# The Impact of Smallholder Cocoa Production on Rural Livelihoods:

## A case study in the Solomon Islands

A thesis presented in partial fulfilment of the requirements
for the degree of
Master of AgriScience
at Massey University,
Palmerston North, New Zealand


**Dorcas Oroi Hivu**

**2013**

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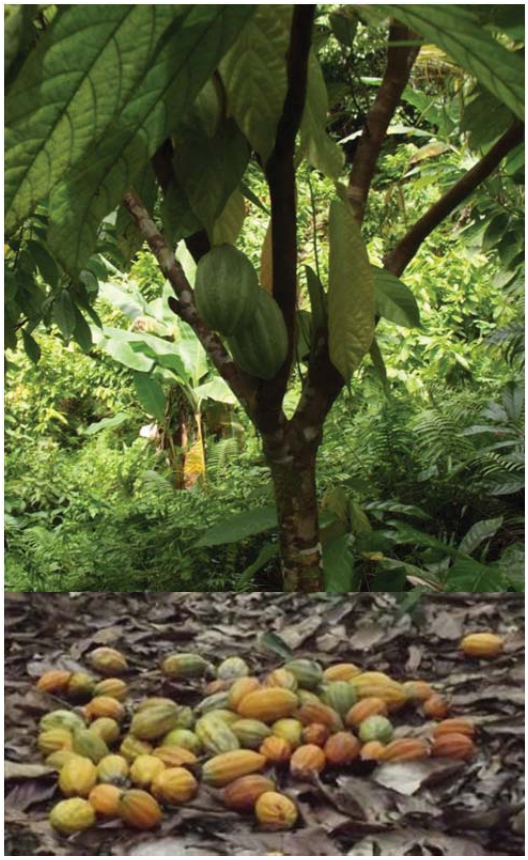

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## Abstract

Through its working policy, the Solomon Islands government aimed to increase smallholder production of cash crop products, such as cocoa, through which the country not only earned revenue but farmers also earned income. As such, smallholder farmers in the Solomon Islands have been encouraged to venture into cash crop earning activities. In the last decades, donor agencies have been involved a lot with farmers to increase cash crop production. However, rural households depend largely on subsistence activities for their livelihood. Based on the understanding that a lot of assistance has been given to smallholder farmers throughout the country, both by the government and outside aid agencies, this study seeks to investigate the impact of smallholder cash crop production on rural livelihoods. A qualitative case study approach was utilised in this study. Data was collected through semi-structured interviews with farmers. This study used the Sustainable Livelihood Framework as a guide to investigate the livelihoods at household level.

The results show that household's involvement in cash crop production is facilitated by the church with very limited support from the central government. This study provides an empirical example of how a community integrates cash cropping as part of their livelihood through their own initiatives. Factors which enable households to integrate cash crops as a part of their livelihood include: motivation to participate due to community commitment to the church; access to a trusted market; nature of the crop; and labour availability. Cash cropping, as shown in this study, does not undermine or substitute food production since there is abundant land available.

Results also show that cash cropping has significantly improved household income and consequently increase household standard of living. This research found that the benefits of cash cropping are distributed across all households within the community as all households grow crops. Households benefit directly from cash cropping through access to cash. Access to cash opens up opportunities for households and/or individuals to venture into other livelihood activities within the community.

This study also found that cash cropping has some negative implications. Access to cash through cash cropping results in a change in cultural expectations towards cash; a change in children's attitude towards education; decreased participation in communal work; and

contributes to reduction in the cultivation of traditional crops with cultural importance to the community.

This research suggests that institutions through which rural households have access to and/or benefit from cash cropping should be supported by the government.

## Acknowledgements

I wish to sincerely acknowledge several groups of people and individuals who have contributed with their help, guidance, encouragement, understanding, patience and support to the completion of this thesis.

First and foremost, my sincere thanks to my supervisors, Ms Janet Reid and Dr. David Gray for guiding me through this difficult journey. Your comments, suggestions, advice and guidance have assisted me from the start to the final submission. Special thanks to Ms Janet Reid for choosing to supervise me and for her continuous support and understanding.

I acknowledge the contribution of the Institute of Natural Resources (Massey University) for funding a component of my research costs. I also extend my appreciation to Denise Stuart for her assistance especially with printing and photocopying services. I would also like to thank Sylvia Hooker and her team and also the Pasifika team at the 'Fale' for their immense support during my course of study at Massey.

I am grateful to the Solomon Islands government for allowing me to undertake this study and to the New Zealand government, through NZAID, for sponsoring my study. Without your sponsorship, I would not be able to elevate myself to this level within the academic arena.

A heartfelt thank you goes to the leaders of Maranu'u village in the Makira Province, Solomon Islands, for allowing me to conduct research in their village. I also sincerely thank those research participants who agreed to be interviewed. Without you, this research would not have been possible.

I would also like to thank all the 'Wantoks' in Palmerston North who have rendered support in one way or another in making Palmy a home away from home; Gloria, Elizabeth, Nina and their families for their support and encouragement; Kerryn and Pauline for 'just being there'. I also extend my sincere thanks to Nanise and her girls for being part of my family in Palmy. Tagio tumas!

Lastly, I am very grateful to my family for all their support expressed in numerous ways. Their prayers have been a source of strength. I sincerely thank my husband Manja for continuous support and encouragement from a distance from the beginning until the end.

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## List of Abbreviations

| | |
|---|---|
| ADB | Asian Development Bank |
| ARDS | Agriculture and Rural Development Strategy |
| AusAid | Australian Agency for International Development |
| CBSI | Central Bank of Solomon Islands |
| CEMA | Commodities Export Marketing Authority |
| CLIP | Cocoa Livelihood Improvement Project |
| COM | Church of Melanesia |
| DAL | Department of Agriculture and Lands |
| MAL | Ministry of Agriculture and Livestock |
| NGO | Non Government Organisation |
| RHC | Rural Health Centre |
| SBD | Solomon Islands Currency |
| SIG | Solomon Islands Government |
| VCD | Village Cocoa Drier |

# Chapter 1 Introduction

## 1.1 Research background

The majority of the Solomon Islands' population (more than 80%) are rural households (Solomon Islands National Statistics, 2011), and rely on subsistence food production for their livelihood. Historically, Solomon Islanders relied predominantly on traditional staple crops (including taro, sweet potato, cassava and yam); and fishing to meet their dietary needs. Jansen et al. (2006) report that household labour was and continues, for many islanders, to be the key to food production and the development of other important livelihoods for families. However, cash has become increasingly important in the livelihoods of rural Solomon Islanders and as such, beside their dietary needs, many rural people have increasing monetary needs which the subsistence economy is insufficient to meet. Formal employment provides access to cash for many islanders. However, opportunities for employment in rural areas are limited (SINSO & UNDP Pacific Centre, 2008). Therefore, there has been a shift to a cash economy in the subsistence system where farmers produce food and sell surpluses in rural community markets for income. In this regard, as pointed out by Jansen et al. (2006), subsistence food production still makes an important contribution to both cash and noncash economies in the rural communities of the Solomon Islands[1].

With an increasing population and the monetary needs by families for non-food item (such school fees, medical expenses, fuel, and various social obligations), individuals are pressured to look for opportunities to engage in cash-earning activities to meet the monetary needs of households. Many rural households are involved in smallholder cash crop production such as coconut and cocoa. Although coconut has traditionally been the major cash crop (Evans, 2006), with the decline in returns for copra[2], cocoa is increasingly an important source of income in many rural areas (AusAid, 2010). Other cash earning activities include sales of fresh food. However, as explained by Bourke et al. (2006), income generated through this is not considered stable in rural areas as it is largely determined by market access, availability of cash for monetary transactions, and physical constraints which in most instances are outside the control of those directly involved in crop production.

[1] Solomon Islands and 'the Solomons' will be used interchangeably in this thesis when referring to the country 'the Solomon Islands'.
[2] Dried coconut kernel which is normally sold to earn cash

In its effort to promote rural development and increase the country's export earnings, the Solomon Islands government (SIG) has promoted the growing of export crops by rural households including cocoa (Prasad, 2009). This has been the main focus of most extension and development work by the Department of Agriculture and Land (DAL) in the Ministry of Agriculture and Livestock (MAL) and donor funded projects since the 1980s (Evans, 2006). Cocoa and coconut are the two main crops that have been promoted. However, more rural households are now involved in cocoa production since it is less labour intensive to produce compared to producing copra from coconut (McGregor, 2006), and as stated earlier, the price received for copra has declined in recent years. In addition the Solomon Islands cocoa industry is strongly supported by international donor agencies in an effort to support rural communities and provide an alternative source of livelihood (AusAid, 2010; Island Business International, 2007). Two international programmes that support the cocoa industry are the European Union-funded Facilitating Agricultural Commodity Trade (FACT) and the Cocoa Livelihood Improvement Project (CLIP), an Australian government-funded initiative. Given the support by the SIG and donor projects, the involvements of household units in cocoa projects have increased over the last two years (Jansen & Maike, 2011). This saw the Solomon Islands cocoa export volume (mainly from smallholders) increase from 4553 tons in 2009 (CBSI, 2009) to 6495 tons in 2011 (CBSI, 2011), and is expected to increase further (World Trade Organisation, 2011).

Since the introduction of cash cropping (cocoa), there has been no research done on the impact of this practice on the family units' food production and living standards. Goverah and Jayne (2003) report that investigation relating to the potential combined effects of cash and food crops has been generally neglected in research and extension programmes, even though these may have important implications for the design of programmes to promote food productivity for smallholders. Earlier studies done in the Solomon Islands explored the link between subsistence agriculture and food security in the late 1970s. The recent collection of studies published (Bourke, McGregor; Allen; Evans; Mullen; Pollard, Wairu & Zotalis, 2006; Evans, 2006; Jansen, Mullen, Pollard, Maemouri, Watoto, & Iramu, 2006; McGregor, 2006) provided a very brief overview assessment on information on the agriculture sector and did not specifically explore the impact of cash cropping on rural households. Nevertheless, none of these studies focused on the impact of cash cropping on rural food production and living standards although they mentioned some impacts of cash cropping in passing. Further, reports on cocoa as a cash crop were mainly focused on monitoring the impact of the the

Cocoa Livelihoods Improvement Project (CLIP). As such, the current situation regarding rural family food production and their living standards as a result of their involvement with smallholder cocoa production is unclear. Furthermore, no studies have been done to find out if households have successfully incorporated cash cropping as part of their livelihoods.

With the increasing involvement of rural households in smallholder cocoa production, there is a need to conduct research into this area so that a clear picture can be established as to whether cash cropping activities have a positive or negative impact on families the involved and the community as a whole.. This will provide the basis to inform policy on the integration of cash crops as a strategy for enhancing the livelihoods of rural households in the Solomon Islands.

**1.2 Research aims, objectives and questions**

This study aims to investigate the impact of cash cropping on rural livelihoods. The specific objective is to investigate the extent to which rural household's livelihoods are affected by their involvement in smallholder cocoa production activities. Thus, the general research question is: "How does cash cropping impact on the livelihoods of rural households in the Solomon Islands?"

In support of the general research question, the following specific questions have been established:

1. What is the impact of cocoa farming on the livelihoods and food production of smallholder cocoa growers?
2. What is the impact of cocoa production on the village community?

The following objectives have been identified to answer the research question.

1. To identify and describe the livelihood activities of rural households growing cocoa in the Solomons.
2. To identify and describe the positive and negative impact cash cropping has on food production and the livelihoods and household's overall standards of living as defined by the farm families.
3. To identify the positive and negative impact of smallholder cocoa production on the community.

### 1.3 Thesis Structure

This thesis is organised into eight chapters. The first chapter provides an introduction and background to the thesis. The second chapter introduces the Solomon Islands and includes the agriculture sector and the background information on the Solomon Island cocoa industry. Chapter three provides a review of the literature, and focuses on the impact of cash cropping on rural livelihoods. Chapter four describes the methodology used in this research and includes the framework of inquiry on which interview questions for data collection were formulated. In chapter five, a detailed description of the case study is presented. The sixth chapter presents the results of the study. Chapter seven discusses the findings in relation to the literature discussed in chapter three. Finally, chapter eight presents the conclusions drawn from the study and their implications.

# Chapter 2 The overview of the Solomon Islands and the agriculture sector

## 2.1 Introduction

This chapter outlines information about the Solomon Islands and cocoa production and also provides background for the subsequent chapters. Information in this chapter is presented in three sections. The first section covers the location of the Solomon Islands, its population, political structure, the climate, vegetation, and the economy. The second section describes the country's agriculture sector. The final section gives a contextual description of cocoa production in the Solomon Islands. This includes a brief history of cocoa in the Solomon Islands, the systems of cocoa production used, marketing, contribution of the Solomon Islands' cocoa to global cocoa production and support for cocoa production in the Solomon Islands. The chapter concludes with a summary.

## 2.2 The Solomon Islands in general

### Geographical location

The Solomon Islands archipelago is situated between the latitudes of 5º and 12º south of the equator, and between the longitudes of 154º and 162º east. The islands are within the Pacific's 'rim of fire', thus have active and dormant volcanoes which, overtime, have created land (Bennett, 2000). There are six larger mountainous islands of volcanic origin namely Choiseul, Santa Isabel, New Georgia, Malaita, Guadalcanal and Makira, plus several medium sized mountainous islands (such as the Santa Cruz group and Vella La Vella), and numerous smaller lowland islands and coral atolls, making up a total of more than 900 islands with a total land area of 28,370 km$^2$. The national capital, Honiara, is located on the north-west coast of the largest island, Guadalcanal. The Solomon Islands' closest neighbouring countries are Papua New Guinea and Vanuatu (Figure 1).

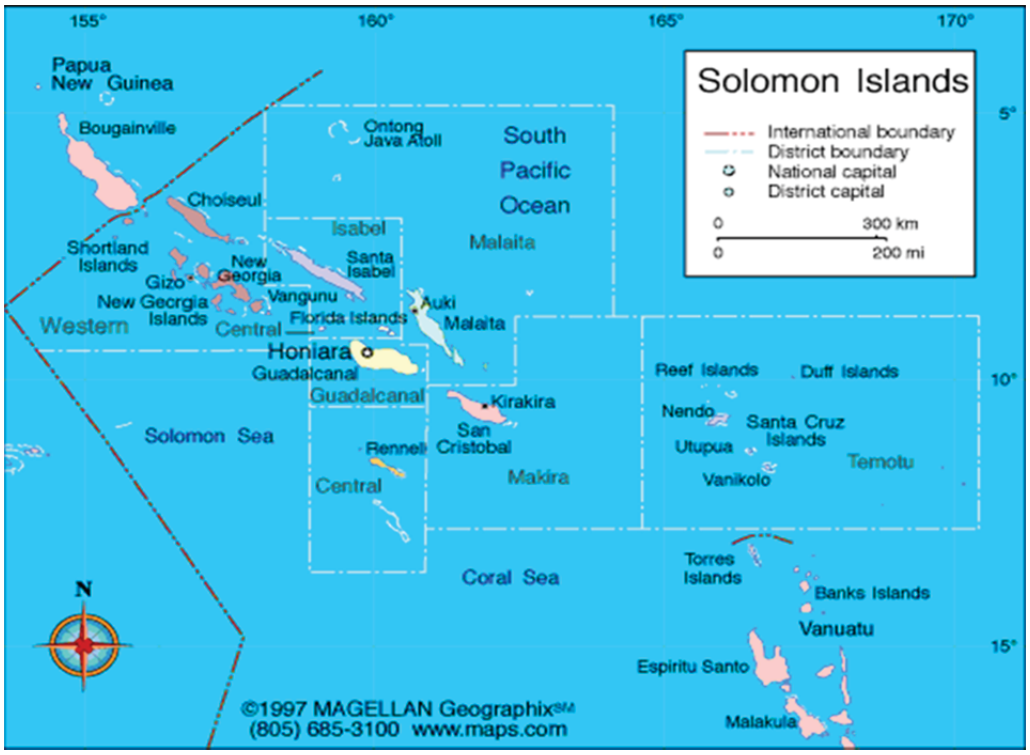


**Figure 1: Map of the Solomon Islands**

**Source: Infoplease.com**

Since the islands are scattered, transport and communication are often difficult and expensive (Warner, 2007). As such, rural farmers find it difficult to transport products produced through subsistence agriculture to urban markets to sell. Sea transport is the main form of transport to get materials, goods, supplies and people from the urban centre to the islands and vice versa. The absence of port facilities on many rural landing sites is common and thus the loading and unloading of goods, supplies and travelling passengers is problematic. For some remote areas, ships visit only on a monthly basis or sometimes occasionally when chartered to collect copra and cocoa. This is reported to contribute to making life difficult for islanders and increasing their feeling of isolation (Jackson et al., 2006). A number of airfields are located around the country for domestic flights and the only international airport which was operating during the time of research is in the capital, Honiara.

**Population**

In 2009, the population of the Solomon Islands was 515,870 with an average annual population growth rate of 2.3%. As stated in chapter one, more than 80 % of the country's population live in the rural areas of the country. There are more than 80 indigenous languages spoken throughout the archipelago, thus communication between people from these different language groups can be a problem, especially in rural areas. However, Pidgin

English is now commonly used while English is the official language of the country. In the Solomons, more than 95 % of the population are Christians and the church is a very important institution in the communities.

**Government**

The Solomon Islands gained political independence from Britain in 1978. The government system is still based on the British Westminster system adopted under British rule, with Queen Elizabeth II as Head of State, represented by the Solomon Islands' Governor General. Fifty members of parliament are elected via national elections (for a four-year term) by the people from across fifty constituencies. A government is formed either by the party with the majority of seats in the parliament or a coalition between several parties from which 20 cabinet ministers are chosen. The cabinet ministers elect the Prime Minister. The islands are further divided into nine provinces, each with an elected assembly and headed by a premier (except for Honiara city which is headed by a city mayor). Village chiefs in many rural areas also exercise administrative responsibilities.

**Climate**

The country's climate is tropical, characterised by high humidity (80%), abundant rainfall in all months, and high temperatures (between 22-31°C during the day and falling to 19°C at night during the cooler months). The average annual rainfall ranges between 3000 and 5000 mm, making it one of the wettest regions in the world. The country experiences two distinct seasons, the wet and the dry seasons. The main seasonal influence on the rainfall is the seasonal winds, the northwest equatorials towards the end and the beginning of the year, and the south-easterly winds in the middle of the year. Occasionally, cyclones may strike during the period from November to March, often causing extensive damage to important agricultural crops and impacting negatively on national infrastructure and economic development. The climate is suitable for growing cash crops such as cocoa but this practice has a profound effect on the country's natural vegetation. Cyclone force winds may destroy forests and crops; heavy rain can cause landslides and floods which impact negatively on soil conditions and the natural vegetation and food crops (see Figure 2). The abundant water from frequent rains allows rapid vegetation growth where forests are cleared.

**Figure 2: Cocoa trees and banana plants uprooted and swept aside by flash flood in Makira Province**

**Source: Solomon Islands National Disaster Council, 2012**

### Vegetation

Approximately 80% of the land is classified as forest with only 12 % in the agricultural land category (Solomon Islands ARDS, 2007). Increasingly, the area of natural rain forest is being decreased. This is the result of national disasters (cyclones, floods, land-slides and forest fires), household gardening (slash and burn shifting cultivation), plantation development, smallholder cash cropping (such as growing cocoa) and commercial logging.

