Japan International Cooperation Agency

Ministry of Forestry and Research
Solomon Islands

The Project on Capacity Development for Sustainable Forest Resource Management in Solomon Islands

(SFRM Project)

Market and Value Chain Analysis

Output 3, Activity 3-3

Final Report

Part II

November 2019

Ministry of Forestry and Research, Solomon Islands
Japan International Cooperation Agency

Contents

List of Tables

Acronyms

ADRA	Adventist Development and Relief Agency
BEE	Business Enabling Environment
CEMA	Commodities Export Marketing Authority
CoC	Chain of Custody Certification
DFAT	Department of Foreign Affairs and Trade
JICA	Japan International Cooperation Agency
MOFR	Ministry of Forestry and Research
PGS	Participatory Guarantee System
PHAMA	Pacific Horticultural and Agricultural Market Access
POETCom	Pacific Organic and Ethical Trade Community
RDP	Rural Development Program
SIARTC	Solomon Islands Association of Rural Training Centre
SIDT	Solomon Islands Development Trust
SITPEA	Solomon Islands Timber Processors and Exporters Association
VATA	Value Added Timber Association

Background

This document is part II of the final report under Output 3, Activity 3-3, of the Project on Capacity Development for Sustainable Forest Resource Management in Solomon Islands. Activity 3-3 had as the objective to select potential commodities for each pilot area and analyze its value chains and markets, with focus on the potential opportunities for the communities.

The study was conducted from July to September 2019, with guidance from the project work plan, internal reports (eg: community profile report)of the project as well as technical inputs provided from the Project team.

A set of three internal reports were delivered during the development of this activity, providing intermediate products to support discussions and decision-making by the Project's management team and community members:

- ✓ Internal Report No.1- Rapid Appraisal for Market and Value Chain Analysis: Gathering information on Komuniboli community profile and production systems.
- ✓ Internal Report No.2 - Rapid Appraisal for Market and Value Chain Analysis: Gathering information on Falake community profile and production systems.
- ✓ Internal Report N3 – Rapid Appraisal for Market and Value Chain Analysis of a short list of 9 commodities: Cocoa (*Theobroma cacao*), Coconut (*Cocos nucifera*), Kava (*Piper methysticum*), Sawn Timber and Furniture, Horticulture, Ngali nut (*Canarium indicum*), Betel nut (*Areca catechu*), Loya Cane (*Calamus* spp.) and Straw mushrooms (*Volvariella volvacea*).

Structure of the final report

Part I of the final report provides detailed information on the methodology used to select the commodities 'timber' and 'cocoa', and the methodology to assess the value chain and market data base.

Part II presents the results of the assessment and analysis, to understand the opportunities and challenges of the selected value chains and provide base line information to support Output 3 of the Project workplan

1 Logs, Timber and Furniture

1.1 Assessing the market

The forest sector contributes to Solomon Islands economy through timber sales on the domestic and international markets. This study focuses on understanding the domestic market for logs, timber and furniture, in Honiara (Guadalcanal) and Auki (Malaita) due to the project pilot area locations in these two provinces.

13 companies in the forest sector were assessed (3 companies in Auki and 10 in Honiara), thereby gathering information about their needs for logs, timber and furniture and elements in the value chain to support the project with material to assist development of community activity plans for sustainable forest resource management and livelihood improvement.

1.1.1 Domestic Market for Logs, Timber and Furniture

From the 13 companies, 7 have interest in the supply of round logs, 11 industries are buying rough sawn timber and only 1 looks for fully processed timber, which is a timber retailer located in Malaita (Table 1). None of the interviewed parties has any interest in buying furniture for further re-processing or resale. The Table 1 shows tree species that the industries are looking for logs and rough sawn timber.

Table 1: Supply of logs and timber

Species	% of companies interest	Interest in the supply of
Vitex/ Vasa (*Vitex cofassus*)	100%	Log, Rough sawn timber, Fully processed
Akwa/ Taun (*Pometia pinnata*)	92%	Log, Rough sawn timber, Fully processed
Rosewood (*Pterocarpus indicus*)	69%	Log, Rough sawn timber
Kwila (*Intsia bijuga*)	69%	Log, Rough sawn timber
Calophyllum/ Baula (*Calophyllum* spp.)	31%	Log, Rough sawn timber, Fully processed
Dillenia/Mudu (*Dillenia* spp.)	15%	Log, Rough sawn timber
White beech (*Gmelina moluccana*)	8%	Log, Rough sawn timber

Source: Lorenza Cordeiro (2019)

The species Rosewood, Kwila and Vitex are protected under the Forest Resources and Timber Utilization Act (Protected Species; Amendment; Regulations 2012), which means that they can only be exported as sawn timber. The timber products from these species are highly sought after on the domestic and international markets.

Among the industries interviewed no one are interested in the supply of exotic species such as teak and mahogany. Only one retailer mentioned to have stock of teak and mahogany sawn timber, but without a meaning of to have new suppliers. The main reason for low interest in those woods is the lack of domestic market. However a company called “South Pacific Group” has recently published a purchasing notice informing they interest in to buy teak. Details about price and requirements are available in the following table.

- **Requirements for quality and price**

The specifications for log's quality are: no hollow, no rot, no twists, no knots. The payment is issued after the quality checking, when the price can be negotiates if need (Table 2).

Table 2: Specifications for quality and prices to purchase logs

Logs (species)	Specifications	Purchase prices- minimal (SBD/log)	
Calophyllum	DBH* 50cm DBH 60cm 6m length		500 1000
Dillenia/Mudu	DBH 50 cm		500 1000
Vitex	DBH 50 cm DBH 60 cm DBH 80cm		500 1000 1500
Akwa	DBH 50 cm DBH 60 cm DBH 80 cm 15 m length		500 500 1000
Kwila	DBH 80cm 15 m length		1200 2000
Rosewood	DBH 60cm 6m length		1500
Teak	(14 years minimal age) DBH 20-24 cm DBH 25-29 cm DBH 30 cm up	(stand up trees) 300 SBD/m3 450 SBD/m3 600 SBD /m3	(at the company timber yard) 650 SBD/m3 800 SBD/m3 900 SBD /m3

*Diameter at Breast Height

Source: Lorenza Cordeiro (2019)

The quality requirements for rough sawn timber follow the same criteria as for logs, with additional restrictions regarding the sawing quality, seasoning defects and biological defects: miscut, oversize, undersize, wane, sapwood, pith, end splits, twist, spring, bow, beetles, fungi, termites and marine borers.

The dimensions follow the required sizes that generally are informed in advance by the timber companies (the buyer), while the timber is processed with small portable saw mills usually have higher prices in the market due the better quality.

Commonly the payment is issued after grading, in accordance to the final volume and quality. Sometimes the buyers can deduct the payment from the shipment, transport, licensing and loading costs when they agree to meet those costs in advance. Table 3 summarizes the specifications for timber and the average price that is paid in the domestic market.

Table 3: Quality specifications for timber and average minimal and maximum price on the domestic market

Timber dimension specifications	SBD min.	SBD max
Akwa	**500**	**2600**
Timber: 4 inch x 1inch to 8 inch x 2 inch; length 10 feet up	-	1800
Timber: 4 inch x 2 inch; 8 inch x 2 inch; 8 inch x 2 inch	1600	1800

Timber: 5 inch x 2 inch; up to 8 inch x 8 inch	-	2000
Timber: 6 inch x 2 inch; 6 inch x 3 inch; 8 inch x 2 inch; 8 inch x 3 inch;	-	2600
Timber: 6 inch x 2 inch, length 2m up	1700	2000
Calophyllum	**-**	**-**
Timber: 6 inch x 1 inch up; min 3,5 m length	-	-
Kwila	**2000**	**4000**
Timber: 6 inch x 2 inch; 6 inch x 3 inch; 8 inch x 2 inch; 8 inch x 3 inch;	2000	4000
Rosewood	**3000**	**5500**
Timber: 6 inch x 2 inch; 8 inch x 2 inch ; length 1.8m to 5.7m	-	4500
Timber: 5 inch x 2 inch; up to 8 inch x 8 inch	-	3000
Timber: 6 inch x 2 inch; 6 inch x 3 inch; 8 inch x 2 inch; 8 inch x 3 inch	-	5500
Timber: 6 inch x 2 inch, length 1.4 m up to 1.8 m	3500	4000
Timber: 6 inch x 2 inch, length 2,1 m up	-	4500
Vitex	**1800**	**3400**
Timber: 4 inch x 1 inch to 8 inch x 2 inch; length 10 feet up	-	2000
Timber: 4 inch x 2 inch; 8 inch x 2 inch; 8 inch x 2 inch length3m up	2650	3000
Timber: 5 inch x 2 inch; up to 8 inch x 8 inch	-	2500
Timber: 6 inch x 2 inch; 6 inch x 3 inch; 8 inch x 2 inch; 8 inch x 3 inch;	-	3400
Timber: 10 inch x 8 inch	2500	-
Timber: 6 inch x 2 inch, length 1.4 m up to 1.8 m	1800	3200
Timber: 6 inch x 2 inch, length 2 m up	3000	3300
Timber: 6 inch x 2 inch; 6 inch x 1 inch, length 1.8m to 5.7m	-	3000

Source: Lorenza Cordeiro (2019)

Another system to trade timber is the minimal value of SBD 30 to SBD 80 for any species with minimal dimensions of 3 inch x 1 inch up to 8 inch x 2 inch and 12 feet to 14 feet length.

Annex 1 shows the list of companies interviewed and Annex2 shows purchasing prices payed for log and sawn timber that the time of this report. The results show that VATA (Value Added Timber Association) has been offering the best market price for timber, followed by Hatanga and Lagoon Ecotimber. The VATA is a charitable organization assisted by MOFR to export sawn timber for resource owners. The organization facilitates the resource owners access to the government to subsidize sea freight of timber.

- **Origin of Timber**

The origin of the timber presented above is Malaita, Guadalcanal, Isabel, Makira, Choiseul, Rennel, Temotu and Western Province. Three companies have their own forest areas established through agreement with communities, to manage and process timber for their own supply. This was considered a strategy to guarantee the required volume and quality. The number of suppliers among the others 10 industries varies from 1-2 supplier, to up to 200 suppliers.

10 of 13 timber industries mentioned to have a stable timber supply and 4 companies declared to even have an excess supply of wood, 3 of them being located in Malaita.

Although most part of the companies are satisfied with the timber supply, some mention difficulties to maintain the timber flow due to high competition between industries and challenges to make the suppliers meet the-agreements. For Vitex specifically it was stated as a difficulty to be able to obtain the required volumes.

- **Legality, Forest Certification and Chain of Custody Certification (CoC) of wood supply**

As part of timber legality assurance, most of the industries require the existence of milling licenses from their suppliers (9) and only 3 industries also verify the existence of felling licenses. Four companies usually buy timber without verifying the timber legality. For Teak the growers need to have special permit from MOFR in order to enable the trade.

Regarding certification, none company requires both Forest Management and CoC certification from their suppliers. However, the SITPEA[1] members (Annex 3), with support of PHAMA Plus program, are preparing for NEPcon Coc certification. Only one member of SITPEA was not informed about the association's efforts with regards to preparing the forest industries for CoC audits.

