persons 5 min for Q&A
10 min.	discussion
5 min.	Introduction of Part 4, Closing

A summary of the feedback on the exercise outputs from the experts are shown in below.

a) Means of verification
   - For infrastructure, not only design documents, but also construction completion certificates and operation reports can be used as means of verification
   - Verification should not rely on only one document. If multiple documents are listed, it is better to decide on one document that would be the final numerical basis since different documents may have different numerical values and data sources

b) Prerequisites
   - Assumptions need to be expressed in positive terms
   - If things don't go as expected, it is a risk and we need to be prepared for it
   - If there is a possibility of delays, it can be clearly positioned as a risk and mitigation and response measures can be found for it

c) Monitoring plan
   - Timing of monitoring should be consistent with the implementation schedule (e.g., monitoring should occur prior to project completion and after project implementation)
   - Indicative budgets are for M&E activities, not for project activities (e.g., installation of systems).
   - Qualitative indicators will be examined through interviews with beneficiaries and surveys

d) Evaluation plan
   - Note that "audit" and "evaluation" have similar objectives but use different methods to obtain results. An audit has a standard process to follow and is documented in a operations manual. An evaluation, on the other hand, must use different methods to measure the progress of a project which is often subject to change.
   - Evaluation of results can be conducted prior to project completion to ensure that results are satisfactory, or some adjustments can be made prior to project completion
   - Ex-post evaluation should be done after the project completion, not at the end of the project

3.5.4 Evaluation of training courses

Seventy-three percent (n=22/30, as of September 5, 2022) of the participants rated the overall content and sessions as excellent and positively rated the training materials, resources, and structure. Major evaluation comments from participants are listed below.

- Would like to see multiple exercises outputs in each component for less experienced people
- Other activities such as project audits should be added to the exercise
- At least one or two group should share lessons learned and best practices
- To make the training more interactive. It would be nice that the training will be carried out in-person.
- It would be better if the opinions in the discussion forum would be widely shared among participants

4. Activities and results of Output 3

4.1 Summary of the training course on climate change mitigation

The following training courses were developed and implemented as an irregular training program on climate change mitigation.

Table 4-1 List of the training courses of the Output 3

No.	Course Name	Date	No. of participants	key external partners
5	Ecosystem-based Adaptation and Mitigation	23 Jun. - 28 Jul. 2021	Nominations: 59 Completion: 42	N/A
6	Climate Resilience and Food Production Systems - agriculture and coastal fisheries	20 Sept. - 15 Oct. 2021	Nominations: 77 Completion: 39	Food and Agriculture Organization of the United Nations (FAO)
7	Enhancing Climate Resilience in Tourism in the Pacific	24 Jan. - 18 Feb. 2022	Nominations: 44 Completion: 28	Pacific Tourism Organisation (STPO)
8	Enhancing Climate Resilience and Safe Water Access in Rural Areas in the Pacific	2-27 May 2022	Nominations: 73 Completion: 56	SPC, Samoa Independent Water Schemes Association
11	Health Systems and Climate Change: Enhancing Resilient and Low-carbon Development in the Pacific	29 Aug.- 6 Oct. 2022	Nominations: 55 Completion:	World Health Organization (WHO), University of Notre Dame, University of Gothenburg, University of Melbourne, USP

4.2 Training material development

Training materials on climate change mitigation were developed as part of the content of the training course on climate change adaptation, based on the training syllabus for the subject area developed through coordination among SPREP, PCCC and JICA long-term experts.

4.3 Organizing training

The training course on climate change mitigation was carried out at the same time as the training course on climate change adaptation shown in Chapter 2. See Chapter 2 for details on the results of the event.

4.4 Evaluation of training courses

See the evaluation of the Chapter 2.

5. Development of the Open-learning courses

5.1 Background

The training programs have been delivered as Executive Courses only for nominated participants enrolled by the project team. However, the resources of these courses are also relevant for many practitioners in the Pacific. Accordingly, it was decided to develop "Open-learning courses"[5] on the PCCC's e-Learning platform for anyone interested in the themes after the coordination with SPREP, PCCC and JICA long-term expert. The open learning courses are self-paced and interested participants can register and learn from the materials and exercise tools used for the closed "executive courses".
The Open-learning course does not have the function to take two-ways communication with the experts. The following items of the training program were modified.

(1) Updating contents of the training materials to the latest information

Climate change issues have been changed day by day, and a lot of new knowledge/findings have gained since the training program was started from 2019 (particularly, the 6th Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) was published in 2022, the latest information on climate science, mitigation, adaptation was shared). Given this, some of the training materials were updated to latest information and reproduced videos and other materials for the Open-learning course.

(2) Revising the exercise contents (problem tree, objective tree, logical framework development)

In the exercise session of the training program, participants from each country worked together as a group by country to develop a problem tree, objective tree and logical framework. However, in the open-learning course, the participant basically learn the training material individually, so the content of the exercise and guidance materials should be modified to fit this learning style.

(3) Summarizing FAQs (Disaster risk reduction sector)

Since the Open-learning course does not have the function to communicate with experts, FAQ for the Open-learning course was developed based on the opinions and questions posted by participants for the discussion forum in the Executive course.