### Land use system.

More than 80% of the land is customary land[3] which is communally owned and held according to the customs of that island (Maetala, 2008; Monson, 2011). Land ownership is the prerogative of the clan or a descent group whose ancestors first cultivated that land. Thus, members have the right to use the land for gardening and other subsistence purposes. Land rights are vested in tribes and clans whose lineage can be traced down through the father (patrilineal land tenure system), the mother (matrilineal land tenure system), or both (ambilineal land tenure system) (Bennett, 1987). In the matrilineal and patrilineal land tenure systems, an individual may, in some documented cases, have the right to use the land but not to own it (for examples, see Maetala, 2008). Generally, individual land ownership is uncommon as land is considered part of the tribe or descent group. However, individual

[3] Both agricultural and non-agricultural land

ownership occurs in special circumstances such as when land is given as a gift for good deeds; or by permission granted by recognised chiefs or land managers in the tribe.

Land in the Solomon Islands is considered a permanent source of sustenance rather than a commodity. Apart from the provision of food, the land holds sacred sites (such as sacrificial shrines, ancestral grave sites, and monuments) which are of historical, religious, and political significance (Bennett, 2000) and it is considered a person's identity and roots. Thus, land links the present generation to their ancestors, and is kept within the clan or tribe. As such, its use should be for the benefit of all members of the clan.

During the colonial period[4], the 'waste land' policy allowed the colonial government to acquire land from tribal groups. It also attracted overseas investors (in plantation development) who secured land (much of which is fertile, arable flat land) on some islands (Bennett, 2000). The introduction of material goods (such as metal tools for clearing forests for new garden land for the tribe, tobacco, cloth) highly sought after by indigenous islanders during the colonial period resulted in tribal leaders selling their land to the government, missions, and individuals (mostly European and Chinese settlers). As more Solomon Islanders participated in the formal monetary sector, land sales of many islands increased, some without the consent of their tribal members. Thus, about 15% of the country's total land area is now either privately owned or classified as Crown land (inherited from the early colonisers). Disputes over communally owned land are common when commercial agricultural development is proposed.

**The Solomon Islands' economy**

The country's economy is identified by the ADB (2010) as being driven by three main sectors: the service sector; the primary sector; and the industrial sector. The service sector includes government activities, communications, transportation and storage, finance, tourism, and other private economic activities that do not produce material goods. This sector provides support for other sectors of the country's economy with the central government forming the dominant component, providing services for the country. This sector was reported as making a major contribution to economic growth in 2004 – 2006, due largely to an increase in outside aid following the country's social unrest (ADB, 2010). However, that has changed and as reported by the CBSI (2011), the major contributor to economic growth is the primary sector.

[4] Prior to 1978

The primary sector includes agriculture, fishing, and forestry. This sector was reported to contribute 10.7% economic growth in 2011 and this was attributed to the strong performance across the sector, particularly the forestry division as a result of unsustainable harvesting of logs for export (CBSI, 2011). The primary sector links the rural population to the country's economic development through the production of raw material (for manufacturing of local products), and the production of export commodities which contribute significantly towards the majority of Solomon Islanders in terms of employment opportunities, cash income, shelter, food security, and other means of family wellbeing. The main export commodities produced from this sector apart from logs include fish, palm products, copra, and cocoa. However, this sector is the most vulnerable of all due to adverse weather conditions and fluctuating world prices, along with limited physical infrastructure and poor transportation.

The industrial sector includes manufacturing (locally manufactured items such as food, tobacco and brewery products; furniture, handicrafts and fibreglass products), water and energy production, construction, and mining (ADB, 2010). This sector's contribution to economic growth primarily depends on imported material which constrains the growth of this sector to the economy. However, with increasing mineral exploration and the reopening of the Gold Ridge mines (which were closed during ethnic unrest), this sector made a significant contribution to economic growth in 2011. Mineral exports have over-taken fish thus becoming the second major export commodity after logs, contributing a 16% share of total exports (CBSI, 2011).

On the whole, the country is still mainly a primary producer, with little processing capability. According to the ADB (2010), the country's economy has many disadvantages such as: far distance from major world markets; diseconomies of scale in the production of goods and provision of public services; a narrow economic base; and vulnerability to natural disasters. In this regard, it is difficult for the country to develop a self-reliant economy and as such, it still relies heavily on foreign aid.

### 2.3 The Solomon Islands' agricultural sector

The Solomon Islands' economy depends largely on the agriculture sector for growth and development. The majority of the rural population rely entirely on agriculture and fishing for employment and their livelihood. Through agricultural activities, commodities for export (such as copra, cocoa, palm products) are produced which is a major source of revenue for the country (MAL, 2009b). The agriculture sector in general contributes about 30% of the

country's Gross Domestic Product. It consists of three sub-sectors: subsistence food production; semi-commercial farming; and large scale commercial farming (MAL, 2009a).

Subsistence food production is the primary activity of many rural families, thus playing an important role in the rural economy. It has also been the traditional way of life in the Solomon Islands and is still the main source of livelihood and food security for the majority of Solomon Islanders (Jansen et al., 2006; Warner, 2007). Subsistence food production involves household gardening and the rearing of livestock for food and to fulfil the different households' social obligations. Surplus food is occasionally sold for income at the local market. Gardening is carried out on forested customary-owned land using a rotational 'slash and burn' (swidden) system, in which land is cleared, cultivated for a short period of time (2-3 years), and then left fallow to regenerate naturally while other gardens are developed on a new site (usually next to the old garden). Garden size is normally less than 0.5 hectare on average and the food crops grown include: sweet potato (also known as kumara) (*Ipomea batatas*); cassava (*manihot esculenta*); banana (*musa spp*); taro (varieties of taro) and yam (*dioscorea spp*.); pumpkin; pineapple; various local vegetables; and a small quantity of rice (Bourke et al., 2006). Food is also collected from the primary and fallow forests[5], mangroves, swamp lands, nut groves, reef, sea, rivers, (Jansen et al., 2006) and agro-forests around the village. This system of production is quite resilient as demonstrated when the market economy collapsed during the country's social unrest (from 1998-2000), during which rural people were able to meet their basic needs from subsistence production (Bourke et al., 2006; Warner, 2007).

In the semi-commercial form of farming, smallholder farmers grow both their household food crops as well as a cash crop to sell at the domestic markets. Where the choice of cash crop is a food crop (such as sweet potato, pineapple, cassava, cabbages etc.), some of the produce is consumed by the farming family while the rest is sold. In many cases, households may have both a garden plot for food and a cash crop plot. Farm size is larger than the subsistence farms and ranges between 1 – 5 hectares (Evans, 2006). The growing of cash crops is normally carried out as in the subsistence food production practices (low input, slash and burn agriculture on customary owned land). If farmers have access to inputs such as fertilisers, chemicals, and tools (spades, hoes, and wheelbarrows), these are sometimes used

[5] During the years of fallow periods, some tree crops in the fallow land are still harvested when they are in season such as breadfruit, nuts and other local fruit trees. Various edible plants (herbs, leaves, mushrooms) and animals (insects, grubs, worms, and beasts) are collected from the primary forest.

in this system. The semi-commercial system is generally undertaken by households who have good access to markets or have easy access to transport to the main markets (in urban centres). However, with the increasing importance of cash in the rural economy, the rural population (who live far from urban centres) are becoming more involved in this type of production. The cash crop of choice, however, is one that can be processed into a product that can be stored for a prolonged period in the village while awaiting transportation to urban markets (such as coconut, cocoa, coffee, and vanilla).

Large scale commercial farming mainly involves cocoa, coconut and palm oilpalm oil plantations. These are grown on large areas of fertile arable land, varying from more than 10 - 15,000 hectares (IBP USA, 2011). This form of production system was inherited from the colonial period when large planting of coconuts were established. Before the ethnic unrest, the plantation sector employed large numbers of the rural population and contributed significantly to the production of the major export commodities namely copra, coconut oil, dried cocoa beans, palm oil, and crude palm. After the social unrest, only the production of palm oil products (from the former Solomon Islands Plantation Ltd (SIPL)) has resumed (since 2005) under a new company, the Guadalcanal Plains Palm Oil Ltd (GPPOL), and has gradually increased production since then. Currently, the production of cocoa and copra is largely done by smallholder farmers. Commercial livestock production (mainly poultry and pigs) is also carried out within the country but it is small scale and is mainly concentrated around urban centres for the domestic market where demand for meat is high.

For this study, participants are involved primarily in subsistence food production. However, cash is becoming more important in their livelihoods and thus they have adopted a livelihood that involves the production of a cash crop, namely cocoa, in a smallholder system of production.

## 2.4 Cocoa in the agriculture sector

This study involves cocoa production by subsistence farmers in rural areas, and as such, it is important to consider an overview of cocoa production within the agriculture sector of the country.

### Botanical description and environmental requirement of cocoa

Cocoa (*theobroma cacao*) is a plant native to the tropical rain forests of South America (Hebbar, Bittenbender, & O'Doherty, 2011). It can be propagated using seeds or cuttings, however, seeds are commonly used. A cocoa seedling normally grows to a height of 1-2.5m

before it starts branching and fruiting at 3-5 years of age, depending on the soil fertility conditions. The cocoa fruit is commonly known as a cocoa pod. Each cocoa pod has on average 30-40 seeds (also known as cocoa beans). Freshly harvested cocoa beans are called wet beans. Once the wet beans are fermented and dried, they can later be processed into cocoa butter, cocoa liquor, cocoa powder, and chocolate.

Cocoa is distributed in regions within 20° latitude of the equator. Soil conditions for cocoa vary widely, however, soils with a deep profile, have good water holding capacity, high organic matter content and pH of 6.5 – 7.5 are considered favourable for growing cocoa. Cocoa grows well in areas of uniform high rainfall distribution (1,500-3,000 mm) and temperatures ranging from a minimum of 18-21°C to a maximum of 30-32°C. Thus, it can withstand flooding and long periods of droughts, but cannot tolerate waterlogged conditions (Hebbar et al., 2011). Given the country's location and the climatic condition described in the previous sections, cocoa is ideally suited to the Solomon Islands.

Shade is an important factor which contributes to the successful establishment and fruit production of cocoa trees. Thus, cocoa seedlings must be first established under shade. The recommended shade tree is *Gliricidia sepium*[6], however, cocoa can be inter cropped with permanent crops such as fruit and timber trees, betel nut (*Areca catechu),* or grown under coconuts. When intercropped with permanent crops, wider spacing between cocoa trees is used to have a cocoa tree density of about 400 – 600 cocoa trees per hectare. Where temporary shade such as *gliricidia*, banana or other food crop is used, tree density should be about 1110 trees per hectare. Normally, temporary shade is gradually removed once the tree is fully established and completely removed once cocoa trees make a full canopy.

**A brief history of cocoa in the Solomon Islands**

Cocoa was first introduced into the Solomon Islands in the 1950s. Early establishment of this tree crop was hindered by black pod disease (a fungal disease caused by *Phytophthora palmivora*) prevailing in high rainfall conditions such as in the Solomon Islands (McGregor, 2006). Despite the very slow establishment during this period, records show that the export of cocoa occurred in the 1960s but only in a very small quantity (Brown & Liloqula, 1992). In-country screening and selection of a more disease resistance and high yielding variety (based on the Amelonado variety imported from Fiji and Kerevat in New Britain) in the 1970s helped to identify a cocoa type which best suited the Solomon Islands' conditions

[6] A legume tree that is commonly used as shade tree

(AusAid, 2010). Thus, in the late 1970s, extensive plantings were undertaken in the country by both smallholders and the plantation sector.

Major expansion in the cocoa industry had occurred by the 1980s and this corresponded with high cocoa prices on the global market at that time. Large plantings were established in the plantation sector (McGregor, 2006). In 1984, cocoa exports from the Solomon Islands were about 1709 tonnes, 64% of which was produced by the plantation sector (Brown & Liloqula, 1992). Cocoa production continued to increase after the 1980s. Support for smallholders through external aid and the SIG through the Commodities Export Marketing Authority (CEMA)[7] led to further increases in expansion by smallholders (Evans, 2006). Production decreased drastically during the period of the ethnic unrest (1999-2002) (mostly due to the cessation of production by the plantation sector), but later recovered and the annual export volume from 2003 to 2009 averaged around 4,000 metric tonnes. This was mostly from the smallholder sector[8] (CEMA, 2011). The relatively stagnant production level for this period was because most of the cocoa trees were old, overgrown, low yielding, and neglected due to unstable markets for smallholder farmers in rural areas. To help increase the production of cocoa by the smallholder sector, the Cocoa Livelihoods Improvement Project (CLIP) (AusAID funded project) was started in 2009 to rehabilitate the existing cocoa farms throughout the country. Production picked up by the end of 2009 and in 2011, the annual export volume was at a record high of 6,495 tonnes, a 21% increase from the previous year (CBSI, 2011). This increase was due to the sustained international and domestic prices; the impact of CLIP and support of the MAL through extension resource personnel for farmer training, other forms of assistance, and rehabilitation programmes. Today, cocoa is mostly produced by smallholder farmers and grown in all provinces (except for Rennell and Bellona) (McGregor, 2006), making it the second most important cash crop largely grown by farmers after coconut (MAL, 2009b). The bulk of Solomon Islands' cocoa is exported to Malaysia, Singapore, and Indonesia (CBSI, 2011), with a new market opening up in Japan (Mamu, 2011).

**Cocoa production in the Solomon Islands**

Cocoa in the Solomon Islands is produced by the commercial plantation sector and the smallholder sector. In the commercial plantation sector, plantations are generally 10 hectares

[7] see p. 16 for more about CEMA

[8] The major commercial cocoa producer has ceased producing since the ethnic unrest, thus cocoa production has been entirely smallholder based since then.

or more in size and normally operated by a company. The major plantation company in the Solomon Islands, RIPEL (initially a subsidiary of CEMA), owned few hundred hectares of cocoa stands (IBP USA, 2011), but the company is currently insolvent and cocoa production has ceased. However, an international Cocoa Development Company, C-Corps Ltd[9] started operating in the cocoa industry in 2009. The company's programme involves the rehabilitation of the 280 hectare Horokiki[10] cocoa plantation, and further establishment of 60 hectares of new cocoa stands (AusAid-ECF, 2011) through a joint venture between the company and tribal groups in North Guadalcanal. The plantation sector provides employment for rural people, both as permanent employees and on a casual basis. Companies operating cocoa plantations have licenced fermentaries (as is the standard procedure) and may either be contracted to a cocoa exporter or the company exports cocoa beans themselves as in the case of C-Corps Ltd.

In the smallholder sector, cocoa farm sizes ranges from 0.1 – 10 hectares (IBP USA, 2011) and this sector is currently the major producer of cocoa in the country. Larger farm sizes (more than 2 hectares) are normally owned by community groups, extended family groups, and education or church institutions. Fermentaries[11] are built where production is high and owned by smallholders who may also buy wet beans in addition to those they produce (Allen et al., 2006). Many households who are under the standard requirement do not qualify to run a fermentary and,therefore, sell their wet beans to fermentary owners. Cocoa produced by smallholders may go through different market channels and the income generated depends on how many transaction points their cocoa passes through along the channels before reaching the overseas markets. The different market channels are shown in Figure 3 below.

[9] The C-Corps Ltd operation in the cocoa industry is co-funded by the company (52%) and AusAid (48%)
[10] Old cocoa plantations owned by tribal groups in North Guadalcanal
[11] A processing unit where cocoa beans are fermented and dried before being bagged for sale.

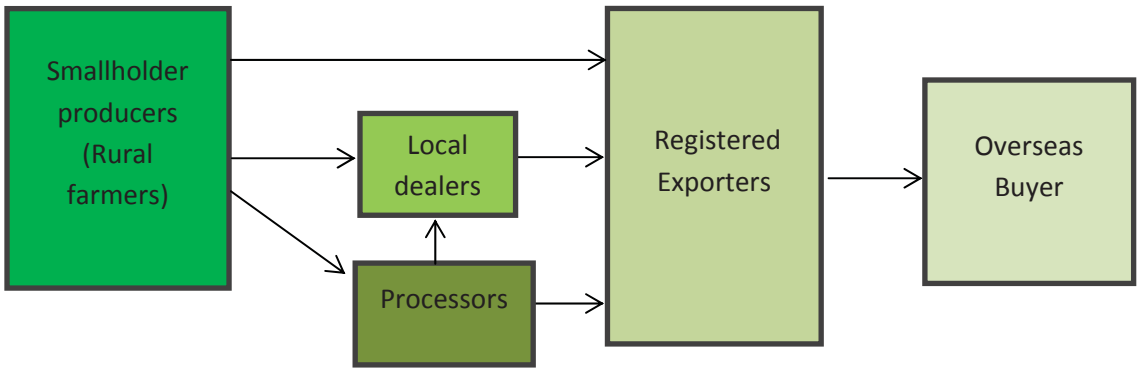


**Figure 3: Market channels**

**Source: adapted from CEMA, 2011**

As shown in Figure 3, smallholders can sell their cocoa through the following channels: (1) process their cocoa and later sell it to the exporter; (2) sell their processed cocoa to a local dealer who then sells to the exporter; (3) sell wet beans to a processor who processes the cocoa and directly sells to the exporter; or (4) sell wet beans to a processor who, after processing, sells to a local dealer who then sells to the exporter. Farmers in this study normally sell their cocoa through channels (3) and (4).

**Role of CEMA in cocoa**

The Commodities Export Marketing Authority (CEMA) is a statutory authority which was set up as an Act of Parliament in 1984 and was mandated to control activities in relation to export commodities (copra, cocoa, palm oil, spices, and coffee). These activities include: production, processing, buying, selling, storing, marketing, transporting or shipping for the purpose of export that is carried out by anyone in the country (CEMA, 2011). CEMA was actually a monopoly buyer and exporter of copra and cocoa and, thus, the production through to marketing of these export commodities must meet CEMA standards. Information on the production and postharvest processing of cocoa is delivered to farmers through MAL. Prior to its breakdown after the ethnic unrest, CEMA in collaboration with the government, had made considerable progress in the development of export commodities through a range of activities such as: supplying farmers with drying equipment and materials; the building of buying points to collect and purchase products from farmers; and providing cargo boats to transport products to Honiara for export (Gay, 2009). The government has now deregulated CEMA's role, and it now only serves as a regulatory and advisory body to the commodity trade with its monopoly status having been abolished. Currently, its main role includes (1) the approval and issue of export licenses; (2) quality standards assurance and the issue of

shipping documentation; (3) the facilitation of market intelligence and the collection and dissemination of commodity statistics; and (4) farmer training on quality (Gay, 2009). The organisation still maintains control over the country's marketing system even though its monopoly was abolished and thus presents a burden on trade through costly export licences (SBD$5,000[12] per annum) and management fees (SBD$40/ton of cocoa) which is mostly met by cocoa bean producers. According to CEMA (2011), there are 15 registered cocoa export licence holders in the country.