- **Challenges in the timber supply**

The main challenges that need to be overcome to improve the log and timber supply are:

- **Price:** High competition; high prices of the timber; lack in a standard or agreements for minimum/maximum prices, lack of capital to buy timber; difficulties to access financial services.
- **Transport:** High shipment costs and inconstancy in the services; lack of support to enable the communities to transport timber; lack of roads infrastructure and wharfs, communities dependency from logging companies for transport.
- **Trading:** Seasonal changes in timber demand (eg: December is a low season for trading, which reduces the need for supply. The suppliers need to plan in advance but this is hampered by lack in communication with landowners and suppliers.
- **Forest management**: Lack in the management of forest resources put the future timber supply at risk; lack of support to develop small scale sustainable community forestry projects; risk and difficulties to transport the timber to the roads; lack of big sizes and good quality timber.
- **Legality:** there is lots of illegal timber yards selling timber without a license; It is common to mix timbers from different origins; lack of provincial offices to facilitate the access to the land owners and to improve the legality of the chain of custody.
- **Technology:** Lack of equipment and machinery (portable sawn mill) to enable the communities to process their wood and reduce their dependence on logging companies; lack of new machines and technology which could increase the production and improve the supply;

[1] SITPEA- Solomon Islands Timber Processors and Exporters Association

1.1.2 End Market

From the 13 companies, 2 mentioned to trade 5% to 10% of their products in the domestic market; 4 trade around 50% to 75% inside Solomon Islands; 6 depend 100% on the domestic market and 1 is part of a group of companies, providing timber exclusively to the corporation.

The reasons for selling in the domestic or international market vary between the interviewed parties. Most would prefer to sell to the international market because of the higher prices, trade volumes, large amounts negotiated, financial return and possibility to plan the annual cash flow. However, the producers acknowledge the importance of the domestic market, which provides an opportunity to keep the cash flow when the international market is not favorable (eg: when they find difficulties to find a buyer, can't meet the required volumes or can't meet restrictions on quality or legality).

The main products sold on the domestic market are the second grade rough sawn timber (sold per 'linear meter'), rough sawn timber (sold per 'linear meter' or m^3) and dressed timber (sold per m^3) (Table 4). The construction sector is the main end market, followed by direct sales to the final consumer, without involving retailers.

Table 4: Final products sold in the domestic market

Products	Specifications (inch)	Sales prices
Akwa rough sawn timber	2x2up to 8x2	SBD 4500/m^3
Akwa rough sawn timber	6x3	SBD 333/m3
Akwa rough sawn timber	1x1 up to 12x4	SBD 3.82 to SBD 185.95 linear meter
Akwa rough sawn timber	1x1 up to 10x4	SBD3.15 to SBD 125 linear meter
Akwa dressed timber	1x1 up to 12x4	SBD4.05 to SBD195.25 linear meter
Akwa dressed sawn timber	1x1 up to 8x1	SBD7.7 to SBD36 linear meter
Kwila rough sawn timber	4x2 up to 8x2	per linear meter: SBD 18 (4 mx1)
Kwila rough sawn timber	Diversified sizes	per linear meter: SBD 24 (6 m) to SBD 144 (6m)
Rosewood rough sawn timber	4x2 up to 8x2	per linear meter: SBD 18 (4 mx1)
Vitex rough sawn timber	4x2 up to 8x2	per linear meter: SBD 10 (4 mx1)
Vitex rough sawn timber	Diversified sizes	per linear meter: SBD 27 (1 m) to SBD 162 (6m)
Vitex rough sawn timber	1x1 up to 12x4	SBD5.22 to SBD260.3 linear meter
Vitex rough sawn timber	1x1 up to 10x4	SBD3.19 to SBD155 linear meter
Vitex dressed timber	1x1 up to 12x4	SBD5.05 to SBD273.3 linear meter
Vitex rough sawn timber	NA	SBD 4000/m3
Vitex dressed sawn timber	4x1 up to 6x1	SBD19.5 to SBD30 linear meter

Source: Lorenza Cordeiro (2019)

Only one company produces furniture in Malaita, whereas 4 industries manufacture furniture in Honiara. The view and expectations about the furniture's market in Honiara is positive. The producers acknowledge this market as a good opportunity for diversification and utilization of recovery timber.

In Malaita, the sentiment regarding the potential of furniture markets is the opposite. Due the low purchasing power of the local population and high transportation costs to Honiara both

furniture and timber markets suffer economic restrictions. The end market for furniture mainly consists of orders from public bidding and local businesses, while the small industries and retailers in the timber sector have small constructions projects and independent consumers as their end markets. The main complaint is the unfair competition with illegal timber producers or temporary (amateur) rough timber, as those competitors don't pay for business licenses and other fees.

- **Market Competition and Challenges**

From the 10 industries interviewed in Honiara, 4 don't know how many companies compete for the same market. The other 6 interviewed state the number to be between 10 to 24 competitors. The MOFR doesn't' have data about the domestic market, while the information of companies registered in the Company Haus[2] is not consistent, as it doesn't advise if the company still active or the specific sector it operates in.

In Malaita, the interviewed mentioned that 3 sawmill industries are producing sawn timber, 7 business are retailers selling timber products (doors and fiberboard) and only one retailer sells the rough sawn timber

The main challenges that the companies face in the domestic market are:

- Competition with illegal wood or freelance (temporary) timber providers which sell for lower prices.
- Low sales prices due too many competitors.
- Timber substitute products: new constructions and buildings are increasingly being replaced by concrete and steel, reducing the market for timber.
- Low timber recovery and product diversification to reach new costumers.
- Low purchasing power of the domestic market
- Difficulty to employ and to keep skilled labor.

1.2 Map of the Value Chain

The value chain of logs, timber and furniture consists of four phases and five activities – planning, log extraction, timber pre-processing, timber re-processing and final trade. The general value chain maps with its phases, activities, actors, functions and products are presented in the table below. The map gives a holistic overview over the timber value chain, and facilitates understanding the detailed map developed with both communities (Falake and Komuniboli), which are presented in the follow sub-items.

Table 5: Map of log, timber and furniture value chain

Phase	Value Chain Activity	Actor	Function	Products for trading
Preparation	**Planning**	Resource owners	Agreement on the area to be managed and tree selection	Standing trees
		Logging companies		-

[2] Registry of companies in side of Ministry of Commerce, Industry, Labour and Immigration.

		Milling companies	Tree selection, forest management plan, felling licensing	-
Production	**Log extraction**	Resource owners	Small scale timber harvesting: felling, log preparation for pre-processing	Logs
		Logging companies	Large scale harvesting: road construction, felling, harvesting, skidding, log transport, shipment	Logs
		Milling companies	Large scale harvesting: skid trail construction, felling, log preparation, harvesting, log transport	
Transformation	**Timber pre-processing**	Resource owners	Timber sawing (rough sawn timber), timber transport	Rough sawn timber
		Milling companies	Timber sawing (rough sawn timber) and transport	Rough sawn timber
	Timber re-processing	Resource owners	Timber grading and transport, or furniture production	Graded rough sawn timber and furniture
		Milling companies	Timber grading and re-processing	Graded rough sawn timber, dressed timber and furniture
Trade	**Final trade**	Milling companies	Domestic trade for construction sector, milling companies, individual consumers; and export	Graded rough timber, dressed timber and furniture
		Resource owners	Domestic trade for construction sector, milling companies, individual consumers	Rough sawn timber, graded rough sawn timber and furniture
		Furniture marker	Domestic trade	Furniture

Source: Lorenza Cordeiro (2019)

Phase 1: Preparation

The preparation is an important phase of the log, timber and furniture value chain, as it covers the planning of the forest management. The actors engaged in this activity are the **resource/land owners** –which have interest in the area to be managed and to select the trees for harvesting by logging companies and milling companies.

When the communities have the capacity (capital, machinery, equipment and skills) to carry out the timber harvesting, the value chain may move straight to the production phase without participation of any other actor. However, commonly the resource owners don't have this capacity (capital, machinery, equipment and/or skills) to handle the timber harvesting by themselves. These restrictions drive the community to enter into commercial agreements and dependencies with logging companies and milling companies.

The commercial agreements are based on the estimated volume of standing trees. The price depends on the species and the benefits provided by the company to the community. In this business arrangement, the company is generally responsible for all forest activities and the timber transport. Usually the agreement provides the employment of the community members and the payment method may include delivery of processed timber and improvements to the community infra-structure (house, roads, etc) and cash.

The system for payment can vary. The following case describes a typical example of a business arrangement*:" The quantity of 2 logs belongs to the company and 1 log belongs to the community. The company has to support the community infrastructure and the company has to meet all the forest operational costs, up to the pre-processing activity. In some cases the company buys standing trees from the community through cash payment (as summarized below) or the company buys timber per cubic meter after pre-processing".*

The value for **standing trees** can vary as showed below:

Table 6: Purchase prices for stand up trees

Species*	Specifications	Purchase prices-minimal (SBD/tree)	Quality	Payment
Calophyllum	Tree: Minimum DBH 60cm; 6m minimum height	500/tree	Not hollow, no rot, no twists, no knots	Quality check after felling and negotiate the price if necessary
Vitex		1500/tree		
Akwa		500/tree		

*The others species were not mentioned by the buyers.

Source: Lorenza Cordeiro (2019)

Phase 2: Production

The production phase comprises the timber harvesting, which includes tree felling and the preparation of logs for processing either directly in the bush or after skidding (pulling the logs using bulldozers) to the timber yard. The actors engaged in the production phase are the same as in the preparation phase.

The value chain moves to the *transformation phase* without interference of any other actor apart from the community where the producers own the machinery, equipment and possess the skills to execute the timber processing.

When the resource owners don't have such capacity, the community may execute only the tree felling to sell logs to the milling companies. The milling company pre-processes the timber inside the bush or after skidding the logs to the timber yard.

The trade of logs follows the same rationale as described in the preparation phase with the possibility to deduct additional costs when the company performs the skidding to the timber yard.

The following case describes a typical example of the business arrangement in the production phase: *"The company carries out the skidding of the logs to the timber yard, performs the timber pre-processing with a portable sawn mill, and negotiates: 1 log to cover the fuel cost, 2 logs as payment to the resource owner, 2 logs as payment to the milling company. When the community wants to sell their logs to the company, the price follows the value per species and per cubic meter of timber."*

Phase 3: Transformation

The transformation phase includes the activities timber pre-processing and re-processing. The main actors involved in these activities are the resource owners and the milling companies.

The communities are able to do the pre-processing when they have skills and equipment, such as chain saws and/or portable sawn mills. In this situation they are the only actors in the value chain. The resource owners may produce rough sawn timber and move up the value chain straight to the trading. The pre-process generally happens inside the forest and there is the need to carry the timber to the closest road or timber yard for further transport. Commonly this is done manually, which demands great labor force.

The second activity of this phase is timber re-processing. At the community level the re-processing comprises: i) grading of the timber to the final dimensions as informed by the buyer; and ii) furniture. The capacity to perform the timber re-processing depends on the community's skills, machinery and infra-structure for the production.

The milling companies participate in the value chain when the communities don't have the capacity to execute the activities for timber transformation themselves. The milling companies may: i) rent the equipment to the communities; ii) carry out the pre-processing; iii) carry out the re-processing: grading, dressing and furniture.

Phase 4: Trading

The three actors in the trading phase are: the milling companies, the resource owners and the furniture makers.

The milling companies perform an important function in the value chain, as they are the main end market for the rough sawn and graded timber produced by the communities, within their size- and quality requirements. The milling companies also play an important role in accessing domestic and international markets, improving the quality of the final products, meeting the buyer's requirements and complying with the national and international trading legislation. In addition, some milling companies are producing furniture with the hope to increase their profits, reduce timber waste and optimize the use of the recovery timber ("second grade") to add value to their final products. The milling companies are connected directly to the consumer, excluding the intermediate 'retailer' as an actor in the value chain.

The furniture producers are a small group of actors, which are directly connected to the consumer and milling companies. They work exclusively for the domestic market and produce customized pieces for their clients. In Auki there is only one furniture maker, while it is unknown how many producers there are in Honiara.

