



Module 2 - Trainers Guide

Green Business Basics

ENGLISH - VANUATU

Funded by:



In partnership with:







ACKNOWLEDGEMENTS

This “**Green Business Basics**” training module was developed by Ramesh Kumar under contract to GGGI, with inputs by the local people, for the local people.

The module was refined by the regional project team, consisting of: Ulaiasi Butukoro (Programme Coordinator, GGGI Fiji), Afsrin Ali (Programme Coordinator, PIDF Fiji), Marilyn Tagicakibau (Director Programmes, PIDF Fiji), Paul Kaun (Senior Officer, GGGI Vanuatu), Jesse Benjamin (Senior Officer, GGGI Vanuatu), Benjamin Keni (Associate, Country Program, GGGI PNG), Hampton Pitu (Project Coordinator, PIDF Solomon Islands) and Alitia Sovunidakua (Intern, GGGI Fiji). Technical guidance and leadership were provided by Mohammed Tazil (Senior Officer- Regional, GGGI), Katerina Syngellakis (Pacific Programme Advisor) and Daniel Muñoz-Smith (Country Representative, Fiji, Kiribati, Tonga and Vanuatu).

Valuable feedback and inputs on this module have also been provided by the following groups of people during the piloting, finalization and customization phases:

Belinda Strid and Thompson Alick (Power and Communication Solutions, Vanuatu), Erica Loli (Intern, Department of Strategic Policy, Planning and Aid Coordination, Vanuatu), Hannah Tamata, Stephen Mataitini (Pacific Vocational Training Center), Wade Evans (Vanuatu Institute of Technology) and Christopher Bartlett for providing review and feedback during the “Pilot training of trainer and feedback workshop” in 2020.

The people of Tisman community in South East Malekula and pilot trainer, John Boar for providing community and trainer feedback during the “Pilot training of remote communities” event in 2020.

Ian Iercet, Doreen Leona and Gary Erick (Department of Energy, Vanuatu), Hellen Wilson (National Green Energy Fund, Vanuatu), Devo Wari (Department of Local Authorities, Vanuatu) and consultant trainer, John Boar for providing validations of the feedback during the “Regional Validations Workshop” in 2020.

Sharyne Fong for externally reviewing and providing feedback for this training module.

Also acknowledging support from the Ministry of Climate Change Adaptation, Meteorology & Geo-hazards, Environment, Energy and Disaster management (Vanuatu), Korea International Cooperation Agency (KOICA) as well as all other stakeholders who have provided their inputs in any way.

Other information in this module is drawn from materials that are publicly available online, and any misrepresentation is truly regretted. Inclusion in this module does not constitute endorsement by GGGI or the authors. Information provided in the module has been adapted by the authors and any mistakes are the authors' own. Readers should always check for latest information with the relevant authorities as standards and requirements keep getting updated.

Cover photo: Women selling vegetables in local market. Source: Benjamin Keni, GGGI PNG.

Disclaimer: The Global Green Growth Institute does not make any warranty, either express or implied, or assume any legal liability or responsibility for the accuracy, completeness, or any third party's use, or the results of such use, of any information, apparatus, product, or process disclosed in the information contained herein or represents that its use would not infringe privately owned rights.

CONTENTS

Acknowledgements.....	2
List of Figure.....	4
List of tables	5
Abbreviations	5
Glossary.....	6
How to use this guide?	7
How to Conduct Activities.....	7
Teaching Tools.....	7
Lesson Plan and Times.....	8
1. ICE BREAKER INTRODUCTION.....	9
Activity 1	10
2. GREEN BASICS.....	11
2.1 What is Green Business.....	12
2.2 Elements of Green Business	13
2.3 Green Wash	14
Activity 2	15
3. ESTABLISHING GREEN BUSINESS MODEL: LINKED TO SDG GOAL	17
3.1 Establishing and Running a Green Business Model.....	18
3.2 Business Model for the Community	19
Activity 3	20
4. GREEN BUSINESS INITIATIVES	21
4.1 Present Practices in the Community.....	22
4.2 Green Business Initiatives – Fuel and Electricity.....	22
4.3 Green Business Initiatives – Water	26
4.4 Green Business Initiatives - Waste Recycling.....	28
4.5 Green Business Initiatives - Agriculture	31
4.6 Sustainable Fishing / Sea Food.....	32
4.7 Green Business Initiatives - Others	33
Activity 4A for all target groups	38
Activity 4B.....	39
Activity 4C.....	39
Activity 4D	40
5. WAY FORWARD.....	41
5.1 CSR Activities	42
5.2 Greener Options – Business Models.....	42
5.3 Green Jobs	43
Activity 5	44
Role Play 1	46
Role Play 2	47
6. ANNEX	48
Annex A: Stakeholder Tips	49
Local Government Officials. Island Councils etc.	49
Community / Religious Leaders	49
Small Businesses.....	49

LIST OF FIGURES

FIGURE 1: Green Economy Principles.....	12	FIGURE 24: Paper from Banana Waste – Vanuatu	29
FIGURE 2: Elements of Green Business	13	FIGURE 25: Metal Processing	29
FIGURE 3: Greenwash Concept.....	14	FIGURE 26: Plastics.....	30
FIGURE 4: Example of Green Wash	15	FIGURE 27: Plastics and Alternatives.....	30
FIGURE 5: Green Business Model	18	FIGURE 28: Recycling Plastic Waste	31
FIGURE 6: Co-Operative Model.....	20	FIGURE 29: Agriproducts- Using Organic Fertilizer	32
FIGURE 7: Principles of Cooperative.....	20	FIGURE 30: Local Fisherman Cooperative.....	33
FIGURE 8: Normal Grid	22	FIGURE 31: Battery Recycle.....	33
FIGURE 9: Microgrid.....	23	FIGURE 32: Packaging - Locally Available	33
FIGURE 10: Biomass Pellets	23	FIGURE 33: Packaging Locally Available Products	33
FIGURE 11: Biogas Plant- Fiji	24	FIGURE 34: Mobile Chargers.....	34
FIGURE 12: Biogas plant Flow Diagram	24	FIGURE 35: Solar Corn Roasting	34
FIGURE 13: Fuel Efficient Stove.....	25	FIGURE 36: Solar Fish Drying	35
FIGURE 14: Solar Cookers.....	25	FIGURE 37: Solar Agriculture Dryer	35
FIGURE 15: Water Use- Present	26	FIGURE 38: Solar Cold Store	35
FIGURE 16: Parched Agricultural Lands	26	FIGURE 39: Rise Beyond the Reef Products and Staff ..	36
FIGURE 17: Rainwater Harvesting	27	FIGURE 40: Women weaving mats.....	36
FIGURE 18: Gravity Fed Water System	27	FIGURE 41: Handicrafts	36
FIGURE 19 : Water Filtration Systems	27	FIGURE 42: Bamboo House and furniture	37
FIGURE 20: Water Filter- Small Scale	27	FIGURE 43: Mangrove Forest Initiative	37
FIGURE 21: Waste Generation	28	FIGURE 44: Corporate Social Responsibilities	42
FIGURE 22: Manufacturing of recycled papers, Fiji	28	FIGURE 45: Financial Models	42
FIGURE 23: Recycled into toilet paper	28		

LIST OF TABLES

TABLE 1: Participants Progress Record – optional for trainers to use 8

TABLE 2: Lesson Plan and recommended timing of each session 8

TABLE 3: Greener Practices – Agriculture 31

TABLE 4: Recommended Practices – Sustainable Fishing / Seafood 32

ABBREVIATIONS

°C	Degrees Celsius
CFL	Compact Fluorescent Lamp
CO ₂	Carbon dioxide
CSR	Corporate Social Responsibility
GB	Green Business
GE	Green Economy
GGGI	Global Green Growth Institute
HP	Horsepower
KOICA	Korea International Corporation Agency
KM	Kilometer
LED	Light Emitting Diode
LPG	Liquified Petroleum Gas
LPH	Liters per Hour
LW	Learner's Workbook
Mts	Minutes
MW	Mega Watts
NGO	Non-Governmental Organization
PAYG	Pay as you Grow
PIDF	Pacific Islands Development Forum
PNG	Papua New Guinea
RE	Renewable Sources of Energy
RO	Reverse Osmosis
USA	United States of America
TG	Trainer's Guide
TOT	Training of Trainer
TV	Television
V	Volts
W	Watts
WASH	Water Sanitation and Hygiene

GLOSSARY

Bookkeeping - Bookkeeping is the recording of financial transactions and is part of the process of accounting in business. Transactions include purchases, sales, receipts, and payments by an individual.

Corporate Social Responsibility - Corporate social responsibility is a type of international private business self-regulation that aims to contribute to societal goals of a philanthropic, activist, or charitable nature by engaging in or supporting volunteering or ethically oriented practices.

Green Business - A sustainable business, or a green business, is an enterprise that has minimal negative impact or potentially a positive effect on the global or local environment, community, society, or economy.

Green Jobs - Green jobs are decent jobs that contribute to preserve or restore the environment, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency.

Green Wash - Greenwashing, also called “green sheen”, is a form of marketing spin in which green PR and green marketing are deceptively used to persuade the public that an organization's products, aims and policies are environmentally friendly.

Microfinancing - Microfinance, also called microcredit, is a type of banking service provided to unemployed or low-income individuals or groups who otherwise would have no

other access to financial services. The goal of microfinance is to ultimately give impoverished people an opportunity to become self-sufficient.

Microgrid - A microgrid is a local energy grid with control capability, which means it can disconnect from the traditional grid and operate autonomously.

Normal Grid - An electrical grid, electric grid or power grid, is an interconnected network for delivering electricity from producers to consumers.

PAYG - Pay as you go. The investor invests in biogas. The biogas is valued in energy terms, and you pay the monthly installments as you go. Once you have paid for the loan and interest through the PAYG model, the biogas plant becomes your own.

The “**Green Business Basics**” training module is a continuation to the modules on Green Economy – General Principles and Energy Efficiency.

Upon completion of the course, the learners will achieve the following learning outcomes:

- Understand what green business is.
- Identify elements of Green Business and differences between Green Business and Greenwashing Business.
- Identify the steps to establish and run a Green Business in compliance with Green Business Model.
- Understand inputs and outputs of business and ways of changing to Greener Alternatives.

HOW TO USE THIS GUIDE?

The trainer guide is provided with the class notes and includes activities which need to be done after each section of the course. The guide acts as a recommendation only. After seeing the situation on the ground in each community, the experienced trainers may use their judgment to modify their delivery and assessment techniques to achieve better results.

The Trainer Guide provides detailed notes written in the form that can be directly delivered to the learners. However, the very detailed notes are intended to broaden the knowledge of the learner as well. You are not required to read each paragraph from the Trainer Guide, but you are expected to know the materials sufficiently to train others. Firstly, you must know what key concepts the learners need to learn. These are normally called learning outcomes. The learning outcomes are all listed at the start of the Trainer Guide, and you must ensure that at minimum, every learner achieves those 4 learning outcomes. You are required to take at least a week to go over the TG and go through the activities in the Learner Workbook. During the actual training you can refer to the Trainer Guide and explain it to the learners in your own words. If you are unsure of something always refer to the TG notes. Also note to take heed of the time recommended for each session and activity.

In case where learner literacy levels are low, trainers are advised to adapt to the situations and modify activities as appropriate. It is advisable to keep a continuous record of competencies of learners. All competencies are achieved when learners fulfil all learning outcomes.

HOW TO CONDUCT ACTIVITIES

- Activities are best done in groups or pairs. It is recommended that in each group there is at least one who is more literate or a more active learner who can help to translate and explain the training contents to learners who are slower to understand.
- You may divide the learners into groups of at least 2 and preferably 3-4 learners and ask them to carry out a rigorous discussion within the group. Some activities can be given to the groups for overnight preparation. The trainer needs to be aware of the dynamics of relationships in the community when dividing learners into groups. Sometimes women and youth are not free to share their

views when the men from the communities are present. The trainer should ideally ask learners for their guidance when organising them into groups for discussions.