5.2 Revising the exercise contents

The content of the exercises (problem tree, objective tree, and logical framework development), which the participants from each country were supposed to work on as a group, was revised as follows to allow them to work on them individually.

[5] As of 9th January 2023, the Open-learning course has not released yet. It will be released after final confirmation by SPREP during January 2023.

Table 5-1 Summary of Exercise Content Changes

Item	Executive course	Open-learning course
Problem tree and Objective tree development	Guidance and templates for developing a problem tree and objective tree are provided. Through group work with other participants, participants develop problem tree and objective tree from scratch based on the climate change impacts and issues in the country.	Using the e-Learning platform's function, some questions about the problem tree and objective tree development are prepared. The user selects the answer that matches the question from the prepared options.
Logical framework development	Guidance and templates for developing a logical framework are provided. Through group work with other participants, participants create a logical framework from scratch according to the problem tree and Objective tree which they developed.	Prepared a Logical framework template with pre-defined project outcome and outputs. The user consider appropriate activities to achieve the outcome and outputs fill them in the template.
Check the outputs	Self-check list is prepared. Participants check the problem tree, objective tree, and logical framework using the check list and submit it to the PCCC secretariate.	Self-check list is prepared. The user check their own outputs using the check list.
Live consultation	Provides expert feedback	None