Most part of the resources owners sell rough sawn and graded timber to the milling companies. Even when the trading is not based on a formal contract or any pre-agreement between producers and buyers, the companies provide previous information about the required sizes and other timber specification. This practice facilitates the trading and reduces the risk of loss. Resources owners also trade directly with consumers, specially in the rural area where there is demand for processed timber to build houses. To a more limited extend, some communities also produce furniture, for buyers such as schools or churches.

1.3 Assessing the Logs, Timber and Furniture value chain in FALAKE

The detailed value chain of logs, timber and furniture developed with Falake community in Malaita is presented in the table below.

Table 7: Value chain of logs, timber and furniture in Falake/Malaita

Activities	Actors	Services needed	Costs	Risks
Phase: Preparation				
Planning: • Gathering market information, • Operational cost estimative, • Operational plan: time and job allocation, • Initial survey: brushing, tree selection, tabu areas, site for milling ('bush yard').	Community Development Committee	• Transport • Labor services • Communication (phone) • Fuel supply • Medical supplies	truck hire for transport	• Miss information about the market requirements (sawn timber sizes) increase the risk of wrong product dimension and risk of buyer refusal. • Health and injuries risks during the activities.
Phase: Production				
Log harvesting: • Camp site establishment; • Transport of machinery, equipment and materials; • Tree feeling • Log preparation /bedding (following the buyer requirements: dimensions and quantity) • Rehabilitation	Community members with skills; Youths; Women (food preparation); Community member with disabilities.	• Transport • Labor services • Communication (phone) • Fuel supply • Machinery and mechanic services • Medical supplies	• Camping infrastructure (tent, light/torch, solar panel, kitchen material); • Food; • Transportation: drop off labor/equipment: SBD 300/load • Labor: chain operator, lucas milling operator, assistants/carriers, security, family obligation; • Machinery hire: Chain sawn: SBD 300/day (Ado[3]);. • Chain block; • Milling machine: SBD 2000/day (machine, labor, crew); • Fuel: Chainsaw- 2 gallon-(10L) SBD120/day) Milling saw- 4 galloon (20L)-SBD200/day) • Communications (SBD 100 / varies) • Medical services – SBD 100 • Bank – SBD 100	• Accidents and injuries; • Mistakes in the calculation/estimative of the volume; • Faulty machinery adjustments.

[3] Ado is a local association in Falake. The word "ado" in Kwara'ae language which means "together".

Phase: Transformation- Community level				
Timber pre-process: **Transformation 1: on the bush yard** • Machinery adjustment/setting; • Timber extraction • Timber sorting (at bush yard) • Timber transport to the road • Timber loading and offloading • Transport to the village **Transformation 2: in the community** • Timber processing: pieces, cubes for building structure. **Timber re-processing:** **Transformation 3: in the community** • Timber sorting and grading in accordance to the product requirements • Furniture preparation (planing, sculpting, fitting, gluing, sanding, varnishing, sorting, storage)	Community members with skills;	Truck Transport Labor services Machinery Work supplies (tools and materials)		• Timber theft; • Flaws in the timber and quality loss through damage (when loading and unloading); • Accidents and injuries; • Timber loss from cracking, twisting and breaking while processing due limited technical knowledge.
Phase: Trade- Community level				
Final Trade: • Sorting of the products (timber / furniture) • Transport and delivery • Storage • Administrative activities: buyer contact, promotion, expenses calculation, cash transaction.	Community Development Committee ADO	Transport to Auki Bank services		• Lack or delay in the payment; • Lower price for the products; • Lack of commitment from the buyer; • Lack of communication between buyer and producer; • Lack of financial management.

Source: Lorenza Cordeiro (2019)

1.3.1 Business Enabling Environment (BEE) in Falake

The performance of the timber value chain in Falake is interfered by the following constraints to the BEE[4]:

Table 8: Business Enabling Environmental in Falake

BEE	BEE in Falake
Cultural norms and customs	– Restriced "Tabu" areas (forbidden for timber extraction) Loss of the wood if the tree is felled into Tabu area by accident; – Frequent and unpredictable compassionate leave of workers (3 days to 2 weeks); – Leave due to commitment to 'brideprice' (wedding event)
Land access/benefit sharing	– Restricted access to tabu areas; – No proper procedures are in place; – No proper equal sharing of funds procedures are in place.
Laws, Regulations, Licensing, policies	– Cost of Milling license and Ado association; – The community will need the felling license, as the wood extraction will have commercial purpose.
Trade agreements	– Only verbal agreements with buyers; – Verbal information about the desirable sizes guides the felling and sawn milling activities.
Community Infrastructure	– ADO infrastructure (nursery, office and storage); – ADO has one chain saw; – No portable sawmill available; – Area for furniture production in side the village.
Public infrastructure (roads, electricity, water, etc.)	– No road access to the felling site; – Need lots of fuel for generator to produce furniture; – Road condition at this moment is good.

Source: Lorenza Cordeiro (2019)

[4] The BEE information aims to understand whether local norms and customs, regulations, policies, trade agreements and infrastructure might facilitates or hinders performance of the value chain. When potential improvements are identified, it can be considered when the design of the activity plan.

1.3.2 SWOT Analysis in Falake

Falake community acknowledged a range of internal strengths and weakness, and external opportunities and threats that may lever actions or can become barriers for the implementation of activity plans, as showed below:

Table 9: SWOT analysis in Falake

	POSITIVE	NEGATIVE
INTERNAL	**Strengths** – Available chain sawn operator in the community – Available portable sawmill operator in the community – Available carpenters in the community – Welder in the community – Architect in the community – Chain sawn mechanic in the community – Community members are involved in tree planting and crop planting – Community well organized – ADO organization and ADO facilities (nursery, bungalow, storage and room) located in the community – ADO work plan (5 years) and corporate plan under preparation – Early childhood infrastructure in the community.	**Weakness** – Time management – delay and lack of commitment to follow schedules – Lack of management of the resources (eg: transport /vehicle, milling machine, bowl processing equipment for furniture, generator); – Lack of community participation – Weak general management (decisions, financial, business) – Lack of formal management: record information, understanding of the roles & responsibilities, good governance, and information for community members – Lack of proactivity to look for updated information. – Lack of safety procedures, which can lead to accidents in the logging operations – Lack of information about chances in the forest legislation and policies.
EXTERNAL	**Opportunities** – SFRM Project in Falake – Continuation of MOFR support, which assisted Falake with the community nursery equipment in the past. – Falake community to become a model for CBSFRM (sharing knowledge, influencing overseas and locals to visit Falake for trainings)	**Threats** – Markets price fluctuation – Cyclones – Difficult to access information about chances in the forest legislation and policies.

Source: Lorenza Cordeiro (2019)

1.4 Assessing the Logs, Timber and Furniture value chain in Komuniboli

Table 10: Value chain of logs, timber and furniture in Kominiboli/Guadalcanal

Activities	Actors	Services	Costs	Risks
Phase: Preparation				
• Gathering market information and selection of the buyer, • Operational cost estimation: material, labor, transport and material. • Field survey for tree selection	Community members; Selected representatives (Moses, Abraham)	• Transport	Transport: SBD 100 per travel to Honiara	• Selection of the best buyer (sizes and value) • Availability of operators to work in the forest
Phase: Production				
• Camp site establishment; • Tree feeling • Cross cutting/bedding (following the buyer requirements: dimensions and quantity) • Log positioning/preparation	Chain sawn operator 4 operators; 2 chain saws	• Labor services: chain sawn operator • Chain saw hire: spare parts, oil, fuel • Catering	Camping infrastructure (tent, kitchen material): SBD 500; Solar panel: SBD 600 Food (5 people) SBD 2000/week; Labor: Chain saw operator: SBD 100/day Chain sawn assistant: SBD 50/day Fuel+oil for 2 Chain saws: SBD 1560/week	• Accidents, hazards and injuries (in special while carrying the wood); • Vulnerability to diseases (eg: Malaria); • Lack of safety gear; • Mistake in the preparation of the fuel and oil mix

Activities	Actors	Services	Costs	Risks
Transformation- at Community level				
Transformation 1: at the bush yard • Machinery adjustment/setting; • Timber extraction in accordance with the buyer sizes • Timber grading (at bush yard)	Chain saw expert and operator Portable saw mill operator	• Truck transport • Labor services: Chain saw operator; Assistants; Portable sawmill operator. • Machinery • Work supplies (tools and materials)	• Fuel+oil for portable sawmill SBD 1200/week • Portable sawmill hire: SBD 1000/day • Portable sawmill spare parts: SBD 1000 • Chain saw spare parts: SBD 250 • Labor: Chain saw operator: SBD 100/day Chain saw assistant: SBD 50/day • Mechanical costs: SBD 250	• Mistakes in the machinery adjustments due lack of knowledge; • Accidents and injuries; • Lack of safety gear;
Phase: Trade- Community level				
• Carrying Timber to the road • Timber loading and unloading • Transport and delivery in Honiara • Administrative activities: expenses calculations; equal distribution of the revenue.	Community members, Group leader	Transport to Honiara	Transport cost: SBD 1650 (1 truck; 25m^3) Transport (minibus SBD 200)	• Transport accidents due the bad road conditions and truck overloading ; • Accidents during loading and unloading the truck; • Lack of commitment from the buyer (refuse to buy); • Delay in the payment; • Delay in receiving the payment increase vulnerability to be target of thieves and people asking for money.

Source: Lorenza Cordeiro (2019)

1.4.1 Business Enabling Environment (BEE) in Komuniboli

The performance of the timber value chain in Komuniboli is interfered by the follow constraints to the BEE:

Table 11: Business Enabling Environmental in Komuniboli

BEE	BEE in Komuniboli
Cultural norms and customs	– Frequent and unpredictable compassionate leave (3 days to 2 weeks); – Leave due to commitment to 'brideprice' (weeding event) – Community policy review – Dedication to church activities – School activities demand dedication and absent from work – Tribal conflicts (land dispute)
Land access/benefit sharing	– Restricted access to tabu areas; – Process to access the land: 1- community chief shall be consulted; 2- community committee shall be consulted; 3- whilst on the land, follow the customary rules (eg: tabu) – Financial contribution of 20% of the income for the community.
Laws, Regulations, Licensing, policies	– Need milling license; – Felling license for commercial purpose.
Trade agreements	– Practices of to check requirements from the buyer; – Practices of to check the price per cubic meter; – Practices of to check the transport; – Verbal agreement with buyers; – Other agreements: buyer provides fuel and ration
Community Infrastructure	– No portable sawmill – No chain sawn – No area to produce furniture
Public infrastructure (roads, electricity, water, etc.)	– Road access (needs improvement); – Communication is limited; – Road and bridge condition are essential to transport the products.

Source: Lorenza Cordeiro (2019)

1.4.2 SWOT Analysis in Komuniboli

Komuniboli community acknowledged a range of internal strengths and weakness, and external opportunities and threats that may lever actions or can become barriers for the implementation of activity plans, as showed below:

Table 12: SWOT analysis in Komuniboli

	POSITIVE	NEGATIVE
INTERNAL	**Strengths** – Chain sawn operator and portable sawmill operator present in the community; – Knowledge of tree selection, felling and tree positioning; – Transport infrastructure ; – Community mobilization for activities. – Revenue from timber can be reinvested in activities that aim to improve community livelihood.	**Weakness** – Lack of chain saw and portable sawmill expert and mechanic to maintain and fix the machines; – Need to improve the timber grading process; – Road access is difficult; – Lack of cooperation among community members – Lack of management skills: business, financial, administration; – Lack of start capital; – Lack of transparency (financial, reporting and no feedback to the community); – Lack of furniture infrastructure; – Weak community governance and guidance.
EXTERNAL	**Opportunities** – Rural Development Program and improvements in the infrastructure; – Member of Parliament supports with materials and house; – Previous trainings provided by different organizations: SIDT, Red Cross, MOFR, JICA, GIZ; – Improvements in the infra-structure (eg: generator, water tanks).	**Threats** – Unstable timber prices on the market – Extreme weather condition – Tribal conflict (boundaries) – Access to the road – blocks due to disputes, conflict; – Illegal logging and tree felling – Bridge condition (in the past the village was isolated due damages to the bridge).