- Ideally the learners may present the results of their activities to the class and have a class discussion based on their findings.
- It is not necessary that all groups present in the same activity.
- However, it is important that all groups are given opportunity to present or verbally discuss their answers.
- At all times, encourage learners to be interactive and participative in class.
- Learners must be encouraged to be vocal and to contribute actively in class discussions.
- To better improve learning, the learners must be encouraged to strongly inquire about the topics through questions.
- The activities allow trainers to observe if the learners have achieved the learning outcomes. If possible, do keep record of the learner's achievement of learning outcomes so that you can help them learn better. A sample record table is given in this guide.
 - Adapt existing activities and/or alternative suitable activities in case the desired literacy levels of learners are not met or the desired resources are not available.

TEACHING TOOLS

The following tools/items may be required to enhance learner learning:

- Laptop/ computer and projector to play videos or present notes to the whole class. This will depend on availability. In case this is not available, you are recommended to take large prints of the key concepts and display to the learners while teaching.
- Provide each learner with pen or pencil, and paper to allow them to participate.
- Whiteboard and markers or black board and chalk can be made available to allow both facilitator and learner to state a point.
- The Learner Progress Record sample given below can be used to observe learners, note their feedback, and assess if they have achieved the specific learning outcome. This recording is useful for both the learner and trainer so you can focus on those who are falling behind. Note there are no marks to be awarded and the record is only to improve learning. This is entirely optional.

TABLE 1: Participants Progress Record – optional for trainers to use

Learner's Progress Record (Optional)		Date:
Learners Name:		
Learning Outcome	Achieved Outcome (Yes or No) and Comments	
1. Understand what is green business.		
2. Identify elements of Green Business and differences between Green Business and Greenwashing Business.		
3. Identify the steps to establish and run a Green Business in compliance with Green Business Model.		
4. Understand inputs and outputs of business and ways of changing to Greener Alternatives.		

LESSON PLAN AND TIMES

TABLE 2: Lesson Plan and recommended timing of each session

Chapter	Lesson Type	Recommended Time (mts)
Inaugural Session		30
1. Ice Breaker - Introductions	Theory and activity 1	15
2. Green Business Basics	Theory	40
	Activity 2	15
3. Establishing Green Business Model: Linked to SDG Goal	Theory	40
	Activity 3	10
4. Green Business Initiatives	Theory optional	90
	Activity 4A	20
	Activity 4B	15
	Activity 4C	15
	Activity 4D	15
5. Way Forward	Theory	20
	Activity 5	15
Role play 1		15
Role play 2		15

A large, white, stylized number '1' is positioned on the left side of the page. The background is a teal gradient that transitions from a lighter blue on the left to a darker teal on the right. The number '1' is composed of two main parts: a vertical stem and a diagonal top bar that slopes downwards from left to right.

Ice Breaker Introduction

Trainers must understand that the learners who are attending the module have taken time from their usual daily activities which sustains their livelihood. Most will also be very nervous and unclear regarding what the module is all about. Hence the trainer must ensure that the learners are comfortable and not too nervous. It is important to make them feel at ease so that they can focus on the module and absorb as much knowledge as possible.

Tell them that this is an informative module and there will be no tests or marks in this. You must inform them that this module is being run so that they can take the information to help themselves to transition to renewable energy. Even if they do not use it, they can always use the knowledge to help others. In any way this module will better equip them to help grow their communities. Tell them to be at ease and focus on enjoying the day and asking as many questions as they want. Also tell them to not worry too much about complicated things as you will guide them through this.

ACTIVITY 1

Introduce yourself briefly to the learners. Ask if they are all comfortable at the venue. One by one ask them their names and tell them to give some details about themselves – such as what they would normally be doing at that time and what they hope to gain from the module at the end of the day. In addition, if time permits – ask them what they think about Green Business. There is no correct answer, and the goal of this activity is simply to get them relaxed and engaged into

the session. You may crack few light jokes as laughter always lightens the mood and helps learners relax. Ask the learners about their prior experiences in green business and how much they know about the topic. Also ask them what they wish to gain from this training session and record their answers on paper so that it helps the trainer in setting a direction to the course. This input will help the trainer direct the training to the learners needs.

2

Green Business Basics

The Green Economy General Principles module gives the basics of green economy principles. This module on Green Business Basics is one of the road maps to 'Go Green'. The practice of Green Business ideas outlined in the module will lead to improved environment and reduced carbon footprint.

Fiji, Vanuatu, Solomon Islands and PNG are rich in forests, greenery, and seashores. These countries are spread over a number of small islands. Therefore, the access to grid power is extremely limited, which makes solar power a very viable alternative. There is a need to preserve the greenness of all these islands. Therefore, following the 'Green Business Model' aims to recommend measures to preserve the "greenness" and create sustainable communities. Following Green Business

models is also expected to reduce the impact of climate change and vagaries of the weather.

2.1 What is Green Business

Green business refers to sustainable **businesses** that has no negative impact on the global or local environment, the community, society, or economy. A **green business** meets the triple bottom line, i.e., people, profit and planet¹. They are backed with progressive environmental and human rights policies.

FIGURE 1: Green Economy Principles²



Well Being: A green economy will create genuine, sustained, shared well-being, going beyond monetary wealth to prioritize human development, health, happiness, education, and community.



Justice: A green economy emphasizes equity, equality, community cohesion, social justice and supporting human rights. This is especially for the rights of marginalized minorities. This seeks a just transition and serves the interests of all citizens, including those yet to be born.



Planetary Boundaries: This recognizes that all human flourishing depends upon a healthy natural world. It defends nature's function and limits and protects biodiversity (forests, plants, animals), soil, water, air and other ecosystem capitals.



Efficiency and Sufficiency: A green economy is low carbon diverse and circular. This recognizes that our biggest economic challenge is the need to create prosperity within planetary boundaries and align economic incentives with true costs to the society.



Good Governance: A green economy builds institutions that combine dynamic democratic accountability, relevant matrix, sound science and local knowledge. Civil life prioritizes public participation, social dialogue, transparency, and accountability.

¹ "Sustainable business", Wikipedia, https://en.wikipedia.org/wiki/Sustainable_business

² Adapted from: Global Green Growth Institute, <http://gggi.org/site/assets/uploads/2019/06/5-principles-of-GE-One-Pager-250619.pdf>

The green economy objectives are given in Figure 1 above. These are described to the extent required to the community.

- **Wellbeing** - means going beyond making money. This improves the quality of life through access to energy, water, reduced pollution, and education.
- **Justice** - means equality in human rights even for marginalized communities.
- **Planetary Boundaries** - aims to preserve natural resources, hoping for a healthy world. It also aims to protect biodiversity, soil, water, and other ecosystems.
- **Efficiency and Sufficiency** - focuses on green and circular economy, which was covered under module 1 on Green Economy – General Principles.
- **Good Governance** - seeks community participation in activities, accountability, transparency, and creation of green jobs.

For the community it means more environment friendly livelihood that improves their quality of life. This is achieved by energy efficient cooking, proper waste disposal, clean drinking water and ensuring the participation of women and marginalized groups in the projects and so forth.

The community needs to find money for practicing green business, be it buying a solar lamp, buying a water tank to store drinking water or improved firewood cooking stove. The additional money spent will go a long way in improving the health of households and the community.

These Manual outlines the initiatives to be taken for cleaner energy, water, waste management and other measures beneficial to the community.

2.2 Elements of Green Business

The elements of green business are people, profit, and planet. This was detailed in module on Green Economy- General Business. Any business is run by the people with profit as the motive. It is to preserve the planet, and this should be for the future generation as well. Green businesses integrate sustainable thinking into every aspect of their operations from management to software. Truly committed green businesses are tasked with monitoring and managing a wide range of elements including solid and hazardous waste, water and energy conservation, pollution prevention, and recycling.

FIGURE 2: Elements of Green Business³



Figure 2 gives the elements of green business. These are:

- Follow quality business practices. Invest and procure good quality material that have are sourced and produced sustainably (e.g., Quality seeds for agriculture, organically grown vegetables etc.).
- Clean and Environment Friendly workplace (housekeeping, shops, roadside vending etc.).
- The green products are costly. A normal (incandescent) bulb will cost about 20 US cents whereas LED is about 1 USD. The green products are healthier. For example, use of Light emitting diode (LED) type lights give you better quality of light and improves your productivity, generates less heat and consumes less power. The module on energy efficiency has more details. This is compared to using kerosene lanterns and normal bulbs, which are not bright enough and produces harmful fumes and consumes more energy and cost to run.
- Using Clean water improves your health by reducing water borne diseases.
- The practice of manufacturing, sourcing of green products should catch up for sustainable profits.

³ Adapted from "The Sustainable Business", Gordon Business, https://theecologist.org/sites/default/files/styles/inline_1/public/NG_media/113615.jpg?tok=DPeCGp6O

The other elements of green business, namely payment of fair wages and equitable distribution of benefits across the value chain are not relevant to the community and hence not detailed.

The following is the way forward to greening the community:

- Obtaining and using green products such as (LED Lights, water filters).
- Eliminate use of plastic bags. Use environment friendly products such as per paper bags and cutlery made from recycled paper, banana leaves and coconut leaves for packaging.
- Whenever you buy /sell (business with others) you should ensure green practices are followed. (e.g.- Fisheries, vegetables, grocery). The various measures are detailed later in the manual.
- Ensure green products you procure are transported packed and stored in eco-friendly manner (e.g., Storing in reusable containers, no use of plastic bags).
- Conserve Human energy and refrain from use of child labour. Children below 14 years of age should be in school to study. If they are made to work (domestic help, industry, shops), this is child labour. The children are paid less than the adult workers. The green business does not permit people to use child labour. Many countries have laws which do not allow children to work.
- Recycle and reuse. Recycling is when, instead of using a material once and then disposing, materials such as plastic, glass or metal are recycled to be used again. Reusing, is similar to using water from home instead of spending money to buy a new bottle of water every day, including reusing the water bottle every day.

The sustainability initiatives relevant to the community are:

- Proper waste management and disposal. Waste should be -- separated as biodegradable and non-biodegradable. The biodegradable waste is one which decomposes when dumped. These are vegetable waste, farm waste. The biodegradable waste is dumped in landfills and for composting. A non-biodegradable waste does not degrade. These are plastics, cans used for soft drinks, batteries, glass etc. A plastic thrown as waste takes years to degrade. The non-biodegradable waste goes to the recycler for recycling and recovering the metal.
- The greener initiative suited to the community is to refrain from plastics for packaging your products. You have many green products made from recyclable material (e.g., Banana leaf, baskets made from coconut leaf etc.).
- Plan Sustainability initiatives for your community is to

encourage green businesses as described above. This can be done in cooperation with community leaders, government agencies.

2.3 Green Wash

FIGURE 3: Greenwash Concept⁴



A greenwash is a false claim of greening (Figure 3). This is done by the manufacturer to sell the product. For example, when you buy a LED which is not branded (Philips), the lamp will fail faster and also consume more power than what is given in the name plate from the manufacturer. Some examples relevant to the community are items sold that are not energy efficient rated.⁵

Our Pacific Island countries have a very green environment compared to the western world. We need to focus on sustaining the greenness.

At the national level, it is essential to check that the products imported from other countries and those manufactured locally are meeting the required standards. In Vanuatu, (Figure 4) there has been instances where imported consignments were rejected and permissions were not granted for the importers, as they did not meet the required standard.