**Solomon Islands cocoa in the global cocoa production**

According to the World Cocoa Foundation (2012), around 40 – 50 million people worldwide depend on cocoa for their livelihood, of which 5 million are smallholder cocoa farmers. The world is producing around 3.986 million tonnes of cocoa, of which 73% is from African countries, 13% from the Americas, and 14% from Asia/Oceania countries (World Cocoa Foundation, 2012). It is estimated that over 90% of global cocoa production is cultivated by smallholders (Weiligmann, Verbraad, & Van Reenen, 2010). The top cocoa producers include Côte d'Ivoire, Ghana, Indonesia, Nigeria, and Cameroon. In the Asia/Oceania region, Papua New Guinea, Indonesia, and Malaysia are the top three producers (World Cocoa Foundation, 2012). In the Pacific region, with the exception of Papua New Guinea, cocoa production is relatively small with the Solomon Islands being the largest producer (Hebbar et al., 2011). However, the Solomon Islands produces less than one tenth of the cocoa produced by Papua New Guinea (Agritrade, 2011). In this regard, the Solomon Islands' cocoa is only a small proportion of the total global production, thus it faces significant competition with the world's major cocoa producer. As such, Solomon Islands cocoa is very vulnerable to fluctuating world prices.

Although cocoa production in the Solomon Islands has increased significantly since 2009 compared to recent years (CEMA, 2011), this commodity is subject to volatile prices on the world market. Favourable international prices in recent years were directly related to the political turmoil on the Ivory Coast; a reduction in global stock piles and diseases affecting production in Ghana and Indonesia (the second and third largest cocoa producers) (Gregory, 2010). As the global cocoa supply has increased, the international cocoa price has declined. In line with the decline in the international price, domestic prices in the Solomon Islands have shown a similar trend where prices decreased from an average of SDB$18 per kilogram in

[12] Currency used in this thesis is Solomon Islands currency, unless stated otherwise

2010 (CBSI, 2010) to SDB$15.75 per kilogram in 2011(CBSI, 2011). The CBSI Quarterly Review (2012) reported that the international cocoa price continues to decline and the domestic price is now at SDB$10.58 per kilogram. In some provinces such as in Makira/Ulawa, the price has now dropped to SDB$8 per kilogram (Newter, 2012). The decrease in cocoa prices is reflected in the 37% decline in cocoa production in March 2012 from the same quarter a year ago. The fluctuating world prices will affect the country's total production as some farmers are now beginning to lose interest in cocoa production (Newter, 2012).

**Cocoa in the agriculture policy**

In the national development framework, the SIG aims to improve the quality of life of Solomon Islanders through various reforms and advancement programs (SIG, 2010). To meet the national development objective, agriculture related policies are mandated to MAL and state "to provide extension, education, regulatory, research, and associated activities to improve the agricultural sector's contribution towards increased food production, food security and standards, and economic recovery and development" (MAL, 2009b, p. 2).

One of the priority activities in the cocoa sector set up by the SIG is to continue to rehabilitate and develop cocoa and coconut. MAL's objective on cocoa (as outlined in its sector policy for 2009-2014) is:

> to enhance the economic contribution of the cocoa sector through the following policy statements: support construction of cocoa dryers as is the case for copra dryers; provide seeding financial support for cocoa buyers in remote areas of the country; support the shipping of cocoa from remote areas; promote and facilitate the marketing of cocoa as an organic product to obtain premium price; conduct training on post-harvest processing, especially on fermentation at farmer level and quality control throughout the marketing chain; introduce improved varieties from other countries, especially black pod-resistant varieties; facilitate the rebuild of the cocoa facility at Marasa on the Guadalcanal Weather Coast; setup appropriate mechanisms to control black pot diseases; and establish protocol to stop incursion of Cocoa Pod Borer from neighbouring Papua New Guinea (MAL, 2009b, p. 23).

The implementation of the policy with regards to the cocoa industry is mostly funded through the AusAID program, CLIP.

**The Cocoa Livelihoods Improvement Programme (CLIP)**

CLIP is a programme funded by the Australian government under its bilateral aid to the Solomon Islands to assist the efforts made by MAL and CEMA in the development of the cocoa industry. According to the CLIP document, this programme came about as a result of not only the findings and recommendations from the Smallholder Agriculture Studies (published in volumes 1-5); and the need to achieve widespread distribution of the Rural Development Project (RDP); but also the consideration of increased production in an alternative export commodities with the decline in both timber and coconut exports (CLIP, 2011). The two main objectives of CLIP are "(1) to increase cocoa export to 10,000 tonnes in five years and 15,000 tonnes in ten years; and (2) to reduce the differential between the Solomon Islands and PNG Free-on-Board (FOB) bulk cocoa price to 25 % in five years, and 75 % in 10 years" (Jansen & Maike, 2011, p. 7).

The main focus is to rehabilitate old existing cocoa trees throughout the country to increase production. Activities supporting the CLIP objectives include extensive farmer training through information pamphlets, posters, a cocoa hand-book, radio programmes and practical field training, the provision of cocoa equipment and tools for cocoa farmers (CLIP, 2011), and the enhancement of the market environment for Solomon Islands' cocoa (Jansen & Maike, 2011). CLIP provides resources to the MAL and CEMA who then provide support and facilitate the delivery of training to cocoa farmers.

## 2.5 Chapter summary

The Solomon Islands consists of scattered double chain islands which lie between the latitudes 5º and 12º south of the equator. The Solomon Islands' economy depends largely on the agriculture sector. This sector consists of subsistence food production; semi-commercial farming, and commercial farming. The majority of Solomon Islanders live in the rural areas and depend on agriculture for their livelihood. In addition to subsistence food production as a livelihood, the rural population contributes to the country's export earnings through smallholder production of export crops such as cocoa on their customary land.

Cocoa is the second most important cash crop grown by many rural farmers in the Solomon Islands. The government through the MAL has set up support programmes (mostly funded through foreign aid) to support the expansion of smallholder cocoa production over the past years. One such programme is CLIP. With such support, many smallholder farmers are becoming involved in cocoa production. However, like many other export commodities, the

Solomon Islands' cocoa is vulnerable to the fluctuating world cocoa prices, which affect the smallholder cocoa farmers' income.

# Chapter 3 Literature review

## 3.1 Introduction

This research aims to understand the impact of cash cropping on rural livelihoods. This chapter reviews the literature relevant to this study. The chapter begins with a definition of rural livelihood. This is followed by a review of rural livelihood strategies, before a review of the type of cash crops farmers choose to grow. The stage of transition from subsistence to cash crop production is also reviewed. This is followed by a review of the impact of smallholder cocoa production on rural livelihoods in the Solomon Islands, which is then followed by a review on the impact of cash cropping in general. This includes a section on cash cropping and income, cash cropping and food security, and the vulnerability of cash crops and how it impacts on rural livelihoods. Finally, a summary concludes this chapter.

It should be noted that this study is based on a rural community who have recently adopted cash cropping as a livelihood and are undergoing a transition from relying entirely on subsistence food production to include producing for the market. Smallholders in many developing countries including other parts of the Solomon Islands seemed to have gone through this transitional change many decades ago; thus, much of the literature will be reviewed from studies on cash cropping during those periods.

## 3.2 Rural livelihoods

Defining the concept of livelihood is important as this study is based on how rural people meet their daily needs. Ellis (2000b) points out that livelihood as a concept has been widely used in contemporary writings on rural development. A commonly used meaning is proposed by Chambers and Conway (1992) who define livelihood as comprising "the capabilities, assets and activities required for a means of living" (p. 6). Capabilities are the ability to perform to gain a livelihood; assets are the stores, resources, claims and access; and activities are the different tasks performed. Based on this definition, Ellis (2000b), defines livelihood as:

> a livelihood comprises the assets (natural, physical, human, financial and social capital), the activities, and the access to these assets and activities (mediated by institutions and social relations) that together determine the living gained by the individual or household (p. 10).

Ellis (2000b) frankly admits that this definition has limitations because it fails to express changes that may occur over time and how individuals or households adjust to changing situations. Niehof and Price (2001) define livelihood as a system where the inputs (resources and assets) are used through a bundle of activities undertaken by the people purposely to meet basic needs in order to produce an output (which is termed a livelihood), and focussed particularly on the household. A definition of Ahmed and Lipton (1997, p. 6) is that "a livelihood is a set of flows of income from hired employment, self-employment, remittances (usually in developing rural areas) or from seasonally and annually variable combinations of these".

These authors further mention that livelihood denotes a system of how rural people make a living. While some authors (Chambers & Conway, 1992; Ellis, 2000b; and Niehof & Price, 2001) emphasise access to a wide range of assets, Ahmed and Lipton (1997) highlight the flow of income. In the context of many developing countries (such as the Solomon Islands), having access to assets determines the activities undertaken by rural people to meet their basic needs and income can only be attained if they have access to the limited resources they may have. Ellis (2000a) points out that the concept of livelihood conveys both economic and non-economic attributes to survive For example income can be in a form of cash earnings (from crop or livestock sales, wages, rents) or in-kind contribution (consumption of on-farm produce, payments in kind such as food or transfers or exchange of consumption items) (Ellis, 2000b).

While the various ways in which the concept of livelihood has been conceptualised confirms Ellis's (2000b) assessment of the ambiguity of the concept, it also highlights that livelihood is a dynamic and holistic concept (de Haan & Zoomers, 2005). For the purpose of this study, the definition proposed by Ellis (2000a) and quoted earlier in this section will be used. This is because it has a strong emphasis on the notion of access to assets and the importance of social relationships and institutions which may shape the activities which households or individuals choose to make a living.

### 3.3 Rural livelihood strategies

Livelihood strategies denote a range of activities and choices people make to meet their basic needs and support their wellbeing (Niehof, 2004). Access to assets and the choice of activities to undertake is argued to be influenced by people's own preferences or priorities and a wide range of external forces both within and outside the household and the community

(Allison & Horemans, 2006; Ireland et al., 2004; Soussan, Blaikie, Springate-Baginski, & Chadwick, 2001). Such forces (such as environmental, political, social, economic, and cultural influences) define the operation of the livelihood system (Niehof, 2004). For example, rigid social customs and religious constraints may create difficulties for a woman to operate a small business enterprise (Kabir, Hou, Akther, Wang, & Wang, 2012); or geographical settings (access to market) may influence the set of livelihood opportunities (de Haan & Zoomers, 2005). The choice of livelihood strategies may also be influenced by past events and decisions (Niehof, 2004), which may lead to a household opting into either natural resource based or non-natural resource based activities or a combination of both.

Scoones (1998) identified three types of livelihood strategies open to rural people: agricultural intensification/extensification, migration, and livelihood diversification. Agricultural intensification/intensification refers to the strategies that are based on the "exploitation of natural resource such as food crops, cash crops, and livestock" (Orr & Mwale, 2001, p. 1327). Turton (2009) argued that agricultural intensification/extensification can be through increased frequency of cultivation, adopting new technology (such as improved varieties, high levels of input use, and shift to higher value crops), and expansion of cultivated area. In rural areas, as in the Solomon Islands, intensification is not viable as it requires an increased use of inputs like fertilisers and chemicals, which are not accessible. Extensification through expansion of cultivated area would be possible only in areas of abundant land. Migration occurs when one or more household members leave the resident household for varying periods of time (Orr & Mwale, 2001; Turton, 2000). Ellis (1998) distinguished two types of migration: temporary migration which may be determined by the agricultural seasonality (in some cases it may not be linked to crop season); and permanent migration where movement from the village to town or abroad is permanent. Migration is argued to be more important for households with little or no land resource (Pingali, Khwaja, & Meijer, 2005). Diversification is defined as the combining of diverse activities and assets to make a living (Niehof, 2004). It is seen as the most important strategy for many rural households because as argued by some authors (Niehof, 2004; Scoones, 1998), it is not only based on diversifying the income sources, but it also depends on the limited resources available to the household.

Literature revealed that some examples of livelihood activities for people living in rural areas of the Solomon Islands include a combination of more than one of the following: subsistence food production (gardening, hunting, and fishing); cash earning activities (such as handicraft,

small business enterprise [trade store], shop keeping, cash cropping, livestock production, and fishing); government jobs (teachers and nurses in rural schools and health clinics); and remittances (Fazey, Pettorelli, Kenter, Wagatora, & Schuett, 2011; Feintrenie, Ollivier, & Enjalric, 2010; Reenberg, Birch-Thomsen, Mertz, Fog, & Christiansen, 2008). These studies do not specifically focus on livelihood strategies; however, they do mention in passing that these activities are what rural people do for a living. Cash cropping (as a cash earning activity) is an important livelihood strategy to diversify income for many rural households and is explored in the next sections.

### 3.4 Cash cropping as a livelihood strategy

Subsistence agriculture supplemented with fishing, hunting and gathering has been the main traditional livelihood for many rural households in many developing countries such as the Solomon Islands (Reenberg et al., 2008). With increasing globalisation and population pressures, it is argued that subsistence agriculture may not be able to sustain household food security and welfare in the long-run due to the growing population pressure and natural resources constraints (von Baun & Eileen, 1994; Warner, 2007), thus it is argued that farmers need to diversify their income strategies. For many farmers, producing crops for sale is an important option since cash crops contribute to livelihood diversification (Babu & Sanyal, 2009).

The term cash crop can be used in different ways. In an early review on the issues connected with cash cropping in developing countries, Maxwell and Fernando (1989) used a common sense definition of cash crop as a "crop that is sold for cash" (p.1678). This is similar to a more common definition used by Babu and Sanyal (2009), "a cash crop is simply a crop that is produced for sale" (p.41). Babu and Sanyal (2009) used the term commercialisation to refer to the shift from subsistence oriented patterns of production to the production of cash crops for sale. The authors (Babu & Sanyal, 2009; Maxwell & Fernando, 1989) all referred to cash crops as the marketed surpluses of traditional food crops at the household level and exported agricultural products at a national level. Thus, a cash crop can either be a local staple crop that is grown for consumption and sold locally or crops that are grown solely for export (Babu & Sanyal, 2009; Barbier, 1989; Jaleta, Gebremedhin, & Hoekstra, 2009). For many farmers, selling surplus food produce is only viable where there is a high domestic demand for their produce. Many farmers do not have access to domestic markets outside their locality to sell their food surpluses due to market constraints and transport difficulties (Jaleta et al., 2009). Further, once all farmers sell food surpluses, no one in the locality will

buy the surplus output (Myint, 1980). Thus, in many areas, farmers choose non-food crops that can be processed and stored while waiting for transport to markets outside their locality.

### 3.5 Transition from subsistence to cash crop production

Much of the literature (see, for example, Barlow & Jayasurija, 1986; Dove, 1993; Myint, 1980; Shand & Straatmans, 1974) on the transition process (from subsistence to cash cropping) was reported in the 1970s to 1990s when a large number of developing countries were introducing cash cropping. This earlier literature is, therefore, drawn on this section. Literature on cases where the transition process took place in the 2000s is limited to a few studies (Cramb et al., 2009).

As an agricultural based economy develops, expansion of agriculture occurs, and farmers become involved in production for the market (Myint, 1980). The transition process from subsistence farming to market-oriented production is said to occur in a step-wise fashion (Barlow, 1997; Barlow & Jayasurija, 1986). Myint (1980), categorises the transition from subsistence production to market production in two contrasting stages. The first stage is when farmers use most of their resources to produce products for their own consumption while production for market is a spare-time activity, in addition to subsistence. The second stage occurs when farmers devote most of their available resources to produce for the market while subsistence farming becomes a spare-time activity. In a study on the development of smallholder tree crop cultivation, Barlow and Jayasurija (1986) examine the case of Malaysian rubber to extend Myint's (1980) two stage process to identify a third stage. They termed stage one as 'emergence from subsistence' and this is when cash cropping is introduced and subsistence is supplemented by a tree crop. In this stage, simple hand tools are used and production techniques are learnt from neighbours and other farmers. This is followed by stage two, which Barlow and Jayasurija (1986) termed the 'agricultural transformation stage' where smallholders rapidly expand and high yielding crop technologies are adopted. Barlow (1997) further elaborates on stage two to include an 'early' and 'late' phase of agricultural transformation. In the early phase, Barlow (1997) explained that the adoption of the cash crop with the cash earning capacity encourages demand for tradable goods (both local and imported items). In the late phase, agriculture (which was once the biggest sector) was soon overtaken by the growing manufacturing sector. The final stage identified by Barlow and Jayasurija (1986) is the 'extended structural stage'. This is characterised by the increasing significance of the industry and service sectors in the economy and reduction in smallholder participation in tree crop productions as in the case of

smallholder rubber in Malaysia and Thailand (Barlow, 1997; Barlow & Jayasurija, 1986). While the transition described by Barlow (1997) and Barlow and Jayasurija (1986) referred to a change during the development of smallholder tree crop cultivation, Myint (1980) focused generally on the farmer's involvement in production for export in the growing monetary economy using resources normally used for subsistence production. Myint (1980) explained in general that the export crop in this case can be a traditional staple crop (such as rice in the case of some South-East Asian countries) or an introduced export crop (such as cocoa in some African countries). In contrast, Barlow and Jayasurija (1986) focussed more on the economic dimensions of the growth and structural change of smallholder tree crop cultivation. Stages one to the early agricultural transformation stage seem to be within the scope of this study since farmers in this study had just recently adopted cocoa as a cash crop to be part of their livelihoods.

The transition process (from subsistence to cash crop) is accelerated by improvements in transport and market infrastructure and may encourage farmers to change from full-time subsistence to full-time market producing (Manivong & Cramb, 2008a). Shand and Straatmans (1974) gave a detailed description of the transition of subsistence to cash cropping (including the extent of smallholder participation in cash cropping and factors which influenced their participation) in four study areas of Papua New Guinea. These farmers were involved in a wide range of cash crops, namely cocoa, coconut, coffee, peanuts, and rice. The authors noted that the slow and/or rapid involvement in cash cropping by smallholders was due to: resource availability (land and labour); availability of technical assistance; improved transport and market access; and the enthusiasm of growers, either through their own initiative or influenced by others (such as other members in the community or agricultural extension officers). The transition from subsistence to cash cropping is argued to accelerate if farmers are involved in estate schemes such as the case of palm oil farmers in Papua New Guinea (Koczberski, Curry, & Gibson, 2001). The rate of transition can vary considerably and many smallholder farmers can be in a semi-commercial stage for decades (Dove, 1993). Farmers may also temporarily retreat to a subsistence economy when market environments are unfavourable (Cramb, 1993; Wadley & Mertz, 2005). For instance, Dove (1993) highlighted how smallholder farmers in a remote part of Indonesia complemented their subsistence production of food with rubber production for almost a century.