Source: Lorenza Cordeiro (2019)

1.5 Need for improvement of the value chain at the community level

Some potential improvements in the value chain at the community level for Falake and Komuniboli are highlighted below.

Subject	Comments	F	K
Phase 1: Preparation			
Communication	Improve the communication between producers and potential buyers is important to guide the forest operational plan, avoid mistakes in the	x	x

	production system (eg: wrong timber dimensions and species) and to ensure that the final product meets the end markets requirements.		
	Strengthen the communication among community committee members, as well as among others members of the community.	x	x
Business plan	The costs inherent to the activities in the preparation phase especially the field assessment shall be anticipated in the business plan.	x	x
	The budget should include the costs of safety gear.	x	x
	An economic feasibility assessment shall guide the business plan, indicating the costs of machinery and equipment, including a comparison of different business scenarios (e.g. purchase vs. rental of such infrastructure).	x	x
	The feasibility study should support the financial plan to guide the start capital, costs deduction, investments and distribution of profits.	x	x
	The cost for logistics and transport of the final products should be predicted, especially for Falake community.	x	
Management plan	The management plan shall clearly indicate the total forest area to be managed, long term timeline and the rules and the community agreement about land access and benefit sharing to avoid future disputes and conflicts.	x	
Operational plan	The operational planning shall specify the boundaries of the Tabu areas and indicate the felling direction of bordering trees to avoid trespassing, and unnecessary timber loss and forest degradation.	x	
Legislation	Timber harvesting for commercial purposes has to follow the legal licensing process. Equally, the milling activity also has to comply with the milling licensing process.	x	x
Subject	**Comments**	**F**	**K**
Phase 2: Production			
Business plan	The economic feasibility study and management plan can support the informed decision making about the best options for investments in infrastructure, production and trading system.	x	x
	The business plan should include the detailed costs of machinery maintenance	x	x
Training	Business and financial management skills are essential to enable the community to administrate the forest resources for long term sustainability.	x	x
	Capacity building to improve the field survey and timber volume estimates is important to optimize the production and to reduce losses.	x	x
	Capacity building about machinery maintenance and basic mechanic can improve the quality and productivity of forest operations.		x
	Updating the knowledge on safety procedures and felling techniques can reduce the risk of accidents and the impact inside of tabu areas.	x	x
Operational plan	The operational plan and the harvesting schedule should anticipate potential delays due to cultural events that have priority for community members and can pose a challenge to strict time management.	x	x
Subject	**Comments**	**F**	**K**
Phase 3: Transformation- Community level			
Training	Training on machinery adjustment, timber sawing and timber grading to improve the quality, reduce costs and to optimize the productivity.	x	x
	Training on technologies, carpenter technics, design and creation.	x	x
Communication	Strengthen the communication with potential buyers to guarantee that the final products correspond to the end market needs.	x	
Products	Although the end market has a short list of products, it would be strategic to investigate alternatives to develop low-cost products made with second grade timber.	x	x

Business plan	An economic feasibility study shall guide the business plan, indicating the costs of machinery and equipment for transformation under different scenarios (e.g. purchase or to rent of such infrastructure).	x	x
	The business plan should anticipate the costs for infrastructure and carpentry.	x	x
Subject	**Comments**	**F**	**K**
Trade: Community level			
Training	Training in Business and financial to improve the community skills to trade and to administrate the cash flow.	x	x
Communication	The communication with potential buyers and market information should support the decision making about the final buyer and determine the trade agreements (eg: transport and logistic cost).	x	x
Business plan	The trade outcome should meet the income and profit anticipated in the financial plan.	x	x
	The financial plan and community agreements should guide the labor payment, benefit sharing, costs deduction and investments	x	x

Source: Lorenza Cordeiro (2019)

1.5.1 Identifying Actions for Activity plan

A summary of recommendations for the activity plan in the pilot areas and potential partners to improve business practice, the forest management and timber processing at the community level are described in the Table 13.

Table 13: Recommendations for the activity plan and potential partners to improve the timber value chain at the community level

Business Practice	Potential support
Develop (or review) procedures and agreements for land and resources use, and profit sharing, highlighting the functions of existing initiatives(eg: associations) in the community forest management and timber processing;	Community activity with assistance from the Project. Ps: Komuniboli mentioned to have community procedures (to check and review); Falake need to develop procedures.
Develop economic feasibility models (each community) and promote capacity building to support informed decision-making about investments in tools and machinery; Eg: based on forest management plan and potential volume per year, to plan the need for machinery and cost-benefit to purchase or to rent such equipment. Consider the rules for ownership, cost for maintenance, and possibility to generate additional income to the community through rental and/or to provide services for other communities nearby.	Training institutions: Solomon Islands Small Business Enterprise Centre (SISBEC); MASE Business Services Centre; Solomon Islands Women in Business Association (SIWIBA), Youth at Work (description in the Annex 4) Financial institutions and services (Annex 5)
Capacity building to develop a simplified community business and financial management plan;	Training institutions: (Annex 4)

Eg: based on forest management plan and potential volume per year, estimate the costs, potential income, profits and investments. Develop a simplified business and financial plan describing basic issues related to accountability, licenses, cash flow etc.	Financial institutions (Annex 5)
Capacity building to develop a community market and trade strategy, especially in Falake due to the narrow market Auki and expensive costs for transport to Honiara; Eg: simplified strategy describing the community leaders responsible for market assessment, list of main buyers and contact, desirable species, routine for up dating the market price, trade agreements, access to subsides, etc.	Training institutions (Annex 4), Strongin Busines (advising from the BEE Program)
Assist Falake community to access the sea freight subsidy to reduce transportation costs.	MOFR and VATA
Forest Management	
Development of the forest management plan and annual operational plan;	MOFR, JICA, SIDT (Annex 5)
Capacity building for the development of annual operational plans;	MOFR, JICA, SIDT (Annex 5)
Review and up date the Licensing of felling and milling activities;	MOFR
Develop a simplified timber traceability system, which may be a differential to establish trade agreements buyers ;	VATA, PHAMA Plus (DFAT)
Refreshment training about safety and felling techniques.	MOFR, SIDT (Annex 5)
Capacity building for nursery and rehabilitation after exploration (Kominiboli).	Knowledge exchange between pilot areas;
Timber Processing	
Capacity building for timber survey, volume calculation and sawing techniques;	MOFR, VATA
Refreshment training for timber grading;	VATA, buyers
Refreshment training for machinery maintenance and mechanics	Knowledge exchange between pilot areas, VATA, SIDT.
Capacity building to improve their knowledge of carpenters and to develop skills to produce new wood products.	Knowledge exchange between pilot areas; San Isidro (Catholic Church) (Annex 5)
Investigate new products to add value to second grade timber and/or to utilize different tree species. Eg: toys, kitchenware, decoration	San Isidro (Catholic Church), Coconut Technology Centre (which is a the non-profit side of Kokonut Pacific), Youth at Work (Annex 5), Strongim Bisnis (DFAT)
Investigate the potential domestic market for teak, mahogany and alternative timber from native species.	Potential support from: Project, SITPEA, VATA and South Pacific Group, Strongim Bisnis (DFAT)

Source: Lorenza Cordeiro (2019)

2 Cocoa

The cocoa sector in Solomon Islands is well understood due to several analyses about its value chain and market system. In addition, many projects have been developed between the Solomon Islands Government and partners, such as Australian Aid and World Bank. This report comprises the results obtained from primary data assessed in Falake and Auki, as well as compiling information from existing studies.

2.1 Context of cocoa sector

It is estimated that around 20-25000 smallholder farmers are engaged in cocoa production. The plantation sites vary from 1 to 3 hectares (smallholders with less than 3000 trees), 3-10 hectares (medium-size holdings with 3000-10000 trees) and larger plantations with more than 10 hectares.

The cocoa production contributes approximately 5,4% to the Solomon Islands gross domestic product. A great effort has been made to promote the domestic market through local processing and consumption of cocoa, however the export markets are still the main markets for cocoa beans as very little value-adding processing takes place in Solomon Islands(a small volume of cocoa nibs, cocoa powder and finished chocolate made by ADRA[5] and Diana Chan).

Although many farmers are involved in cocoa production they are losing interest due the challenges such high transport costs, high input cost, lack of infrastructure and hard labor coupled with low earnings.

From 2012 to 2018 the country's annual cocoa production has stagnated between 4000 – 5000 MT (CEMA, 2018) which is largely due to: fluctuating prices dis-incentivizing pod harvest; ageing trees resulting in lower yield; climatic issues; and a lack of new plantings (Strogim Bisinis, 2019 b).

Cocoa production is also not seen as a 'full time' job but more as a means to quickly access cash when needed. This means that in times when cash is not needed or prices are poor, cocoa trees are not tended and this ends to poorly managed plantations and low yields (Strogim Bisinis, 2019 b).

The challenges in the cocoa supply directly impact the sector, putting in risk the cocoa industry Solomon Islands.

2.1.1 Relation of international market and domestic market

According to the Market System Analysis and Sector Strategy developed by Australian Aid trough the initiative Strongim Bisinis (Strogim Bisinis, 2019 b), the export market in fact masks a monopoly. Seven of the country's 18 registered Exporters are agents for an Australian trading

[5] The Soul Cocoa project from ADRA- Adventist Development and Relief Agency - provides practical training to local farmers to improve the quality of their cocoa beans. The next phase of this project is the establishment of a social enterprise to produce and sell high quality cocoa to overseas chocolate makers. (ADRA, 2019).

house called Holland Commodities (Strogim Bisinis, 2019 b). In 2018, 78% of the production was traded to the international market by Holland Commodities International Ltd, followed by **Commodity Exports (**C-Corps), with 20% (CEMA, 2018). The Annex 6 shows the exporter list with a description of exporter contact and niche of products (bulk or special quality/boutique).

Holland Commodities act as a final trader in the domestic value chain. They have a technical and financial advantage over their domestic competitors. Physically the company has a warehouse in a key location on the wharf and has strategically locked many exporters into a pre-financing relationship which assures they receive the maximum volume of cocoa possible. The company has agents in Honiara to act on its behalf. Holland Commodities sells most of their cocoa on to Barry Callebaut, who owns a number of grinding facilities in Asia and is one of the largest buyers in the region. (Strogim Bisinis, 2019 b).

C-Corps has two functions in the market system: they act as exporter (domestic market) and chocolate maker through the brand "Solomon Gold" manufactured in New Zealand. The company has 20% market share (CEMA, 2018), being a consistent market leader in the Solomon Islands and one of the only exporters of significant size that is not owned by or in partnership with Holland Commodities. Recently they have established a price incentive scheme to reward farmers for quality cocoa. C-Corp is motivated by profit and also a desire to promote the Solomon Islands as a boutique chocolate origin through their Solomon Gold brand. In 2017 the company purchased 15 Mt of high quality cocoa at a premium price, hoping to scale up the volume (Strogim Bisinis, 2019 b).

Malaita is the second main producer of cocoa beans in Solomon Islands (21%) after Guadalcanal (57%) (CEMA, 2018). There is the total of 5 cocoa exporter agents in Malaita. During this assessment 3 exporter agents were interviewed: ST Cocoa Exporter, Arania, and an individual trader working for C-Corps (mentioned above).