⁴ Adapted from the Green World Project Blog, <https://thegreenworldproject.com/blogs/news/greenwashing-and-6-toxic-ingredients-hiding-in-all-natural-products>

FIGURE 4: Example of Green Wash⁵

The company imported several types of electrical appliances such as refrigerator units, air conditioning units and lighting units that are regulated by the act. However, the equipment and appliances were not initially registered especially the refrigerator units as required by the act. The company was issued a penalty notice that amounted up to VT 96,000 for which payment was done accordingly.

The refrigerators were imported directly from China and the models were not registered. Therefore, the company was required to provide test reports to prove that they comply with AS/NZ minimum energy efficiency standards and labelling requirements. The same has not been provided as of now.

- Palm oil refining. The collection of palm seeds done by child laborers. The women (sometimes pregnant) and children carry heavy weight- Not green.
- Cosmetics (skin cream/soap/nail polish/shampoo) are branded off as using herbal products. There are other chemicals used. The advertisement films used for promotion of the products; the women stand in chemical solutions for hours. Further during product development so many combinations are used damaging skin- not green.
- Use of chemical preservatives in food processing / fisheries – not green.

The other examples of green wash are:

- Companies in developing nations sending plastic waste to lesser developed countries for processing.
- Chocolates using cocoa have a green label. The cocoa is sourced from places where child labour is used for harvesting cocoa. Therefore, not green.

ACTIVITY 2

Target: Local government officials, Provincial Councils, District Councils, Town Councils, Island Councils, etc.

1. How do you promote green business in your area?

As a green initiative, green business can be promoted by Government agencies by:

- Creating Awareness on the concept.
- Waste Segregation and Management.
- Programs for potable water.
- Government based incentives for growth.

2. What are elements of green business and how do you work towards the same?

- Quality Business Practices: Important even in government policies / programmes.
- Environment Friendly workplace- maintain our offices well.
- Provide incentives to work on Green Business.
- Campaigns for Avoiding plastic use / ban plastic use.

Target: Traditional community/religious leaders, women and youth and vulnerable groups (single mothers, elderly), etc.

1. What is Green Business?

Green business refers to sustainable **businesses** that has no negative impact on the global or local environment, community, society, or economy. A **green business** meets triple bottom line, i.e., people, profit, and planet. For the community it means to have access to clean source of energy, water and also preserve the environment.

2. What are the elements of green business?

- Follow quality business practices. Invest and procure good quality material (e.g.: Quality seeds for agriculture, organically grown vegetables etc.).
- Clean and Environment Friendly workplace (housekeeping, shops, roadside vending etc.).
- The green products are costly. A normal bulb will cost about 20 US cents whereas LED is about 1 USD. The green products are healthier. For example, Using Light emitting diode (LED) type lights gives you better quality of light and improves your productivity, generates less heat. This is compared to using kerosene lanterns and normal bulb, which are not bright enough and produces harmful fumes.

⁵ Source: Energy Newsletter, Vanuatu

- Using clean water improves your health by reducing water borne diseases.
- The practice of manufacturing, sourcing of green products for sustainable profits.

3. How do initiate measures for greening the community?

- Obtaining and using green products such a (LED Lights, water filters).
- Eliminate Use of plastic bags. Use environment friendly products such as per paper bags and cutlery made from recycled paper.
- Whenever you buy /sell (business with others) you should ensure green practices are followed. (e.g.- Fisheries, vegetables, grocery). The various measures are detailed later in the manual.
- Ensure green products you procure are transported packed and stored in eco-friendly manner (e.g., Storing in reusable containers, no use of plastic bags).
- Conserve Human energy and refrain from use of child labour. Children below 14 years of age should be in school to study. If they are made to work (domestic help, industry, shops), this is child labour. The children are paid less than the adult workers. The green business does not permit people to use child labour. Many countries have laws which do not allow children to work.
- Recycle and reuse.

4. What is the difference between biodegradable and non-biodegradable waste?

- The biodegradable waste is one which decomposes when dumped. These are vegetable waste, farm waste. The biodegradable waste is used as land fill and for composting. A non-biodegradable waste does not degrade. These are plastics, glass bottles, cans used for soft drinks, batteries, glass etc. A plastic thrown as waste takes years to degrade. The non-biodegradable waste goes to the recycler for recycling and recovering the metal.

Target: Local electricians, people with technical aptitude, etc.

1. How will you practice green business guidelines in your work?

- Procure quality material for maintenance replacements.
- Dispose old spares/ repair waste in an ethical way.
- Housekeeping of my workplace.

2. How do you create awareness in the community, for people who use your services on green business?

By explaining them about green products LED lights/solar products etc.

Target: Small Businesses

1. How do you make your business greener?

- Housekeeping of the premises.
- Separate place for waste disposal.
- Avoid unnecessary commuting.

2. What are the Green Practices you would follow?

- Avoid child labour all along the supply and delivery chain.
- Ensure equal opportunities for women and men.
- Follow ethical business practices (fair wages).
- Invest a portion of profit on green initiatives.



3

**Establishing Green
Business Model:
Linked to SDG Goal**—————

These are linked to SDG goals:

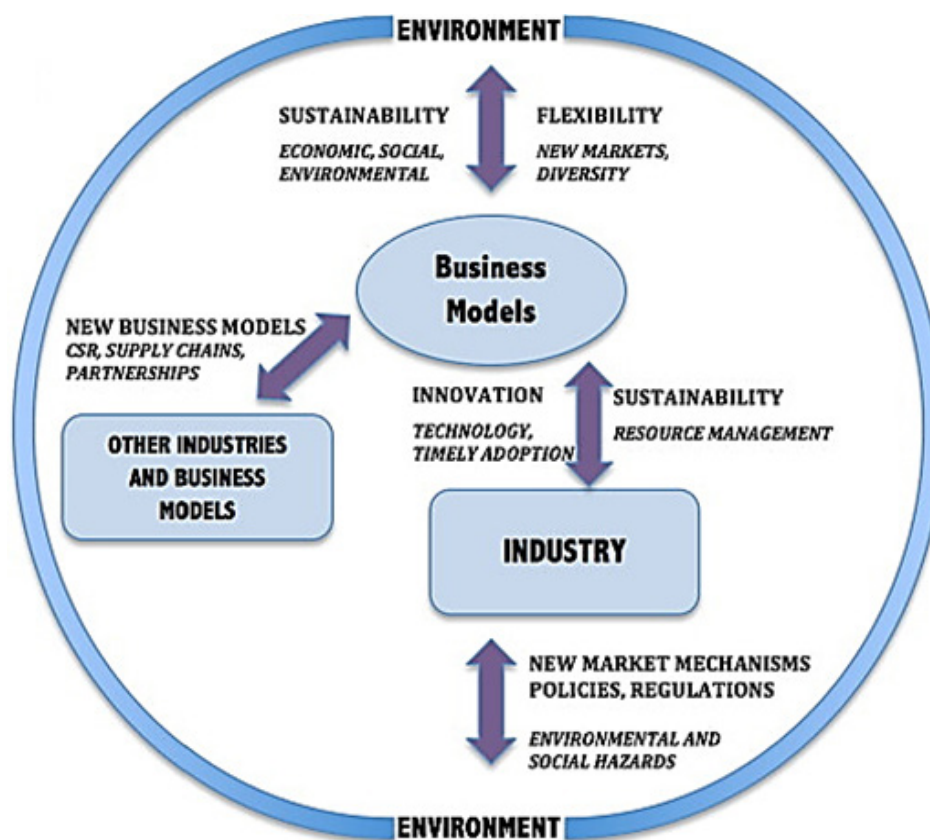


3.1 Establishing and Running a Green Business Model

The sustainability pillars are social, economic and environmental activities. The business model is therefore expected to establish and run green business is similar to any other business also taking care of sustainability. The elements of green business

are people, planet and profit. Any green business model should address these issues. The people's objective being profit, this should be carried out in a sustainable manner so that the planet (water, air, soil etc.) is preserved. The product has to be 'Green' (environment friendly, recyclable, energy efficient). The concept is given in Figure 5 below. This gives a general business model. The points relevant to the community are elaborated.

FIGURE 5: Green Business Model⁶



6 Adapted from Science Direct "Emergence of Green Business models: The case of algae biofuel for aviation", February 2014, <https://doi.org/10.1016/j.enpol.2013.10.034>

Amongst the above, the following needs to be addressed:

- Identification of new markets (Handicrafts, fisheries, Vegetables, packaging).
- Establishing Co-operatives for the stakeholders (women, NGOs) through a proper business model.
- Appropriate policies by the government to promote these initiatives.
- Concessional financing.
- The stakeholders while keen on developing the market should take care to address environmental and social hazards.
- Integration of other businesses into the green business model. (e.g., Grocery store can sell organic products, solar product seller can sell fuel efficient stoves, solar cookers etc.).

Some examples of Green Businesses are:

A company in Solomon Islands is passionate about creating sustainable livelihoods for their rural communities. This company presently works with more than 50 village producers across the Solomon Islands and sources from over 3,500 hectares of Certified Organic plantations owned by more than 1,000 farmers across the country. And they are focusing on adding more. Over 60% of oil revenue goes back to communities which provides an income to over 5,000 people.⁷

A company in Suva, Fiji has a colorful array of island dresses, skirts, blouses, men's shirts, jewelry and clutch purses bearing unique prints all using local materials. This has been successful through perseverance and discipline when dealing with time and money.

A women entrepreneur in Vanuatu originally employed elsewhere started a small enterprise to manufacture body massaging oil, soaps, moisturisers from locally grown nangai and coconut oils.⁸

3.2 Business Model for the Community

A green product needs to address sustainability, is flexible to changes and is innovative. The products chosen should add value, save energy, affordable and acceptable. A lot of handicrafts are made by the community (wallets, cloth, baskets), which use local products available in the community. The middlemen and exporters pay very small money, and they export at fabulous prices. In order to get the right selling price

for the product, there are initiatives such as Rise Beyond the Reef⁹ and other handicrafts centers that provide training, on the selection of quality raw material to ensure product quality Product, a right selling price for the product and that packaging does not use plastics.

The market needs to be innovative (e.g.: solar lamps along with regular product, mobile charger as a source of income, selling drinking water, handicrafts etc.). Some of the initiatives are given above and are detailed later in the guide.

The basic motive here is 'return on investment' and additional source of income. For example, women in the community used kerosene lamps earlier and needed to spend the money on buying kerosene. Now with solar lamps, the women save money by not buying kerosene and could use the extra money on household income generating activities, and household savings.

An initial assessment should be made about the needs of the community ensuring to consult with women's groups as women have different needs. Based on the data sheets provided by the country coordinators, the community appears to predominantly need clean fuel for cooking, clean drinking water, waste management and reliable electricity.

In order to make a product /project green, an assessment of present environmental conditions is desired. Based on the country/s available data the environmental issues are in its initial stage. In this case, it is essential to preserve the environment now before it gets worse and much harder or impossible to control.

Whenever any green product is marketed, be very sure it does not contribute to environmental pollution/contamination (e.g.: Drinking water bottled and sold, market products packed in plastic covers etc.). It is necessary to make the product environment friendly. The example here is plastic is used everywhere (cutlery, packaging, bags etc.). The replacement for the plastic usage has to be user friendly. You can use Banana or coconut leaves for packaging food instead of plastic bags. The technology should be simple to meet the needs of the local community.