The transition from subsistence to cash cropping may take the form of smallholder cash crops or plantation/estate forms of production with varying degrees of initiative from farmers,

communities, the government agricultural policies or external actors (Barbier, 1989; Cramb et al., 2009). For example, palm oil, which many smallholder farmers grow in Indonesia, is supported by government policy due to the growing demand for fuel exports and domestic biodiesel production (Rist, Feintrenie, & Levang, 2010). The adoption of rubber production by almost every household in Northern Laos was induced by population growth, market demand, improved transport infrastructure and government restrictions on land use (Manivong & Cramb, 2008b). Beside government policy, the expansion of cocoa by smallholders in Indonesia between the 1980s and 1990s was identified as due to the good transport infrastructure, smallholder entrepreneurship and low production costs (Akiyama & Nishio, 1997). However, for many farmers, a stable market for their product is important. This aspect is stressed by Wiggin (2000) in a review of the changes in African agriculture that states "without market, farmers are not going to develop their farming in ways which enhance their incomes" (p. 637). Thus, market access is crucial in the development of cash crops (Leavy & Poulton, 2007). Nevertheless, regardless of how cash crops are introduced, farmers' involvement in growing cash crops is generally encouraged by their growing monetary aspiration (Rist et al., 2010; Shand & Straatmans, 1974).

Once cash cropping is adopted and established, it will impact on the adopters' livelihoods in a number of ways. The next section is specifically aimed to attempt a review the impact of smallholder cocoa production on rural livelihoods in the Solomon Islands.

### 3.6 Cocoa production and impact on livelihoods

There has been no research done in the Solomon Islands on the impact of smallholder cocoa production on rural livelihoods. An impact assessment report on CLIP for the period July 2010 – June 2011 was completed in 2011 (Jansen & Maike, 2011). The main aim of the report was to evaluate the success of CLIP and not specifically on the impact of cocoa as a cash crop on rural livelihoods. However, the report makes a few notable points. It asserts that cocoa production by smallholder farmers has increased household incomes as well as increasing on-farm employment opportunities in rural villages. It also notes the concern for increasing consumption of alcohol purchased using cocoa income. The report specifically points out that cocoa is a male controlled cash crop and, thereby, men control the cash obtained from it. The report also noted that the expansion of land under cocoa displaces agro-biodiversity with the potential loss of valuable timber (building material for households) and fruit trees, such as ngali nuts, which is an important traditional tree crop. Further, the burden of collecting fuel wood for the processing of cocoa is bestowed on women, thus increasing

their already exhausting list of daily chores. The report concludes that CLIP is still in its early stages and other impacts on livelihoods of cocoa farmers are yet to be measured (Jansen & Maike, 2011).

There are no specific studies on smallholder cocoa production and its impact on rural livelihoods in other developing countries. However, it is commonly cited that cocoa is an important export commodity for many developing countries and an important source of income for many rural households contributing to improving rural livelihoods (Adetunji, Olaniyi, & Raufu, 2007; Brown & Kennedy, 2005; Curry, Koczberski, Omuru, & Nailina, 2007; Enete & Amusa, 2010; Jansen & Maike, 2011; Knudsen, 2007; Oluyole, 2012; Ould, Jordon, Reynolds, & Loftin, 2004). In contrast, Lee (1980) reported that in the Ivory Coast in the late 1970s, the standard of living in rural areas remained low despite considerable involvement in cocoa/coffee production. During this period, the country's economy was mainly based on cocoa and coffee exports that were sourced entirely from the rural smallholders. His findings were based on statistics and observations but he admitted the poor availability of data for this study.

Due to the paucity of literature in the area of cocoa as a cash crop for subsistence farmers, the following sections will review the impact of cash crop production in general, based on cash crops that have similar characteristics to cocoa. These characteristics include: non-food export crop; perennial; high labour demand at some stage of production; and requirement for some processing to have a storable product before sale. The group of non-food cash crops consist, for example, of tea, palm oil, cocoa, coffee, and rubber. Some of these cash crops, such as cocoa, coffee, and rubber are well suited to smallholder farms because they can be intercropped with traditional food crops forming a hybridised subsistence-and market-oriented livelihoods activity (Dove, 1993; Nair, 1983; Riedl, 2009).

### 3.7 Effects of cash cropping for subsistence farmers

It has been argued that cash cropping is an important strategy for rural development in many developing countries in terms of economic benefits (Adetunji et al., 2007; Koczberski, 2002; Riedl, 2009), poverty alleviation (Masanjala, 2006; Susila, 2004), and infrastructure and market development (Babu & Sanyal, 2009). This section is a review of the literature on the outcomes of cash cropping on various aspects of livelihoods for rural farmers such as employment, income, food security, and infrastructure development.

**Cash cropping and employment**

It has been argued that access to formal employment in rural areas in developing countries such as the Solomon Islands is limited (Solomon Islands ARDS, 2007). Hence, many in the rural areas carry out subsistence activities, mostly gardening to occupy their time. Stent and Webb (1975) described this for Papua New Guinean subsistence farmers saying "having considerable range of working hours per day, individuals prefer the pleasure of working in their gardens than to remain idle in their villages" (p. 523). This statement applies to much of the population of rural subsistence farmers in Melanesia, including the Solomon Islands. Thus, given their growing demand for cash, rural farmers' involvement in cash cropping means farmers are engaging time they could 'remain idle' in the village in a more economical manner beside working in their gardens. Jansen and Maike (2011) reported in the assessment report on CLIP in the Solomon Islands that cash cropping is a way of engaging in fulltime employment with farmers earning an income while remaining in their villages.

According to Masanjala (2006), most cash crops tend to be labour-intensive and thus entail a substantial expansion of the demand for hired labour. Although Masanjala (2006) studied the case of tobacco, an annual cash crop, his statement is also reflected in findings in studies on perennial cash crops. Studies on perennial export crops such as rubber (Manivong & Cramb, 2008a), jatropha curcas (Wamalwa, 2011), cocoa (Curry et al., 2007) and palm oil (Koczberski et al., 2001; Susila, 2004) reported that cash cropping provides employment for smallholders in rural areas. The employment opportunities, depend on the nature of commodities produced, technologies used in the production process and whether agricultural processing is involved (von Braun et al. 1994 in Jaleta et al., 2009). Commodities which demand more labour at some stage of production, such as during harvest, create employment opportunities among village members beyond household labour. For example, Wamalwa (2011) reported that some jatropha farmers in Kenya hired labour from the village to help out during the harvesting of the crop. For some households, hiring out their own labour is a way of diversifying income earning opportunities. However, many rural farmers are poor and may not be able to afford hired labour thus depend largely on family labour for both subsistence and crop production. In some cases, labour reciprocity within kinship groups enable households to cope with peaks in labour demand (Frazer, 1987; Jamal & Pomp, 1993).

**Cash crop and income**

Evidence from the literature indicates that the involvement of smallholder farmers in cash cropping contributes to increasing their income. For example, empirical analysis by Susila (2004) from a case study in two locations in Sumatra (Indonesia) showed that palm oil activities contribute over 63% of household incomes. The author also implied that the small proportion of poor people in these communities indicates that smallholder palm oil production contributes to poverty alleviation. Similarly, a study on the impact of palm oil development on the economic wellbeing of rural farmers in Sumatra and Kalimantan (Indonesia) suggest that many rural communities have had significant livelihood improvements as a result from access to increased income from palm oil (Rist et al., 2010). Likewise, in Papua New Guinea, smallholders producing palm oil receive regular incomes (Koczberski et al., 2001).

The effect of cash cropping on farmers' incomes, as stressed by McCarthy (2010) (in the case of oil), depends on the mode in which the smallholder is engaged in the industry: either in contract form or independently. He noted that large numbers of local landholders who had developed their palm oil plots without external support were unable to access input and as a result, were forced to sell their land and remain poor. The dissimilarities noted in the smallholder involvement in palm oil here are due to inadequate governance of the rural development project which initiated the establishment of the cash crop and how it was delivered to farmers. Unlike cocoa, which smallholders can manage within low input systems, palm oil requires large investments in input (such as labour and fertiliser) and smallholders will best benefit from being involving in palm oil production through smallholder schemes with an palm oil company.

In Kenya, Wamalwa (2011) reported a considerable difference in the incomes of the farmers planting and selling the energy crop, jatropha curcas, compared to those involved in both planting and trading it (middle man) with the latter having more income than the former. Nevertheless, his findings provide evidence that farmers who grow the cash crop have an increased income contributing to their increased financial status in the community. These findings suggest that farmer choice of mode of entry into the cash crop production which very much depends on access to assets is critical for future outcome on household income. Where farmers are members of a production scheme, such as in the case of palm oil, there is easy access to input (like fertiliser, planting material, marketing network and extension

support) which all contribute to increases in production and thus further increase farmers income which is in contrast to farmers who independently establish their smallholdings and sell their produce in the open market (McCarthy, 2010).

**Household response to accessing cash incomes**

Income from cash crops is used in different ways by rural households and has both positive and negative implications for households. Increased income increases the purchasing power of the household (Demont & Stessens, 2009), enabling spending on consumable goods and other household assets (like furniture, kitchenware, livestock, tools and machinery). Mustapha (1999) noted for cocoa famers in south-western Nigeria that the income accumulated (from cocoa production) was mostly used to "educate the farmer's children, expand cocoa holdings, develop real estate, and to meet obligations of kin and community" (p. 1). Where building one's status is important in a society, income from cash crops is more likely to be spent on increasing status. For example, smallholder cocoa farmers in Papua New Guinea invest cocoa income in businesses which have high social status (such as transport businesses, trade stores, or poultry businesses) and to meet social obligations (substantial financial contributions to church, community and traditional activities) rather than reinvesting in the cocoa block to improve production (Curry et al., 2007). Nyaga and Doppler (2009) found in Kenya that income from tea is used to purchase food for the household. This is also noted for some smallholder rubber farmers in Laos (Manivong & Cramb, 2008a). In the Kenyan and the Laos cases, the expansion of cash crops had dominated food production and the households therefore relied on the cash crop income for subsistence requirements since most of the household resources (labour and land) were allocated to cash crop production. According to Wamalwa's (2011) findings relating to farmers in Kenya (in the case of the jatropha crop), income from cash crops is used to invest in domestic animals and farm input as well as to pay for children's school fees and materials that support children's education (such as books, pens and uniforms).

Cash cropping is also highlighted as contributing to negative impacts on rural households. It is argued that activities associated with cash cropping are identified as being dominated by males in many developing countries (Curry et al., 2007; Enete & Amusa, 2010). Males are likewise reported as dominating decisions on how the income from cash crops is spent, disregarding the contributions women may have in the production system as reported in Papua New Guinea (Koczberski, 2002, 2007). In developing countries (such as in the

Solomon Islands and Papua New Guinea), men are reported to spend cash cropping income on gambling and alcoholic drinks (Jansen & Maike, 2011; Kerr, 2005; Koczberski, 2002). As reported by Kerr (2005) in relation to Northern Malawi, the misuse of cash crop income often contributes to household disputes and domestic violence. While men have been reported to spend money elsewhere outside household needs, women folk spend money on food, children's clothes and other domestic needs as reported in Bangladesh (Ahmed, Quisumbing, Hoddinott, Nasreen, & Bryan, 2007) although women's access to income in this case is limited.

**Cash crop and food security**

Cash crop production is reported as adversely affecting food security for rural households. According to Clay (2002), food security exists when members of the household at all times have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Focusing on tea and coffee cash crops in Kenya, Nyaga and Doppler (2009) found that allocating more of the household resources such as land, human labour and capital to cash crop production undermined food production thus increasing the households' exposure to food insecurity. Similar findings are noted for rubber farmers in Northern Laos (Manivong & Cramb, 2008a). Where land and labour is limited, the potential adverse impact of cash cropping on food security is greater particularly when the cash crop is non-food crop like cocoa or coffee (Langat et al., 2011), thus farmers may need to maximise production through intensification or diversify income earning strategies (Frazer, 1987; Nyaga & Doppler, 2009). On the other hand, where animal traction substitutes human labour, the labour peak is spread, lowering the constraints on labour competition between cash cropping and food crops and this allows increased productivity for both types of crops (Demont & Stessens, 2009). However, most smallholder farmers operate in low input systems and inefficient traditional farming practices (Langat et al., 2011), and most cannot afford animal traction or machinery. Further, labour is the key asset for rural smallholder households (Takane, 2008), thus where resources (especially labour) are diverted to cash earning activities, the production and/or the availability of food is threatened. As Langat et al. (2011) point out, households who allocate some of their land for food production are more food secure than those who use all their land for cash crop production. Thus, the threat to household food security is more likely to occur in land scarce areas where all resources are diverted to cash crop production. Nevertheless, where cash crops are integrated with food production, threats to household security may not

be an issue as reported by Wamalwa (2011) in the case of the energy crop, jatropha, in Kenya. In this case, the author found out that farmers either intercropped cash crops with food crops or used it as a hedge to fence their farms. As such, the area for food crop production was not reduced while farmers still earned reasonable incomes from the cash crops.

It has been argued that household food security could also be threatened by cash cropping through the increased workload for women (Jansen & Maike, 2011; Rennie, 1991). Rural women in many developing countries play an important role in food production (Enete & Amusa, 2010; Garcia, 2004) and spend longer hours in agricultural production compared to men (Rennie, 1991). In addition, women are responsible for daily child care and domestic chores (such as collecting fuel wood, fetching water, house cleaning and laundry, cooking, and caring for the elderly in the community). With cash cropping, women's work load is reported to increases (Demont & Stessens, 2009) as they continue their traditional responsibilities of household tasks while participating in cash cropping activities such as planting, weeding, harvesting and processing (Frazer, 1987). As such, women's time is diverted away from food production. Expansion of cash crops into garden land forces women to reallocate their food garden further away from the village which takes up time to get to, as reported in the case of the Solomon Islands women (Frazer, 1987; Rennie, 1991). Where land is limited, women may have to diversify their livelihoods and seek off-farm employment (Garcia, 2004). Such changes may affect women's ability to make food available for the household and thus affecting household food security.

**Impact of cash crops beyond the household**

Proponents of cash cropping argue that food production can be improved or maintained due to the increased ability to acquire agricultural input (Govereh & Jayne, 2003; Key & Runsten, 1999). This is because the introduction of cash crop is usually accompanied by accessibility of the farmer to fertiliser, traction and other important resources which can be used for food production (Babu & Sanyal, 2009; Masanjala, 2006). For example, where the cash crops are rotated with food crops, fertiliser residues from cash crops can increase food production (Demont & Stessens, 2009).

Benefits from cash cropping for the wider community is explained as the "regional spill-over effects", by Govereh and Jayne (2003, p. 49) which occur when cash cropping schemes attract new investments in the region, benefiting both farmers involved in cash cropping and

non-cash crop farmers. This may include infrastructure development such as public utilities, ports, water supplies, electricity, transport and communication facilities, schools, public health, and market venues (von Braun & Eileen, 1994). Increases in household incomes may also increase business opportunities. For instance, Frazer (1987) reported for coconut and cocoa growers in the North Malaita region of the Solomon Islands that with increased income, entrepreneurial farmers started small business such as trade stores. Similarly, Finney (1973) reported that there were increased transport services and business enterprises such as trade stores, restaurants, and livestock projects by local entrepreneurial coffee farmers in Papua New Guinea in the 1960s when coffee development was rapid. Such business opportunities were made possible by access to cash from cash cropping which contributed to the economic development of the region and thus drawing the rural population into a monetary economy in the rural area.

The negative impact of cash cropping on the broader community is also reported. In a study on changing village agriculture in the Solomon Islands, Fraser (1987) found that the increased involvement in cash cropping by villagers in Manakwai (in this case coconut and cocoa was the cash crop) since the 1950s along with population growth led to a shortage of land. Consequently, competition and disputes over land use among clan members increased. Where disputes got out of hand, threats were made against land users, properties destroyed and frequent disruptions to normal work often occurred. In this example, people in the area were from diverse clans and land was limited and communally owned. Expansion of cash crop allowed particular families to gain control over clan territories which deteriorated social relationships among clansman.

**Risk associated with cash cropping**

There are risks associated with the involvement in the production of export crops such as cocoa which may adversely impact farmers' livelihoods. This may be induced within the production setting (such as environmental shock or stress) or outside (e.g. market prices) the farmer's environment. While cash crop production in tropical climates, such as in the Solomon Islands, is subject to the risk of pest and disease attacks and frequent natural disaster occurrence, a major risk is from fluctuation in prices (Ha & Shively, 2008; Ul Haque, 2004). The world market crisis has a direct impact on the livelihoods of smallholder farmers through lower incomes from cash crops (Calkins & Ngo, 2010). As reported for coffee farmers facing collapse in coffee prices in India (Ambinakudige, 2009), Vietnam, Africa and Latin America (Ha & Shively, 2008), lower incomes have a serious negative impact on the

livelihoods of farmers. These authors reported that many coffee farmers struggled to provide education, health and nutritious food for their families. Many of those affected were forced to cut essential expenses, sell their assets or give up and migrate to find better futures in the cities (Charveriat, 2001). To avoid such a negative impact, it is argued that smallholders need to adopt buffering strategies to cope with such risks associated with cash cropping (Wadley & Mertz, 2005).

Poor farmers do have the ability to adapt their livelihoods to changing situations to survive, as pointed out by Ellis (2000b). Ambinakudi (2009) highlighted vulnerability coping measures for coffee farmers in India during the global coffee crisis: dependency on kin relationships; balancing between commercial and subsistence crops; growing alternate commercial crops; labour sharing; lobbying; and the creation of informal institutions. Ha and Shively (2008) note for Vietnamese farmers that when coffee prices dropped, some changed crops, borrowed or engaged in off-farm employment. While a change of crop is an alternate option for farmers, it may only be viable with short-term cash crops that have short cropping cycles. The repeated cycles of investment and disinvestment in perennial crops (such as cocoa) can be detrimental to household capital (Ha & Shively, 2008). Other risk reducing strategies for smallholder farmers may include crop diversity and income diversity. However, subsistence food production is argued to remain an important part of local farming systems as it acts as a buffer in times of fluctuating prices (Wadley & Mertz, 2005). Thus, smallholder farmers needs to integrate cash cropping with subsistence food production to reduce risk.

### 3.8 Chapter summary

Cocoa production as a cash crop has been widely adopted as a livelihood strategy by many rural farmers in the Solomon Islands. Even so, subsistence food production remains the most important livelihood activity from which rural people obtain their daily staples. Other than the reports on the evaluation of CLIP, no research has been carried out on the impact of cash cropping on rural livelihoods in the Solomon Islands. The literature reviewed showed that cash cropping increased income for many rural farmers in developing countries. Increases in income allowed rural farmers to meet their various financial needs such as school fees for their children, basic household needs, and various social obligations. Access to income from cash crops had also enabled the entrepreneurial members of communities to venture into other livelihood activities such as expanding their cash crop production activities or starting a business, which greatly contributes to the economic development of rural communities.

However, cash cropping is also associated with negative outcomes where cash is used to purchase items or engage in activities outside household needs such as alcohol and gambling. In developing countries such as in the Solomon Islands, cash cropping is a male dominated activity and the cash obtained from sales of the cash crop is held and controlled by the male head of the family. Vulnerability to fluctuating world prices is a risk associated with cash crops such as cocoa. It is argued that farmers adopt buffering strategies such as integrating subsistence food production with cash crop production to cope with such risks.

The previous two chapters presented the background information to the study. The next chapter, chapter four, outlines the research methodology and the practical methods of data collection and analysis employed during the field work.

