

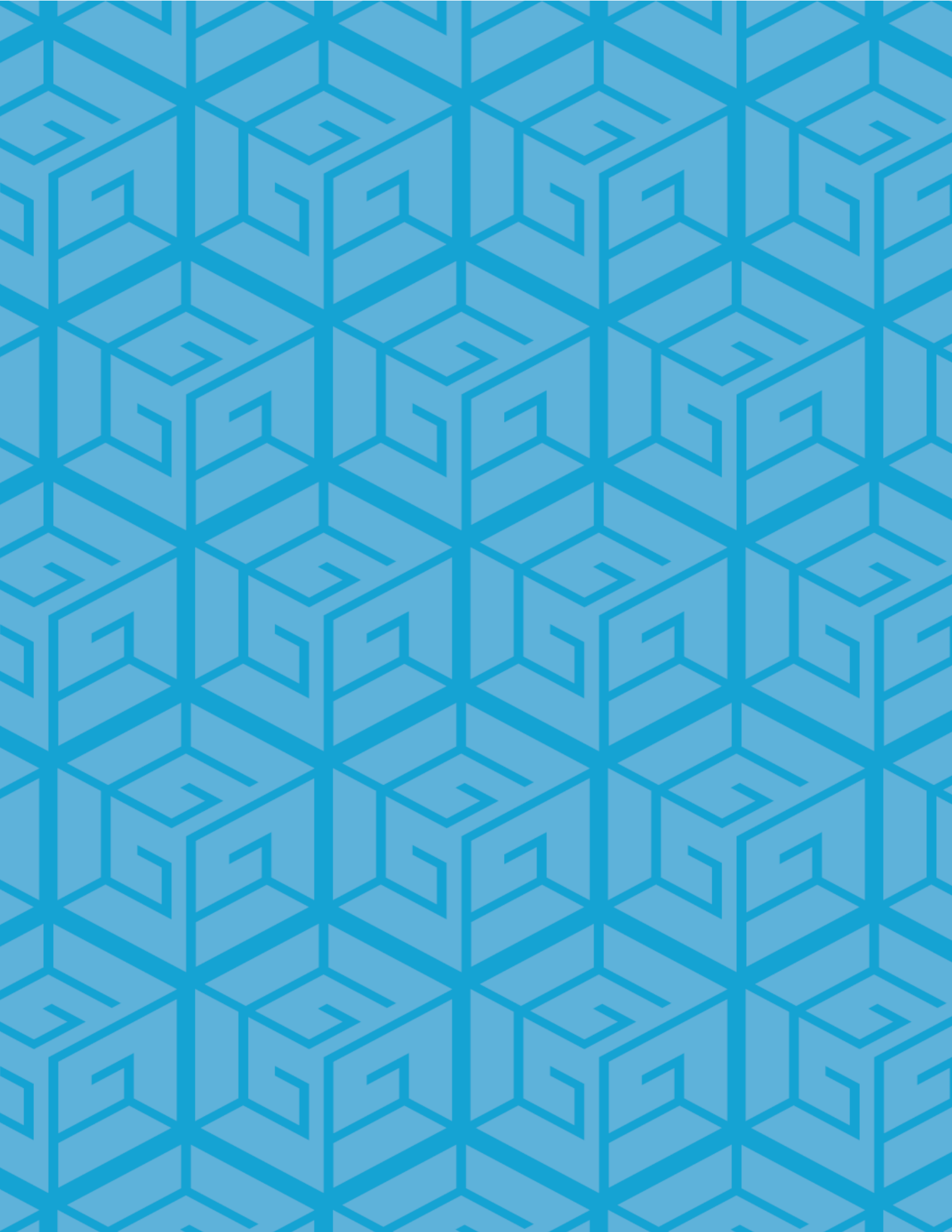
FIJI NATIONAL WORKSHOP

Capacity Building to Strengthen Sustainable Implementation of Renewable Energy Technologies for Rural Energy Access *Project Inception and Planning Workshop Report*

24 July 2019

Tiri Bar and Restaurants, Nasese FNU Campus, Fiji National University, Nasese, Suva, Fiji