⁷ Pacific Islands Private Sector Organization, "Collective Impact in the Solomon Islands", http://www.pipso.org.fj/for-pacific-businesses/stories-from-around-the-region__trashed/success-stories__trashed/collective-impact-solomon-islands/

⁸ Loop Pacific, "The Woman behind Oils of Paradise", June 2017, <https://www.loopvanuatu.com/vanuatu-news/woman-behind-oils-paradise-61827>

⁹ Rise beyond the reef, www.risebeyondthereef.org/arts-crafts/

FIGURE 6: Co-Operative Model¹⁰

One of the suggested business models is 'Cooperative Model' (Figure 6). This can be applied to fisheries, vegetable shops, cold stores etc. A group of Like-minded people (including men, women, and other vulnerable groups) join and form a cooperative. This is to be done as per the applicable cooperative laws of the country. The cooperative invests some money, and the balance is sourced from the bank. The profits are shared after payment of the loan each year. Regular meeting are held to sort out any issues.

Below gives you the principles of Cooperatives.

FIGURE 7: Principles of Cooperative¹¹

Membership is voluntary and the meetings are conducted, and issues are sorted out in democratic manner. There is economic participation by of sharing the expenses and also profits.

ACTIVITY 3

All Target Groups

1. What are the relevant points for establishing a green business model in the community?

- Identification of new markets (Handicrafts, fisheries, Vegetables, packaging).
- Stakeholders (women, NGOs) establishing a Co-operative through a proper business model.
- Appropriate policies by the government to promote these initiatives.
- Concessional financing
- The stakeholders while keen on developing the market should take care to address environmental and social hazards.
- Integration of other businesses into the green business model. (e.g., Grocery store can sell organic products, solar product seller can sell fuel efficient stoves, solar cookers etc.)

¹⁰ Adapted from training materials of the Cooperative College of Fiji

¹¹ Adapted from training materials of the Cooperative College of Fiji.



4

Green Business Initiatives

These are linked to SDG goals:



4.1 Present Practices in the Community

Current bad practices and recommended community alternatives:

Present	Recommendations
Inefficient Cooking – leads to smoke – respiratory diseases – faster use up of resources such as firewood.	Use Energy Efficient Stove – Covered in module 3 (Energy Efficiency Basics). The community may not be able to afford energy efficient stoves. Therefore government/NGO initiatives are needed as this will improve health of the people.
Water- Sources from river, stream, ground etc. Not clean and unfit for drinking and cooking- leads to increase in water borne diseases.	Use treated water for drinking. Ensure water drinking storages are covered well, to keep it clean and safe (not a breeding hub for mosquitoes). Water must be boiled before drinking.
Throwing waste in the surrounding no proper segregation and dumping.	Separate waste, have a proper landfill and recycle waste. Use a pit for composting and use this as fertilizer.
Agricultural waste – open burning in field- smoke.	Proper disposal through composting.
Use of Kerosene lamps, candle – Poor quality of light, smokes a lot and does not last long.	Shift to solar home systems- Elaborated in Renewable Energy Module.

The table above highlights the basic needs of the community, being energy, water, waste disposal and others and the Greener Business Initiatives are detailed in that order.

4.2 Green Business Initiatives – Fuel and Electricity

Present Scenario

Some communities may not have access to grid power. They use either kerosene lamps/ battery powered torches or solar individual or home lighting systems which takes care of individual lighting requirements of the houses.

FIGURE 8: Normal Grid¹²



A normal power from the public utilities is given in Figure 8. This is shown as an example and not elaborated further.

¹² Source: UMLAUT, https://www.umlaut.com/uploads/images/stories/_1024x768_crop_center-center_none/iStock-661805558_web.jpg

Proposed Initiative

FIGURE 9: Microgrid¹³

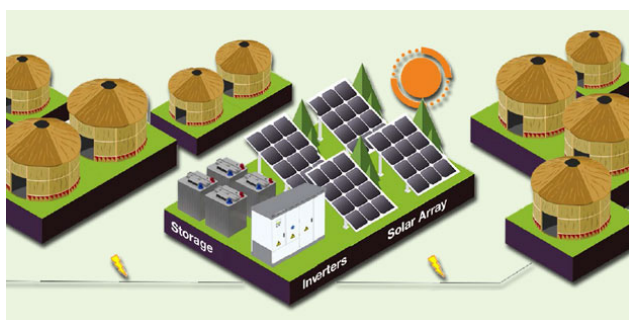


Figure 9, above shows a microgrid. The solar power is a larger one and power can be supplied to more houses in the community. The community houses pay for the power used -either on a fixed basis or based on metering. Depending on the size of the solar panel power can be supplied to as little as 4 houses (size about 400W) or larger one.

In some communities there can be mixed loads like mobile towers, school, business activity. Therefore, the loads are classified ABC as follows:

Anchor Load: Fixed load available all the time (mobile tower, school petrol bunks etc.).

Business Loads: Small Business Loads like grocery stores, small markets etc.

Consumer Loads: Individual Houses.

The following are the advantages of micro-grid:

- Hybrid models (solar, generator, Pico hydro etc.) can be combined to operate when there is no solar power or on rainy days. Depending on the location, the hybrid model needs to be tailor made.
- Whenever the electricity system gets damaged due to cyclones/floods, the solar based system can be repaired, and power generation can start faster.
- The investment will be about USD 1500 for a 500W solar panel and this can supply power to 4 households.
- Larger ones can be designed up to any level of power.

This proposition is feasible after a detailed project report and needs funding.

Various governments have different donor funded initiatives to promote microgrids. This is particularly suitable for the countries covered under this project as there are number of small islands.

Biomass Pellets

Firewood and most other biomass (saw dust, Agri-waste) has high fine particles. This is a source of biomass. This burns off faster, generating fine ash. It is possible to compress and extrude the same into pellets (Figure 10). This can burn better, for a longer time and reduce smoke etc.

FIGURE 10: Biomass Pellets¹⁴



¹³ Saur Energy, <https://www.google.com/search?q=%3B+https%3A%2F%2Fwww.saurenergy.com%2Fsolar-energy-articles%2Fmissing-the-sunshine-mini-grids-in-india&rlz=>

¹⁴ Source: DH Gate, <https://www.dhresource.com/Ox0/f2/albu/g17/M01/2B/D9/rBVa4mAL44eAfRo2AANK-6hntI8598.jpg/electrical-poultry-chicken-fish-feed-pellet.jpg>

- Suitable for a new entrepreneur as this requires investment.
- Can use wide range of fuels.
- To make pellets, the biomass must first be cleaned to remove contaminants. The clean biomass is then ground in a hammer mill or chipped to a uniform size, which must be less than the thickness of the pellet that will be produced. Grinding down biomass helps to reduce the power required for driving the pellet mill as input wood will be smaller in size.
- Raw materials depend on local source.
- Need to invest on raw material collection, transport and also pelletizing equipment.
- Needs an investor, project developer and implementer on a profit-sharing basis.

This is proposed as a business initiative. The fuel for the community being free, it is not viable. This is used as a fuel source in tourist resorts, hotels, industries.

This is presently not available in any of the countries covered. This is proposed as a future green initiative.

Bio-Gas Plants

The common agricultural waste disposal methods include:

- Burning;
- Dumping;
- Land filling;
- Composting;
- Random piling and so on.

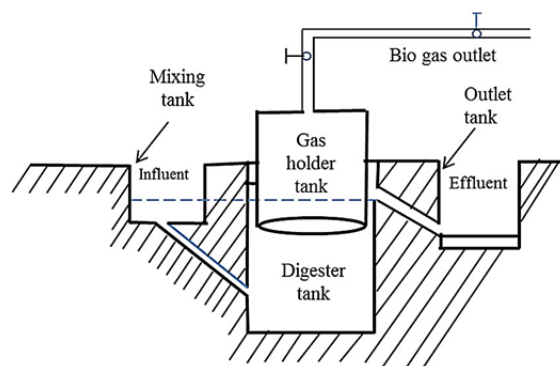
All these methods may cause pollution and waste of resources. Above mentioned agricultural organic wastes contains multiple nutrient elements, which can be made into organic fertilizer through composting.

Some are composting the waste (organic fertilizer).

FIGURE 11: Biogas Plant- Fiji¹⁵



FIGURE 12: Biogas plant Flow Diagram¹⁶



Proposed Practice:

- Agricultural waste, vegetable waste, animal waste etc. degrade naturally when thrown away. This can be converted into fertilizer by using composting methods. These wastes are termed organic. They have energy stored in the organic waste.
- The process of degradation generates biogas. There are bacteria which live in the absence of air and that is why called anaerobic. The bacteria use the waste as food and in the process generate biogas. The biogas is rich in Methane. The other constituents are carbon dioxide (CO₂) and hydrogen sulfide (H₂S).
- In composting, the fuel value is lost. In biogas plant fuel (that is, Biogas) is recovered.
- The influent (input to the digester in Figure 12) is diluted waste. The inlet waste is mixed with water. This then flows to the digester tank. The bacteria in the digester generates the gas. This gas is collected in the floating gas holder. The gas holder moves up and down. The effluent (output from the digester) is a very high value fertilizer and is collected in the outlet tank. The gas from the gas holder is transported by pipeline to the kitchen for cooking or lights or to run the gas engine to generate power.
- The size of the biogas plant can be small for a family or large for a community.
- This is suggested as a stand-alone business where the investor invests on the plant, operates, and maintains it. He can charge for the Biogas.
- Apart from use as fuel this can be used for lighting and also to drive engines.
- The government of Fiji and Vanuatu have initiatives for promoting biogas plant.¹⁷

¹⁵ FBC News; First for the Pacific, a Home Biogas installed at Lautoka school, https://www.google.com/search?q=%3B+https%3A%2F%2Fwww.fbcnews.com.fj%2Fnews%2Ffirst-for-the-pacific-a-homebiogas-installed-at-lautoka-school%2F&rlz=1C1GCEA_enFJ951FJ951&oq

¹⁶ Research Gate, "Economics of Biogas plants and solar home systems: For household energy applications", June 2017, https://www.researchgate.net/figure/Simple-schematic-of-a-bio-gas-plant_fig3_318503013

¹⁷ SOPAC Technical Report, "Individual Country Biomass Resource Assessment Profiles for Fiji, Kiribati, Samoa, Tonga, Tuvalu & Vanuatu, December 2003, https://pacific-data.sprep.org/system/files/TR0364_0_1.pdf

Fuel Efficient Stove

This has been well explained in Energy Efficiency basics model. Another model of cooking stove (Figure 13) is given below.

FIGURE 13: Fuel Efficient Stove¹⁸



Solar Cooking:

There are two routes to solar energy - "solar photovoltaic" and "solar thermal". The photovoltaic route is for producing power (electricity) while the thermal route is for heating. The solar thermal route is used for cooking, for example, there are very large solar cookers used to cook tons of rice.

FIGURE 14: Solar Cookers

A¹⁹



B²⁰



18 Olympus Flower, "Rocket Stove", http://www.solar-cookers-rocket-stoves.co.za/ol_images/ray_solar_cooker.jpg

19 Rudra Solar Energy, "Solar Cookers", <https://www.rudrasolarenergy.com/solar-cookers.html>

20 Olympus Flower, "Solar Cookers", http://www.solar-cookers-rocket-stoves.co.za/ol_images/ray_solar_cooker.jpg

There are two types of cookers shown in Figure 14. Figure 14A is a box type cooker. The box of the lid when open is the solar collector. It reflects the sun on the pot placed in the box. The box can be closed after cooking. Figure 14B is a parabolic collector, and the concentrated solar parabolic collector reflects the sun light on the pot.

- Suitable as an add on product for small grocery, electrical and others as a greener alternative and additional fuel.
- Though cooking takes more time, women can parallelly work on other activities (tailoring, embroidery, local arts and crafts).
- Useful for boiling rice, vegetables, lentils etc.
- Slower Cooking allows for more health food.
- Not Suitable for frying or high temperature cooking.
- Need to rely on other means of cooking on non-sunny days.

4.3 Green Business Initiatives – Water

This is one of the most relevant initiative of Greener Alternatives. At present though water (surface and ground water) is consumed without any treatment. Therefore, this cannot be potable (drinking and cooking). Water is used for agricultural purposes apart from domestic use.