# Chapter 4: The Research Strategy

## 4.1 Introduction

This chapter describes the research methodology used for this research. It begins with a discussion of the research strategy used in this study. Then, a description of the case study follows, which includes the case design, case selection, site selection criteria, the sampling procedure, and the description of the participants. The data collection methods, data analysis technique and field work experiences are also described. To reiterate, the aim of the research was to explore the impact of smallholder cocoa production on the livelihoods of a rural households. Therefore, a sustainable livelihoods framework is used to guide the investigation of livelihoods undertaken at the household level. The framework is also outlined in this chapter. This chapter also includes the ethical considerations for this research and is concluded with a summary

## 4.2 Research strategy

This research is a qualitative research single case study. Qualitative research is ideal for this study as it can be used to gain in-depth information needed to understand the complex realities of rural livelihoods which are recognised by a number of authors as being difficult to measure (Berg, 2009; Curry, Nembhard, & Bradley, 2009). In accordance with Yin (2003), the type of research question, the degree to which the researcher has control over the research subjects and whether it is a contemporary issue or historical event were the factors considered when selecting the research strategy for this research. The research question posed in this study: 'How does cash cropping impact on the livelihoods of rural households in the Solomon Islands', is a 'how' question and is based on a contemporary situation in rural development in the Solomon Islands. Based on Yin's (2003) characteristics for different research strategies, a qualitative case study is seen as appropriate for this study. The study was undertaken in a natural setting where the researcher had no control over the behaviour of the respondents (Yin, 2003), focussing on how cocoa production impacted on current rural livelihoods.

A case study can either be of a single or multiple cases. Where the same study contains more than a single case, Yin (2003) explained that it is considered a multiple-case study design and commonly used for comparison in criss-cross analysis for more convincing evidence. Though evidence from multiple case studies is deemed as more convincing, it requires extensive work and requires more time (Yin, 2003). As such, given the scope of the necessary information and the limited time available for data collection and analysis, a single

case study approach was chosen for this study. Further, a case study is chosen as it is best suited in situations where the research questions will require detailed answers (Hartley, 2004). To date, there has been no research exploring the impact of cocoa as a cash crop on farm households' livelihoods in the Solomon Islands. As such, this study demanded a single in-depth case study.

### 4.3 Case and research site selection

This research focused on cocoa as an example of a cash crop that had impacted the livelihoods of rural farmers. Cocoa is the second most important cash crop behind coconut which is widely grown throughout the Solomon Islands. It can be easily grown by smallholder farmers and has been adopted by many rural farmers throughout the country. It is also supported by the government through external aid to increase production by smallholder farmers. Therefore, cocoa was the cash crop selected for focus in this study.

Maranu'u village was selected for the following reasons: (1) It is in one of the three main cocoa growing provinces of the Solomon Islands, the Makira Province (beside Guadalcanal and Malaita); (2) It is in the least developed province with regards to infrastructure development and thus the majority of the cocoa farmers are located in a more rural settings compared to those in the other two major cocoa growing provinces; (3) The majority of the households in Maranu'u village grow cocoa compared to other villages and regard it as their major source of income; and (4) the researcher is familiar with the local language spoken in the area thus enabling easy interaction with farmers during data collection and allowing good understanding of information collected from farmers during interviews. Thus, given the remoteness and the level of involvement in cocoa production, this village was selected for study.

### 4.4 Data collection and field work

The field work was considered a great success despite some frustrating moments being encountered. The success was attributed to prior preparation; having prepared interview question before undertaking the interviews. Although it was my first time undertaking interviews, being able to speak the local language gave me confident to carry out the interviews.

Getting to the research location was a challenge as the time of travel was not in line with the normal shipping schedule to the area. Thus, I had to wait a week for the first available transport to the village which took a week to get to the village instead of 24 hours (time of

travel for the normal shipping scheduled). Apart from this, bad weather conditions had delayed planned visits with some households inland of their various cocoa plots. Another minor problem encountered was being made to wait long hours without attention while waiting for those concerned to grant the research permit. I resided in my home village and walked (for about 40 minutes) to the village of study to collect data. During rainy days, roads became muddy which made getting to the village of study a bit difficult. Nonetheless, the fieldwork experience was considered a success.

Data Collection was carried out between June 11 and July 13, 2012. Both primary and secondary data were used in gathering relevant information for this study. Primary data was collected through taped semi-structured interviews with the participants. Semi-structured interview was used because as argued by Curry et al (2009) and Yin (2009), it allowed the researcher to get the information needed while posing open questions that allowed the participants to freely give opinions. I used an interview guide (see Appendix 5) with prepared questions to answer the research question which was developed based on the Sustainable Livelihood Framework (see Section 4.7, p. 41) and knowledge of the literature that had been reviewed. The prepared questions provide a guide to the conversation with the participants.

Interviews were supplemented by field observations and field notes completed during fieldwork. As argued by Yin (2009), observation was another means of gathering additional information for this study. This is helpful in providing additional information about the subject studied. This method involves "systematic, detailed observation" of the household, events and activities occurring in the natural setting (the study site) (Curry et al., 2009, p. 1445). By observing, this allowed me to understand the participants' situation and to learn more about the household while interacting naturally in their environment (Patton, 2002). I observed while participating in some of the daily activities households normally engaged in, which include food and cocoa production activities, and various community events. Gathering data for this study was not difficult since I am familiar with the community. Further, participants were eager to provide the necessary information since the study was based on a crop which is their main source of income. Field notes were taken during interviews as a back-up for tape interviews in case the tape recorder got damaged.

Secondary data such as written documents on the background of cocoa production within the Makira Ulawa Province were also collected from the Provincial Department of Agriculture of

MAL. However, this was limited due to poor database and filing systems within the department. Thus, information was based on recollections of important dates and events that had occurred with regards to cocoa production in the Makira Province and the Arosi North area through personal communications with a senior staff member in the provincial government who worked as an AEO in the past in a another district.

### 4.5 Sampling procedure and sample size

Purposeful and snowball sampling techniques were used to select the participants for interviews and observations in this study. The participants were purposively selected by their degree of involvement they had in cocoa production (farm sizes, commitment to cocoa production activities, how long they have been involved in cocoa). This sampling strategy aims to identify participants who have detailed knowledge or experience that is relevant to the topic of interest, thus enabling them to answer the research questions (Curry et al., 2009; Patton, 1990). With regards to snowball sampling, selected participants such as key informants (e.g. village leader) and those that were first interviewed, helped in referring the researcher to other potential candidates for the study (Berg, 2009; Marshall, 1996). Thus, during the fieldwork, the agricultural extension officer working in the area was first interviewed. He pointed out cocoa farmers from the Maranu'u village who were involved in his training workshops, who were then interviewed. In the village, the village leader was the first to be interviewed. The village leader then referred the researcher to other farmers for further interviews. After each interview, the respondent identified another respondent who was likely to provide rich information for the study. As such, the required information was collected. Interviews were carried out until limited new information was collected. Everyone in the village appeared to be willing to give information.

### 4.6 Participants

There were twenty one participants interviewed for this research, and these included: one agricultural extension officer (AEO), ten households (which involved the farmer, his wife and their children), eight male farmers, and two woman farmers (2 wives). The AEO was interviewed to provide information on how much assistance the government had given to these farmers through extension support. During household interviews, everyone in the household was present and each answered questions as required of him/her. Interviewing households aimed to gather as much information as possible from the household members on the impact of cocoa on their livelihoods. Included in the eight farmers interviewed were the

key informants: the church leader and a village elder, who gave detailed information about the village in general.

### 4.7 The framework of enquiry

This research seeks to gain insights into the impact of cocoa as a cash crop on the livelihoods of rural households. Thus, this study used the Sustainable Livelihoods Framework (SLF) as a guiding tool in the investigation of the livelihoods at the household level. To investigate the impact of cash cropping on household livelihoods, this study focused on the livelihood capitals (interchangeably used with assets) depicted in the SLF. This section briefly describes the livelihood assets against which the research questions for this study have been formulated in relation to participant livelihoods (see Appendix 5).

#### Livelihood assets

The livelihood assets are the resources on which rural people build their livelihoods and are defined as: natural, physical, financial, human and social capitals (DIFD, 1999). Natural capital refers to the natural occurring resource stock such as land, forest, water, marine, soil, and air (Adato & Meinzen-Dick, 2003). Such resources are important because they form the basis of human survival and thus play a significant role in determining and sustaining rural livelihoods. Physical capital is basic technology, basic infrastructure, tools and equipment which supports livelihood (DIFD, 1999). It includes affordable transport; secure shelter and buildings; adequate supply of water and good sanitation; access to health facilities and schools; clean and affordable energy; as well as access to communication services. Physical capital can be privately owned (such as houses, tools and machinery, household items) or state-owned but for communal use (such as roads, health clinics, schools, and wharves). Financial capital is the source of finance people use to help them achieve their means of living. This includes cash in hand, savings and investments (Cahn, 2006). Duncombe (2006) also includes in the financial capital: gifts, microcredit and any transfer of items of monetary value that occurs within the household's social circles. Financial assets are seen as the most versatile of all the types of capital as it is transferable into any of the other types or, alternatively, directly used to achieve a livelihood outcome. However, it is least available to the poor, thus making other capitals more important. Human is the labour available to a household. It represents the available skills and knowledge, together with the ability to perform a task (labour) that the rural people possess which allows them to pursue their livelihood strategies (Duncombe, 2006). For the poor, the chief human asset is their own labour (Ellis, 2000b). Human labour is required to make use of the other types of capital,

thus on its own, is not sufficient to achieve a positive livelihood outcome. Social is described by Woolcock and Narayan (2000) as "the norms and network that enables people to act collectively" (p. 226). It refers to the social resources upon which people draw from in the pursuit of their livelihood intentions which are developed through: networks and connectedness; being a member of a group; and relationships of trust and reciprocity (DIFD, 1999). Social capital can have direct impact on other capital. For example, through improving the efficiency of economic relations helps to increase people's income (social–financial); social capital helps in the maintenance of infrastructure that is shared (social-physical); and social networks facilitate the development and sharing of knowledge to increase human capabilities (social-human).

Within the SLF, livelihood assets are central to rural peoples' livelihoods. Improvement in peoples' lives can be measured through these five key assets. It is essential to report all types of impact smallholder cocoa production relating to any of the five asset categories discussed above as any change may have impact on rural livelihoods.

**4.8 Data Analysis**

This research used a qualitative form of data analysis. All the interviews were tape recorded and were supplemented with field observation notes. The analysis of data began with rereading of the field notes and re-listening to the interviews to become familar with the data collected as suggested by Yin (2011). The data was then organised and summarised according to the questions asked during the interviews. The emergent themes from the data were grouped under core themes which were later coded. The interviews were repeatedly listened to while grouping the data to avoid losing its richness. The data was then interpreted into a meaningful story which Patton (2002) notes as making sense of the findings through offering explanations, drawing conclusions, and making inferences on the data.

Pseudonyms are used instead of participants' real names to ensure confidentiality. In this study, the pseudonyms used are: FI (family interview which includes the husband, wife and children present during the interview), WFI (woman farmer interview where the only the wife is present) and MFI (male farmer interview where only the husband is interviewed). Any number used alongside a pseudonym indicates the number of the interview. For example, FI 9 means this is a family interview and it is the ninth interview session done when collecting data.

### 4.9 Ethical considerations

This research was assessed and approved as low-risk by the Massey University Human Ethics Committee (Appendix 1). Ethical principles were considered before the research was carried out. First, an email was sent to a representative from the Arosi North area requesting permission to carry out a research project in the said area. Feedback from the request was received on arrival in Honiara which, as required, was included in the application for the research permit submitted to the chairperson of the Research Committee of the Ministry of Education and Human Resources Development (MEHRD). Data collection was carried out after obtaining the research permit (see Appendix 2).

Secondly, the provincial government was made aware (and permission sought) of the purpose of the research. Thirdly, on arrival at the study site, I sought the consent of both the chief and church leader before information relating to the research was released to everyone during a Sunday church service. The purpose of the study was explained to the participants at the beginning of various interviews.

Consent was also issued for the participants to sign prior to interviews. The consent form (see Appendix 4) certified that the research participants agreed to participate in the research and whether or not they agreed to the recording of their interview. All participants showed enthusiasm for being recorded as this was perceived as a privilege. It is culturally inappropriate for a females to question males on her own. As such, a female assistant always accompany me when going to collect data. The assistant provided company when travelling to the village of study and just to be present when interviewing male participants (who were interviewed without their wives). The assistant was advised that information from interviews should be kept confidential..

### 4.10 Chapter Summary

This research took a qualitative research approach and a single in-depth case study was chosen in order to collect detailed information to answer the research question. Prior to conducting the research, field research procedures were drawn up. Purposive and snow balling sampling techniques were used to select participants for this study. Data was collected both through semi-structured interviews with participants and through observations. This thesis used the SLF as a guiding tool to formulate questions which underpin the conversations during the semi-structured interviews. The researcher adhered to the code of

conduct of the Massey University Human Ethics Committee, which underlies any research involving human participants.

As the following chapters demonstrate, the methodology has provided the information required to explore the impact of cocoa as a cash crop on rural livelihoods in the study site. The next chapter, chapter 5, presents the context of the case study.

# Chapter 5 Case study description

## 5.1 Introduction

This chapter describes the context of the case study undertaken. The study centres on smallholder cocoa production by rural farmers in Maranu'u village in the Arosi North area of the Makira/Ulawa province in the Solomon Islands. The chapter includes a description of the physical and the demographic characteristics of the Makira/Ulawa province and Makira Island as well as the case study village. Further, it outlines the livelihood strategies undertaken by villagers before becoming involved in cocoa production, and provides a brief history of cocoa production in the case study village, cocoa production practices, the village cocoa drier, marketing of the village cocoa and the government involvement with cocoa farmers in the village.

## 5.2 Makira/Ulawa Province in general

The Makira/Ulawa province consists of nine islands: Ulawa, Pio, Ugi, the three sisters (Malaulalo, Ali'ite and Malaupaina), Makira, Santa Ana and Santa Catalina (see Figure 4). See Figure 1 for the location of the Makira Ulawa province within the Solomon Islands.

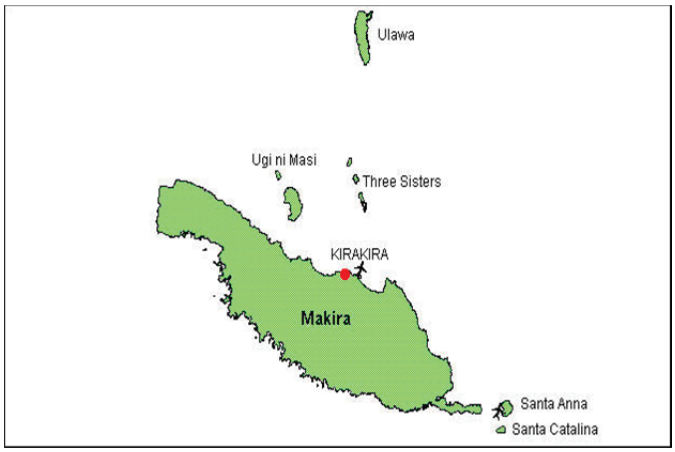


**Figure 4: Map of Makira/Ulawa**

**Source: Vincent, Kakai & Saunders, n.d**

The province has four constituencies (East Makira, Central Makira, West Makira and Ulawa/Ugi), each having a representative in the national parliament, linking the people and the central government. The provincial assembly is the policy making body of the province

with 20 members representing the 20 wards in the province. Wards[13] one, two, three and four are in the Ulawa/Ugi constituency, while the rest (except for wards 15 (Santa Ana) and 16 (Santa Catalina)) are on the main island of Makira, forming the East, Central and West Makira constituencies (SIG, 2001). There are 15 provincial executive members who are chosen by the premier and who are responsible for assisting in policy making. The structure of the provincial assembly is a replica of the central government structure.

According to the national census in 2009, there are 7,173 households and a total population of 40,419 in the province with an average annual population growth rate of 1.2 % (Solomon Islands National Statistics, 2011). Only 5% of this population live in the urban centre. The Bauro region has the highest population in the province due to it being the location of the province's headquarters: Kirakira (see Figure 4 p.45), and having two education institutions in the region. Most village settlements are located on the coast with a few inland villages on the leeward side of the island of Makira where there are limited coastal plains. There are 11 distinct languages spoken in the province. However, Pidgin has become the common language used mainly by people who have gone through the formal education system outside their native language speaking area or outside the province. English and Pidgin are the languages of instruction in all educational institutions and public sector work places.

Christianity was introduced to the islands in the 1800s. The major church groups in the province include the Anglican Church of Melanesia (COM), Roman Catholic Church, South Seas Evangelical Church, and the Seventh Day Adventists. Other sects are Rehma, the Church of Christ, and Jehovah's Witnesses. Churches undertake various community activities, which have been instrumental in the province's development through the establishment of educational institutions (both primary and secondary schools) and rural vocational training centres. Churches have also established structures such as the parish councils, youth groups, and women's groups of the COM (SIG, 2001), which enable people to actively participate in rural development activities.

### 5.3 Location and environment of Makira Island

The island of Makira (formally known as San Cristobal) is located at 10.60°S and 161.85°E and is about 200 km southeast of Honiara, the national capital (See Figure 1 p.6). The island is 140 km long, between 12 and 40 km wide and has a northwest-southeast orientation,

[13] A ward is a number of villages (who speak a similar or the same language) who together have a representative in the Provincial Assembly. See Figure 5 on the wards on Makira Island. A number of wards form a constituency.

covering an area of about 3100 km$^2$. The climate of Makira is characterised by high rainfall, high humidity and uniform high temperatures, which are occasionally tempered by sea breezes. There is higher occurrence of rainfall from May to October in the southeast region and from November to April in the west of the island (Allen et al., 2006), with annual mean rainfall within 3000 to 5000 mm with no dry months. Makira has a narrow coastal plain leading up to undulating hills and occasional terraces, and finally steep central ridges that run along the length of the island (SIG, 2001). The steep interior ridges are rugged and vary from 400 m to 1,250m (the highest point above sea level). There are areas where the coast becomes extremely rugged with cliffs descending to the deep sea and access to basic services such transport, communication and medical services is extremely poor (Jackson et al., 2006). There are more than 20 main rivers flowing towards the north of the island, with some rivers changing course frequently, making the surrounding settlements prone to flash floods during heavy rains. Agricultural activity is favourable primarily on the plains along the coast of the island and mostly on the north coast.

**5.4 Infrastructure developments**

Makira is the least developed of the major islands of the Solomon Islands in relation to poorly developed infrastructure. The major road network is located mostly along the northern side of the island. Government funded roads built in the 1970s-1980s are in the Wainoni Bauro regions (SIG, 2001). About 67 km of this road (Warihito-Kirakira-Wainuri road) (see Figure 5, p. 48) has undergone rehabilitation with 27 new bridges and causeways (along this road), co-financed by the governments of New Zealand, Australia, the European Union, the Solomon Islands and the ADB (AusAid, 12012; SIG, 2008). In the 1990s, the Somma Logging Company built unsealed roads that link East Arosi to the provincial capital, Kirakira, by connecting with the government-funded road in the Bauro regions (SIG, 2001). However, much of this roading is in a very poor state and cannot be used by vehicles. Other road links, most of which are non-gravelled, were built and used by the logging company operating on the island. Most parts of the island and the Weather-Coast area are still without roads thus restricting the movement of people and hindering trade in the area.