ST Cocoa Exporters is a company working as an agent for Holland Commodities. They have 15% market share from 2017 to date. ST Cocoa Exporters is usually one of the major market shareholders, an active member of the industry working group and a well-established business which follows established regulations (Strogim Bisinis, 2019 b)

Arania is another company working as an agent for Holland Commodities. They have a 7% market share from 2017 to date. Arania's manager is an active member of the industry working group and the company is a well-established business following established regulations and industry expectations. Arania buys most of their cocoa from Malaita and have invested in the farmers there through their RDP project (Strogim Bisinis, 2019 b). The RDP project contract started in 2016 and involves two major farmer association in the province: Aimela (in ward 2, C/Kwaraáe) and Faalau (in N/Malaita). Currently Arania are working with 3800 farmers under the two cocoa farmers associations (AIMELA and FAALAU), with a total of 15 drying facilities already set up for these two associations. There is a high demand for membership and participation under the RDP project. The community group (or farmers association) have to apply for membership to the Ministry of

Agriculture under the RDP project and through the agriculture provincial office. The applicants must be a registered body and become regular clients of Arania, in order to be included as new farmers under RDP.

The PHAMA Program has introduced three new players into the Solomon Islands cocoa market: Island cocoa (UK), Pump Street Chocolate (UK) and Zokoko (Australia). All of them are **chocolate makers** looking for high quality of cocoa beans and increased supply.

The Islands cocoa buys between 15 Mt -20Mt per year from smallholder farmers and handles their shipment using the PHAMA funded warehouse in Honiara (managed by Diana Yates). Pump Street Chocolate buys only 1 Mt, but the owner is well known in the UK/EU for high quality and unique chocolate making and maintains very close relations with their suppliers (Strogim Bisinis, 2019 b).

2.1.2 Domestic market for cocoa beans

In Malaita, there is a market for wet beans and dry beans. Wet beans are purchased by dealers directly from the farmers, while the dry beans are purchased by export agents.

According to the export agents there is a high competition for cocoa beans. For this reason it is essential for the business to maintain a good relationship with their suppliers, as the farmers always are looking for better prices.

Agents and dealers sometimes provide some facilities or services, such as picking up beans, providing bags, and offering premium prices for fidelity. Arania, under RDP project, also supports the farmers with tools and equipment (eg. drying facilities), and technical training. Training are facilitated by the provincial agriculture extension office.

There isn't any pre-ordering system between the dealers and agent to the farmers. The farmers communicate with the agents by mobile phone to check the prices and volume before delivering the beans. The payment is made by cash or cheque.

The agents, in turn, receive pre-orders from the exporters, which provide financial support to enable the agents to buy the beans from the farmers (or dealers) and to meet other costs.

- **Quality Requirements**

In terms of quality, the exporters are looking for both high quality cocoa (known as boutique cocoa) and ordinary cocoa, generally classified as 'low quality' and sold as bulk cocoa.

Good quality in dried cocoa beans is reached through a good fermentation and drying process, without leaving a smoky smell and flavor. The exporter agents check the quality through the organoleptic characteristics which are taste, color, smell, and touch. Arania and the C-Corp agent also use equipment to measure the equilibrium moisture content.

CEMA has the mandate to inspect and grade all cocoa exports. Its role is to regulate quality and export volumes for the cocoa industry. CEMA inspects all consignments of cocoa products for: 1)

physical appearance (colour, mould); 2) and moisture. All shipments have to meet CEMA's requirements (published in the regulation), or meet the buyer specifications before it is approved for export (Strogim Bisinis, 2019 b).

Although CEMA has the role to inspect and test all cocoa, exporters are not able to *rely* on them for quality testing (Strogim Bisinis, 2019 b) due some specific restrictions that can be different from each buyer. As a result exporters are required to send samples overseas for pre-shipment testing by buyers or third parties.

Market System Analysis and sector strategy identified an increase of Pacific supply into the boutique market, the reasons for which are twofold: Firstly, there have been concentrated efforts to improve the international reputation and visibility of Pacific cocoa origins. Secondly, the popularity of Pacific chocolates is partly driven by a new flavour profile in the market and consumers wanting to try something new and different. This trend is also evident in Solomon Islands.

Solomon Islands has built a name in the last two years as a new potential origin for boutique cocoa, shifting from 0 Mt of boutique cocoa exports in 2015 to over 30 Mt in 2017. While this is increasing visibility of the country on the international stage, the reality will always be that boutique exports can only support a limited number of suppliers and production volume, at most 2-3% of the country's crop (Strogim Bisinis, 2019 b).

- **Market price**

In September of 2019 the market price payed by the agents to the farmers in Malaita were:

Agent/Company	Wet beans	Dry beans
C-Corp agent	SBD 3,00/kg	SBD 10,50/kg
ST Exporter	-	SBD 11,00/kg
Arania	-	SBD 11,00/ kg

Source: Lorenza Cordeiro (2019)

The main activities performed by the agents are scaling the bags, goods storage, preparing the documentation (quality and other data), and arranging the shipment.

Dry bean dealers (which buy wet beans to dry and to sell to exporters) beans often have no choice but to accept the price offered to them, while farmers depend on prices dictated from exporters, which have very little real influence in the industry. The exporters are pressured by manufacturers, who can source cheaper origins. However the manufacturers have less power than many imagine, as the largest profit margins in the industry are achieved by the retailers of finished products (adapted from Strogim Bisinis, 2019 b).

Boutique chocolate makers have a strong influence on the quality of production via the exporter, as they only buy high quality beans and also provide price incentives for higher quality.

As neither farmers, dry dealers or exporters can control the price, the alternatives are to reduce the production costs (through technology, tools, improvement in the variety and efficiency), to increase local processing and added value, and to increase the final consumption on the domestic market. These approaches are being addressed by the RDP Program, PHAMA plus and Strogim Bisnis.

- **Value Added Cocoa Products**

The financial analysis provided in the study "Investment Options for Value Added Cocoa Products in the Solomon Islands (Strongim Bisnis, 2019 a) indicates that there are two potentially viable investment options for value-added processing of cocoa in the Solomon Islands: 1. Cocoa Nibs[6]; 2. Drinking Chocolate with untempered chocolate.

The study shows that both can be produced using either low technology, essentially unmechanized production techniques, or by the use of a range of mechanized techniques with varying output capacities and capital investment requirements. The costs for equipment and processing can be very low, thereby allowing production at the household level, and the financial projections demonstrate profitability.

However, it must be noted that neither of these products are currently established in the market and a consumer awareness campaign may be necessary to establish enough demand for these products to warrant investment in mechanized production facilities (Strongim Bisnis, 2019 a).

Recently the Strogim Bisnis (Cocoa Program) release the book "Cooking with cocoa in the Solomon Islands" (available at https://strongimbisnis.com.sb/programs/cocoa). The book inform how to making cocoa products at home and recipes.

- **Certification and Organic Cocoa**

Mainstream certification has overall become less important for Pacific cocoa producers as the major buyers have established their own traceability/certification systems (i.e. Cocoa Life from Mondelez). The small, boutique buyers do not require certification as they often have established relationships with their suppliers, visiting their cocoa blocks once or twice a year.

There is, however, a definite increasing regional demand for organic produce which is deemed healthier by for consumers. There has been ongoing demand for Solomon Islands organic cocoa, however organic certification can be expensive to establish, and growers do not receive a set premium price in return.

Organic Pasifika in partnership with Pacific Organic and Ethical Trade Community (POETCom) developed the Participatory Guarantee System (PGS) to reduce the price for certification and

[6] Cocoa nibs are small pieces of crushed cocoa beans that have a bitter chocolatey flavor.

adapt the conventional certification schemes to the Pacific community scale. Additional information about certification schemes for cocoa production are available in the Annex 7.

- **Challenges in the cocoa supply and market:**

The main challenges of cocoa supply and market is summarized below:

- **Price:** Despite the high competition for cocoa beans on the domestic market, the price is controlled by few players on the international market, which demotivates the farmers to produce cocoa beans.
- **Quality:** Lack of infrastructure and lack of good practices in the fermentation and drying processes reduces de quality of cocoa beans, leading to a bad reputation for the whole Solomon Islands cocoa sector.
- **Cocoa farm management**: Lack in the management of cocoa plantation plots leads to decreasing productivity and quality.
- **Land ownership and production system:** Many smallholders that produce different varieties, use different management systems, produce small quantities with high costs and sell individually.
- **Added Value:** Potential added value through local processing of cocoa Nibs and chocolate drinking, however will depend on a market and a consumer awareness campaign to establish enough demand.
- **Boutique Cocoa:** some potential to add value through boutique cocoa, with challenges in maintaining consistent quality and in establishing strong relationship and trade systems directly with the chocolate makers and/or their agents.

2.2 Map of the Value Chain

The value chain of cocoa in the domestic market consists of three phases and 3 main activities: cocoa production, cocoa bean preparation and final trade. The general value chain map with its phases, activities, actors, functions and products are presented below. The map gives a holistic overview over the value chain, and facilitates understanding the detailed map developed with Falake community members.

Table 14: Cocoa value chain map

Phase	Value Chain Activity	Actor	Function	Products for trading
Production	**Cocoa production**	Farmers	Nursery of cocoa seedlings, plantation, maintenance, pod harvesting and packing of wet beans	Wet beans
Transformation	**Cocoa bean preparation**	Dry bean dealer *(member of the community or external buyer)*	Transportation of wet beans, purchasing of wet beans from a specific region, fermentation, drying, packing	Dry beans
Trade	**Final trade (domestic market)**	Dry bean dealer	Purchasing of more dry beans and packing, Transportation to the exporter (or its agent) by road or ship	Dry beans
		Exporter agent	Purchasing of dry beans, packing, storage, transport to the exporter	Dry beans
		Exporter	Re-dry, blend, grade, packing, storage, export or reselling to a trader	Bulk dry beans Boutique cocoa
		Trader	Act as a middle man in the international market, trading the dry beans to manufacturers or chocolate makers	Bulk dry beans Boutique cocoa

Source: Lorenza Cordeiro (2019)

Production:

The farmers are the only actors engaged in the production of cocoa beans. The farmers can establish the plantation on their own land (like in Falake), or in some cases they can lease an area from another landowner. In Falake, it is estimated that the sum of all smallholder's cocoa plantations exceeds 10 hectares.

The cocoa seedlings can be purchased from a nursery or can be produced by the farmers. In Falake, the Ado has its own nursery unit, providing infrastructure for the community and members.

The production activities (plantation, maintenance, pod harvesting and packing of wet beans) are manly performed by men, while youths and women are engaged only occasionally as their main role is looking after other crops produced inside family gardens.

From the production phase, the first marketable product is obtained: wet beans (raw cocoa, covered in mucilage). The majority of smallholders sell wet cocoa beans to a "dry bean dealer", which is another farmer from the community or an external buyer. The reason for selling wet beans is that many smallholders have too few trees to produce the minimal volume of beans

required for a good fermentation (300 kg) or don't build fermenting boxes and drying infrastructure due to a lack of capital (Strogim Bisnis, 2019). The technical specialists recommend that the cocoa pods should be broken on the day that they are harvested and the beans transferred as soon as possible into the fermenting box (Strogim Bisnis, 2019), as the beans begin to germinate as soon as the fruit has been picked (Wild Mountain Chocolate, 2019). If germination is allowed to progress too far, the result is bitter beans that cannot be improved with further processing (Wild Mountain Chocolate, 2019).