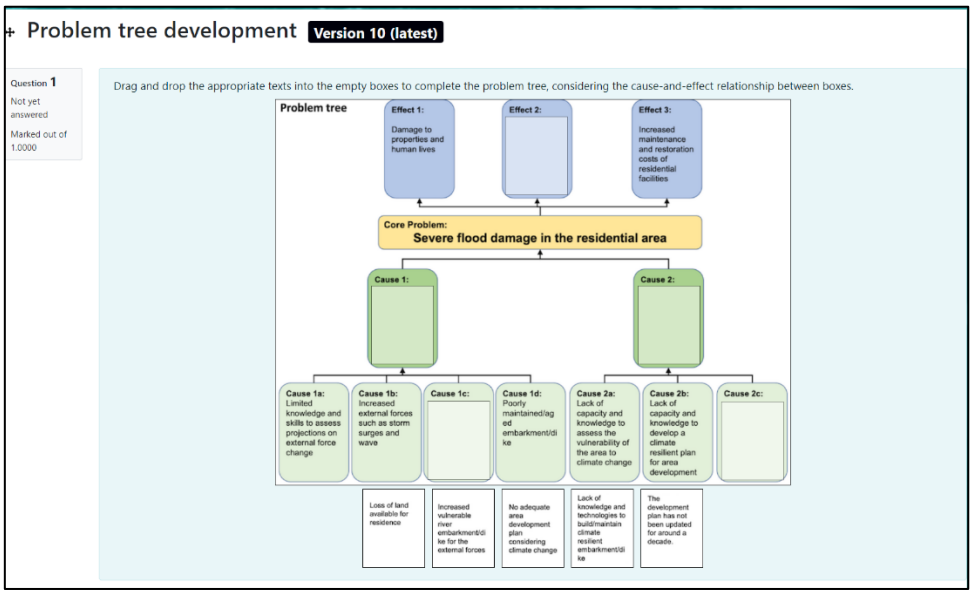


Figure 5-1 Example of a question for problem tree development

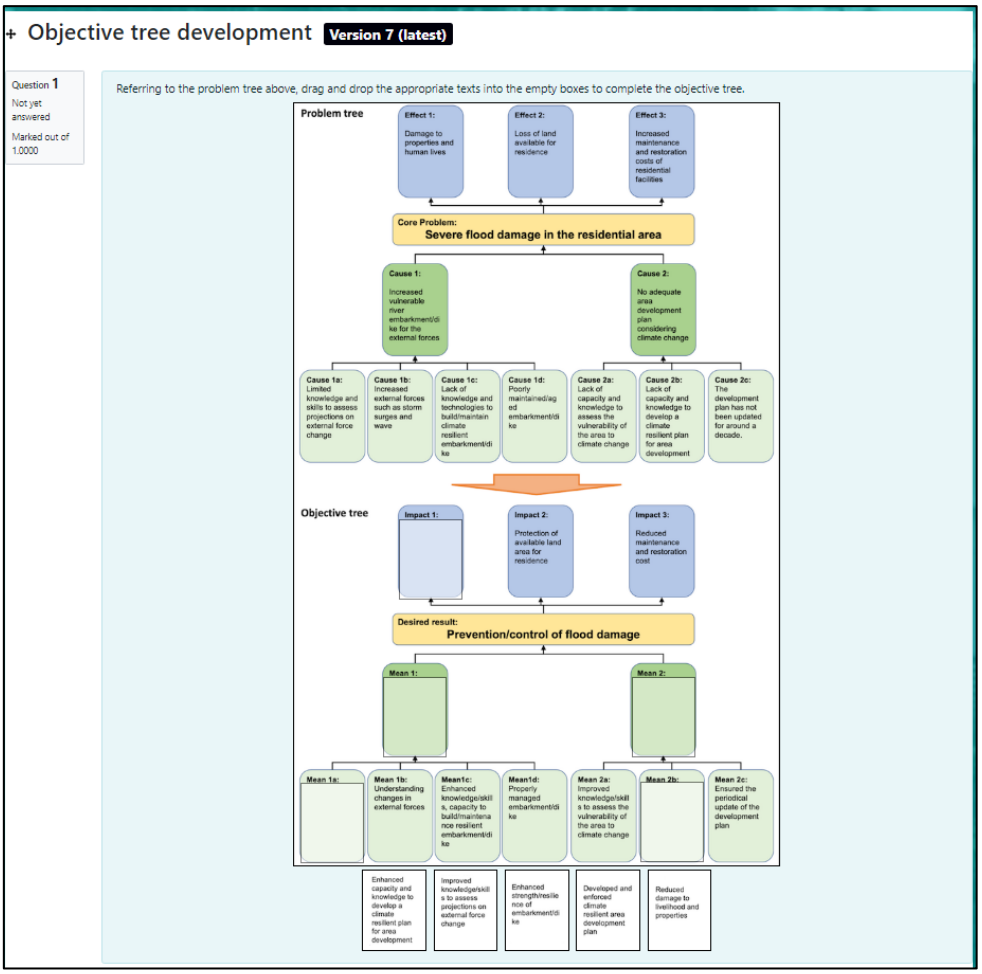


Figure 5-2 Example of a question for objective tree development

1. Simplified logical framework

Participants are requested to fill the boxes for "Activities" and "Description".

Project outcome
• Strengthened adaptive capacity and reduced exposure to climate risks
Project outputs
Output 1. Assessments and mechanisms are in place for an integrated approach to reduce vulnerability towards flood-related risks
Output 2. Infrastructure along the river A are flood-proofed to increase resilience to negative effects of excessive water
Output 3. Drainage in downstream areas is upgraded with increased water flow control.

Expected Result	**Activities**	**Description**
Output 1. Assessments and mechanisms in place for an integrated approach to reduce vulnerability towards flood-related risks	*e.g.) Strengthen capacities and information requirements to pursue an integrated programme approach to flood management*	*e.g.) Feasibility studies should be carried out for flood- mitigation measures that are necessary for optimal flood management. The study will assess areas of improvement for the reservoir to contain and buffer rainwater during extreme weather events and explore ways for productive use of water resources.*
Output 2. Infrastructure are flood-proofed to increase resilience to negative effects of excessive water		
Output 3. Drainage in downstream areas upgraded for increased regulation of water flows.		

Reference: Green Climate Fund FP037: Integrated Flood Management to Enhance Climate Resilience of the Vaisigano River Catchment in Samoa

Figure 5-3 Template of a logical framework development

Details of the questions for the problem tree, objective tree, and logical framework which were prepared for the exercise are shown in the Appendix.

6. Project Formulation Handbook development

6.1 Background

The exercise of the training program (problem tree, objective tree, logical framework development) can be widely utilized to identify the core problem related to climate change, its causes and effects, identify countermeasures to the issues and formulate a project, not only to consider the project proposals in the training courses. This exercise is very useful, and in fact, many of the participants rated high evaluation on this exercise and express their intention to utilize them in their daily work.
Therefore, to make the outputs of this project will be utilized in sustainable after the project completion, a Project Formulation Handbook was developed to summarize the methods, procedure and tips which obtained in the exercises of the project to keep in mind to formulate a project so that the participants can widely use the handbook to solve problems.
The below points are particularly considered in developing the handbook.

- To explain the definition of terms and the necessity of developing a problem tree and objective tree so that they can understand how to utilize this for project development, planning, etc. in daily works.
- To include the explanation on issues and its solutions that the participants commonly faced to develop problem tree, objective tree and logical framework that were identified through the exercises in the executive course to make the handbook more practical.
- Set a "Memo" section so that user can write notes and other information while using the handbook.

6.2 Structure of the Project Formulation Handbook

The below is the index of the handbook and the Project Formulation Handbook is attached as Appendixes.