Transportation of goods and services is mainly by sea. It takes about 24 hours to travel by ship from Honiara port (in the capital) to the Kirakira through the normal route, the Arosi-north coast route. It may take more than two days using the Arosi-west coast route, which is seldom used. There is only one wharf in operation on the island (Namugha wharf in East Makira). Kirakira (in the Bauro region) is served by a small rundown jetty, while the

causeway for Kaonasugu wharf (also in the Bauro region) has been damaged and eroded by high swells during bad weather and is unusable. Elsewhere on the island, on/off loading of passengers, cargoes, and material to/from ships is done via small dinghies. The dinghies are taken to and from the shore through small passages on the reef, usually natural outlets for a river or stream. As such, on/off loading is problematic, especially during bad weather.


**Figure 5: Map of Makira Island showing the wards and road network**

**Source: Adapted from SIG, 2008**

There are three airstrips servicing the island. Ngorangora in Central Makira serves the business sector at Kirakira and the nearby educational institutes, the Arosi region and the Weather-Coast three times in a week. The Nana airstrip serves the Wainoni region, while the Santa Ana airstrip, the eastern part of Makira with weekly services.

Radio wireless is the most common communication service linking urban centres and the rural remote areas, most of which are installed in Rural Health Clinics (RHC), sub-stations, parish headquarters of the COM, and few business entrepreneurs throughout the island. An internet service is provided by Solomon Telekom and serves the population in the provincial capital. Mobile services are also available but are not yet widely distributed throughout the island.

Logging companies- mostly foreign loggers - have been operating on the island since the 1980s. During the time of data collection, there were six commercial logging companies working predominantly in the Arosi region (SIG, 2008). Nonetheless, there are no signs of infrastructure development from these operations; rather, more significant negative impacts are obvious such as damage caused to the natural forests, village gardens, cocoa plots, as well as the degradation of rivers. These logging operations have also caused land disputes among tribal members as not all members agreed to allow loggers into their land and consequently resulted in disunity in the community (Herbert, 2007)

### 5.5 The Arosi North

Arosi North is situated on the northern tip of Makira Island (Figure 5). It is one of the five wards within the West Makira constituency. Six main villages and a few scattered settlements make up the ward and it is on the Arosi plateau which is one of the agricultural opportunity areas[14] of the Arosi region (SIG, 2001).

The population of the Arosi North is more than 2,300 from about 405 households (Solomon Islands National Statistics, 2011). This is about 15% of the West Makira constituency's population and 6% of the province's total population. All villagers speak the Arosi language; however, Pidgin English is also spoken widely. There are two primary schools, a community high school and two RHC serving the area. Except for a few households, everyone is a member of the COM. The Arosi North area has been heavily logged by Malaysian logging companies in the 2000s. Roads in the area include tracks made by these logging companies which are now in poor condition and are overgrown by vegetation.

### 5.6 The case study village of Maranu'u

#### Location

Maranu'u village is located in the Arosi North area, more than 95 km northwest of Kirakira. Houses are scattered over a distance of 2 km along the coast and approximately 1 km inland on the slopes from the shore. The spread of houses over such a large area is due to the increasing population, where families have built dwellings in their old garden plots adjacent or behind the village which resulted in the expansion of the village. The village can be reached by a 2-3 hours ride on an out board motor (obm) vessel from Kirakira depending on the load and sea conditions, and about 24 hours on the inter-island cargo boats from Honiara

[14] These are areas which have been identified as having very fertile soil and the potential for commercial agriculture during a survey by the Agriculture Division in the 1980s..

(Honiara-Kirakira Arosi-north coast route). Travel from Kirakira to Maranu'u by road is about a four hour ride on a truck, crossing a good number of rivers. However, this will only take one to Asimanioha village in the Arosi East area, and the rest of the journey must be taken on foot (about a four hour walk) or hired obm (40-50 minutes). During rainy periods, travel by road is difficult as rivers become flooded, making it hard for vehicles to cross. A road runs through the village but is rarely used by vehicles since bridges over rivers on that part of the island are in poor condition and roads are overgrown with vegetation.

**Population**

There are 99 households in Maranu'u village and a total of 490 people. The number of people living in each household range from four to ten and households comprise of nuclear family units. The majority of the adult population's (20 years and above) highest qualification is year six of primary school with a few reaching year nine (secondary school level). There is only one person from the village that has formal employment (as a police officer) and he works in Honiara. Other than women who married outside the village (traditionally have to reside in their husband's village), everyone remains in the village after leaving school. Apart from the five Catechists[15] (who are paid $70 per week of duty by the village church), formal employment is non-existent in the village.

**Physical infrastructure**

Infrastructure development in Maranu'u village is minimal. The village is located on the coast where the natural passage through the reefs end half way to the shore. Boats that get ashore are usually battered by waves before reaching the beach. As such, commercial cargo boats can only put ashore their dinghies during very fine weather. Otherwise, all on/off loading of cargo, supplies produce and passengers are done in the neighbouring village. The nearest school and RHC are about a 30-40 minute-walk away. The only communally owned structures in the village are the village cocoa drier (VCD), the church, and a kindergarten classroom (all built of local material, except for the new incomplete church building, which is built from imported material). The kindergarten is run by three women from the village, with limited training and no qualifications. In the 1990s, a water supply system was built under a rural water supply project, piping in water from an inland stream for the village, but is long since destroyed. Villagers currently use the two streams at each end of the village as their major sources of water for drinking, washing, and cooking v(Figure 6). A designated site on

[15] A Catechist conducts the village's morning and evening prayer sessions. Each Catechist takes turns within a week to carry out daily prayers.

the seashore at each end of the village is used by everyone as toilet areas- females on the east end and males on the west end. During the logging operation in the area, a playing field and the site for the new church building were bulldozed using the company's machines.

**Figure 6: The village stream - the village's main source of water**

**Photo by Thomas Oroi, 2012**

Most structures in the village (sleeping houses, kitchens, pigpens etc.) are built from local material, mostly collected from the forest (see Figure 7A). There are a few semi-permanent dwellings (built of both local and imported material (such as corrugated iron roofing and nails), and locally sawn timber (Figure 7C&D). Unlike western-styled homes, most households in the Solomon Islands (and especially in the Makira Province) have two separate houses. First, a sleeping house on stilts (consisting of the bedrooms and an open veranda which the family may also use as a dining area and where friends, relatives and visitors are entertained) and second, a kitchen (a smaller hut where all the cooking is carried out using wood fuel) (see Figure 8). Elderly couples prefer warmer dwellings, such as those used in the olden days. They sleep in low houses (not raised on stilts) where cooking is also done, and the heat from the fire keeps the house warmer (Figure 7B).

A   B

C   D

**Figure 7: Types of sleeping houses used in the village. A - a sleeping house on stilts; B – a sleeping house not raised, both A and B were built with material collected from the forest; C&D – semi-permanent sleeping houses**

**Photos by Thomas Oroi, 2012**

E   F

**Figure 8: Photo showing examples of kitchen huts**

**Source: Author's field data observation, June 2012**

**Village institutions**

Everyone in the village belongs to the Anglican Church of Melanesia (COM). The church plays a major role in the communal life of the village through communal gatherings, village activities, and spiritual services. Within the Anglican Church structure, there is a women's group called the Mothers Union (MU) of which most women in the village are a member. The MU promotes good family life through caring with love, thus in the village, putting family first is the priority of many women. As part of the COM, the community makes financial contributions to the church. All households are obliged to do this irrespective of their individual hardships. Apart from the MU, there are also other church groups in the village such as: the Sunday school group, companions of various religious orders[16], and the youth group. Members of such groups also contribute cash or in kind to the church when asked. With regards to church activities, the village has a committee (called the Vestry Committee) chosen by community members to oversee the affairs of the church in the village.

Any matters outside the church are mandated to the village chairperson and his executive (such as school matters, health issues, community work, cultural and social conduct). The village is divided into five zones (sections of the village), through which allocation of community work is delegated. Generally, villagers are obliged to do communal work organised by leaders in the village, either the village committee or the Vestry Committee. This includes church building maintenance or the repair of any communally owned structures in the village, village clean up, cleaning the RHC compound and any task assigned by respective committees. Each zone has their zone leader who is also a member of the village committee. Information dissemination for every village member is mainly done through announcements during church services, particularly on Sundays when the whole community attends.

As stated earlier, the Vestry Committee is in charge of the affairs of the church in the village. An important priority for this committee when this study was conducted was the completion of the church building. The construction of the church building was the main driving force for the adoption and expansion of growing cocoa by the Maranu'u community. This is explained in detail in the next section.

[16] The COM has religious orders such as the Melanesian Brotherhood (MBH), Society of Saint Francis (SSF), and the Sisters of the Church. A member of the COM may choose to be an associate of any of these religious groups.

**Establishment of the village cocoa drier project**

The village cocoa drier[17] (VCD) was built and started operating in 2000. The decision to build and run a cocoa drier came about after the Vestry Committee decided that the village should have a permanent church building to avoid the continuous burden of collecting bush material for the repair of the existing one (Figure 9). Thus, the Vestry Committee proposed the VCD project to raise funds for the permanent church project, which was later approved by the community members during a village meeting. Funds to start the operation of the VCD with were raised by selling few imported goods commonly desired by households (such as rice, noodles, kerosene, matches, soap) in the village. The VCD started operating with only SBD$1,000 and during that time only very few households owned cocoa plots. Households were encouraged to plant and/or expand their cocoa plots. This allowed for the continuous supply of wet beans and the running of the drier whilst at the same time, the villagers had access to a market for their cocoa beans, therefore obtaining a constant source of cash income.

The Vestry Committee oversees the running of the VCD; however, villagers also help with the various tasks in the processing of cocoa. As mentioned earlier, the village is zoned into five zones, thus each zone take turns in providing labour, firewood and other requirements to undertake cocoa processing. Thus, the community work together on the processing of the village cocoa. The community relies entirely on the funds raised through the VCD for the church project. The construction of the church started in 2008 and is slowly progressing as funds depend on the on-going cocoa production from the village (Figure 10).

**Figure 9: Existing church, front and side view.**

**Photos by Thomas Oroi, 2012**

[17] A convention drier that uses fire wood to produce the required heat to dry the cocoa beans

**Figure 10: New church building under construction**

**Photo by Thomas Oroi, 2012**

**Village cultural and social practices**

Like many Makira villages and elsewhere in the Solomon Islands, Maranu'u village upholds certain cultural practices which have been passed down from previous generations to the current one. Traditionally, 'giving a hand' to anyone in the village is a norm. It is ones obligation to help whenever someone is seen doing a job, most especially house building, and heavy food production tasks. There is a saying 'it might rain on you someday' meaning: 'you too will, someday, need a helping hand which will be made available if you are also seen helping others'. This reflects the practice of sharing, caring and giving which for many years, families relied on for support. This support system builds strong links between families and kinship groups. Having such a strong support system allows some of the burden of a household to be shared amongst the members of the clan, the extended family and to some extent, the whole community. For example, when buying a bride, hosting a wedding feast, or an untimely event such as hosting a funeral feast, everyone contributes food or other means of support. As such, households must have something ready in hand to contribute. In the past, households contributed garden produce (mostly traditional food crop such as yams and taro[18]), live pigs, cooked food or shell money (for bride price payments). Nowadays, other food crops such as kumara, konkong taro and cash contributions are popular. In this regard, one's contribution is an investment. Thus, accumulation of material wealth is not a priority for most households.

An annual event on the village calendar which is part of the community's way of life is the Saints' Day celebration which falls on June 24 each year. A lot of preparation is put in by the

[18] Taro and yam are culturally significant and were traditionally used as part of payments or gift exchange.

community for the event and everyone is expected to attend. Each household prepares a plot in their garden to supply food for the feast on that day. Households also make cash contributions as required by the committee organising the event. Friends and relatives from neighbouring villages also attend. Other feasting events include Christmas, Easter, wedding celebrations and funeral feasts, but the extent of the feast depends on the organisers of the event. Nevertheless, everyone is obliged to contribute cash or an alternative and most importantly, to attend, for the success of the event.

**Gender and task allocation**

The household head, which is normally the father, makes decisions on the delegation of tasks in the household and the issues concerning the family. In most cases, however, both the husband and wife jointly do the decision making. Traditionally, female members of the household and male children are responsible for food production, family chores, child care, caring for the elderly, and collecting water and firewood. Female food production activities include clearing, planting, weeding, harvesting and cooking. Some women also perform tasks that are traditionally performed by men such as soil preparation, when needed. Female members of the household are also responsible for gathering fruits, nuts and vegetables from the forest, marine food from the reefs, as well as to earn income through sale of surplus garden produce. The male members of the household carry out the heavy manual jobs associated with food production for the household. This includes clearing land for a new garden site, tree felling, soil preparation, hunting, deep-sea fishing and earning a cash income (such as making copra, casual work outside the village). Males are also responsible for the building and the maintenance of the household dwellings.

**Land tenure system and land use**

Land in Maranu'u is customarily owned by five tribal groups whose ancestors first settled in the area. Thus, land is divided into five blocks that runs from the shore and extends to the hills further inland towards the mountain ranges. Land boundaries between tribes (and between Maranu'u land and the adjacent village land) are distinguished by natural landmarks such as waterways, ridges, valleys, or ancestral shrines. Ownership of land is inherited through the mother's lineage (matrilineal system). Land is not individually owned, but rather, is owned by the tribe. However, anyone from the tribe who first cleared the primary forest for gardening on the tribal land has the right to that cleared land for subsistence use. Rights to the land can also be gained through marriage. Any proposed development of the land must have the consent of all members of the tribe and may result in disputes over the

land if there isn't agreement. For example, recent logging activity in the village resulted in land disputes between members of the same tribe as it was not agreed upon by all. This resulted in the company leaving prematurely (6 months) after it started operating.

Maranu'u land is characterised by a narrow flat plain from the shore which then slopes up to rolling hillsand continues onto the plateau further inland. The village land is more hilly than flat. Houses are built on the narrow flat land close to the shore and inland on the small hill. The shore is fringed with coconut palms. Valleys cut through the rolling hills and range from deep cutting sides to gentle sloping valleys. Some families have small coconut plantations (less than 1 hectare) in these gentle sloping valleys. Garden plots are located on the wide ridges between valleys and also on gentle sloping land. Most garden land is on land with secondary forest and the primary forest is now further away from the village, about 4-7 km inland. Household cocoa plots are located along the valleys and on slopes where gardening is not suitable. Households with existing coconut plantations have planted cocoa in between the coconut palms.

The villagers carry out a shifting cultivation method of farming. Two crops or plantings of food crops are planted on the cultivated land before it is left to fallow for at least 5 years. In the past, a fallow period may take up to 15 years before the land is cleared again. However, due to increased population pressure, this fallow period is now shortened, and some households are experiencing a decline in soil fertility on their garden lands. As such, crops such as taro and yam can only be planted in newly cleared primary forest further in-land.

**Livelihood activities**

The livelihood activities undertaken by the households in Maranu'u village have changed over the last decade. The livelihoods described in this section are generally those that villagers undertook before cocoa became a livelihood strategy. Cocoa is now an important livelihood strategy for the majority of households in the village. This became possible once the VCD was set up. The pre-cocoa period in this study, refers to the period prior to the setting up of the VCD (before 2000).

***Food production***

The mainstay of the community remains the production of food through gardening, which is a priority activity for most households. As an old Arosi proverb states: 'The sun rises with a yam tuber and sets with a banana sucker.' It means, to have a continuous supply of food for the family, something must be planted in the garden each day. Like in many rural villages in

the Solomon Islands, food production is carried out using the 'slash and burn' shifting cultivation method. Sometimes farmers collect wood from the felled trees and pile it around the boundary of the new garden which then can be later carried home for firewood (Figure 11). After the cleared land is burnt, material that has not been burnt is cleared from the land and the soil is prepared for planting. The food crops normally planted in gardens include kumara, banana, taro, yam, cassava, maize and local vegetables such as slippery cabbage. Kumara and banana are the most important staples in the area. Kumara[19] has become very popular because it is easy to produce, quick to harvest, and its taste is much preferred by the younger generations compared to the traditional crops such as yam (which are labour intensive, requires special care, and take longer to mature). Banana is always grown as it reduces the risk of food shortages if kumara fails due to prolonged wet conditions. Some families also plant introduced vegetables such as eggplants, tomatoes, cucumber, watermelons, pumpkin, and pineapples. On the ridges, where the soil is dryer, the main crop planted is kumara, while along the valleys and sloping areas, taro and banana grow well and thus are normally planted. Where soil is suitable for a wide range of crops, different food crops are intercropped in a garden plot. For the kumara crop, harvesting is done in a way that allows it to last a household for at most 6 months before a new plot is harvested.


**Figure 11: Newly prepared soil for planting kumara. Beyond the new plot is an old garden left fallow.**

**Source: Author's field data observation, June 2012**

[19] Kumara is an introduced root crop; the date of introduction to the villages is not known but it has been accepted as an important staple crop.

A household can have up to three kumara plots at a time: a newly planted plot; a near to harvesting plot; and one currently being harvested (all next to each other in one area or in different locations). Others may have one being harvested, a newly planted plot and a plot of a different food crop from kumara at a different location. Thus, for a household, a new garden plot should always be ready for harvest when the one being harvested is almost finished. This system of farming contributes to a continuous supply of food for household consumption and for sharing with relatives as well as for household contributions (to a wedding or a funeral feast, bride price payments, church offerings and for clinic fees[20]) and for sale. A break in this gardening cycle disrupts the continuous flow of food supply for the family. The total area for a family's garden depends on the size of the household, ranging from 192 $m^2$ to more than 500 $m^2$. All households' food gardens are located some distance away from the village.

Generally, on a visit to the household's food garden, family members perform various tasks before returning to the village. For example, the farmer and/or the wife may first do the major task that is allocated for that day such as clearing, soil preparation, planting or weeding. Later, food is collected if stocks at home are low (from the garden plot they are currently harvesting staples from), and other tasks are carried out such as cutting firewood, gathering greens for pig feed, or gathering any building material that is needed for the house (Figure 12). When children accompany their parents to the garden, they also help in carrying home garden produce. Thus, it is common for many households to bring home something on return from the garden (from the garden or forest, firewood, baking leaves, house construction materials, fish bait or sometimes medicine). Farmers normally return home by mid-afternoon.

[20] When cash is scarce, garden food is used as payments instead. This is later sold to convert into cash. This also applies for church offerings, which in this case, people in the other villages buy since it is cheaper to buy from the church.

**Figure 8: Farmer with items gathered during a visit to his food garden; a bunch of bananas and two bundles of poles to repair his house.**

**Source: Author's field data observation June, 2012**

Households carry out gardening activities with limited tools. Much treasured gardening tools for a household are: machetes (known as bush knives) and axes. A bush knife has multiple uses and can be used to clear land, slash down small trees and the branches of felled trees, weeding, and to cut whatever is needed to be cut. An axe is mainly used for tree felling, and chopping firewood. Soil preparation is done using a sharpened digging stick. Owning a hoe, spade, a digging iron rod, or more than two bush knives is a bonus for a household.