In most cases the external "dry bean dealer" owns a truck and drives around a specific region in a specific week-day purchasing with cash the wet beans sold along the road. In Falake there are 9 external dry bean dealers and in the past, there were 3 farmers purchasing wet beans for fermentation and drying.

Transformation:

The transformation comprises the activities: fermentation, drying, packing and transport to an exporter or its agent. The minimal amount of 300kg of wet beans is recommended to guarantee a good fermentation, which takes six to seven days to complete.

The process of fermentation breaks down the sugars and starches into acids or alcohol. The yeasts, bacteria, and enzymes ferment the juicy white pulp that surrounds the cocoa beans. The beans endure the heat, acid, and enzyme effects from the fermentation of the pulp and are transformed, both internally and externally, as a result.

Fermenting helps developing the natural flavours of the bean, witch significantly impacts the quality of chocolate. The consistency in this process is key: There is an art and attention to detail that is fundamental to the process to ensure that the beans aren't experiencing too much, or too little, fermentation (Wild Mountain Chocolate, 2019).

There are different methods of fermentation, from simply digging a small hole (or using a basket) to place the beans in, and then covering it with banana leaves to trap the heat generated by fermentation, to well designed boxes stacked in tiers to be easily tipped and poured into the lower – for a natural turning of the beans.

After fermentation, the cocoa beans are dried in order to reduce the moisture content from about 60% to about 7.5%. Drying must be carried out carefully to ensure that off-flavours are not developed. Drying should take place slowly. If the beans are dried too quickly, some of the chemical reactions started in the fermentation process are not allowed to complete their work and the beans become acidic with a bitter flavour. However, if the drying is too slow, moulds and off-flavours can develop too. Various research studies indicate that bean temperatures during drying should not exceed 65^{o}C (ICCO, 2000).

There are two methods for drying beans - sun drying and artificial drying.

For sun drying, the beans are spread out on mats, trays or on wooden or concrete floors in the sun. The beans are normally turned or raked to ensure uniformity of drying and the beans need to be covered when it rains (ICCO, 2000).

Artificial drying may be resorted where there is a lack of pronounced dry periods after harvesting and fermentation. Artificially dried with fire wood can be of poor quality due to contamination from the smoke of fires or because the cocoa is dried too quickly. The simplest forms of artificial driers are convection driers or "Samoan driers" which consists of a simple flue in a plenum chamber and a permeable drying platform above. Air inlets must be provided in order to allow the convection current to flow without allowing smoke to taint the beans. These driers are simple to construct and have been used in Solomon Islands (ICCO, 2000). Also new technologies like the "bubble drier"(introduced by PHAMA Plus and Strogin Bisinis (Cocoa Program)) have been used in Solomon Islands and are a good option to improve the consistency and quality.

The final product obtained from the transformation phase is the dried cocoa beans. The beans are stored in bags (approximately 70 kg) and transported straight to the exporter or its agent. The storage also is important to guarantee the long term quality. Traditionally cotton bags are use to store the grains, however it isn't efficient to protect the beans against humidity for long term. The new technology of ultra-hermetic bag was (also introduced by Phama Plus and Strogin Bisinis (Cocoa Program)) and demonstrate to be very effective to preserve the quality of the grains. The Annex 8 present the local price for bubble drier and hermetic bags sold at Honiara Hardware.

Trade

The final phase that takes place on the domestic market comprises the trading between the dry bean dealer, agents and exporter. In Malaita, the dry bean dealer and agents have the function to aggregate the production, store and to send the total volume to the exporter located in Honiara.

Depending on the quality, the exporter may have to winnow, re-dry or blend the cocoa prior to export. The exporters grade and store the beans usually for a period of no more than three months (Strongin Bisinis, 2019). Exporters can either sell their cocoa to trading houses, manufactures (factories) or chocolate makers.

Boutique cocoa exporters often aggregate dried beans in order to reach the minimal volume (12-15 Mt) to be able to fill a 20-foot container, as it is not possible to export less-than-container-load (LCD). The storage need to occur in a clean warehouse away from any potential sources of flavor contamination. In Honiara, Mrs Diana Chan built a boutique cocoa warehouse with support from PHAMA Program (Strogim Bisnis, 2019).

2.3 Cocoa Value Chain in FALAKE

Table 15: Value chain of Cocoa beans in Falake

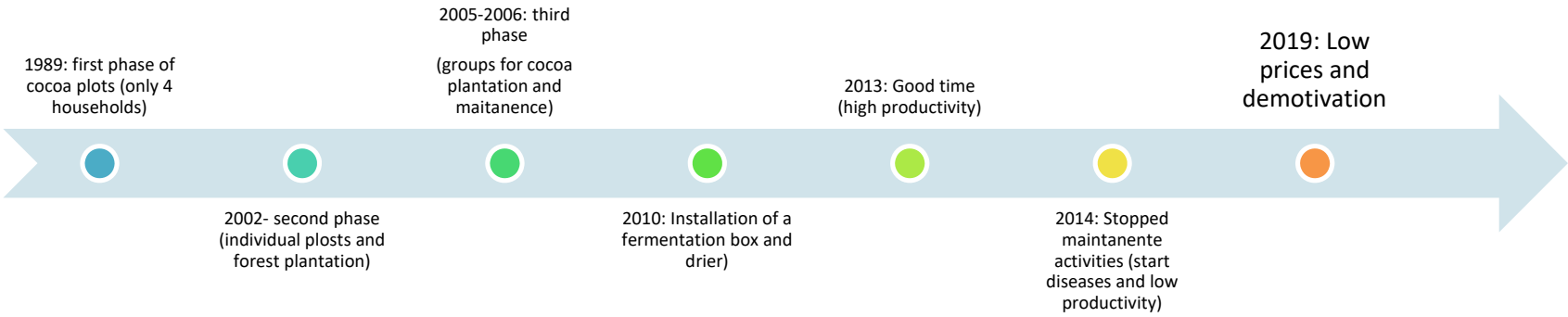
Activities	Actors	Services needed	Costs	Risks
Phase: Production				
Nursery: • Varieties selection • Poly bags preparation • Seed selection • Planting **Plantation**: • Brushing • Lines measurement • Digging • Transplanting (plantation) • Maintenance and pruning **Harvesting**: • Cocoa fruits harvesting • Ripening of cocoa pods • Wheel barrow transport • Cocoa seed extraction • Filling bags • Transport by wheel barrow of the bags to roadside (selling point)	**Farmer** Obs 1: Most production activities are performed by men. Obs 2: Women and youths support: polybag preparation, brushing and transplanting and sometimes also help in the harvesting	**Input supplies:** poly bags, nets, spade; knife, chainsaw, pruning saw, bush knife, tape measure, wheel barrow, loops secator. **Labor**	• Polybag: SBD 50/pkt (100 units) • Rubber boot: SBD 200 • Nursery net: SBD 500/roll • Spade: SBD 120 • File (lime): SBD: 20 • Raincoat: SBD 150 • Handglove: SBD 25 • Axe: SBD 240 • Tape measure: SBD 35 • Wheel barrow: SBD 1000 • Pruning saw: SBD 75 • Chain saw hire: SBD 300/day • Labor: SBD 50/day	**Nursery:** Infertile soil, lack of bean selection, pest, diseases, lack of watering. **Plantation:** Poor selection of plantation lots, rocky soil, lack of log clearing, lack of labor **Maintenance**: Lack of tools, lack of pruning, brushing, injuries, lack of management **Natural events:** Heavy rain, predation from animals (birds, rats, bat), diseases (black pod)
Phase: Transformation				
Beans preparation: to sell wet or dried • Wet beans transportation by the buyer (dry bean dealers); or Wet beans transportation by the farmer • Fermentation (close to the plantation, in the village, or carried out by the dealer • Drying • Packing	**Farmer** Obs 1: Most transformation activities are performed by men. **Buyer** (approx. 9 buyers/drier dealers)	**Input supplies:** Tools, shovel, sacks, box, chainsaw, bush knife **Wood** **Labor** **Transport provider**	• Labor: SBD 50/day • Shovel: SBD 70 • Sacks: 20 • Chain saw hire: SBD 300/day • Transport: SBD 300/ load • Nails (box): SBD 500/kg • Nets (mesh for drier) SBD 50/m • Empty drum: SBD 100/drum	• Mistakes in the fermentation time, • Lack of tools • Unripe pods • Predation from animals (rats)

Activities	Actors	Services needed	Costs	Risks
Phase: Trade				
Wet beans: • Contacting the buyers (or waiting on the road) • Weighing the wet beans (SBD 2,50/kg) **Dry beans:** • Transport to Auki • Weighing the beans (SBD 10,50/kg)	**Farmer** (family- wet beans) **Buyer/ Agent Exporter**	**Wet beans:** • Transportation • Labor • Scale and wheel barrow **Dry beans:** • Transportation • Communication	• Transport to Auki: SBD20/bag • Transport fare: SBD 50/person • Market price (September): Wet bean: SBD 2,5/kg Dry bean: SBD 10,50/kg	• Market price fluctuation • Low quality of the beans (Uncooked beans or burned) • Difficulty to meet with buyers • Delay in the payment • Accidents in the transport • Lack of communication for trade agreement

Source: Lorenza Cordeiro (2019)

2.3.1 Cocoa plots in Falake

- **Time Line of Cocoa activity in Falake:**



Source: Lorenza Cordeiro (2019)

- **Cocoa plots and productivity:**
- Plantation line: 3m x 3m = 1111 tree/ha
- Productivity: 100 trees produce around 20 kg of dry beans ≈ 222 kg/ha (considered low productivity compared with an average yield of around 550 Kg/ha in 2011 for three largest cocoa producing countries (Vadnjal and Pelomo, 2013).
- Operational activities: 100 trees/ 2 work days / 2 people ≈ 22 work day/ha

2.3.2 Business Enabling Environment (BEE) in Falake

The performance of the cocoa chain in Falake is interfered by the following constraints to the BEE[7]:

Table 16: Business Enabling Environmental in Falake

BEE	BEE in Falake
Cultural norms and customs	– Restricted "Tabu" areas (forbidden for cocoa plantation); – Frequent and unpredictable compassionate leave of workers (3 days to 2 weeks); – Leave due to commitment to 'brideprice' (wedding event) – Leave due family sickness – Land issue disputes – Cultural festivity g
Land access/benefit sharing	– Land ownership: tribal members to plot cocoa plantation; – Family owns cocoa plots: profit owned by families; – Communal lifestyle: Wantok (relatives) system allows extended family to access the plantation (difficult to control the access to the pods) – Payment for labor services with cash or goods. – Members of ADO can access subsidies (tools, spade, wheelbarrow, nets…). Approximately. 20 farmers produce cocoa, but not all of them are members of ADO.
Laws, Regulations, Licensing, policies	– Plantations ≥ 10 ha are eligible to access license and benefits from Ministry of Agriculture (MAL) (need to investigate)
Trade agreements	– Only verbal agreements with buyers; – Premium prices for long term relationship with producer; – Shared transportation costs with buyers (bus fare or freight of bags) – Christmas present from the buyer
Community Infrastructure	– ADO infrastructure (nursery, office and storage); – No infrastructure for fermentation and drying – Old tools and equipment
Public infrastructure (roads, electricity, water, etc.)	– Road condition at this moment is good. – No energy – Water supply – Local market close to the community – Schools close to the community

Source: Lorenza Cordeiro (2019)

[7] The BEE information aims to understand how local norms and customs, regulations, policies, trade agreements and infrastructure affect the performance of the value chain. When potential improvements are identified, they can be incorporated into the design of the activity plan.