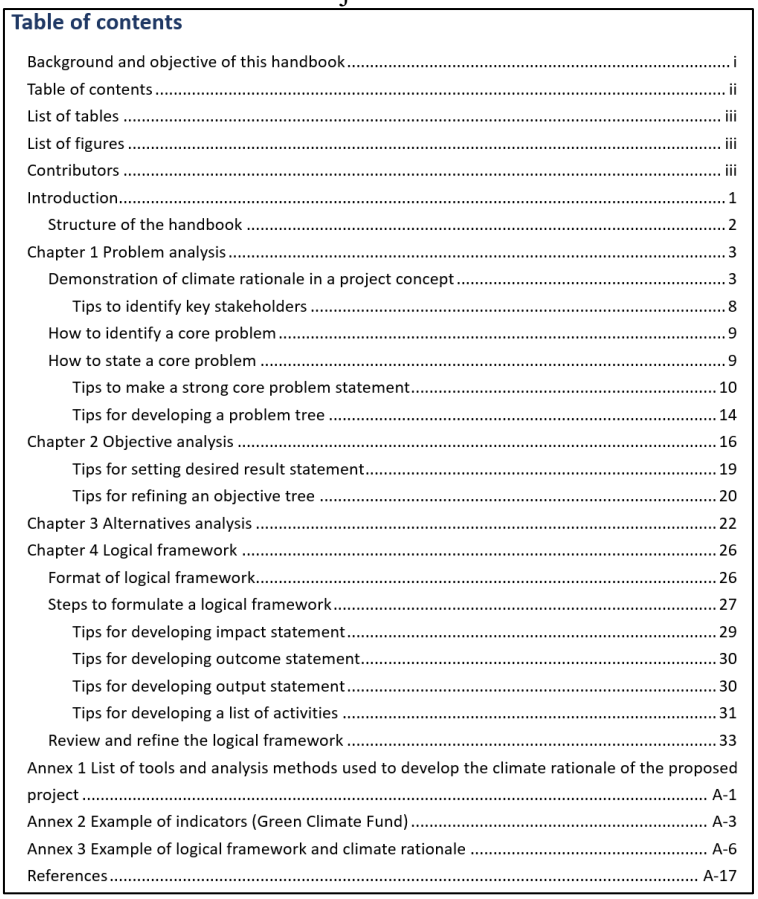
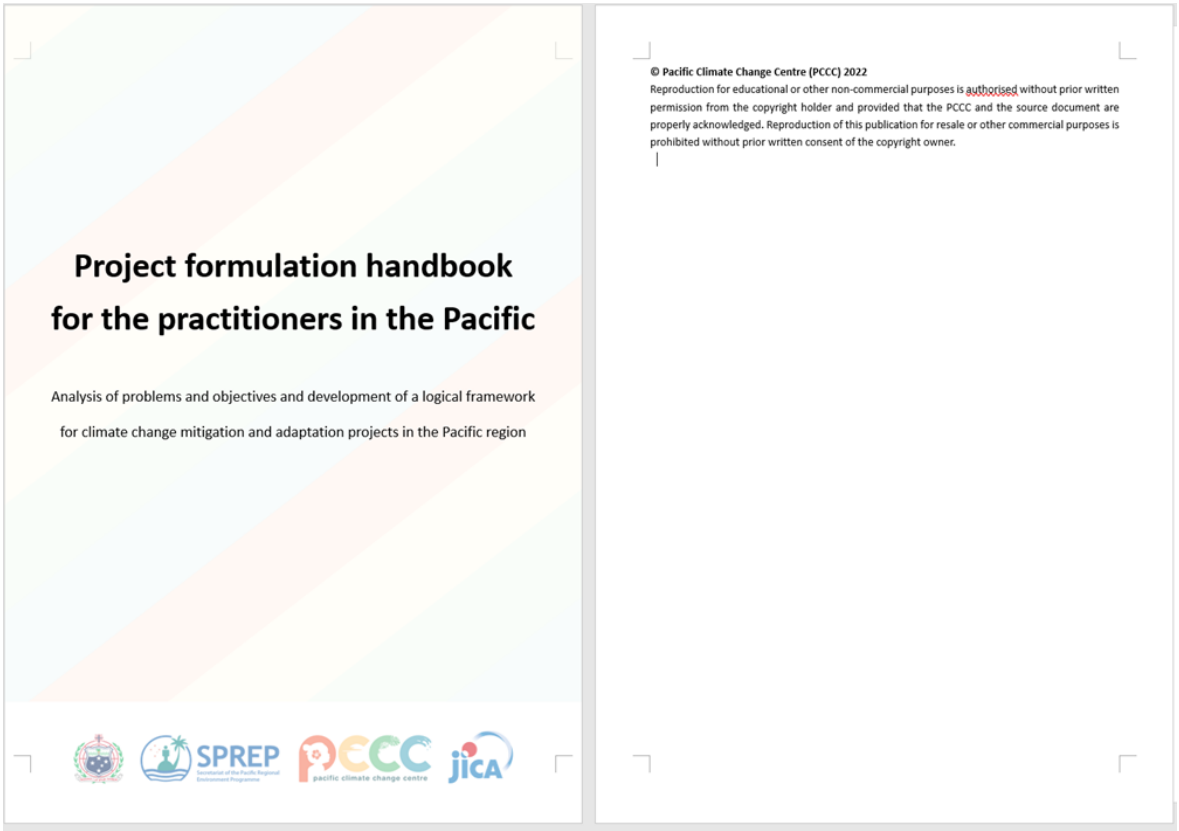