Villagers do not spend every day working in their gardens. Once a new garden plot has been completed, the household can have up to 3 months free from heavy gardening tasks (apart from occasional weeding to keep weeds down and harvesting). During this period, the wife can return to house cleaning duties, and husband can turn to repairing their house if needed; otherwise, there is not much to do during this period.

***Other activities***

During the pre-cocoa period, households were also involved in supplementary activities such as rearing livestock (village chickens and pigs) and fishing. Chickens are normally raised for consumption while pigs were mainly kept for special events such as feasts and brideprice

exchange ceremonies[21]. Selling livestock to fellow villagers was uncommon. Similarly, fish caught were not for sale, but mainly used for household consumption.

Cash became the medium of exchange in the village following the development of cash cropping (coconut and cocoa) in the 1980s and only few households were involved. As the monetary economy in the village became increasingly important, households needed cash to purchase basic necessities such as kerosene for lighting, soap, matches, school fees and stationary for their children, clothes and other household goods plus other community contributions. Cash, however, was hard to obtain in those days. Households had a constant food supply from their gardens for sustenance, but many found life hard as they struggled to meet their monetary needs. Income earning activities included: sale of surplus from their food gardens, casual labouring, making copra, and intermittent harvesting of old existing cocoa trees[22]. Those who wished to sell their garden surplus had to walk to the nearby village's weekly Saturday market to sell their produce. Men had to find jobs outside the village to earn incomes for their families. Whenever, a lump sum of money was needed, husbands had to look outside the village to earn money and sometimes had to leave the family for up to three months to work as a casual labourer before returning home with the necessary cash. Income for many households was low, intermittent and many possibly had no access to cash for months in a year.

Since access to cash was limited, parents often found it difficult to meet the required expenses for their children's education such as school fees, stationary, uniforms, or even clothes. Thus, children were discouraged to stay at school. Many dropped out from school before reaching year 6 and remained in the village.

Trading of surplus food and other items in the village was not possible since there was a limited flow of cash. There were no trade stores in the village thus people had to go to the nearby villages if they needed to buy household items. Households mostly used garden produce to give as church offerings, to meet their clinic fees and to contribute towards feasting events;livestock was used on the occasions where animals were required. Easy

[21] After bride price payment (done by the bridegroom's parent and relatives), the bride's parents and relatives must bring a pig(s) to the bridegroom's parents and relatives. By doing so, both sides have the right to the custody of their children.

[22] Very few households in the village are involved in copra and also very few had cocoa plots expanded from those planted in the 1980s. The market for these products was limited thus income from these items was intermittent.

access to cash in Maranu'u village was made possible only through the village's involvement in cocoa production.

### 5.7 A brief history of cocoa in the village

Cocoa was first introduced in the Arosi North area during the 1980s with support of external aid. At that time, cocoa plots were owned by extended family groups. In Maranu'u village, two cocoa farms were established under coconut plantations and were located close to the village (garden land in those days). There were no fermentaries built to process wet beans from these farms, therefore farmers had to carry their cocoa to the neighbouring villages to sell. Due to a number factors such as poor management; limited knowledge of cocoa maintenance practices (shade control, pruning, and farm hygiene); and diseases due to high rainfall, these farms were neglected and thus most cocoa trees died. Furthermore, some families within the groups also started their own cocoa plots in the 1990s, leaving the old farm to be maintained by one household, which was too much for the household given their limited knowledge of cocoa production. The surviving cocoa trees from the early established cocoa plots however, provided the seed stock for the expansion of cocoa in the village. Prior to the establishment of the village cocoa drier, one of the villagers ran his own cocoa drier and consequently bought all the village cocoa. However, due to high repair costs and poor management, the cocoa drier ceased operating and therefore, the few households who owned cocoa at that time had to find a market for their cocoa outside the village. The establishment of the village cocoa drier in 2000 provided a reliable market venue and thus boosted expansion of cocoa production in the village. To date, with the exception of only two households, the entire village is involved in cocoa production. Cocoa plots ranges from 0.2 to 1 hectare.

#### Village cocoa production and practices

Normally, once the land is cleared, shade trees must be planted three to six months before cocoa seedlings are transplanted out into the field. Once the cocoa trees make a canopy (approximately 3 years), shade is gradually removed. All shade must be removed once a good canopy forms. In the case of many farmers in Maranu'u village, food crops (such as bananas, taro, and cassava) are intercropped with cocoa. The food crops provide the shade that the newly planted cocoa seedlings need. In some cases, fruit trees such as nuts are left standing to be used as shade trees when clearing the forests. When intercropping, food crops help supress fast weed growth, thus reducing household labour compared with mono-cropped cocoa. Further, households benefit from food produced from the land while waiting for their

cocoa trees to bear fruit. Some families continue food gardening in the cocoa plot until the trees start producing fruits, thus prompting more regular visits to the farm to carry out maintenance work.

Farmers' access to tools and equipment for cocoa production is limited. Digging sticks are used during transplanting of seedlings (not more than five villagers own a digging spade); bush clearing, weeding, pruning, and harvesting are all done using bush-knives asvery few farmers own secateurs, pole harvesters or a wheelbarrow. Production happens on a low input system as farmers have limited knowledge of fertilisers and chemical use, and even less access to these products.. Skills and knowledge relating to cocoa production were obtained from a one day workshop organised for the villagers in the 1990s, and experiences of older farmers in growing cocoa was shared. Household members are the entire labour source, with the father the main provider of the manual labour needed.

**Cocoa processing and marketing in Maranu'u village**

Villagers harvest their cocoa fortnightly. Farmers sell cocoa as wet beans to the VCD (Figure 13). With a common understanding agreed to by the whole community, no villager is to sell their cocoa outside the village and no outside cocoa dealer is allowed to buy wet beans from the villagers. The VCD buys wet beans from the villagers at SBD$3 a kilogram which is SBD$2 less than the normal wet bean price of SBD$5 per kilogram. With this arrangement, households are giving SBD$2 for each kilogram of cocoa produced from their plots towards the church project. The wet beans go through two stages of processing before they are bagged to sell. First, the fermentation process, where the beans are kept in fermentation boxes and are turned after 24-48 hours, for a few days. During this process, the mucilage covering of the cocoa seed is removed and the cocoa develops its chocolate flavour which determines it quality. Secondly, the cocoa is dried which normally takes two to three days during which the moisture content of the bean is reduced below 7.5%. The dried cocoa is then bagged in gunny bags ready to be sold. A bag of dried cocoa weighs about 64 kg.

**Figure 9: A farmer assisting in weighing wet beans at the VCD**

**Source: Author's field data observation June, 2013**

The team managing the Maranu'u VCD has made an agreement with a local cocoa exporting company (El-Shaddai Enterprises) for their cocoa to be purchased at SBD$13 per kilogram for 10 shipments. In return, the company will assist in purchasing building material for the church. During the time of data collection, the village had already sent seven shipments. Within this arrangement, the VCD still had to meet all other costs such as freight for the cocoa and transport and accommodation cost for whoever was accompanying the produce to Honiara. To cut costs, they sometimes sold their cocoa to a buyer in the Arosi area at the much cheaper price of SBD$10 per kilogram but this worked out more cost effective than taking the product to Honiara. Whichever way the processed cocoa is sold, the VCD provided a stable market for village cocoa and increased its operation from SBD$1,000 when it first started to SBD$15,000 (during the time of data collection).

**Extension support for Maranu'u cocoa production**

Extension support for agricultural development in Makira province is provided by the Department of Agriculture and Lands (DAL). However, support services are financed mostly by aid agencies. Support from the government to extension workers is mainly through payment of their salaries. Thus, extension support for farmers through DAL is only through project-based activities (Allen et al., 2006).

Maranu'u cocoa farmers obtained information on cocoa production from the previous extension officer working in the area in the 1990s. Being a local in the area, the officer arranged a village meeting for Maranu'u during which villagers were informed on the best practices in cocoa production. Through this meeting, some households got ideas on cocoa and thus planted their own cocoa plots. Some obtained skills and knowledge on growing cocoa

from the experience of those who worked on the cocoa plots established in the 1980s. In this regard, there is no direct extension support for Maranu'u cocoa farmers from DAL.

The AusAid funded CLIP has used the extension officers in the DAL to run cocoa training workshops for farmers in the Makira province. These training opportunities are aimed at farmers who have at least a hectare of cocoa land. Farmers have to pay a certain fee before they can be assisted in the provision of tools and material for cocoa production. In Maranu'u village, only four farmers (who own about a hectare of cocoa land) attended the training workshops. There are only two farmers who are officially supported members of the CLIP project (having paid the required fee); one being a frequent workshop attender while the other has never attended any training workshops. The majority of Maranu'u households own less than a hectare of cocoa land, thus CLIP directly supports only 4 farmers in the village.

### 5.8 Chapter summary

This chapter described the case study village where the research was conducted. The study was conducted in Maranu'u village in the West Makira constituency of the Makira/Ulawa province in the Solomon Islands. The climatic condition of the area is typical of that in most regions in the Solomon Islands and is well suited to cocoa growing. The mainstay of the villagers is the production of the staples and local vegetables on customarily owned land. Cocoa was first introduced in the 1980s with support from external aid where farms established by villagers were jointly owned by family groups. Limited management skills, poor crop production techniques and market constraints resulted in the breakdown of the early established farms; however, these initial farms supplied the seed stock from which households later established their own cocoa plots. The village set up a fermentary as a market for farmers to sell their cocoa. Apart from the previous extension worker in the area, extension support to Maranu'u cocoa farmers is poor and the CLIP project supports only very few farmers. Nevertheless, villagers have adopted cocoa production, which is now an important livelihood strategy alongside staple food production activities.

# Chapter 6 Case study results

## 6.1 Introduction

This chapter presents the findings from the research data collected in Maranu'u village, the case village described in Chapter 5. The research was based on subsistence farmers who are also involved in smallholder cocoa production. The chapter explores the research question: 1) how does cash cropping impact on the livelihoods of rural households in the Solomon Islands? This study focusses on cocoa as the cash crop. The livelihood activities of farmers prior to involvement in cocoa production were described in Chapter 5. Cocoa had been in the village since the 1980s, however, expansion of this crop started after the VCD was set up in 2000 to support the building of a new church. This is reflected in the data as the majority of the farmers in this study have cocoa trees that are less than 10 years of age. This chapter will examine the livelihoods of farmers after 2000.

Farmers interviewed have gone through two phases of changes in their livelihood activities as they have become involved in cocoa production: the establishment phase and the post cocoa period. The establishment phase was the period during which farmers set up their cocoa plots, from 2000 to 2006. After this, the majority of the farmers started harvesting cocoa and were in a production phase, which in this study, is referred to as post cocoa period. Many households were still expanding their cocoa plots and may have had both bearing trees and newly established trees.

The first section in this chapter will describe the farmers' livelihoods as they established their cocoa plots. The second section will outline the post cocoa livelihoods of the farmers. The responses of farmers as a result of having income from cocoa are described in the third section. Following this section is a description of the changes brought about by cocoa both in household units and the community as a whole. This chapter is summarised in the final section.

## 6.2 Livelihood activities during establishment period of cocoa plots

The livelihood activities undertaken by many households during their establishment period of cocoa plots were similar to that of the pre cocoa days, with some notable exceptions in the magnitude of some activities. These are explained in this section.

**Food production and cocoa plot establishment**

Farmers recognised that cocoa production provided a means to generate a cash income and therefore a source of cash to pay for essential needs and meet social obligations. However, farmers did not lose sight of the importance of food production as a source of their family's daily staples. Most farmers interviewed did not grow cocoa on land used for gardening. The majority of them established their cocoa plots on newly cleared primary forest land along the valleys and slopes that were not suitable to grow the main staple crop, kumara.

Farmers still practised food production activities through the 'slash and burn' shifting cultivation method on garden land during the establishment phase of the cocoa plots. Many made sure there was a continuous supply of food from the food garden and that the garden size was the same as before cocoa was grown. Some increased garden sizes, for most, in response to the increasing family size. Some households produced less food from their gardens. One farmer stated:

> When we (husband and wife) started working on our first cocoa plot, we spent most of our time in the cocoa plot and as a result there was a decrease in food supply from our garden, especially the kumara crop (FI 4, 2012).

This reduction in food production did not have adverse effects for any households interviewed as food crops were also grown intercropped with the cocoa plants. Many farmers took advantage of newly cleared land for cocoa and intercropped food crops (such as common taro, kongkong taro, cassava, local cabbages and yam) in addition to bananas[23] as well as cocoa plants (Figure 14). Some interviewed experienced huge surpluses of food when those inter cropped with cocoa were ready to be harvested, and were able to share the food with extended family and sell some for additional income.

Intercropping allowed farmers to visit their cocoa plots more often to tend the garden crops and at the same time, maintain the cocoa trees. As such, farmers maximised their labour for both food and cocoa production. On the same note, it also helped to reduce the workload for farmers. One farmer explained:

> Having the food crops in the cocoa plots made us go there often. This is because sometimes when we plant non-food crops, we tend to forget about them for a while.

[23] Banana is normally planted to provide shade for young cocoa plants (see section 5.7.1)

But for food crops, we make sure they are maintained. With cocoa amongst the food crops, the cocoa plants were well looked after (FI 3, 2012).

We planted food crops with our cocoa because we go to the cocoa plot often to work. So we could still harvest food to bring home from those planted in the cocoa plot, even if we didn't have time go to the food garden to collect food. This saves us a lot of time (WFI 18, 2012).

**Figure 10: Cocoa intercropped with banana**

**Source: Author's field data observation**

The changes to the type of food crops grown by households when they started planting their cocoa plots also varied. For some households, no change occurred; they planted the same crops as they had done in pre cocoa days. Some no longer planted traditional crops such as yam, (which demands more time and attention) as their time was spent working in their cocoa plots. Others increased the variety of food crops grown to include yam, taro and kongkong taro in addition to kumara. This increase in food crop variety occurred as farmers took advantage of newly cleared land for cocoa, which is more fertile than their garden land[24] and intercropped food crop with cocoa.

**Income**

Income for households increased slightly during the cocoa establishment period. However, this was not due to cocoa, but was due to the new demand from the logging camp. Income,

[24] In this study, garden land refers to where households plant their food crops. Cocoa land is where cocoa is planted.

however, was still irregular, low and not sufficient to meet all the monetary needs of many households.

Income earning activities for most households included sale of food crops, casual labour, fishing and livestock production. Towards the end of the establishment phase of the cocoa plots in Maranu'u, logging operations also commenced in the nearby village. This opened up a market for the sale of garden produce by villagers. In addition to the selling of surplus food to the neighbouring village at the weekly Saturday market, villagers also sold to the logging company workers during the period the logging company operated.

During the cocoa establishment phase, men from the village continued to go outside the village to work to earn income. The logging company also provided employment opportunities where some villagers were employed. For those who were hired, work in establishing the cocoa plot was interrupted temporarily as a farmer outlined:

> More than half of my cocoa trees are not yet bearing at the moment. I stopped planting for a while when I worked for the logging company. Otherwise I should be harvesting cocoa from my 600 trees by now (FI 9, 2012).

Young girls were also employed by some company workers (mostly Malaysians) as house-girls. The demand for protein by the loggers also allowed the villagers to start raising livestock for sale and allowed fisher-farmers to sell fish which also contributed to household incomes.

**Labour**

There was a considerable change in workload and focus of household labour as they ventured into cocoa production. Cocoa production facilitated the creation of work unions in the village and provided employment for some villagers to earn incomes.

***Household labour***

When households started their cocoa plots, there was a shift in household labour from gardening to cocoa production activities that varied amongst households. For some households, men concentrated on working in the cocoa plots leaving their wives to do most of the gardening activities, although the wives sometimes helped in the cocoa plots as well. Some men continued to carry out heavy gardening tasks. One farmer explains:

> I only did the bush clearing and the rest of garden work was left for my wife (MFI 13, 2012).

In other instances, husbands rarely worked in the food gardens, as one male farmer explains:

> I spent most of my time in the cocoa plot and left all the food gardening work to my wife (FI 7, 2012).

The work load for women increased compared to the pre cocoa days. Some male farmers continued to prioritise food production activities during the establishment phase of their cocoa plots with more time spent working in the garden compared to the cocoa plot. One farmer explains:

> I only worked in the cocoa plot when I was free from gardening work and community work (FI 10, 2012).

For some households, all members of the household helped out both in gardening and work in the cocoa plots, and the work load was shared. For most, work was programmed and set tasks were allocated to be done on a given day. This was common with young couples without children and households with older children who were capable of helping out with easier tasks such as weeding, garden maintenance and even in looking after younger children.

For families with smaller children, the husband did all the gardening and cocoa work while the wife looked after the children and occasionally helped out with the cocoa work when the farmer needed her help, as one woman farmer states:

> My husband did all the work in the cocoa plot and our garden. I mostly stayed home with our children and besides, our garden is too far for the children to get to so I couldn't take them along with me (WFI 18, 2012)

***Work union***

Villagers realised that a lot of work was needed to be done in cocoa plots during the establishment phase, which required additional help other than household labour. For this reason, work unions were formed that could be hired at a lower cost than employing individual labourers. Work unions include zone groups[25], or the women's group and collective farm work between groups of farmers. To restate, the village is divided into five

[25] See chapter 5, section 5.6, p. 53

zones and in some zones, members agreed upon a day a week to give their labour to work for whoever hired them. A zone group may have 20 to 50 able bodied persons and can be hired by any member of that zone to work in cocoa plots for SBD$25 or for any other task (such as gardening, collecting building material) for SBD$20. With this amount of man power, completing an assigned task normally took only a few hours. The rate for hiring a zone group by anyone outside that zone is much higher (SBD$30 - SBD$50 per given task). Hiring a zone group was cheaper and for many, this greatly assisted them in accomplishing tasks that may have taken days to complete. Although only two farmers interviewed stated that they had hired their zone group to help clear the land for their cocoa plots, many households took advantage of this cheaper form of labour from their zones to establish their cocoa plots. This is evident in a farmer's comment who also worked in a zone group:

> Our zone group has been hired by many households in our zone to work in their cocoa plots and food gardens (MFI 17, 2012).

In zones where work unions were not active, some farmers set aside a day a week to help each other in their cocoa plots, mostly forest clearing. Each took turns to have their site in the forest land cleared until all had cleared pieces of land to start their cocoa plots. This helped reduce the workload compared to working alone. This was done in reciprocity, thus no monetary transaction was involved in this arrangement.

An interview with a female farmer revealed that a women's group for hire also exists in the village. This group existed before cocoa was grown, the Mothers Union. However, hiring out their labour was only established during the establishment phase of cocoa in the village. Although available, the women's group was hired only to a very limited extent. No mention of the fact that the women's group could be hired to provide labour for cocoa was made by male farmers interviewed. However, the female farmer interviewed explained that some women within the women's groups have hired this group to do gardening tasks but not very often. No further explanation was given as to why they were not often hired. She further emphasised that the women's group mostly helped the less fortunate members of the community (widowed, elderly, mothers with newly born babies) through contributing food and household items during their programmed "visit" days.