2.3.3 SWOT Analysis for Cocoa production in Falake

Falake community acknowledged a range of internal strengths and weaknesses, and external opportunities and threats that should be considered to guide the activity plan, as showed below:

Table 17: SWOT Analysis for Cocoa production in Falake

	POSITIVE	NEGATIVE
INTERNAL	**Strengths** – Easy to establish the plots due to good knowledge and experience – Good team work, organization and – Good implementation and application of new information and knowledge – Ownership of the land –	**Weaknesses** – Time management – delay and lack of commitment to follow schedules – Lack of management /maintenance of cocoa plantation – Lack of commitment (prioritization) with cocoa plantation – Lack of information (diseases, technical, quality improvement) – Low fruit production – Difficulty to control the access and interference of the relatives (wantoks) to the plantations (uncontrolled harvesting)
EXTERNAL	**Opportunities** – Workshop and training from stakeholders (partners): JICA, MAL – CEMA: market regulation and information – Subsidies from SIG – Education: student at SINU can acquired knowledge about Cocoa – Public transportation (available services for truck and ship) – Public infrastructure: good condition of the road at this time, wharf	**Threats** – Markets price fluctuation – More work needed for less income – Extreme weather patterns: cyclones and heavy rains – Pest, diseases and predators (birds, rats. flying foxes) – Lack of information from MAL – Unstable road conditions

Source: Lorenza Cordeiro (2019)

2.4 Need for improvement of the value chain at the community level

Some potential improvements in the cocoa value chain at the community level for Falake are highlighted below.

Table 18: Potential improvements in the cocoa value chain in Falake

Subject	Comments
Production	
Cocoa bean variety	Investigate what are the cocoa varieties in Falake plantation and whether need improvement in the genetic base.
	Establish a nursery of good variety (adapted to the region, good productivity and quality)
Cocoa plots/plantation	Investigate the total area, number of farmers, productivity and need for silvicultural activities and/or renovation (replanting) of the cocoa trees.

	Promote refreshment training about silviculture and good practices of cocoa production, cocoa diseases e maintenance.
Business plan	Establish a framework for cocoa plantation management and maintenance (individual activity, community work group, etc)
	Develop management and operational plan to coordinate the production and activities to improve the timing management for the maintenance of the cocoa plots.
	Improve the materials and equipment for cocoa plantation maintenance and establish agreement over the material (individual, collective, owned by association, etc)
	Establish agreement for cooperation and work group in the cocoa plots to improve the commitment and maintenance of the cocoa plots
	Establish agreement with wantoks to improve the control over the cocoa production.
Phase 3: Transformation- Community level	
Business plan	Define a goal for cocoa plantation: boutique cocoa, bulk cocoa, wet cocoa
	Establish agreement for cocoa transformation (individual, community, association, etc) , members engaged in the activities and ownership of the infrastructure.
	Improve the infrastructure for transformation (fermentation, drier, pack, storage and transport)
	Investigate possibilities for subsidies to reduce the costs of cocoa production for all farmers; also to reduce the costs of transformation and/or potential programs or associations to participate.
	Investigate potential value add products to generate alternative income.
Training	Capacity building about cocoa beans transformation and quality
	Capacity building value add products to cocoa beans
	Capacity building about business and financial management
Subject	**Comments**
Trade: Community level	
Business plan	Establish a framework for trade the cocoa beans (individual trade or community trade)
	Investigate potential formal partners for trading and establishment of trade relationship (program, association, buyers, agents)
Market	Investigate potential initiatives from the cocoa sector to participate (association, working group, programs, etc) and to follow the news from the cocoa sector in Solomon Islands.
	Increase the value added products for cocoa beans.

Source: Lorenza Cordeiro (2019)

2.4.1 Identifying actions for activity plan

A summary of recommendations for the activity plan in the pilot area and potential partners to improve the cocoa production at the community level are described in the Table 19.

Table 19: Recommendations for activity plan

Economic feasibility	Potential support
• Survey of cocoa production to understand numbers of producers, plantation area and productivity, need for silvicultural activities and/or renovation (replanting) of the cocoa trees.	MAL, Kastom garden (Malaiata extension farmers), extension with other local initiatives (ex: Arania).

• Investigate the potential subsidies from SIG or partners; and design a framework to arrange the production system, transformation and trading. (Eg: Compare feasibility scenarios for: individual production and trade; collective system through local association; collective trade to external association,..etc).	MAL, buyers (Arania, ST exporter, etc), Strogin Bisisnes (AusAid), financial institutions (annex 5); financial and technical training (annex 4)
Production system	**Potential partners**
• Define a goal for cocoa plantation: boutique cocoa, bulk cocoa, wet cocoa	Community, Project
• Based on the Production Strategy, elaborate a management system for cocoa plantations. (Eg: silviculture and tending techniques to increase the productivity and reduce costs, calendar of operational activities, collective plan for cocoa harvest, replanting etc).	Potential partner: Project, MAL, buyer, financial and technical training (annex 4)
• Preparation of a business plan for cocoa bean plantation, transformation (ferment, dry, quality control, pack, store) and improvement of the infrastructure. (Eg: investments in infrastructure and materials, operational cost, potential income, potential profits, benefit sharing system, agreements for internal/community trading system, etc).	MAL, CEMA, buyers, financial and technical training (annex 4),), financial institutions (annex 5)
• Capacity building on cocoa plantation management system, fermentation techniques, dry, packing and storage, quality control.	MAL, buyers (Arania, ST exporter, etc) , financial and technical training (annex 4).
Business	**Potential partners**
• Establish agreements addressing the community decision over the framework for management of cocoa plantation, transformation and business management as all.	Community, Project
• Elaborate a production strategy and economic model for cocoa plantations (Eg: maintenance and/or improvement of the same planted area, enrichment with other species in an agroforestry system, gradual replacement of cocoa with other production system, etc…).	Project, MAL, Kastom Garden (annex 4)

• Link the community to partners and buyers in the domestic market (bulk cocoa or boutique cocoa) and (whether is possible) international market.	Potential partner: Cocoa working group, buyers, PHAMA Plus
• Capacity building on financial management, accounting, marketing and trading.	Financial and technical training (annex 4).
• Capacity building activities about value added products for cocoa beans	Solomon Islands Association of Rural Training Centres (SIARTC) (Annex 4), Strogin Bisiniss (Cocoa Program)
• Assess the potential income generation through service provided for: cocoa nursery, transformation, quality control.	Project, Strogin Bisiniss (Cocoa Program), Financial and technical training (annex 4).
• Assess potential and feasibility of traceability system and feasibility of organic certification schemes	Kastom gardem, buyers

Source: Lorenza Cordeiro (2019)

Annex

Annex 1: List of assessed companies in the forest sector

No_	Company name	Venue for the interview	Contacts
1	Lagoon Eco Timbers	[redacted]	
2	Hatanga Timber		
3	Homeland Timber Milling (HTM)		
4	Goodwood (SI) Ltd		
5	Pacific Export Alliance Ltd		
6	Fairtrade		
7	TGA Timbers		
8	SA Holdings Ltd		
9	Top Timber		
10	VATA		
11	Malta Timber Enterprise		
12	Kwaibala Furniture		
13	EKD HArdware		
14	South Pacific Group		

Annex 2: Purchasing prices for logs and timber, per company

Species	Specifications	Purchase prices-minimal (SBD/m3)	Purchase prices-maximum (SBD/m3)	Quality	Payment	Location	Company
Akwa	Tree: DBH 60cm min; 6m minimum height	500/tree	-	No hollow, no rot, no twists, no knots	Check the quality after felling and negociate the price	Honiara	Homeland
Akwa	Timber: 6 inch x 2 inch; 6 inch x 3 inch; 8 inch x 2 inch; 8 inch x 3 inch;	-	2600	Has to meet the requirements for quality and size.	Pay after reducing the costs of the services: grading, loading, export documentation, shipment	Honiara	Vata
Akwa	Timber	1800	2200	Higher price for timber processed with portable saw mill delivered in Honiara.	After grading	Honiara	Lagoon Ecotimber
Akwa	Timber: 6 inch x 2 inch x 2m up	1700	2000	chain saw / portable saw mill	Final volume after grading	Honiara	Hatanga
Akwa	Timber: 5 inch x 2 inch; up to 8 inch x 8 inch	-	2000		Final volume after grading	Honiara	Fair Trade
Akwa	Timber	-	2000			Honiara	PEA
Akwa	Timber: 4 inch x 2 inch; 8 inch x 2 inch; 8 inch x 2 inch	1600	1800		Final volume after grading	Honiara	SA Holding
Akwa	Timber: 4 inch x 1 inch to 8 inch x 2 inch; 10 feet up		1800			Auki	Malta Timber
Akwa	Log: DBH 50cm min	500	1000	Size, long logs, straight, no knots		Auki	Malta Timber
Akwa	-	500				Honiara	Top Timber
Akwa	Timber	1600		Lower price when bought in the Province.	After grading	Honiara	Lagoon Ecotimber
Calophyllum	Log: DBH 60cm min; 6m minimum height	500/tree	-	No hollow, no rot, no twists, no knots	Check the quality after felling and negotiate the price	Honiara	Homeland
Calophyllum	Timber: 6 inch x 1 inch up; min 3,5 m length		2000/m3			Auki	EKD

Calophyllum/Baula	Log: DBH 50cm min	500	1000	Size, long logs, straight, no knots		Auki	Malta Timber
Dillenia/Mudu	Log: DBH 50cm min	500	1000	Size, long logs		Auki	Malta Timber
Kwila	Timber: 6 inch x 2 inch; 6 inch x 3 inch; 8 inch x 2 inch; 8 inch x 3 inch;	-	4000	Hs to meet the requirements for quality and size.	Pay after reducing the costs of the services: grading, loading, export documentation, shipment	Honiara	Vata
Kwila	Timber	2000	3400	Higher price for timber processed with portable sawmill, delivered in Honiara. Lower price bought in the Province	After grading	Honiara	Lagoon Ecotimber
Kwila	Timber	-	3000			International	PEA
Kwila	Log: small and medium size	1000	1200	No knots, splits, bows, grub, sapwood	Delivered in Honiara	International	Good wood
Mahogany	-	-	2000	-	-	Domestic (Auki)	EKD
Rosewood	Timber: 6 inch x 2 inch; 6 inch x 3 inch; 8 inch x 2 inch; 8 inch x 3 inch;	-	5500	Has to meet the requirements for quality and size.	Final volume after grading	Honiara	Vata
Rosewood	Timber: 6 inch x 2 inch x 2,1up	-	4500		Final volume after grading	Honiara	Hatanga
Rosewood	Timber: 6 inch x 2 inch; 8 inch x 2 inch; 1.8m to 5.7m	-	4500			Honiara	PEA
Rosewood	Timber: 6 inch x 2 inch x 1.4 m up to 1.8 m	3500	4000	Higher price for timber processed with portable sawmill , delivered in Honiara.	After grading	Honiara	Lagoon Ecotimber
Rosewood	-		4000			Honiara	Top Timber
Rosewood	Timber: 5 inch x 2 inch; up to 8 inch x 8 inch	-	3000		Final volume after grading	Honiara	Fair Trade