Table of contents

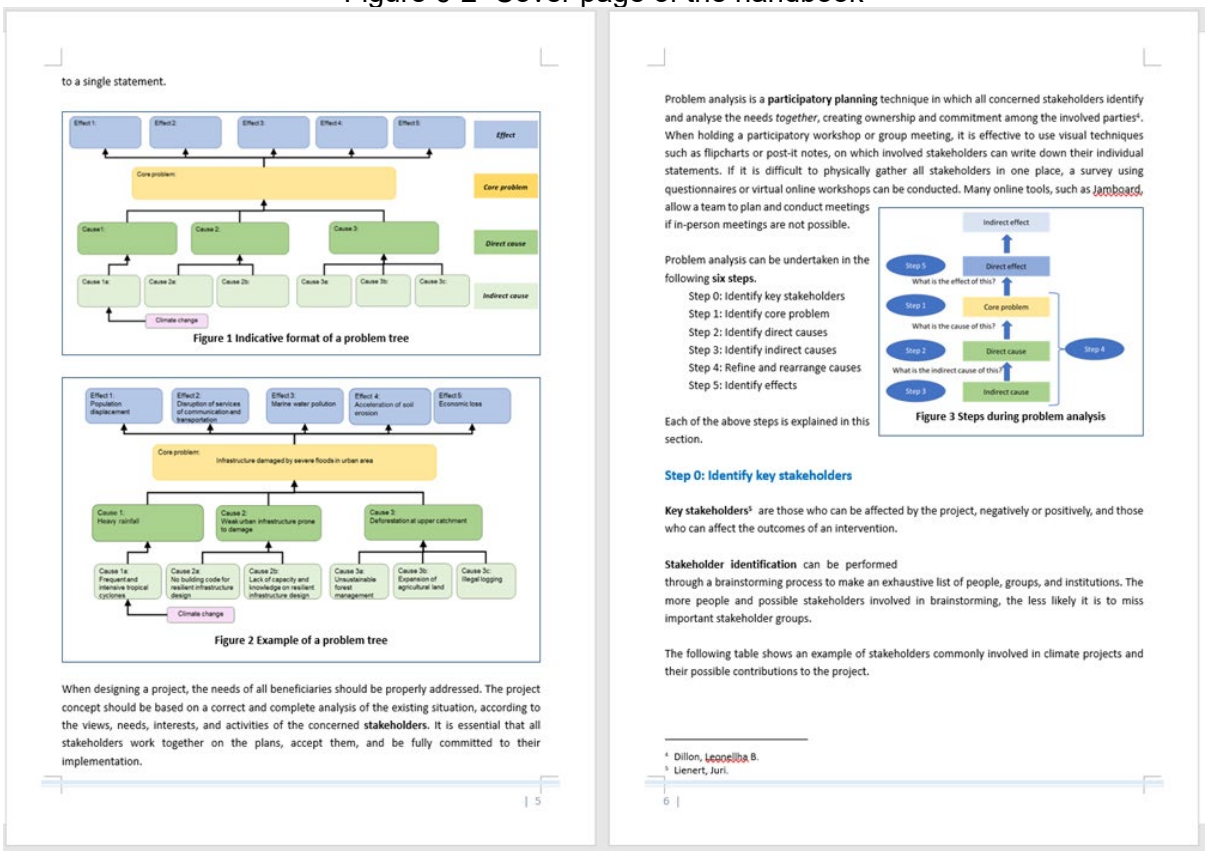
Figure 6-1 Table of Contents of the Project Formulation Handbook



Project formulation handbook for the practitioners in the Pacific

Analysis of problems and objectives and development of a logical framework for climate change mitigation and adaptation projects in the Pacific region

Figure 6-2 Cover page of the handbook



to a single statement.

Figure 1 Indicative format of a problem tree

Figure 2 Example of a problem tree

When designing a project, the needs of all beneficiaries should be properly addressed. The project concept should be based on a correct and complete analysis of the existing situation, according to the views, needs, interests, and activities of the concerned **stakeholders**. It is essential that all stakeholders work together on the plans, accept them, and be fully committed to their implementation.

Problem analysis is a **participatory planning** technique in which all concerned stakeholders identify and analyse the needs *together*, creating ownership and commitment among the involved parties[4]. When holding a participatory workshop or group meeting, it is effective to use visual techniques such as flipcharts or post-it notes, on which involved stakeholders can write down their individual statements. If it is difficult to physically gather all stakeholders in one place, a survey using questionnaires or virtual online workshops can be conducted. Many online tools, such as Jamboard, allow a team to plan and conduct meetings if in-person meetings are not possible.

Figure 3 Steps during problem analysis

Problem analysis can be undertaken in the following **six steps**.

- Step 0: Identify key stakeholders
- Step 1: Identify core problem
- Step 2: Identify direct causes
- Step 3: Identify indirect causes
- Step 4: Refine and rearrange causes
- Step 5: Identify effects

Each of the above steps is explained in this section.

Step 0: Identify key stakeholders

Key stakeholders[5] are those who can be affected by the project, negatively or positively, and those who can affect the outcomes of an intervention.

Stakeholder identification can be performed through a brainstorming process to make an exhaustive list of people, groups, and institutions. The more people and possible stakeholders involved in brainstorming, the less likely it is to miss important stakeholder groups.

The following table shows an example of stakeholders commonly involved in climate projects and their possible contributions to the project.

[4] Dillon, Leonelha B.
[5] Lienert, Juri.