Contents

| | | |
|-------|--|----|
| 1 | Introduction | 4 |
| 1.1 | Objectives of the Workshop..... | 4 |
| 1.2 | Participants..... | 4 |
| 2 | Workshop Opening..... | 4 |
| 3 | Project Overview | 5 |
| 3.1 | Project Overview and Details | 5 |
| 3.2 | Fiji Country Needs Assessment Summary | 5 |
| 3.3 | Group Discussions: Target Locations and Communities | 6 |
| 3.3.1 | Discussion Outcome..... | 7 |
| 3.4 | Group Discussions: Training Module..... | 9 |
| 3.4.1 | Discussion Outcome..... | 10 |
| 3.5 | Group Discussions: Identification of Potential Partners to assist Training Delivery at NationalCommunity Level | 10 |
| 4 | Conclusion | 11 |
| | Annex A: Participants List..... | 12 |
| | Annex B: Map of Recommended Project Sites in Fiji | 13 |

1 Introduction

The Global Green Growth Institute (GGGI) in partnership with the Pacific Island Development Forum (PIDF), and funding from the Korean International Corporation Agency (KOICA) focused on strengthening informed and inclusive decision-making by resource owners and local government officials for integration of green economy (GE) and renewable energy (RE) into local level planning and to strengthen implementation of renewable energy (RE) infrastructure for rural electrification. This has led to the development of a project titled **Capacity Building to Strengthen Sustainable Implementation of Renewable Energy Technologies for Rural Energy Access Project**.

As part of the first project steering committee resolution, this national stakeholder workshop was conducted by GGGI in partnership with the CCICD of the Ministry of Economy (MOE), after the official launching of this regional project in Suva, Fiji. It was organized particularly to engage and get support of the key national stakeholders before the national implementation of the project. There was a good representation of the various national stakeholders and institutions which includes the Ministry of Employment, Ministry of iTaukei Affairs, Ministry of Youth and Sports, Fiji Higher Education Commission, iTaukei Affairs Board, University of Fiji, University of the South Pacific, Fiji National University, Fiji Locally Managed Marine Areas Network.

1.1 Objectives of the Workshop

The national workshop had four main objectives:

1. To introduce the project to national stakeholders, and to seek support towards implementation of the project,
2. To review and confirm pre-selected sites in country for the project implementation,
3. To review and confirm the type of training modules relevant for the locally targeted groups, and
4. To identify potential individuals/organizations/agencies to assist in delivering the training workshops at the national and provincial levels

1.2 Participants

A total of 20 participants attended the national workshop, of which _ were men and _ women who attended the workshop. The list of attendees is presented in the table in Appendix A.

2 Workshop Opening

Opening Address by Nilesh Prakash, Head of CCICD

In his opening remarks, Nilesh emphasized the importance of Fiji meeting its global commitments as per the Sustainable Development Goals including its national commitments such as its National Determined Contributions (NDC) and the National Development Plan (NDP) targets of reaching 100% electricity access by 2021 and achieving 100% renewable energy shares in power generation by 2030. He also mentioned that sustainable access to electricity is a subject matter that the Fijian Government is committed to in which it intends to provide a robust rural electrification programme that has the relevant support systems to ensure its sustainability such as the Fiji Rural Electricity Fund (FREF). The fund intends to house 300 rural communities across Fiji with solar hybrid systems which would encourage appropriate capacity building programme such as this KOICA project to support it. Nilesh also mentioned that capacity building programmes as this is vital for existing rural electrification projects and programmes under the Fiji rural electrification scheme to ensure the process of identifying communities needs for capacity building as well as exchange of knowledge and best practices for smooth implementation of rural community-based electrification projects.



3 Project Overview

3.1 Project Overview and Details

The project overview was presented by Ulaiasi Butukoro, Fiji Program Officer and also the Fiji National Coordinator of the Project. The presentation provided a brief background of the project including the project objective and expected outcomes.

The project will be implemented in the Melanesian countries of Fiji, Papua New Guinea, Solomon Islands and Vanuatu, with the aim of training 3000 people, around 750 per country. The target groups include; community leaders, vulnerable groups (women's groups leaders, youth leaders), provincial government administrators, local technicians, and small businesses. There will be selected trainers with relevant expertise and experience to facilitate a training of trainers at the regional level before those trained trainers will then be designated to provide capacity building of target groups at the local level. For Fiji, the project will be coordinated by GGGI in partnership with the CCICD and including perhaps support from the Department of Energy. Oversight will be provided by the Regional Project Manager for this project. A project steering committee (PSC) has been set up with its first meeting held on the 11th of April in Suva and consists of government officials from the four participating countries and a representative each from project partners. The PSC is to provide recommendations and advice for project's planning and implementation and assist with M&E and provide high-level guidance and oversight of the project. The project will run from beginning of 2019 to mid of 2021.