FIGURE 15: Water Use- Present²¹



Present Practice

- Source of water is streams, river, ground water.
- No piped water in most of the communities.
- Water is collected manually in trolleys (Figure 15), carrying on the head. Water often spills on the way. People, particularly women trek long distances sometime uphill and spend substantial time to fetch water.
- No mechanism to use rainwater.
- Water from open wells is sometimes contaminated.
- Proximity to low lying swamp and pit toilets make water unsafe for drinking.
- Water is directly used for all purposes (drinking, cooking, washing, and gardening).
- Drinking unclean water can lead to water borne diseases.
- Piped water may not be clean.
- The communities being cyclone prone the water storage tanks get damaged, and the pipelines are broken.
- Rainwater too murky and its untreated use leads to water borne diseases.

FIGURE 16: Parched Agricultural Lands²²



Figure 16 shows parched agricultural fields. Mismanaging water resources impairs people's ability to grow crops and feed their families.

The investment for water treatment requires huge investments. Therefore, initiatives for providing clean water become a green business proposition.

Initiatives for Clean Water

The water needs to be collected, filtered, and used, there is also scope to collect rainwater. As a part of Water Sanitation and Hygiene (WASH) project, Fiji, Vanuatu, and other countries have taken initiative for improved water supply and

²¹ IsraAID, A woman collecting water in Latano, Vanuatu; <https://www.israel21c.org/flowing-water-in-vanuatu-village-thanks-to-israeli-aid/>

²² Source: Jae C. Hong, Business Insider Australia, <https://www.businessinsider.com.au/nasa-data-shows-the-world-is-running-out-of-water-2015-6>

management. This is a part of Sustainable Development Goal (SDG 6) which is promoting clean water and sanitation. Some of the initiatives are:

Rainwater Harvesting

Rainwater harvesting effectively catches the rainwater falling from the building and is collected in a tank as shown in Figure 17. There are communities where there is abundant rainfall and access to alternative water is scarce. Rainwater harvesting can be used effectively in these communities.

FIGURE 17: Rainwater Harvesting²³



Gravity Fed Water System

FIGURE 18: Gravity Fed Water System²⁴



A gravity fed water system (Figure 18) safely transports water from a protected catchment area usually below a river, stream, or spring. This flows into the community's water tank. From the community water tank, it flows through pipelines to homes.

The other source is to drill a borehole, collect the water on the surface through a solar powered water pump and treat them before use.

FIGURE 19 : Water Filtration Systems²⁵



The water collected from the above sources need to filter through a bio sand filtration system (Figure 19). The tanks in the figure are filled with sand, activated carbon and other filtering material. The water becomes clean for consumption.

These are to be designed based on community requirements and a lot of money is needed to buy and also to maintain.

Small Scale Water Initiatives

FIGURE 20: Water Filter- Small Scale²⁶



This is a very good add-on for grocery shops in the community. This water filter gives clean and pure water (Figure 20). The water can be sold at reasonable prices. For people who can afford, the entire water filter could be bought. This basically has a cloth filter initially and later an activated carbon filter for purifying. Further technical explanation is not desired here. There is no license required for small machines. The grocery store can also stack and market tender coconut water, which is available in abundance in the community. Depending on price, the customer can choose to drink water or coconut water.

²³ Rotary Pacific Water, <https://www.rotarypacificwater.org/>

²⁴ Rotary Pacific Water, <https://www.rotarypacificwater.org/>

²⁵ Rotary Pacific Water, <https://www.rotarypacificwater.org/>

²⁶ Price.com, <https://price.com/pureit-ultima-mineral-water-purifier-price-in-india-36139>

4.4 Green Business Initiatives - Waste Recycling

Waste is generated in the community from homes, markets, schools, place of worship. Though comparatively the waste generation may be small compared to the urban / semi urban / rural areas, it is essential that waste is handled in an environment friendly way.

FIGURE 21: Waste Generation²⁷



The sources of waste generation: Domestic, vegetable waste (Figure 21), aluminum, iron, ash, paper, animal waste (bones/skin). The Present Means of Disposal: Some vegetable waste is converted into compost. All the balance waste is disposed. The concepts of waste segregation (biodegradable and non-biodegradable) has been explained in chapter 2 Green Business Basics.

The greener alternative slogan is 'Wealth from Waste'. The concept of Reduce, Reuse and Recycle (3Rs) needs to be in place. In Fiji and Vanuatu paper is made from banana waste, cutlery is made from waste material. These are explained later.

- Seen as a new venture for persons with entrepreneurial aptitude.
- To source funds from local lending institutions.
- Send biodegradable waste to biogas plant (separately explained).
- Separate plastic, metal, paper, glass bottles.
- Glass bottles can be sold directly to the agent who will in turn sell to drink producers (beer, coke, hard and soft drinks).
- Sell soft drink cans metal/paper to the recycler.
- Ensure recycler uses ethical methods to recycle.
- Avoid green washing concept.

Recycled Paper

There is a lot of wastepaper generated. This is from news paper, packaging, cardboards, stationery etc. This is segregated and send to a paper recycler (Figure 22 and Figure 23).

FIGURE 22: Manufacturing of recycled papers, Fiji²⁸



FIGURE 23: Recycled into toilet paper²⁹



27 Dreamstime.com, "Garden compost heap", <https://www.dreamstime.com/stock-photo-compost-heap-garden-kitchen-food-waste-vegetables-fruit-peel-green-refuse-image68229062>

28 South Pacific Waste Recyclers, "Reducing Waste", <http://www.southpacificwasterecyclers.com.fj/our-product/>

29 South Pacific Waste Recyclers, "Reducing Waste and Our Product", <http://www.southpacificwasterecyclers.com.fj/our-product/>

FIGURE 24: Paper from Banana Waste – Vanuatu³⁰

Paper is taken from the bin and deposited in a large recycling container along with paper from other recycling bins. The paper is taken to a recycling plant where it is separated into types and grades. Then separated paper is then washed with soapy water to remove inks, plastic film, staples, and glue. It is further processed to the quality of paper (newsprint, packaging, cartoon).

Here the business proposition for the community is only to act as a collecting agent for the recycler. The waste from the community is collected and segregated. The paper waste is procured by paper recycler.

The intention here is not for setting up a paper business as it is investment oriented. The waste picker and segregator earn for the waste collected.

Recycling Metal

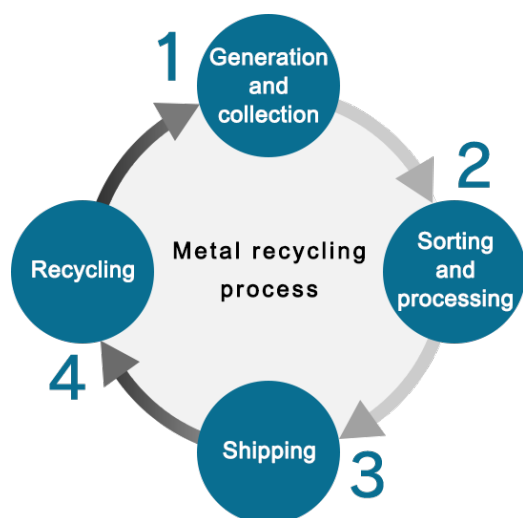
The metal is collected, segregated (Figure 25A), taken to a melting furnace (Figure 25B) and turned into liquid metal for further processing.

**FIGURE 25:** Metal Processing**A**³¹**B**³²

³⁰ Green Banana Paper, <https://greenbananapaper.com/>

³¹ Source: wmmetalsandalloys.com, "Different types of scrap metal", <https://wmmetalsandalloys.com/wp-content/uploads/2020/02/stainless-1080x675.jpg>

³² Source: Shutterstock.com, "Converter filling scrap", <https://www.shutterstock.com/image-photo/tangshan-june-18-converter-filling-scrap-213902791>

C³³

The community waste is segregated to metal (cans, tins). This is collected and given to the scrap dealer. The scrap dealer then recycles by melting. This is then processed and sold.

Plastic Disposal

Universally, this is one of the major issues. The uncontrolled use of plastic for packaging has spread globally. There are many countries which have banned single use plastics. It has been observed in Fiji that 97% of marine organisms, such as fish, prawns, and freshwater mussels) had micro plastics inside them. This is 30% higher than the global average. The government of Fiji has a levy of 10 cents per plastic bag under the Environment and Climate Adaptation Act. Apart from this levy, there is a commitment to phase out plastics by 2025.³⁴

FIGURE 26: Plastics³⁵



FIGURE 27: Plastics and Alternatives³⁶



Plastics, when discarded into the natural environment, take many, many years to break down and in this time, it affects many forms of animal life, especially marine life. It is proposed to source and use environmentally friendly packaging materials and bags (woven types are available locally that are made of leaves), paper cups, metal bottles

for water. Avoid single use plastics (covers, straws, water bottles) as much as possible.

This is seen as a value add on green business ventures for existing grocery shops. If local talent is available probably there is scope for local manufacture.

33 Shin-ei holdings co.ltd, <https://www.shineikinzoku.co.jp/en/recycle/>

34 Adapted from Tax Talk- Plastic Bag Levy, Fiji Revenue and Customs Service, <https://www.frcs.org.fj/wp-content/uploads/2018/01/Plastic-Bag.pdf>

35 Source: Roguedisposal.com, "Have petrochemical companies used recycling to make more plastic.", https://roguedisposal.com/images/PlasticWars_1100x700.jpg

36 Adapted from the Marine Conservation Society Twitter; <https://twitter.com/mcsuk/status/1034524796032360453?lang=ca>

Recycling Plastic Waste

FIGURE 28: Recycling Plastic Waste³⁷



There are technologies available to recycle plastics to granules and then convert them to end products such as bottles, spoons, and plates). There are technologies available to convert plastics to fuel (Figure 28).

These are investment oriented and hence not recommended to the community.

There are other initiatives where the customers are paid for the plastic bottle, they return through a recycling programme.

4.5 Green Business Initiatives - Agriculture

The present practices in agriculture and proposed Green Business alternative action:

TABLE 3: Greener Practices – Agriculture

Present Practice	Proposed Practice
Always cultivating the same crop (rice, wheat, vegetables). Growing the same crop in the same place for many years depletes the soil nutrients.	Rotation of crops. This is to be need and market based. First time rice, then some other and then rice. Crop rotation is the practice of growing a series of different types of crops in the same area across a sequence of growing seasons. It reduces reliance on one set of nutrients, pest and weed pressure, and the probability of developing resistant pest and weeds.
Coconut plantation/ Banana always.	Follow intercropping. Leave sufficient distance between coconut tree/ banana tree. Use the space between two for vegetables, green leaves (spinach). Intercropping is the cultivation of two or more crops simultaneously on the same field. The most common goal of intercropping is to produce a greater yield on a given piece of land by making use of resources or ecological processes that would otherwise not be utilized by a single crop.
Use of water at random.	Follow drip irrigation. Not suitable for marginal farmers. Investment is required. Drip irrigation is a type of micro-irrigation system that has the potential to save water and nutrients by allowing water to drip slowly to the roots of plants, either from above the soil surface or buried below the surface. The goal is to place water directly into the root zone and minimize evaporation.
Use of Chemical fertilizers and pesticides.	Use organic fertilizers (as shown below) and insecticides (neem powder).

³⁷ Source: Shutterstock, adapted from theconservation.com, <https://theconversation.com/the-major-source-of-ocean-plastic-pollution-youve-probably-never-heard-of-111687>

Organic Fertilizer

The output of the biogas plant / composting plant is organic fertilizer. This is better than chemical fertilizer. The products grown from organic fertilizer (ginger, turmeric, vanilla, banana) shown in Figure 29 below have better market value and price.