Figure 6-3 Example of handbook page

7. Mentoring for Accessing Climate finance

7.1 Summary

As part of the follow-up activities of the training program, a mentoring was carried out to support the preparation of a proposal (concept note) to access to climate finance such as GCF and other funds to deal with the issues and measures caused by climate change which were identified in the exercise of the training courses. SPREP issued a call for applications for mentoring at the beginning of the mentoring and four proposals were submitted. SPREP, PCCC, JICA long-term experts, JICA short-term experts, and external experts selected three projects for mentoring from them. SPREP notified the applicants of their selection. The mentoring was carried out from June 2022 to November 2022.

7.2 Selected Projects

The selected projects for the mentoring projects are listed below.

(1) Project 1

[Project name]
Application of Sustainable Agriculture Practices for Smallholder farmers in the Southern Region Provinces of Papua New Guinea
[Sector, country and proposer]
Sector: Agriculture
Country: Papua New Guinea
Proposed representative: Ms. Theresa Wambon-Kambuy, Department of Agriculture and Livestock, Provincial Agricultural Technical Services Division
Summary: Strengthening the capacity of relevant organizations of agriculture, resilience to climate change through the smart agriculture integration, and implementation of projects that contribute to improving agricultural production through sustainable agriculture

(2) Project 2

[Project name]
Connecting Rural Farmers to the Urban Markets through Climate Resilient Roads and Bridges in Papua New Guinea
[Sector, country and proposer]
Sector: Disaster Prevention and Infrastructure
Country: Papua New Guinea
Proposed representative: Mr. Julius Wandi, Department of Works and Highways
Summary: Implementation of resilient transportation infrastructure (roads, bridges, etc.) projects to enhance market access by residents

(3) Project 3

[Project name]
Scaling up Ecosystem Based Adaptation to climate change in Solomon Islands
[Sector, country and proposer]
Sector: Ecosystem Conservation
Country: Solomon Islands
Proposed Representative: Mr. Chris Teva, Climate Change Division, Ministry of Environment, Climate Change, Disaster Management and Meteorology, Solomon Islands

Summary: Implementation of a project to strengthen capacity on establishment of policy and institution for climate resilience using Ecosystem-based Adaptation

7.3 Mentoring activities

The proposers proactively developed a work plan for project formation, drafted project concept notes and had discussions with their country's climate change focal point and potential Accredited Entity (AE) of GCF/Adaptation Fund. The mentoring team consisted from JICA short-term experts and external experts in each field had online-review meetings basically once a month to review the draft concept notes of the selected project, focusing on the core problem, theory of change, climate rationale, investment criteria, and provided advice on how to improve the concept notes.

7.4 Results of the mentoring

(1) Project 1: Application of Sustainable Agriculture Practices for Smallholder farmers in the Southern Region Provinces of Papua New Guinea

The mentoring team provided comments and advice to revise the draft concept note. The major comments are listed below.

- About feasibility of climate finance other than GCF
- Necessity of supplemental evidence regarding on selecting the Environmental and Social considerations category
- Necessity of reinforcement on background of target area selection
- Necessity of reinforcement on explanations about gender
- Necessity of detailed information on the main functions of the main implementing organizations

(2) Project 2: Connecting Rural Farmers to the Urban Markets through Climate Resilient Roads and Bridges in Papua New Guinea

The mentoring team provided comments and advice to revise the draft concept note. The major comments are listed below.

- Necessity of showing stronger climate rationale to build roads and bridges to enhance climate resilience
- Necessity to identify stakeholders and beneficiaries clearly narrowing the target area, such as coastal areas and other vulnerable area to climate change rather than the whole country
- Necessity to refer the relative report on observations and projections of climate change in PNG
- To discuss about accreditation entities with the NDA from the beginning of the project development

(3) Project 3: Scaling up Ecosystem Based Adaptation to climate change in Solomon Islands

The mentoring team provided comments and advice to revise the draft concept note. The major comments are listed below.

- Necessity of the coordination with relevant agencies to determine which climate funds to be accessed
- Many activities, such as surveys, gap analysis exercises, and capacity building, need to include actual activities to be conducted in the field.
- Necessity to supplement and update information on natural disasters that have occurred and the latest climate change projections

Through this mentoring, the participants had opportunities to utilize the knowledge and know-how obtained in the exercise of training course on developing problem tree, objective tree, and logical framework, especially on the importance of developing concept notes considering the climate rationale and the theory of change. In addition, through the review meetings with the project team, specific and clear suggestions were given on what

information was needed to receive support from climate funds such as GCF, and what improvements could be made to the concept note. These have facilitated a closer examination of the projects, improvement of the concept notes, and consultations with relevant agencies. It would have provided greater clarity on what is required to receive support from climate funds. Based on this, the participants will continue to improve their proposals and discuss with the relevant agencies.