There will be 2 training modules suggested for this capacity building projects, they are Green Economy (GE) and Renewable Energy (RE). The GE Modules includes General Principles, Energy Efficiency Basics, Green Business Basics, and Inclusive Development. On the other hand, the RE Module would include RE General Principles, Solar in the community, Pico hydro in the community, Solar O&M basics, Pico hydro O&M basics, RE Financial management. A Web-based Knowledge Platform on Green Education will be available to a broad audience around the Pacific and to other Small Island Developing States, which will virtually host training materials developed from this project for rural communities in the Pacific region.

3.2 Fiji Country Needs Assessment Summary

Fiji pre-implementation mission took place from the 11th to 22th of February 2019. The occasion was used for consulting key stakeholders and agencies that has actively participating in rural electrification programmes and projects in Fiji which includes national and sub-national government officials, academic institutions, energy experts and community-based NGOs and institutions. The project preliminary assessment has identified seven (7) islands in Fiji as potential sites for implementing this project. These included the islands of Beqa, Nacula, Kadavu, Gau, Vitilevu Highlands, Vanualevu, Taveuni and they been prioritized based on current and pipeline RE projects earmarked for implementation. These RE related projects include the Existing diesel solar hybrid off-grid systems under Fiji rural electrification schemes, solar home systems, Earmarked solar hybrid systems under the Fiji Rural Electrification Fund (FREF), Micro and mini hydro community-based projects. The pre-selected sites identified re as follows below;

1. Rukua, Beqa Island, Rewa – Solar Diesel Hybrid System (JICA funded)
2. Nacula, Nacula Island, Yasawas – Solar Home Systems & Earmarked Solar Hybrid System (FREF)
3. Daku/Dravuwalu, Kadavu Island– Solar Home Systems & Earmarked Solar Hybrid System (FREF)
4. Navukailagi/Qarani, Gau Island– Solar Home Systems & Earmarked Solar Hybrid System (FREF)
5. Vunisea, Kadavu Island – Micro grid Solar Hybrid System (UAE funded)
6. Namara, Kadavu Island – Solar Hybrid System (WOOJIN funded)
7. Bukuya, Ba, Viti Levu Highlands – Micro Hydro System (Fiji Government funded)
8. Buca and Tukavesi, Cakaudrove, Vanua Levu – Micro Hydro System and Solar Home Systems
9. Somosomo, Taveuni, Cakaudrove – Mini Hydro System

Some of the current constraints in sustainability of RE rural electrification projects in Fiji, and some of which are common to other Pacific Island countries are as follows below;

1. Lack of proper management (O&M and financial) of community-based systems projects.
2. Limited skills and knowledge of local communities to operate and maintain electrification systems in rural communities.
3. Urban migration of trained technicians entrusted to operate and maintain and/or manage community-based rural electrification projects.
4. Limited budget and resource in government agencies i.e. DOE to main stream capacity building on operation and maintenance of rural electrification projects on an annual basis.
5. Response time of RESCOs to the communities and vice versa to repair/replace parts is very weak and often too much of a delayed issue.
6. Unavailability of replacement/spare parts in the communities or at a district is an issue
7. Insufficient information on where to access spare parts and linking communities to suppliers
8. High cost and lack of spare parts available
9. High cost of transportation and logistics of parts, etc.
10. Distance from main market centres.

Some of the training gaps identified for the target groups in these pre-selected sites are;

1. Local Government Officials – limited training on RE and GE including basic knowledge on RE, EE, GE including limited knowledge on O&M and financial management for RE related projects.
2. Traditional Leaders – Community awareness on RE and EE, Adhoc community awareness training delivered and very little knowledge of O&M and financial management for RE related projects.
3. Small Businesses - No Training Undertaken Yet specific to GE, RE, EE and Ad-hoc community awareness training undertaken. They have Little to Basic knowledge+ on GE, RE, and EE and Limited knowledge of suppliers and access to markets.
4. Local Technicians – are provided initial capacity building training by government and Ad-hoc community awareness training. Hence technicians have limited knowledge on new technologies and limited knowledge of suppliers.