Rosewood	Timber	-	3000	Lower price when bought in the Province.	After grading	Honiara	Lagoon Ecotimber
Rosewood	Tree: DBH 60cm min; 6m height min	-	1500	No hollow, no rot, no twists, no knots	Check the quality after felling and negotiate the price	Honiara	Homeland
Rosewood	Log: Medium size	-	1400	No knots, splits, bows, grub, sapwood	Delivered in Honiara	Honiara	Good wood
Teak	-	-	2000	-	-	Auki	EKD
Vitex/Vasa	Timber: 10 inch x 8 inch	2500	-			Honiara	Good wood
Vitex/Vasa	Timber: 6 inch x 2 inch; 6 inch x 3 inch; 8 inch x 2 inch; 8 inch x 3 inch;	-	3400	Has to meet the requirements for quality and size.	Pay after reducing the costs of the services: grading, loading, export documentation, shipment	Honiara	Vata
Vitex/Vasa	Timber: 6 inch x 2 inch x 2m up	3000	3300	Higher price for timber processed with portable sawmill .	Final volume after grading	Honiara	Hatanga
Vitex/Vasa	Timber: 6 inch x 2 inch x 1.4 m up to 1.8 m	1800	3200	Higher price for timber processed with portable sawmill, delivered in Honiara.		Honiara	Lagoon Ecotimber
Vitex	Timber: 6 inch x 2 inch; 6 inch x 1 inch; 1.8m to 5.7m	-	3000			Honiara	PEA
Vitex	Timber: 4 inch x 2 inch; 8 inch x 2 inch; 8 inch x 2 inch; 3m up	2650	3000		Final volume after grading	Honiara	SA Holding
Vitex	Timber: 5 inch x 2 inch; up to 8 inch x 8 inch	-	2500		Final volume after grading	Honiara	Fair Trade
Vitex	Timber: 4 inch x 1 inch to 8 inch x 2 inch; 10 feet up	-	2000			Auki	Malta Timber
Teak	Logs 14 years min.age DBH 20-24 cm DBH 25-29 cm DBH 30 cm up	(stand up trees) 300 450 600	(timber yard) 650 800 900			Honiara	South Pacific Group

Source: Lorenza Cordeiro (2019)

Annex 3: List of SITPEA members

Company	Contact	Address	Phone number	Email address	Date joined
Hatanga Hardwood					
Top Timber					
Goodwood (SI) Ltd					
Lagood Eco Timber					
Pacific Export Alliance Limited					
Value Added Timber Enterprise (VATA)					
TGA Timbers Ltd					
Fairtrade					
Zuapa Piko					
Advanced Technologies					
Agro LBS Limited					
SA Holdings Limited					
Big International Timber					
Makavore Landowners Association					

Source: SITPEA (2019)

Annex 4: Business, Financial and Technical Training

Business and Financial training:

Youth@Work Program: is supported by Secretariat of the Pacific Community (SPC), DFAT, and the Queens Young Leaders. Youth@Work is a youth employment and youth advocacy program, which provides training, internships, a resource centre, mentoring and an entrepreneurship program.

Solomon Islands Women in Business Association (SIWIBA): is a non-profit whose goal is to build business opportunities for Solomon Islands women to participate at all levels. SIWIBA is discussing business and other skill training programs for women in Malaita

MASE Business Services Centre: The Centre aims to provide various business management and accounting services, practical business training and research development skills to urban and rural Solomon Islanders to enable them successfully establish, manage and maintain their own businesses.

Solomon Islands Small Business Enterprise Centre (SISBEC): Mission is to be a catalyst for the development of successful businesses in Solomon Islands by designing and delivering quality and relevant courses and providing advisory and mentoring support to both new and existing business owners and managers. It offers a range of short business training courses including but not limited to; basic bookkeeping through to advanced financial skills, Sales & Marketing and Start your Own Business; and can build custom courses for larger customers.

Technical training:

San Isidro Care Centre: The San Isidro Centre rural training centre is located at Aruligo outside Honiara, educates disabled young people from the ages of 14 and over, over a duration of three years. Courses offered are English, Maths, Business, Sign Language, Agriculture, Life Skills, Carpentry, Woodwork, and Practical Trade and Skills

Solomon Islands Development Trust (SIDT) is an indigenous non-government organization aiming to improve the lives of village people in the Solomon Islands. Over the past 30 years the Solomon Islands Development Trust has worked on a great number of campaigns and programs. In the past SIDT has focused on programs such as the Eco-Forestry Unit, which concentrated on teaching chainsaw-milling and forest management.

Live and Learn: ・ Live and Learn is motivated by sustainable agricultural practices and has developed training material for cocoa farmers.

World Vision: World Vision has a livelihood component to their funding for which cocoa is a small component. World Vision is motivated by Christian charity. Religion and the church are very powerful influencers in Solomon Islands. World Vision is a small player in the industry but an

active member of the industry working group. They also run very successful cocoa programs in PNG and Vanuatu

Solomon Islands Association of Rural Training Centres (SIARTC) is the umbrella body for **Rural Vocational Training Centres (RTCs),** non-formal educational institutions for young men and women. Between in May /2019, Strongim Bisnis helped 17—mostly female—trainers from Solomon Islands Rural Training Centres and non-government organizations learn how to make drinking chocolate, face cream, tea and nibs from Solomon Islands cocoa beans. The objective of the training was to give Solomon Islands trainers new skills to process cocoa so they could then teach their own agriculture, tourism or hospitality students in the provinces how to produce drinking chocolate and cocoa nibs using household equipment such as wooden mortars, rolling pins, a pan and Ziplock bags.

Kastom Gaden Association (KGA) is an indigenous registered non profit organization. Their goal is to strengthen village-based food security in Solomon Islands using participatory, practical, grass-roots approaches that enable village people to examine, understand and develop their own solutions to improving household food security and village-based agriculture economy. The KGA Provides assistance to their members for organic production and has a networking of trainers in all Provinces.

Annex 5: Financial institutions and services

The information below is compiled from Australian Government initiative Strongim Bisnis, from the document **"Cocoa Market system Analysis and Sector Strategy**

Banks: Banks provide banking and other financial services to businesses and individual customers throughout the country. To reach customers outside of Honiara and main urban centres, banks are increasingly focusing on digital money or branchless banking.

All banks are foreign owned except POB, which is locally incorporated (ANZ=Australia and New Zealand, BSP=Papua New Guinea, BRED=France).

- **BSP** is largest individual account holder, and has a new product for SME business loans (unsecured, require account with history, 10%). BSP has branchless (agent) banking, but it is not functioning well due to limited agent liquidity and activity.
- **ANZ** products for individuals and smaller businesses is limited. ANZ only provides finance to a number of sectors, does not provide start-up loans and has high requirements for commercial loans. ANZ has mobile money services.
- **POB's** main purpose is to support the logging industry. However, individual account fees are relatively low and the number of savings accounts are increasing.
- **BRED Bank** has just starting operations (will be fully operational in 2018). It will focus on commercial/corporate customers in Honiara.

Microfinance: Micro finance is available to women from South Pacific Business Development (SPBD) at an average rate of 25%. SPBD only covers two provinces.

Five Organizations (potentially more) organizing savings groups:
- World Vision
- The Anglican Church
- WWF
- Ministry of Women
- Live and Learn

Four donor and government programs increasing access to finance:

- **PFIP**: Pacific Financial Inclusion Programme: While not providing finance directly, PFIP, managed by UNCDF, provides support for digital finance solutions, savings groups, financial literacy, and is working with the Solomon Islands National Provident Fund (SINPF) to expand access to savings for the informal sector.

- **ASEF**: Agricultural Supplementary Equity Facility aims to stimulate agribusiness activities in rural areas. It addresses the equity part of a bank loan by providing a grant of 20% of the 40% equity required for each project. The loan is still subject to normal commercial banks terms, conditions and interest rates. ASEF is managed by the RDP programme.

- **Pacific RISE:** Pacific RISE is a regional DFAT-funded program which aims to develop an impact investment market in the Pacific. Pacific RISE works through intermediaries to identify investment opportunities in Pacific social enterprises and match them with impact investment (typically debt or equity). Three intermediaries, Spark Strategy, Good Return and Akina Foundation, are scoping opportunities for impact investment in Solomon Islands, with the latter two covering a wide range of industries.

- **Central Bank**: Central Bank Loan Guarantee has a loan guarantee scheme for entrepreneurs (90%) to reduce bank's risk for lending.

Annex 6: Exporter list of Cocoa beans in Solomon Islands

The information below is compiled from Australian Government initiative Strongim Bisnis, from the document **"Cocoa Market system Analysis and Sector Strategy**. The companies number 3,6, 9 and 15 are export agents for Holland Commodities.

No.	EXPORTER	REG. No	ADDRESS	PHONE	CONTACT PERSON	Remarks
1	AJF Enterprises					
2	JEMS Cocoa Enterprises					
3	Arania Enterprises Ltd					
4	SK & Brothers Enterprises					
5	Pinihimae & Associates Group					
6	Tradecom Ltd					
7	CATHLIRO Commodities Dev. Co. Ltd					
8	OBO Exports Agents					
9	ST Exporter					
10	Tupaghotua Cocoa Plantation					
11	Solomon Commodity Export Ltd					
12	Chan Wing Motors Ltd					
13	Korri Enterprises					
14	P-Tech & Professional Services					
15	Totogi Enterprises					
16	Jamcop Co. Ltd					
17	Lukasco Group					
18	DKFCAC					

Annex 7: List of assessed companies in the cocoa sector

No_	Company name	Venue for the interview	Contacts
1	ST Export	[redacted]	
2	C- Corp		
3	Arania		

Annex 8: Certifications for cocoa products

The information below is compiled from Australian Government initiative Strongim Bisnis, document **"Cocoa Market system Analysis and Sector Strategy"**.

Hazard Analysis Critical Control Point (HACCP):

HACCP is a tool to help businesses identify and control food safety hazards. HACCP Certification recognizes that a business has developed and implemented systems and procedures in accordance with HACCP. Certification is granted by an external certification authority. Most HACCP Certifiers come from Australia.

HACCP Australia (Fiji) Limited has a branch in Fiji which is dedicated to the Fijian marketplace, which may be a future option for Solomon Islands processors. PHAMA has provided support directly to exporters on food safety accreditation (HACCP certification) and organic certification with select businesses.

Organic certification:

NASAA/NCO, **BFA**, **BioGrow**, **EcoCer**t are some of the certifiers that are known to be operating in the region.

NCO is Australia's leading organic certifier – focused on providing quality, cost efficient organic certification services. In addition to domestic accreditation, NCO also holds accreditation under US National Organic Program and Japanese Agricultural Standard. It is not clear if other exporters are using NCO or other organic certification agencies.

Pacific Organic and Ethical Trade Community (Poetcom), developed the 'Pacific Organic Standard' (POS), for the Pacific Region which as of 2011 was seeking equivalence with the European Union's (EU) organic standard, the Australian Organic Standard (AOS), US National Organic Program (NOP-USDA) and Japanese Agricultural Standard (JAS).

Annex9: Bubble drier and hermetic bags for cocoa beans

Quotation

HONIARA HARDWARE SUPPLIES LTD

P O BOX 174
HONIARA
SOLOMON ISLANDS

Quotation

Number:	162679
Date:	03/10/2019
Ref.#:	
Terms:	
Salesperson	George
Page:	1 / 1

Client

JICA
HONIARA

SOLOMON ISLAND

Delivery

Part Number	Item Details	Qty	Amount $	Total $
SBD Solar-25-1	Bubble Drier SBD25 with Battery	1.00	27000.00	27,000.00
SBD Solar-50-1	Bubble Drier SBD50 with Battery	1.00	35000.00	35,000.00
GrainSafeBag-1.0	GS iii-1, GrainSafe Bag iii For Bagged Grain, 120x120x190cm	1.00	4400.00	4,400.00

Hermetic bag- Grai Pro® advertise:

Images of the Bubble drier (Cocoa farm- Guadalcanal)

Bibliography

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ICCO. **Drying cocoa beans**. 2000. International Cocoa Organization. Available: https://www.icco.org/faq/59-fermentation-a-drying/110-drying-cocoa-beans.html

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Strogim Bisnis**. Annex3: Cocoa Market system Analysis and Sector Strategy**. 2019 b. Internal document of Australian Government, initiative Strongim Bisnis.

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