FIGURE 29: Agriproducts- Using Organic Fertilizer³⁸



4.6 Sustainable Fishing / Sea Food

The river based and sea-based fishing often use methods which are not conducive to the growth of fish/seaweed etc. These are:

TABLE 4: Recommended Practices – Sustainable Fishing / Seafood

Present Practice	Proposed Practice
Throwing waste into the river/ sea/beaches etc.	Refrain from throwing waste into the sea/beach/river etc. Have a social activity to clean beaches / rivers once a month.
Use of Dynamite filled in bottles to kill fish. The use of dynamite and other explosives for fishing is commonplace throughout the tropical Pacific, although usually illegal. Dynamite fishing shatters fragile coral colonies. Even the smallest piece of dynamite can blast a crater two to three feet in diameter. The blast kills coral tissues, and the surrounding rubble prevents adjacent coral colonies from recovery.	Sustainable seafood is seafood that is either caught or farmed in ways that consider the long-term vitality of harvested species and the well-being of the oceans, as well as the livelihoods of fisheries-dependent communities. To refrain from dynamite-based fishing. Fishing societies to monitor illegal fishing activities. To provide training and scientific materials at local universities and enforcement agencies to support marine conservation; purchase small water purifier systems that will be donated to local communities that shows progress in stopping dynamite fishing.
Oil spills (lube oil, fuel) into sea/ river.	Make the boat owners/ship owners responsible for cleanup.
Sea Food / fisheries supply chain management.	The most significant seafood retailers, brands, and foodservice companies are engaged to catalyze their global supply chains and drive actions to rebuild depleted fish stocks, reduce the environmental impacts of fishing and fish farming, and ensure sustained economic opportunities for fishing communities worldwide. These practices need to be practiced at community level.

³⁸ Slideshare.net, Slide 44 of "Kiribati Agritourism Policy Setting Workshop 2019", <https://www.slideshare.net/brusselsbriefings/kiribati-agritourism-policy-setting-workshop-2019-agri-cultural-valuechain-guide-for-the-pacific-islands>

FIGURE 30: Local Fisherman Cooperative³⁹



4.7 Green Business Initiatives - Others

4.7.1 Battery Recycle

FIGURE 31: Battery Recycle⁴⁰



Batteries (such as those from cell phones, cars, solar systems etc.) are thrown away on land or rivers and sea. These materials include acid, lead, nickel, lithium, cadmium, alkaline, mercury and nickel metal hydride, which are corrosive and harmful elements to the environment and livestock, as well as marine life. When batteries are not properly disposed of the casing can disintegrate and the toxic chemicals within can leach into the surrounding environment. In many countries new battery is given only when old battery is returned to the distributor. The distributor is expected to act ethically and ensure no battery in their possession ends up in the natural environment. The battery recycler then recycles acid, lead and other parts, even giving new life to old batteries for

reuse.

4.7.2 Packaging

There are quite a few already available packaging alternatives. Where potential exists, it is better to use traditional knowledge to develop alternatives to plastic packaging.

FIGURE 32: Packaging - Locally Available⁴¹



Figure 32 above shows use of banana leaves and woven basket used locally. This is the most environment friendly way of packaging. The issue is to make them more attractive to users.

FIGURE 33: Packaging Locally Available Products⁴²



39 Source: Vanuatu Cooperative Movement Facebook Page, <https://www.facebook.com/coopsvanuatu/>

40 City of Fort Wayne, <https://www.cityoffortwayne.org/images/stories/batteriesmg.jp>

41 Adapted from Pacific Greenpreneurs: Jump starting green businesses in Fiji, Vanuatu and Kiribati*, https://www.aptc.edu.au/docs/default-source/default-document-library/djsyj_christopher_and_katerina_min.pdf?sfvrsn=b620dc14_4

42 Source: Projectunify.net, "Say no to plastic bags", <https://www.projectunify.net/say-no-to-plastic-bags/>

B



Figure 33A shows paper bags and baskets made locally. Figure 33B shows earthen cups used for tea and coffee. The cup shown is made by the potter and it is very environment friendly as once disposed it degrades into mud clay. The women in the community can be encouraged to develop paper, leaves or bamboo-based products and then develop a market. This is a very good add on to the women in the community and ensure economic empowerment as they can earn extra money by developing these products. The local women need to be trained and helped to market their product. There are many examples of women's groups contributing to village and community development through their earnings with increasing women's resources likely to benefit families and the whole community. The local council or local government province/district plays a major role. The raw material for the product depends on local availability. However, other local alternatives can be available.

4.7.3 Solar Products

One of the modern-day requirements is mobile charging. The solar mobile charger is a very good add-on to the rural market. Figure 34 below shows mobile chargers based on solar energy.

FIGURE 34: Mobile Chargers

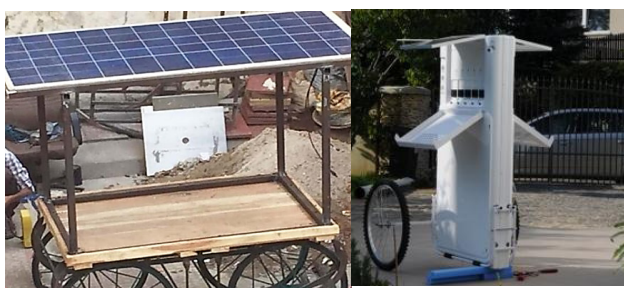
A⁴³B⁴⁴

Figure 34A is very good value-add to green business ventures for local women, grocers, and vegetable vendors alike. The conventional vegetable vendor has mounted on the solar panel on the roof top of his vegetable vending cart. There are mobile charging points (up to 10). A small fee is charged for the mobile charging. Figure 34B shows a solar light, panel, and mobile charger. The second picture shown is a more aesthetic one. Microfinancing can make it viable.

FIGURE 35: Solar Corn Roasting⁴⁵



This is just an example. There should be local products / ideas available.

43 Source: Indiamart.com, "Community solar mobile charging station", <https://www.indiamart.com/proddetail/community-solar-mobile-charging-station-7163127873.html>

44 Source: Indiamart.com, "Solar Emergency Portable Led light", <https://www.indiamart.com/proddetail/sun-king-pro-400-solar-emergency-portable-led-light-with-usb-mobile-charging-17407429648.html>

45 Source: India content.in "Solar power fan to grill corn", https://www.indiacontent.in/bengaluru--75-year-old-selvamma-who-has-been-selling-corn-outside-vidhana-soudha/pr-783895/?utm_source=recengine&utm_medium=WEB&referral_sourceid=783954

Fisheries

Developing fisheries in terms of food security and economic development is an important exercise for many Pacific Islands countries, as most of their communities are along a large coastline. There is huge potential for commercial fishing too. There is a need to reduce post-harvest loss, develop cold storages and also downstream fish processing industries. Downstream fish processing industries are processing fish and canning it for sale within the country and outside for export. There is also scope for development of in-shore fishing (aquaculture, Mari culture). Some of the initiatives relevant to this module are:

Solar Fish Dryer

Probably a viable alternative as all the countries covered have sea food and probably dry fish.

FIGURE 36: Solar Fish Drying⁴⁶



System for drying fish (or other such perishable commodities) using solar energy (Figure 36). In sunny days fish will be dried using solar energy and when solar radiation is not sufficient during cloudy/rainy days, LPG back up heating system will be automatically activated to supplement the heat requirement. Thus, continuous drying is possible in this system without spoilage of highly perishable commodities to obtain a good quality dried product. In communities where LPG is not available other sources of energy can be used.

When dried in open, fish has a strong odour. Since the solar dryer uses covered drying this odour is reduced. Needs funding and custom designed.

FIGURE 37: Solar Agriculture Dryer⁴⁷



The solar drying concept can be used to dry any produce (chilies/copra/tobacco). Figure 37 shows a solar dryer. Air is heated by solar energy and is used to dry the produce in the room. Depending on the season different product can be dried.

Cold Rooms – Solar

Fish, vegetable, meat, and other products get spoiled and wasted due to lack of cold stores. A good initiative is to invest on community cold store (Figure 38). There could be two systems one for vegetables and another for non-vegetarian produce (meat, chicken eggs, fish). Based on the weight of the produce stored, rent can be charged from the customers.

FIGURE 38: Solar Cold Store⁴⁸



⁴⁶ SlideShare, <https://www.slideshare.net/upamadas/dynamics-of-development-in-fish-processing-sector-72216570>

⁴⁷ Indiamart.com, <https://www.indiamart.com/radha-energycell/solar-dryers.html>

⁴⁸ Greenpowerco.com.au/Eco frost

Fisheries – Pico hydro Tail Race

Apart from solar power, the communities can invest in Pico hydro plants. The water from the Pico hydro power plant is known as tail race. An example of growing fish is Loltong, Pentecost, which is a selected site for a hybrid RE systems, a pico-hydro and solar, and the women in the community are using wastewater from the tailrace to construct fishponds and raise tilapia fish.

Handicrafts

Rural communities are very talented in handicrafts. Some of the products are given below in Figure 39.

They are not able to get a proper marketing and market these products. There are NGOs such as Rise Beyond the Reef at Sabeto, Nadi, Fiji, that promotes initiatives for forming cooperatives to help in sourcing material, ensure end-product quality and that the community gets the right price.

FIGURE 39: Rise Beyond the Reef Products and Staff⁴⁹**FIGURE 40: Women weaving mats⁵⁰****FIGURE 41: Handicrafts⁵¹**

All the above use biodegradable material saving volumes of waste generated and also replacing plastic products.

Forests and Mangrove

The forestry sector contributes to a significant portion of exports. The forests are a source of food, building materials and traditional medicines. Some of the issues in the forest sector are:

- Forest cover has substantially declined in the countries (by about 14% in Fiji from 1991 and 2007), due to over felling of logs to export timber at current extraction rates.⁵²
- Need to implement the regulations for commercial forests (Code of logging practice).
- Public-Private partnership for funding, and
- Proper Reforestation methodologies.

One of the initiatives of commercial forestry is bamboo cultivation. A bamboo center will be established in Fiji by the Ministry of Forestry in cooperation with Pacific Islands Development Forum.⁵³ This is a very good initiative. Figure 42 shows some of the possible products.

49 Source: Rise Beyond the Reef Instagram, https://www.instagram.com/rise_beyond_the%20reef_fiji/

50 Rawfiji.com, "Women weaving, Rise beyond the reef", <https://rawfiji.com/blog/2016/07/13/rise-beyond-the-reef/>

51 Photo credit: Kristin Deason, GGGI

52 Asian Development Bank, "Country Partnership Strategy: Fiji 2014-2018- Environment Assessment (Summary)," November 2014, <https://www.adb.org/sites/default/files/linked-documents/cps-fj-2014-2018-ena.pdf>

53 Report by Fonua Talei, "Talks to establish Bamboo Centre Here", The Fiji Sun, February 2021, <https://fijisun.com.fj/2021/02/13/talks-to-establish-bamboo-centre-here/>

FIGURE 42: Bamboo House and furniture⁵⁴

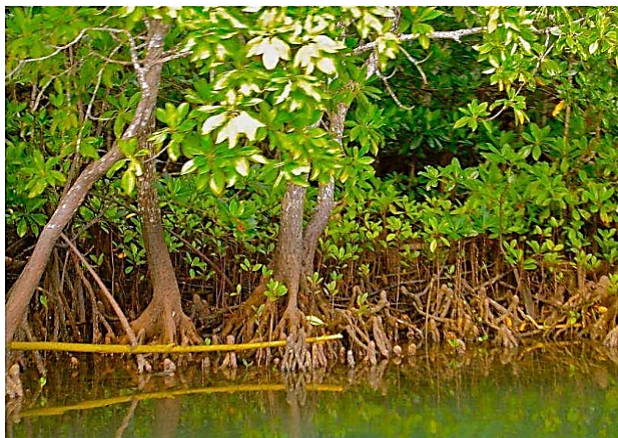


Mangroves

The mangroves area declined by 5% (1991-2007). This is higher in urban areas. Initiatives have been taken to preserve mangroves.