Below is a suggested CRITERIA for determining the pre-selected sites:

1. Locations where a renewable energy (solar, hydro) project or initiative have happened recently developed or are planned for in 2019;
2. Rural electrification projects (infrastructure/equipment) that are either already underway or due to start in 2019 / or grid extension plans;
3. Number of communities in area (at least 2 communities);
4. Ease of access/safety/security for facilitators;
5. Physical location/proximity to other targeted communities - limited to one province/one district/ one island within the province (depending on size of country);
6. Whether there is a health centre/school/church or other public building
7. Indication of local income-generating activities (agriculture/fisheries cooperative, tourism activities, etc.)
8. Numbers; assuming ~150 people in a community/district assume ~10-20 leaders;

3.3 Group Discussions: Target Locations and Communities

Before the discussions, workshop facilitator presented the list of sites which were pre-selected from the country mission and the regional workshop conducted earlier this year. The sites presented are in the table 2 below;

Table 2: List of Fiji Pre-selected Sites for Project Implementation

| Name of Community | No. of Households | Population | Island | Province | RE Related Projects |
|--------------------------|--------------------------|-------------------|---------------------|-----------------|--|
| Rukua village | 47 | 179 | Beqa | Rewa | Solar Hybrid System – JICA/Fiji Government |
| Nacula village | 140 | 476 | Nacula | Ba | Solar Home System, Earmarked FREF |
| Daku and Dravuwalu | 69 | 268 | Kadavu | Kadavu | Diesel Generator, Solar Home System, Earmarked FREF |
| Navukailagi and Qarani | 57 | 227 | Gau | Lomaiviti | Diesel Generator, Solar Home Systems, Earmarked FREF |
| Vunisea | 103 | 460 | Kadavu | Kadavu | Solar Hybrid System – Micro grid (UAE/Fiji Government) |
| Namara | 44 | 172 | Kadavu | Kadavu | Solar Hybrid System – Woojin/Fiji Government |
| Bukuya | 143 | 706 | Viti Levu Highlands | Ba | Micro Hydro System – China Government/Fiji Government |
| Buca and Tukavesi | 115 | 564 | Vanua Levu | Cakaudrove | Micro Hydro System, Solar Home Systems – Israel Government/Fiji Government |
| Somosomo | 949 | 4281 | Taveuni | Cakaudrove | Mini Hydro System, Solar Home Systems – China Government/Fiji Government |

The above sites were selected based on the above criteria from the needs assessment summary on energy projects that are currently implemented and those in the pipeline such as the FREF.

3.3.1 Discussion Outcome

The participants reviewed the above list of sites and slight changes were made accordingly as reflected in Table 3 below;

Table 3: Pre-selected Sites with Recommended Changes

| Name of Community | Island | Province | Recommended changes |
|--------------------------|---------------|-----------------|--|
| Rukua | Beqa | Rewa | Unchanged and will need to cover nearby village and hoteliers |
| Nacula | Nacula | Ba | Unchanged and will need to extend to nearby villages, primary school, secondary school, health centre, government station. |
| Daku and Dravuwalu | Kadavu | Kadavu | Unchanged |
| Navukailagi and Qarani | Gau | Lomaiviti | Unchanged and will need to extend to nearby villages, primary school, secondary school, health centre, government station. |

| | | | |
|-------------------|---------------------|------------|---|
| Vunisea | Kadavu | Kadavu | Unchanged. Covers 2 nearby villages and the whole Vunisea semi-township and government station |
| Namara | Kadavu | Kadavu | Unchanged and will need to extend to nearby settlements, primary school. |
| Bukuya | Viti Levu Highlands | Ba | Unchanged. Covers 3 nearby villages, primary school, nursing station, post office. |
| Buca and Tukavesi | Vanua Levu | Cakaudrove | Unchanged. Covers 2 nearby villages, primary school, health centre, government station. |
| Somosomo | Taveuni | Cakaudrove | Unrecommended. The entire somosomo area is covered by the Somosomo Hydro EFL Grid network. |
| Tutu | Taveuni | Cakaudrove | Recommended. Covers a micro hydro system for a small community, as well as Solar Home Systems for nearby villages and settlements. |

Given the above changes, the recommended list of project sites for Vanuatu are as follows;

Table 4: Recommended Project Sites for Fiji

| Name of Community | Population | Island | Province | Confirmations |
|------------------------|------------|---------------------|------------|------------------------------|
| Rukua | 179 | Beqa | Rewa | |
| Nacula | 476 | Nacula | Ba | |
| Daku and Dravuwalu | 268 | Kadavu | Kadavu | |
| Navukailagi and Qarani | 227 | Gau | Lomaiviti | |
| Vunisea | 460 | Kadavu | Kadavu | |
| Namara | 172 | Kadavu | Kadavu | |
| Bukuya | 706 | Viti Levu Highlands | Ba | |
| Buca and Tukavesi | 564 | Vanua Levu | Cakaudrove | |
| Tutu | 240 | Taveuni | Cakaudrove | Replace Somosomo site |
| Total | 2,782 | | | |