8. Challenges and Lessons Learned

8.1 Form of the training

The Project originally planned to deliver in-person training programs at the PCCC, and the first training program was delivered at the PCCC in November 2019. Due to the COVID-19 pandemic and international travel restrictions, the remaining eleven programs were delivered online through the PCCC e-learning platform launched in March 2021. The 2nd, 3rd and 4th program used various tools for a live session, discussion, Q&A, and sharing of materials. After the launch of the PCCC E-learning Platform in March 2021, all the training programs in 2021 and 2022 have been delivered through this Platform. Online training has the advantage that participants are less subject to time and location constraints and can review the exercise materials as many times.
Therefore, this project utilized the PCCC e-Learning Platform, which is built using one of Course Management System (CMS)[6] named Moodle, and examined the most efficient structure of training programs referring to other online training courses. As a result, the overall structure of the training program was standardized across all sectors (Module 1: Climate Science, Module 2: Adaptation and Mitigation, Module 3: Project Development and Exercise) to provide a sense of unity as a training program and to provide sufficient training content. In addition, the below items were incorporated to elaborate the training program more effective and efficient.

- The video of the lecture was modified within approximately 20 minutes per video, taking into account the available time for the participants to concentrate on learning.
- Since there are possibilities that many island countries have weak internet connections, the slides and documents (PDF files) containing notes on the oral explanations in the videos were provided along with the video as supplementary materials
- Facilitating the information sharing and exchange of opinions among participants and experts through the discussion forum which is one of the PCCC e-Learning platform's functions
- Using Quiz, one of the PCCC e-Learning platform's functions, incorporating a test to check the participants achievement
- Live summary lecturer & QA sessions were held via Zoom for Q&A with the experts who developed the training content to support the participant's understanding.
- Live consultation sessions were held via Zoom to provide expert feedback on the outputs of the exercises
- Utilizing the PCCC e-Learning platform's function to carried out the course evaluation and certificate provision

The training program was highly rated by the participants. On the other hand, there were requests for a hybrid training program that combines face-to-face training and online training. Particularly, some desired a face-to-face training program with an emphasis on exercises and practical training, including logical framework development exercises and site visits.

8.2 Training Content and Materials

(1) Exercises and group work

Group work was carried out from the first online program on climate science in September 2020 as an important content to enhance participants' intention to actively participate to the training. In the first exercise, the group exercises were carried out in the form of live sessions which the participants from different countries discussed the sectors affected by climate change and their contents under the facilitation by experts. However, the exercise did not work well because each country's vulnerability to environmental and climate change is different. Therefore, from the next training course on November 2020, it had changed that the group was

[6] The training program on climate science conducted in 2020 included live sessions, discussions, Q&A, and sharing of materials using various tools such as Google Drive, Zoom, and Slack.

consisted from the participants from the same country gather to conduct the exercises. In addition, the participants in each country compile and submit the outputs of the exercises by coordinating their own schedules using the exercises and templates prepared by the project team. And the experts provide feedback on the outputs of the exercises via online meetings. The participants evaluated this change to strengthen their skills more effectively through exercises and group work compared to the initial training described above, and the exercises were highly rated in comparison to other modules.
The exercise, "problem tree, objective tree, and logical framework development" was carried out in a total of six training programs since the November 2020. Through the training, the relative training materials were revised to clarify the items and requirements of the exercise such as a project tree and an objective tree should be developed considering climate change impacts and adaptation measures described in the training programs, a logical framework should include other activities other than capacity building and awareness raising. However, there were some cases where the focus of the discussion shifted from what was explained in the training and the elements identified in the problem tree and objective tree were not effectively integrated into the logical framework. Also it was found that there was a lack of understanding of Outcome, Outputs, and Activity. To address these issues, further improvement of the training materials were implemented, such as revising the templates for the exercise and preparing a checklist of outputs, as well as developing a Project Formulation Handbook summarizing the tips to keep in mind when developing a problem tree, objective tree and logical framework. In addition, orientations for participants were held prior to the training course. In the orientation, JICA long-term experts explained the training materials provided by the PCCC e-Learning platform and the expected outputs of the exercise. This orientation was highly rated by the participants.
On the other hand, some participants pointed out that more time was needed to work on the exercises. In response to this, the period of the exercise was extended to two weeks at the last health training session. However, some participants still felt that it was too short. It is difficult to extend the training period any further in practical terms, and it is necessary to explain to the participants that it is also important for them to take actions, such as making sufficient arrangements among themselves regarding the dates of the training.

(2) Training Materials

The training materials that were developed in this project include four elements, "climate science" "adaptation" "mitigation" and "access to climate finance" for each of the targeted sectors as much as possible. It makes the participants to be able to learn same themes and obtain outputs in each training course. In addition, the training materials were prepared by experts with knowledge and expertise of PICTs and covered a wide range of important topics such as disaster risk reduction, ecosystems, water, tourism, and health in the target countries after reviewing the climate change strategies and policies of each country. These efforts make the training program to differentiate itself from other training programs on climate change offered by other international organizations and added value.
On the other hand, some participants raised some requests to elaborate the materials to include contents such as actual cases and lessons learned of PICTs. Also, in the water sector for which many participants belonged to the technical sector participated, they were seeking more practical knowledge and skills and detailed information on operation of equipment and systems. However, on the other hand, some participants commented that the material on climate science, for example, was difficult for participants without a technical background. Given that training participants have varieties of backgrounds, it is necessary to provide as much useful information and knowledge as possible to as many participants as possible from multiple perspectives.
Furthermore, the scientific evidence, knowledge, and examples of climate change in the Pacific region are constantly being updated so that there is a need to regularly update training materials in a manner that fully takes into account the unique characteristics of PICTs
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8.3 Human and related resources