FIGURE 43: Mangrove Forest Initiative

A⁵⁵



B⁵⁵



Figure 43A shows a fully-grown mangrove area and Figure 43B shows a typical mangrove development initiative in Fiji.

Mangroves are vital habitats that not only protect the coast against tsunamis, hurricanes/cyclones and sea level change but directly benefit the adjacent reef by exporting life building carbon.

Mangroves have an enormous capacity for sucking up carbon dioxide and other greenhouse gases and trapping them in flooded soils for millennia. They are among the most carbon-rich tropical forests and can store twice as much carbon on a per-area basis as salt marshes.

Carbon capture and storage (CCS) is the process of capturing and storing carbon dioxide (CO₂) before it is released into the atmosphere.

Mangroves protect shorelines from damaging storm and hurricane winds, waves, and floods. Mangroves also help prevent erosion by stabilizing sediments with their tangled root systems. They maintain water quality and clarity, filtering pollutants and trapping sediments originating from land.

They are the nursery areas for countless marine organisms. They provide natural adaptation to the effects of climate change and contribute to the reduction of pollution.

54 Pinterest, adapted from Airbnb.com, <https://www.pinterest.co.kr/pin/465911523924319522/>

55 Adapted from <http://mangrovesforfiji.com/>

ACTIVITY 4A for all target groups



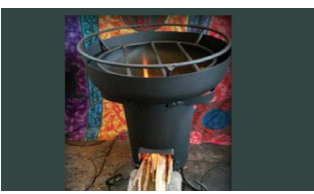

1. What are some bad community practices and how can you improve them?

Present	Proposed
Inefficient Cooking – leads to smoke – respiratory diseases.	Use Energy Efficient Stove – Covered in module 3 basics of energy efficiency.
Water- Sources from river, stream, ground etc. Not clean and fit for drinking and cooking- Water borne diseases.	Use treated water for drinking.
Throwing waste in the surrounding, no proper segregation and dumping.	Segregate waste, have a proper landfill and recycle waste.
Agricultural waste – open burning in field- smoke.	Proper disposal through recycling.
Use of Kerosene lamps, candle – Poor quality of life, smoke.	Shift to solar home systems- Elaborated in (Renewable Energy Module).

2. Please read the following statements and identify whether they are true or false?

Statement	True / False
Drinking Water Directly from the well/ river is green.	False
Segregation of waste is a green initiative.	True
Petrol used for motorcycle is a clean source of energy.	False
Use of Solar Energy is green.	True
Use of firewood for cooking is good for health.	False

3. Look at the figure below and name them

Figure	Answer
	Biomass pellet
	Biogas plant
	Fuel Efficient Stove
	Solar cooker

4. What is the feed material (input) to the biogas plant and what do you do with the output?

The feed material to the biogas plant is kitchen waste, vegetable waste, animal waste. The output of the biogas plant is organic fertilizer.

ACTIVITY 4B

1. What are the present practices of water use in the community?

No piped water in most of the communities.

Water is collected manually in trolleys, carrying on the head. Water often spills on the way. People trek long distances sometime uphill and spend substantial time to fetch water.

No mechanism to use rainwater.

Water from open wells often contaminated.

Proximity to low lying swamp and pit toilets make water unsafe for drinking.

This water is directly used for all purposes (drinking, cooking, washing, gardening).

Drinking unclean water can lead to water borne diseases and also cooking.

Piped Water may not be clean.

The communities being cyclone prone, the water storage tanks fly off and the pipelines are broken.

Rainwater too murky and its untreated use leads to water borne diseases.

2. What is rainwater harvesting?

This effectively catches the rainwater falling from the building and is collected in a tank as shown in figure19. There are communities where there is abundant rainfall and access to alternative water is scarce. Rainwater harvesting can be used effectively in these communities.

3. How do you treat water for drinking?

The water is collected in the tank, filtered through a water filtration system, and supplied through pipes in the community.

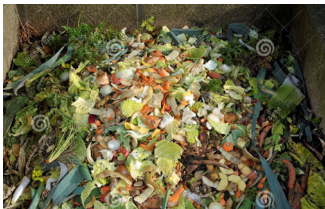
ACTIVITY 4C



1. What are the measures to make wealth from waste?

- Seen as a new venture for persons with entrepreneurial aptitude.
- To source funds from local lending institutions.
- Send biodegradable waste to biogas plant (separately explained).
- Separate plastic, metal, paper, glass bottles.

- Glass bottles can be sold directly to the agent who will in turn sell to drink producers (beer, coke, hard and soft drinks).
- Sell soft drink cans metal/paper to the recycler.
- Ensure recycler uses ethical methods to recycle.
- Avoid green washing concept.
- Profitability depends on size of waste handled and the area covered.

2. Identify the waste from the figures and how will you recycle?

Figure	Recycle
	Vegetable waste. Used to make compost or biogas in a biogas plant.

	Metal. Segregated, melted, and reused.
	Plastics. Can be used to make recycled materials.

3. Name some of the recycled material available in your country?

- Organic Fertilizers used in agriculture (vanilla, Banana, turmeric, and any other plant).
- Recycled paper.
- Handicrafts (cutlery, artefacts, paper bags, wallets).

ACTIVITY 4D

1. What are the issues with Fisheries in your countries?

There is a significant scope for developing fisheries in terms of food security and economic development as the communities have a large coastline. There is huge potential for commercial fishing. There is a need to reduce post-harvest loss, develop cold storages and also downstream fish processing industries. Further there are some unethical fishing activities (throwing plastics in the sea /river, cyanide dynamite. Beach de mere harvesting for fishing). This destroys marine life. There is also scope for development of in shore fishing (aquaculture, Mari culture).

2. Name some of the renewable energy gadgets that can be used in fisheries?

- Solar fish drying – to dry fish.
- Solar cold room.
- Solar lights and fans in the fish selling store.

3. Name some initiatives for developing handicrafts?

- Forming of cooperatives to give loan (money) to the artisans.
- NGOs and government can facilitate this.
- Help in sourcing quality raw materials and also ensure quality of finished product.
- Ensure right price for the product.

4. Name some of the issues in forestry sector in the countries?

- Over felling of logs to export timber at current extraction rates.
- Forest cover has substantially declined in the countries (by about 14% in Fiji from 1991 and 2007).
- Need to implement the regulations for commercial forests. (Code of logging practice).
- Public-Private partnership for funding.
- Proper Reforestation methodologies.

5. Why are preservation of mangroves important to the community?

Mangroves are vital habitats that not only protect the coast against tsunamis, hurricanes and sea level change but directly benefit the adjacent reef by exporting life building carbon. They are the nursery areas for countless marine organisms. They provide natural adaptation to the effects of climate change and contribute to the reduction of pollution.

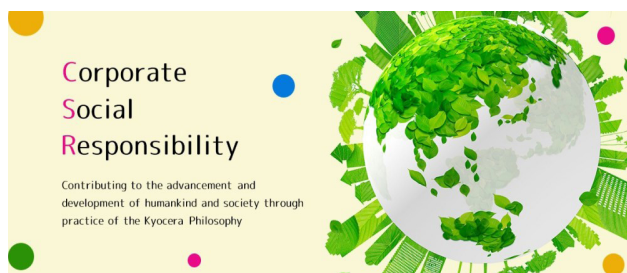
5

Way Forward

5.1 CSR Activities

Many of the green initiatives can be handled as Corporate Social Responsibility, this is also very good publicity tool for the various stake holders (financial institutions, NGOs, Missionaries).

FIGURE 44: Corporate Social Responsibilities⁵⁶



The following CSR activities will go a long way in greening the society.

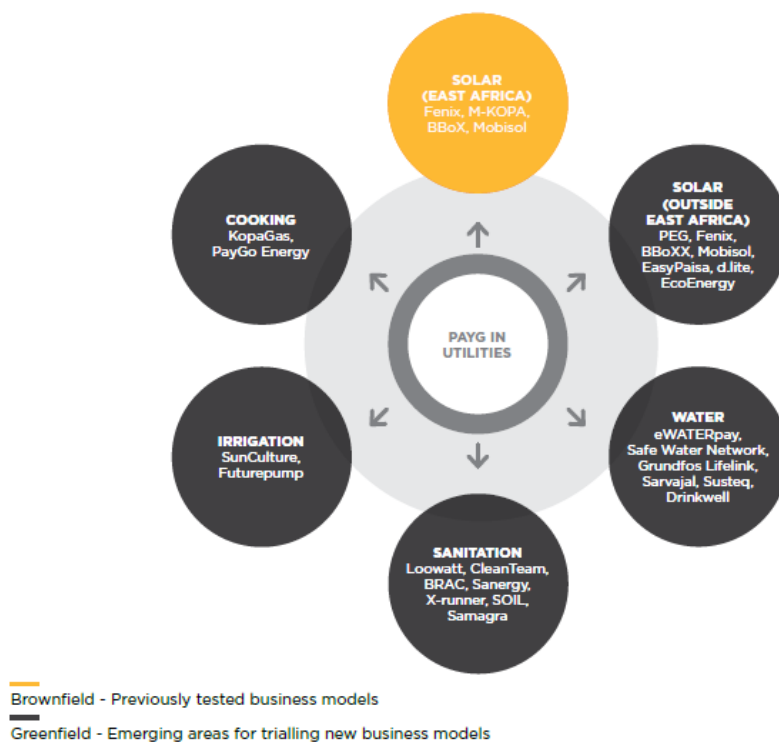
- Beach Cleaning – once a month. Trash to be segregated, disposed, and recycled as per above discussions.
- Paper recycled from the above can be made into notebooks and given to children.
- Fund low investment business initiatives (mobile charger/ corn roasting, packaging).
- Refrain from using child labour for financial purposes.

5.2 Greener Options – Business Models

MONEY IS THE KEY ELEMENT - whether energy efficiency or green business. The community members will not be able to invest in many of the alternatives proposed- be it energy efficiency or green business. There needs to be innovative business models attractive enough to interest the community. Otherwise, this will end up as limited concept selling.

FIGURE 45: Financial Models⁵⁷

PAYG utility models in greenfield markets



Note: This list is neither representative nor exhaustive

⁵⁶ Source: Mangala, https://i2.wp.com/www.mangalaclothing.lk/wp-content/uploads/2020/05/mv_01.jpg?resize=1024%2C412&ssl=1

⁵⁷ SMA Mobile for Development; <https://www.gsma.com/mobilefordevelopment/english/our-new-report-going-greenfield-with-pay-as-you-go/>

PAYG-Pay as you go: PAYG (Figure 45) companies deploy various lease-to-own or direct pay-per-use business models. Through these services, they offer accessible and flexible payment plans to customers, including those that typically do not have credit histories or bank accounts. Suitable for expanding business of small vendors (mobile charging, waste segregation and collection, drinking water).

Leasing / Financial Institutions: Suitable for biomass pellets/ biogas /RO plants for drinking water.

Any business has an investor, project developer and implementer. They both work in tandem to be beneficial to the community.

This is only for basic information about the available avenues. Detailing is not a part of this exercise.

Establishing Green Business Steps- e.g., Waste Management – Step by Step Approach.