Consequently, a total of 9 project sites have been endorsed by the workshop, 4 of these sites covers government stations however all sites will have a form of public services and/or facilities. The Ministry of iTaukei Affairs (MIA) (through its Provincial Offices under the iTaukei Affairs Board) will need to be formally advised and is to be involved in the coordination of logistical aspects to mobilize training for the sites. The Ministry of Rural and Maritime Development (MRMD) through their District Offices located near these sites need to be informed as well as they administer government stations located in these locations. Hence, communication with both the above MIA and MRMD will need to be done for the sites. Given the proportion of population numbers to be covered above is 2,782, which is a lot more than the national limit of 750 participants, there may be a selection criterion required to narrow down the coverage of participants.



The recommended project sites are shown in the Fiji Maps in Annex B of this report.

3.4 Group Discussions: Training Module

The workshop facilitator presented the list of training modules that would be delivered during the capacity building training workshops. These included;

1. Green Economy (GE) Module
 - a. General Principles
 - b. Energy Efficiency Basics
 - c. Green Business Principles, and
 - d. Inclusive Development
2. Renewable Energy (RE) Module
 - a. RE general Principles
 - b. Solar in Communities
 - c. Pico Hydro in the Community
 - d. Solar O&M basics
 - e. Pico-Hydro O&M basics
 - f. Re Financial Management

The participants were generally in support of the training modules applicable for Fiji, especially given the number of RE related projects which are currently and about to be implemented. However, the module on pico-hydro, may not be applicable to Fiji for this particular exercise as micro and mini hydro is the most common community-based hydro technologies in Fiji.

In terms of the contents of the modules; green business principles need to cover applicable green business in a Fijian community-based setting, taking in account common business ventures in Fijian rural communities including examples of successful businesses in rural communities in Fiji. There are training materials available with the Ministry of Industry and Trade through the Department of Cooperative and they would need to be contacted if necessary. The MITT would also have training materials on financial management as well.



Consideration of standardizing the content of all the training materials for all the countries will need to be considered for ease of comparisons and evaluations between them.

There was also a comment on consideration of incorporate climate change and resilience into the modules in terms of the applicability of the modules with respect to the social and environmental context of these rural communities.

3.4.1 Discussion Outcome

- a. Based on the discussion outcome, participants feel that the proposed modules for this capacity building workshop are relevant and adequate for local communities, however, some of the module content may not be relevant for all communities, but depending on the source of RE.
- b. There was general agreement to have a summary of each module translated into iTaukei language, and with more use of pictorial illustrations and examples.
- c. The Fiji Higher Education Commission in partnership with SPC had developed guidelines on specific programmes relating to renewable energy and climate resilience. These guidelines would have key messages, expected outcomes, which would be useful to make reference for this work in terms of developing the training materials and content for the modules.
- d. However, for the benefit of executing this exercise, one should be mindful of creating accreditation pathway that doesn't become a drawback in terms of turnover of recipients. This is a reason why the Barefoot Model particularly focuses on empowering women as they have more chances of remaining within the community rather than a male.



3.5 Group Discussions: Identification of Potential Partners to assist in training delivery at National and Community Level

- a. Below under (b.) and (c.), all those institutions provide capacity building programmes for those respective modules;
- b. In terms of GE modules; the following institutions will need to be consulted in developing the training materials as they have developed similar contents as well on this subject:
 - Fiji National University, Narere Campus – Akisi Mavoia – akisi.mavoia@fnu.ac.fj
 - Department of Cooperative, Ministry of Industry and Trade
 - Pac Tafe, University of the South Pacific; ;
 - Centre for Appropriate Technology, Ministry of iTaukei Affairs – director@catdnadave.ac.fj
 - Fiji Locally Managed Marine Areas Network.
- c. For the RE systems, the following institutions will need to be consulted in developing the training materials as they have developed similar contents as well on this subject:
 - Department of Energy;
 - Barefoot initiative with the Ministry of Women;
 - Fiji National University – Narere Campus;
 - Engineering Division, University of the South Pacific;
 - Centre for Appropriate Technology, Ministry of iTaukei Affairs;
 - Lautoka College, Government Vocational Centre;
 - Pac TVET, University of the South Pacific (USP) and Secretariat of the Pacific Community (SPC)
- d. Out of the above institutions, the Centre for Appropriate Technology (CATD) under the Ministry of iTaukei Affairs and Fiji National University – Narere Campus has existing curriculum that have comparable training modules to the training modules for this project.