(1) Collaboration with SPREP and external personnel

Through the project implementation, PCCC has strengthened its organizational structure as a Knowledge Hub on climate change in the Pacific region and its human resources by hiring staff and raising their awareness, as

well as developing and accumulating many training materials and know-how that can be used in the future training activities. In addition, a human network with external experts has been established and it has being put in place to receive continuous cooperation in future activities. Furthermore, it has been reconfirmed that SPREP has excellent experts in climate science, climate finance, and EbA. It is necessary for PCCC to strengthen the collaboration with these human resources and obtain their continued cooperation for PCCC's activities in the future. It is also necessary to continue ensuring human resource, strengthening human networks to enhance the effectiveness of the training programs provided by the PCCC.

(2) Utilize the Project Formulation Handbook and mentoring outputs

The activities carried out in the project such as exercises for developing a problem tree, objective tree, and logical framework that can be used in project formation activities, the Project Formulation Handbook development incorporating the knowledge gained in the exercises, and mentoring on concept note development, were highly evaluated by the participants. Also, project formulation and the activities on accessing climate finance have been practically carried so that it is assumed that project formation activities would continue in the future. These results and knowledge can be utilized widely and continuously in future training activities of the PCCC. It is necessary for the PCCC to manage and update these materials and knowledge by itself.

9. Recommendations

The followings are important for the PCCC to continue effective training programs provision and further strengthen its capacity after the project completion.

- To update and add latest information to the training materials and other materials that were developed in this project
- To carried out continuously training in a hybrid format that combines online and in-person training
- To encourage the participants to use obtained knowledge and training outputs in daily works (including M&E) and prove support for project formation
- To build and strengthen networks with participants, external experts, local institutions and other donors
- To strengthen the PCCC structure (particularly on recruiting human resources).
- To establish a M&E system and methodology to utilize training outputs

9.1 Updating and revising existing training materials and add new contents

- To update and revising the existing training materials based on requests and coordination with SPREP and PCCC.
- To integrate new/innovative approaches and technologies related to adaptation and mitigation, as well as content that contributes to public-private partnerships establishment. For example, to promote climate change countermeasures in the private sector, a training programs that enhance on understanding of the TCFD, scenario analysis, and practical training should be integrated.
- To integrate some elements such as introduction and applicability of innovative technologies and frameworks into each training course under the collaboration with the Innovation which is positioned as one of the four strategic pillars (Knowledge brokerage, Applied research, Training and learning, Innovation) in the PCCC's 2018 Business Plan.
- To carried out a training combining online training (utilizing the training materials which are prepared in the project) and in-person training (mainly exercises, but also including site visits)
- Develop contents of mitigation which can contribute achievement of the NDC implementation and monitoring while focusing on adaptation.

9.2 Continuous support for project formulation

- To support the participants and its organization continuously to make the outputs of this project more tangible. Particularly, Continuing and expanding the mentoring services currently being provided, and conducting similar training course with the training course which was carried out including site visits for water sector in October 2022[7] for other sectors.
- To provide continuous mentoring to the currently being supported projects as needed and aim to receive any support from the climate finance such as GCF. And it should be aimed to increase the number of eligible projects for support. In order to enhance a commitment on active participation to the mentoring by the participants, it would be good to make an agreement between the target country’s organization and PCCC. Also, further involvement of SPREP/PCCC as a mentor of the mentoring team would be necessary.
- To introduce the public-private partnership mechanism that the Japanese government, including JICA, is working on and specific examples of its implementation (JICA SME/SDGs Business Support Program, METI/NEDO's demonstration project, JFJCM by ADB, etc.) and provide support to utilize them.

[7] As a follow-up activity of the training course on water sector which were carried out in May 2022, a face-to-face training for the Polynesian region was carried out in October 2022. The JICA long-term experts assisted PCCC in drafting the training agenda, sharing the list of potential experts and participants, and preparing sub-modules on project planning and management.

9.3 Enhancement of the capacity of PCCC

- To provide continuous support to enhance the capacity of PCCC so that they can work as a Knowledge Hub for the region. Providing support to enhance capacity to manage information/data so that PCCC can use and strengthen continuously the training materials and human networks accumulated in Phase 1.
- To strengthen collaboration with the Climate Change Resilience Programme team of SPREP. It is also necessary to strengthen collaboration with the Project Management Unit and the responsible unit of DAE in the GCF.
- To support monitoring activities of the PCCC's Draft Strategy and Business Plan (2018) implementation and revision of it.
- Sharing information of PCCC's activities periodically, and organizing a seminar to consolidate opinions among stakeholders inviting the graduates of the training course, participants of the mentoring and external experts etc. one a year. If there is an existing such framework, it should be utilized.