- Form a team of community members say 3 to 4. Ensure women from the community are represented.
- Identify waste collectors preferably from vulnerable groups (women/unemployed youth, single mothers).
- Find out the nearest waste buyer and disposal agent.
- Enter into a price agreement with him (dollars/ kg of paper, cardboard, per bottle, per kg of iron etc.).
- Enter into a payment term with the waste buyer - income.
- Buy a weighing machine.
- Enter into a price arrangement with the waste collector- expense.
- Separate the waste into biodegradable (vegetable and animal waste) and non-biodegradable (metal/paper).
- Have a compost plant for biodegradable. Sell the compost as fertilizer.
- Sell the wastepaper / waste metal to the waste buyer.
- Profit = Income- Expense.
- Share the profits in the community.

Bookkeeping Sample								
Date		Month						
Expenses	Received Paper		Received Metal					
	Kgs	dollars	Kgs	dollars				
Waste Collector 1								
Waste Collector 2								
Waste Collector 3								
Transport admin etc								
Income	Received Paper		Received Metal					
	Kgs	dollars	Kgs	dollars				
Profit	Income-expenses							

5.3 Green Jobs

Transition is a way towards a green economy and sustainable development that will create green jobs, support climate action and help combat social injustice. The Pacific islands region is an economically and culturally diverse area, sharing similar challenges and opportunities.

The schools should be made to create an awareness on Green Business and Energy Efficiency Initiatives by including in the curriculum. Orienting the education in green economy will create more green jobs. The areas of opportunity are:

- Operation and Maintenance of Solar Systems (Electrical and Mechanical technicians and engineers).
- Operation and Maintenance of Pico hydro (Electrical and Mechanical technicians and engineers, Plumbers).
- Construction of Rainwater harvesting systems (civil and mechanical).
- Operation and maintenance of water supply systems (civil, mechanical, and electrical).
- Waste Segregation and management (environmental).

The way the opportunities for the above are growing in the Pacific Islands and the countries covered in this programme lot of awareness and training needs to be undertaken at various level. The other issue that needs to be addressed is to retain

the trained manpower to stay and work in their countries. Otherwise, they may find greener pastures elsewhere.

The following has been considered and dropped keeping the community limitations:

- Ecotourism as this is separate subject by itself.
- Marine Pollution again to big a subject.
- Higher level technologies for recycling waste.
- Solar powered boats (still in development stage).
- Sanitation and hygiene as these are local government initiatives.
- Forests and mangroves have been covered briefly.

To conclude this part of the focus of this manual has been to understand and appreciate few green initiatives.

- Waste is a RESOURCE at a wrong place. Be innovative on resource recovery based on the above and suited local community.
- Energy is not LONG LASTING, be sensitive while using Energy. Conserve and Use Energy Efficient Equipment.

You are fortunate to live where Renewable Energy is abundant. Please make use of it.

ACTIVITY 5

Target: Local government officials, Provincial Councils, District Councils, Town Councils, Island Councils, etc.

1. What is the role of your government in promotion of CSR activities?

- Meeting with various stake holders and request them to initiate activities.
- Inform the community about these activities and ensure their participation.
- Request the stake holders to include vulnerable groups.

2. What initiatives you would undertake to create green jobs?

- Identify Green jobs (solar, pumps, lights, boats, fisheries etc).
- Assessment of Training Needs.
- Interact with various stake holders.
- Monitor and implement.

Target: Traditional community/religious leaders, women and youth and vulnerable groups (single mothers, elderly), etc.

1. List some of the CSR activities you can undertake in the community

- Beach Cleaning – once a month. Trash to be segregated, disposed, and recycled as per above.
- Paper recycled from the above can be made into notebooks and given to children.
- Fund low investment business initiatives (mobile charger/ corn roasting, packaging).
- Refrain from using child labour for financial purposes.

2. Name some green jobs that can be generated as a part of renewable energy and green business initiatives?

- Operation and Maintenance of Solar Systems (Electrical and Mechanical technicians and engineers).
- Operation and Maintenance of Pico hydro (Electrical and

Mechanical technicians and engineers, Plumbers).

- Construction of Rainwater harvesting systems (civil and mechanical).
- Operation and maintenance of water supply systems (civil, mechanical, and electrical).
- Waste Segregation and management (environmental).

Target: Local electricians, people with technical aptitude, etc.

1. How do you upgrade your skills?

- Look for training programme to develop skills in green jobs.
- Apply skills learnt in my work practices.
- Educate others when they join new.

Target: Small Businesses

1. Name of some CSR activities you would like to undertake as a part of green business initiative?

- No plastics to be used in my packaging.
- Educate people for greener products.

2. How would you keep your self-updated in green business?

- By interaction with experts/knowledge partners.
- Participate in training.

Role Play 1

The members of the community are to then act out two role plays. For this role play, the learners may volunteer, or trainer can choose learners to act out certain roles. For this role play, 3 people are needed to play the characters Ronnie, Minnie and Kevu.

Ronnie and Minnie live in one of the communities. Ronnie works as a mechanic in the nearby town. Ronnie cycles his way every day to his work. Minnie uses a conventional wood stove for cooking. After Ronnie leaves, every day Minnie spends about 2 hours to trek up the hill to fetch water. She takes care not to waste water. The family meet their lighting needs by a solar home lighting system.

On his way to the work every day, Ronnie sees a waste collection shop. Ronnie was seeing stacks of paper waste, metal waste, empty bottles. Ronnie is used to see waste thrown everywhere in his community. He therefore decides to stop on his way back at the store.

In the evening, he stops by at the store.

Ronnie: Halo I am just wanting to know what you're doing in the shop.

Kevu: Halo I am Kevu owner of this shop. I make money by collecting and selling waste.

Ronnie: How's that collecting waste!!!

Kevu: Yes. I collect the vegetable waste and composting it and sell organic fertilizer. I sell the paper recycler which makes cardboard boxes. The metal waste I sell to metal recycling to melting industry. He melts it into metal. Waste bottles, if they are not broken, I recycle it to the soft drink industry, breweries, and distilleries. They pay me. The plastic waste goes to plastics recycler.

Ronnie: That sounds good. How do you get the waste?

Kevu: I have waste collectors who collect the waste and I separate the waste and pay them.

Ronnie: I have enough waste lying around in our community. If I collect and give it to you, will you pay me.

Kevu: Yes of course. It can add to your income. There are waste collectors who get paid about 400 to 500 USD a month.

Ronnie: Sounds Good! Will discuss with my community and get back.

Ronnie drives back home with this thought!

Minnie: Halo why are you late.

Ronnie: I stopped at a waste store on the way and met the owner.

Minnie: Waste Store??? What does it mean??

Ronnie: He collects waste from various houses and sells them to the recyclers. He pays the people who collect the waste and give it to him. Am planning to do the same to add income. The additional income may help us to have a larger solar system, water tank to store water so that your trips to fetch water will be reduced. We can also have a system to collect rainwater.

Minnie: Yes, let's talk to the community this Sunday and then get started.

The coming Sunday they talk to the community and Ronnie educates the community of waste collection and recycle. He convinces the community to use bins to store waste. He said he will collect and give it to the recycler. He also tells them the money he earns will be shared 50:50.

Next day on his way back he stops at the waste shop.

Ronnie: Halo Kevu

Kevu: Halo Ronnie. Nice to see you back. Hoping you will contribute to making your community green.

Ronnie: Yes. I convinced the community. I shall collect waste and bring it to you. You can pay me.

Kevu: Yes. Suggest you get the waste twice a week. We will keep an account and I will pay you monthly. Also suggest you keep the vegetable waste in the community. I will help you with composting and use it as fertilizer.

Ronnie: Thanks, Will be on the job.

So, saying Ronnie starts collecting the waste, separates the waste and takes it to the waste seller. As per discussion Kevu paid Ronnie regularly. He also helped Ronnie with composting. The organic manure from the composting was shared by the community for use in their fields.

After one-year Ronnie noted that he made about 600 USD. He shared the money with others. With the balance he invested on a larger solar system. He has enough light, solar fridge and TV. He is planning to invest on water system next year.

Not only Ronnie and Minnie were happy, but the entire community. The community experienced better quality of life.

Role Play 2

In this role play, 3 learners are needed to play the roles of the old lady, Meli and Ken.

In the rural community of Lawa, a group of children are playing in the school playground and having a conversation.

Meli: Ken, have you seen that old lady who walks around the village very early every morning, picking up rubbish?

Ken: Yes, Meli – I thought she was a bit weird at first but every morning I watch her and she has a few different rubbish bags – one for the glass bottles, one for the plastic bottles and one as well for the disposable rubbish. I really admire her commitment to keeping the village clean.

Meli: Interesting – I have always wanted to learn more about her – thanks for telling me what she does – does she get paid for doing it?

Ken: I hear she takes the waste she collects to town, and she gets some money for it – she uses the money for her grandchildren. I hear their parents have both passed so she has to look after them.

Meli: That is such a sad story – I think I will wake up early tomorrow morning and offer to help her

Early the next morning Meli meets the old lady as she is picking up rubbish

Old lady: good morning young man – what are you doing up so early?

Meli: I have been waiting for you – I wanted to help you and learn more about what you are doing with this rubbish.

Old Lady: A few years ago, I heard about the concept of Reduce, Reuse and Recycle from my daughter before she passed away. She made me promise to do my best to look after her children and also the environment. She was a strong advocate for looking after the environment. That is why I continue to do this until this day.

Meli: That is such an amazing story – I will make a point to do the same as well so I can do my bit to protect the environment.

Old Lady: And you can make some money as well – so I would encourage you to do it and show your friends how it's done so we can start to create an environment which values the concept of the 3 R's.

6

Annex

Annex A: Stakeholder Tips

This manual has been prepared with bare minimum technical terms/business jargons (bottoms -up approach). Should there be any requirement for further clarity / technical terms needing to be included, please inform the trainer.

Local Government Officials. Island Councils etc.

- Understand the basics of energy efficiency and green business to the extent required for your community.
- Request your trainer for any clarity on the coverage.
- Prepare an implementation programme shortlisting your priorities.
- Facilitate the community and handhold for implementation.
- Look for funding grants/ financial packages for greening your area.
- Have a regular campaign for sustaining the measures (e.g., beach cleaning / zero plastics/energy labelled equipment).
- Monitor and address the issues (e.g., Waste segregation/ space for waste disposal/ community benefit sharing).
- Proper Publicity campaigns related to the programme.
- Educate and involve school children in publicity campaigns.

Community / Religious Leaders

- As a leader **Practice** rudiment of green economy (Use of LED lights/water usage/waste disposal).
- Dedicate time and **preach** the green economy basics to your community members.
- Invite men and women for your meetings and ensure the community issues are discussed and there is guided action.
- Sensitize your community (e.g.: health, clean water, vaccination) to the importance of quality of life and sustainability.
- Be **Proactive** to new ideas and see how they can be beneficial to you /your community.
- Be a facilitator between the community and the government officials.
- Open to funding avenues (loans/grants/ community funding).
- Ensure money is well spent on the programme and monitor the benefits.

Small Businesses

- Source Green Products (e.g., If you have electrical shop source and market quality LED lamps. Refrain from selling normal bulbs).
- Extract proper guarantee conditions from the supplier / agent (e.g., 2 years or more for LEDs) and pass it on to your customer.
- Examine ways and means to make your business greener (e.g., If you are dealing in firewood shift to biomass pellets).
- Check on the source of supply and ensure greenness (e.g., Tetra-packs instead of plastic bottles).
- Proper Product Storage (e.g., vegetables /fish/fuel).
- Waste Segregation and disposal (e.g., vegetable /animal / plastic/metal).
- Check on avenues for resource recovery from waste (e.g.: recycle of paper, metal, biodegradable). Remember what is waste for you is a resource to other to start a manufacturing activity.
- Follow principles of green business (e.g., eco-label, packaging/organic fertilizer, clean water).
- If you wish, consult these "How to Guides" at <http://greenbusiness.solutions/how-to-guides/>











Follow our activities on
Facebook and Twitter



www.gggi.org