- e. Ministry of Youth and Sports mentioned that they have training centres available in rural areas which could be used to facilitate the local level trainings.
- f. Consultations need to be also undertaken with the following institutions who could provide additional support regarding the project in Fiji;
 - Fiji Higher Education Commission
 - Ministry of iTaukei Affairs
 - iTaukei Affairs Board
 - Ministry of Rural and Maritime Development
 - Fiji National University – Narere Campus
 - Centre for Appropriate Technology
 - Barefoot College
 - Government Vocational Centre

4 Conclusion

A total of 20 participants have attended the workshop, 11 of whom were men and 9 women having a fair distribution of government officials, academic and training institutions including community-based NGOs. The workshop has managed to meet its objectives in terms of the following;

- The preselected sites have been verified and necessary changes made accordingly resulting in only 1 change to the sites which is from Somosomo to Tutu (both located in Taveuni);
- Use of existing training materials with institutions could be a useful way of improving the contents of all the modules covered;
- All training materials at the local level needs to be interpreted into the iTaukei language including pictorial instructions and those providing training, needs to be fluent iTaukei speaking trainers for ease of understanding.
- The training modules were identified against specific institutions who would have already delivered those modules or their contents. Only CATD and FNU were the 2 identified institutions that have existing training modules that covers GE and RE at the moment.

Annex A: Participants List



Capacity Building to strengthen Sustainable Implementation of Renewable Energy Technologies for Rural Energy Access

Fiji National Workshop

Tiri Bar and Restaurants, FNU Nasese Campus, Fiji National University, Nasese, Suva, Fiji

Wednesday, 24 July 2019

List of Participants

| Name | Position | Organization | Gender |
|---------------------------|---------------------------------|---|--------|
| 1. Raikala Tiko | Technical Trainer | Centre for Appropriate Technology | Male |
| 2. Saimoni Nabati | Senior Employment Officer | Ministry of Employment | Male |
| 3. Ashneel Chandra | Senior Technical Officer | Department of Energy | Male |
| 4. Shelvin Prasad | Technical Officer | Department of Energy | Male |
| 5. Deepitika Chand | Climate Change Officer | Climate Change and International Cooperation Division | Female |
| 6. Aradhana Singh | Climate Change Officer | Climate Change and International Cooperation Division | Female |
| 7. Iliesa Marawa | Youth and Sports Officer | Ministry of Youth and Sports | Male |
| 8. Epli Lesuma | | Fiji Higher Education Commission | Male |
| 9. Waisale Ramoce | Senior Planning Officer | Ministry of iTaukei Affairs | Male |
| 10. Ana Tagivetaua | Senior Administration Officer | iTaukei Affairs Board | Female |
| 11. Afsrin Ali | Programme Coordinator | Pacific Islands Development Forum | Female |
| 12. Achala Abeyasinghe | PNG Country Representative | Global Green Growth Institute | Female |
| 13. Katerina Syngellakis | Pacific Regional Representative | Global Green Growth Institute | Female |
| 14. Jini Kim | Country Director | Korean International Cooperation Agency | Female |
| 15. Ji In Lee | Intern | Korean International Cooperation Agency | Female |
| 16. Ulaiasi Butukoro | Fiji Program Officer | Global Green Growth Institute | Male |
| 17. Ashneel Chand | Lecturer | University of the South Pacific – Tafe | Male |
| 18. Akisi Mavoava | QA Manager | Fiji National University – Narere Campus | Female |
| 19. Ana Vesikula | General Secretary | Soqosoqo vakamarama | Female |
| 20. Apimeleki Nasokitabua | Technical Officer | Fiji Locally Managed Marine Areas Network | Male |

Annex B: Map of Recommended Project Sites in Fiji



Below are the pre-selected sites for Fiji by numbers as per the above Map;

1. Rukua village, Beqa island, Rewa
2. Nacula village, Yasawas
3. Daku village and Dravuvalu village, Kadavu Island
4. Navukailagi village and Qarani village, Gau Island
5. Vunisea, Kadavu Island
6. Namara, Kadavu Island
7. Bukuya, Ba, Viti Levu
8. Buca village and Tukavesi village, Cakaudrove, Vanau Levu
9. Tutu, Taveuni Island, Cakaudrove