***Labour hire***

Hiring labour from individuals instead of a group was also undertaken by some farmers during the establishment phase of the cocoa plots. This was mostly done by farmers who had saved enough money to hire labour and those who worked at the logging camp and were able to afford hired labour. One farmer explains:

> After I planted part of my cocoa plot, I worked for the logging company. I used the income earned to hire some boys in the village to clean around my young cocoa plants (FI 9, 2012).

This type of labour hiring was not however very common, compared to the cheaper form zone group.

Hiring labour using goods in exchange for work done was also practised in the initial establishment phase of cocoa plots. This was through the provision of homemade tobacco (locally known as saho). Many young adults in the village who cannot afford to buy tobacco (either imported or locally made) work in exchange for a piece of saho. One farmer in particular found this very effective in getting the neglected family coconut plantation he had planted his cocoa trees in cleaned up:

> I gave those who come to help me work in my cocoa plot some saho instead of paying them money. They cleared the whole area for me in less than an hour and I gave them saho in return. That could have taken me two days of work (MFI 17, 2012).

**Social relationships**

Villagers experienced a number of social issues when they started venturing into cocoa production. These issues were experienced at the household level; within the extended family unit; amongst the tribal members; and at the community level.

***Amongst family***

As there was a shift in men's labour from food production to cocoa work, some women were not very keen on this change as the burden of producing food for the entire household was delegated to them. Some women were not happy and voiced their concern during the interviews. One woman expresses her feelings saying:

> Sometimes, I became very frustrated with him (husband) because he spent every day in the cocoa plot while I was doing all the garden work and that was not fair. Now, that the cocoa trees are fruiting, I am not complaining anymore because he is now spending more time working in the garden than in the cocoa plot (FI 6, 2012)

As mentioned earlier, cocoa was grown by some in the village before the VCD was established. After the VCD was set up, strong ties between some families were damaged due to disagreements over who had the right to harvest and therefore gain income from the old established cocoa trees. This is explained by an interviewee during a family interview session:

> Our neighbour is one of those who earns a lot of money from cocoa, but until recently, he did not have a good relationship with his siblings. He claimed the plot his father planted years back as his own and never shared his money with his poor aging father. He had a heated argument once with his older brother over those old cocoa trees, and many in the village were there when that happened (FI 9, 2012)

A similar incident occurred between close family members over who was able to harvest the old cocoa trees owned by a late grandfather. This led to violence (between an uncle and his nephew) resulting in the nephew being physically injured. One interviewee commented that although this issue has been resolved, scars from the physical injury will always be a reminder of a breakdown in kinship ties at some stage in the lives of those involved.

***Land disputes***

To reiterate, land in Maranu'u village is owned by the tribes in the village and households have rights to the land for subsistence use if they are the first to clear the primary forest on their tribal land. When the villagers started planting cocoa during the establishment period, there were disagreements over this use of land between some tribal members. One farmer commented that 'it was the first time someone in this village disagreed on what I planted on the land I had been working on for years' (MFI 11). For some farmers, this discouraged them from continuing planting cocoa. A farmer explained:

> We (husband and wife) had planted about 500 cocoa plants when we first started our cocoa plot but they all died because we stopped tending them when some members in the community stopped us planting cocoa there. After some years, they approached

> us themselves and told us to continue planting again. We replanted some and now we have only 330 cocoa trees, some are yet to produce fruit (FI 3, 2012).

Four farmers interviewed experienced disputes over land when they started planting cocoa and three knew of farmers who also had land issues when they first started their cocoa plots. Some of the disputes were due to fear of expansion of cocoa plantings into garden land as an elder interviewed explains:

> Some people fear for their garden land areas so they even go as far as uprooting cocoa trees planted close to their gardens and that is when arguments erupted (MFI 19, 2012).

For some, they did not want extended family members to plant cocoa on the land and tried to stop them by putting up notices on the disputed area, uprooting young cocoa trees or cutting down trees onto the cleared land to obstruct cultivation. One farmer explained that land was not the issue, rather, it was, from some tribal members' jealousy of the benefits one could get from the cocoa planted on the land that caused them to discourage others from planting cocoa. However, the disputes that arose in the early years were settled and villagers continued growing cocoa.

Despite the negative social issues experienced by the villagers described above, there were also positive aspects that were also associated with cocoa production in the early days of expansion. One farmer stated that cocoa provided him employment in the village, which meant he did not have to leave his family for long periods of time to earn money outside the village, allowing him to help his wife in the gardens more often.

***Community cohesion***

Participating in communal work is an accepted norm in the Solomon Islands and an important contributor to community cohesion. The growing of cocoa during the establishment phase impacted adversely on this cohesion. People began to work on their own instead of helping each other as was the norm. One farmer resettled his family home close to his cocoa plot further inland from the village and as a result, rarely turned up to work in the village. The farmer explained his situation:

> Ever since I started planting cocoa, my daily activity schedule is I either work in my cocoa plot or my garden. I don't attend any community work in the village because I do not live in the village (FI 1, 2012).

On the other hand, growing cocoa also led to enhancement of community cohesion. With the commitment of the village to raise funds through cocoa sales to build their church, the villages were united in a common goal. This assisted the quick resolution of land issues in the village and farmers were able to continue planting cocoa.

### 6.3 Livelihood activities in the post cocoa days

The post cocoa days in this section refers to the period when the majority of the cocoa farmers started harvesting their cocoa trees until the time of data collection. Data revealed that there have been some changes in their livelihood activities which will be described in the following sections.

#### Food production activities

##### *Shift in labour and garden sites*

Fully grown cocoa trees shade the ground around them, suppressing fast weed growth and reducing the need for weed control. As a consequence, there is a shift in household labour back to food production activities. Farmers prioritised food production after establishing their cocoa plots; spending less time in their cocoa plots and more time helping their wives in the garden. The shade from mature cocoa trees also made intercropping of food crops with cocoa no longer possible. Households who previously relied on food supplied from their cocoa plots returned to their garden land and now continue with the traditional 'slash and burn' shifting cultivation method of gardening used previously.

##### *New garden land and changes in food crop variety*

Clearing new forest land to plant cocoa enabled some households to establish new gardens on land not previously used for gardening. While some farmers continued gardening in their old gardens, some cleared the surrounding forest to relocate their garden land close to their cocoa plots. This provides the opportunity to continue growing food crops (they had intercropped with their cocoa) which they were not able to grow on their old garden site (such as yams and taro) due to a lack of suitability in their garden land for such crops. This led to an increase in the food crop variety planted. One farmer commented that his household had an increased

harvest from food crops grown on the new garden land compared to before, which allowed him now to be able to sell surplus food for income.

On the other hand, some households with mature cocoa trees have returned to planting kumara, cassava, and bananas in their garden land and no longer plant crops they had intercropped with cocoa. Some were not able to grow yams in their gardens as all their planting material had not been retained during the period where they spent more time establishing the cocoa plots. Others stopped planting some traditional root crops because their children had developed a preference for other crops, such as kumara. Some still plant yams but in smaller quantities. Although changes in the type of food grown vary amongst households, data revealed that only a few households interviewed still grow yams in their gardens. This suggests that if the few that are still growing yams stop doing so, yams are likely to become vulnerable and potentially lost from this community as a food source.

***Changes in size of garden plots and diet***

Changes in garden plot sizes were made by households in the post-cocoa period. In addition to the normal increases to gardens in line with expanding family sizes, some households increased their food gardens to produce surplus food to sell. This became possible as more households in the community had access to cash from their cocoa income to spend on food.

Conversely, some chose to decrease the size of their gardens as their income from cocoa meant they no longer needed to produce surplus to sell so as to gain cash.

With access to a regular income from cocoa, most households started supplementing their diets with food they purchased. As illustrated above, families now not only purchased staple food crops they could grow for themselves, but also purchased processed food including rice, noodles, canned tuna/meat, and varying snacks (sweets and biscuits) for children.

Staple foods for most households in this study are now supplemented with processed food bought with income from cocoa such as rice, noodles, canned tuna/meat, and varying snacks (sweets and biscuits) for children. The majority of the farmers interviewed confirmed that they also purchased such food items thus there is a change in the diet of many in the village.

**Income**

All the farmers interviewed stated that cocoa production had allowed their families to have easier access to cash and a reliable source of income for their families. A farmer interviewed explains:

> Before growing cocoa, it was hard to have access to cash and my family did not have cash available to buy basic household needs for months. Now, I can always earn money when I harvest and sell my cocoa (FI 10, 2012).

To reiterate, the flow of income for households in pre cocoa days was irregular. In contrast, regular harvesting of cocoa provided farmers with a regular and a much higher income than before. All the farmers interviewed said growing cocoa had led to an increase in income for their household. Cocoa is a very important source of income, as two farmers interviewed confirmed:

> Cocoa is the only means to earn money for my family. Even though what I earn from cocoa is small compared to some families in this village, to me it's big and I am earning income which is a big difference from the past (FI 6, 2012)

> Cocoa has increased my family income and it is like a bank, I get income after every two weeks I harvest them (FI 2, 2012).

For some villagers, they are content to earn an income only from cocoa, as they value the social norm of sharing within the community. Selling food to others is for them not acceptable. Cocoa, however, is neither a food nor is sold to fellow villagers (but to the VCD). One farmer explained:

> I am not comfortable in selling food such as surpluses from our garden or livestock (pigs and chicken) we raise to earn money. In my conscience, food is something people need in order to live, so we (me and my wife) share instead. I've always been like that even before I owned a cocoa plot. With cocoa, I am comfortable to sell, because people in the village don't eat it. So, it is the only way I can earn an income (FI 4, 2012).

With a regular income flow, the local economy of the village has expanded. Farmers are now able to meet their households' basic needs and participate more in monetary contributions in the village as required of them. The community has set up a weekly market during which

people sell and buy things from each other, as opposed to leaving the village to trade as in the pre cocoa days (Figure 15).

**Figure 11: Food items on display during the village's market day**

**Source: Author's field data observation June, 2012**

All the farmers interviewed in this study agreed that with cocoa, they were better off with regards to the way they live their lives compared to before. They are satisfied with the living standard they have attained in their involvement in cocoa. With the reliable income from cocoa, many felt secure and no longer anxious over how and when they would get income.

**Changes in the income earning activities**

With their involvement in cocoa production, none of the farmers who were engaged in casual labour outside the village any longer left the village to earn money for their families. One farmer explained:

> For almost twenty years now, I stopped looking for jobs to earn money but worked in my garden and cocoa plot instead (FI 1, 2012)[26].

Cocoa has also allowed some farmers to venture into new livelihood activities not normally carried out in the village. One household now grew food crops solely for sale, instead of only selling surplus food. When interviewed, the head of this household explained that with cocoa, people can afford to buy things. He saw this as an opportunity to establish a small 'market garden'[27].

[26] This farmer has been harvesting cocoa for about 15 years since he planted his first cocoa plot about 20 years ago.
[27] All food crops grown in the garden he called a 'market garden' were for sale.

The number of farmers selling fish for an income also increased compared to before cocoa was grown. This was mainly due to the fact that many in the village were able to afford to buy fish, including households whose members had not done before. Almost half of the farmers interviewed stated that they were now raising livestock (pigs and chickens) for sale compared to none before cocoa was grown. As mentioned earlier, raising livestock for sale was initiated in response to the demand for meat by loggers in the area. Farmers who started raising livestock for sale continued to do so as some villagers now purchase livestock for special occasions (such bride exchange ceremonies[28], funeral feasts and weddings).

Some farmers also diversified in what they grew (beside garden food) and the products to sell for income included betel nuts, limes[29], home tobacco, noodles, cooked food and megapode eggs (Figure 16). One farmer in particular mentioned that he was earning a larger income from the sale of home tobacco than cocoa, which was made possible through the increased flow of income from cocoa in the village.


**Figure 12: Other items sold for income in the village (betelnut & areaca fruits on the left and saho on the right)**

**Source: Author's field data observation June, 2013**

## 6.4 Other responses by households to access to cash

The greater access to money led to other changes at both the household and village levels. Some have expanded into entrepreneurship, some choose to spend, while others spend cash but save some for future use. These are described in the sections that follow.

[28] After the bride price payment is made by the bridegroom's parent and relatives, the bride's parents and relatives must bring a pig(s) to the bridegroom's parent and relatives. By doing so, both sides have the right to custody of the couple's children.

[29] Limestone that has been processed into powder; an ingredient used when chewing betel nuts.

**Entrepreneurship**

The increase in income from cocoa production led to an increase in demand for goods to purchase. This demand has presented an opportunity for entrepreneurial farmers in the village to start a trade store. At the time of data collection, four trade stores provided a retail service for villagers, with the owners being cocoa farmers themselves. An interview with the owner of one of the trade stores revealed that the income from cocoa was used to start his business. Initially he saved his income from cocoa until there was enough to purchase a few cartons of noodles and bags of rice to sell. Over time, his business has expanded and he was able to build a semi-permanent house for his family and locate his trade store on the ground floor of his house. A regular flow of income from cocoa for households in the village contributed to the success of these trade stores, since trading is done mostly with cocoa income.

The trade stores sell goods that previously had to be sourced outside the village. This include tools (such as secateurs, bush knives), kitchenware, basic household cleaning items, clothes, food (rice, noodles, flour, cooking oil, tinned food, snacks, sweets, drinks), footwear, fishing gear, batteries, school stationary, toiletries, kerosene, and torches to name a few.

**Purchasing power of households**

Cocoa has increased the purchasing power of the households in the village. Purchasing power in this case refers to the ability of the households to participate in the monetary exchange of goods and services. Many villagers are now able to buy goods as well as meet their household living expenses and make monetary contributions to community projects. For many, they simply enjoy the pleasure of buying things which for them is a new experience. Some villagers indicated they even buy food which they grow in their gardens, betel nuts, cooked food and fish; just for the sake of engaging in the retail act. One farmer happily explained:

> Having a regular income is good; I can buy things I wanted and that makes me happy. I also buy garden food even though I have it in my garden (MF 16, 2012).

The table below displays the items many villagers spend their income on.

| **Item categories** | **Name of items** |
|---|---|
| Food | Rice, noodles, tinned food, snacks, sweets, drinks, flour, cooking oil, garden food, locally prepared cooked food, fish |
| Kitchenware and tools | Kitchen utensils, bush knives, cocoa tree pruning tools |
| Basic household needs | salt, sugar, kerosene, batteries, matches, toiletries, clothes |
| Education/health | School fee, stationaries, clinic contributions, medical expenses |
| Social obligations | Village contributions, bride price, feasting events |
| Assets | Solar panels, labour, timber, fishing gear |
| Items for pleasure | Cigarettes, betel nuts, lime, alcohol, toiletries, snacks/sweets, |
| Other expenses | fuel |

**Savings**

Like many rural communities in the Solomon Islands, there are no banks or saving facilities present in the village. Even so, over half of the farmers interviewed mentioned some informal means of savings from their cocoa income. The farmers who indicated that they save, earn no more than others (some less), but were motivated to save. Savings are kept either locked in a suitcase or box in their house or carried around in a wallet inside their handbag, as revealed by two farmers:

> I do not use all of the income I earn from cocoa. I keep some of it and carry it around with me in this bag" (farmer showed the bag he was carrying to the researcher) (FI 1, 2012)

> I save money in a small box I made purposely to put money aside for future use (FI 4, 2012)

Farmers who saved income from cocoa had a certain goal in mind when saving. Some of these goals included: school fees for their children, medical expenses[30], house building, social obligations (such as bride price payments) and just to keep some in case they might need to

[30] The nearby RHC is attended by a nurse, thus patients referred to see a doctor must be sent to Kirakira or Honiara. Relatives accompanying patients have to pay their own way to the hospital as well as their board and food.

buy food when unforeseen circumstances stop them from collecting food from the garden. However, saving money in their houses is not always safe. Saving is at risk of being stolen, lost due to being misplaced, used unnecessarily, or lost in a natural disaster such as fire or a cyclone, some of which have been experienced by some farmers:

> I used to save money by putting it inside in a big bottle[31]. Someone broke into my house while I was away and stole the bottle so I no longer save money. It is not safe to do that in the village (MFI 11, 2012).

> Within two to three months, I can save up to $1000, but we use the money up whenever things that require us to give cash come up. We often spend unnecessary on things such as paying for food which we can always collect from the garden and before we realise it, the saved money is all gone (FI 3, 2012).

The households who chose not to save had varied reasons for not doing so. These reasons included: lack of knowledge as to how to budget their income, excess spending on food items sold in the stores; and giving cash for numerous village activities requiring contributions after the meeting of household expenses, as confirmed by some farmers:

> I do want to save some of my income from cocoa, but I do not know how to do it. I am not very good with managing money (MFI 12, 2012)

> It's a bit hard to save money because there are a lot of things that demand cash contributions in the community such as the church, school, clinic contributions and we also need to pay for some basic household goods. In the end, there is hardly any left to safe (FI 6, 2012).

> I can't save money because I spend a lot of my income on buying rice for my family. It tastes nicer than kumara (MFI 17, 2012)

There seems to be some form of informal investment undertaken by some farmers in the village. For example, a trade store owner explained that the income from his cocoa plot is put into his store to pay for the goods his family uses. Even if his family used less than was there, 'I left it to grow in the store' (MFI 15, 2012). Similarly, when another farmer was asked whether he had other ways to earn income, he revealed that he is selling his pigs which

[31] A round buoy that was found adrift on the sea. The farmer cut a small opening big enough to fit money and put money inside. Money can only be removed if the floater is cut open.

were bought a year ago with the income he received from the first sale of cocoa from his plot. His income was invested in livestock that are bought, kept, and resold at a much higher price at a later time when cash is needed.

Although households in the village now have a steady income, accumulation of wealth is not a priority for many households in this study:

> I do not want to buy things that will make me stand out as a wealthy person in the village. I only want to make my family happy so I buy things my wife and children need such as clothes, their school fees, and give them pocket money to buy things they want themselves. The only big thing I bought with my income from cocoa is the solar panel and battery. This gives lighting to allow my wife to prepare food very early in the morning for our children to take to school (FI 1, 2012).

> I am satisfied with the standard of living I have now. I do not wish to buy bigger things that will make me richer that everyone in the community. I just want to be equal like everyone in the village (MFI 16, 2012)

### 6.5 Other changes brought about by cocoa

This section describes others changes that occurred in the village since harvesting cocoa began. These include employment, social aspects, and impact on education.

#### Employment

Although cocoa production may be viewed as an additional activity that was adopted as part of the households' livelihoods, cocoa work had occupied farmers' time during their "nothing to do period[32]." Hence, farmers are now self-employed in their cocoa plots, enabling them to earn money while remaining in the village.

More than half of the farmers interviewed stated that they are still expanding their cocoa plots. With income from cocoa, some were able to hire labour to work in their cocoa plots. As an example, in an interview with a farmer who had some older trees (15 years) and a newly established plot, he stated: "*When I have enough money, I sometimes hire some boys in the village to clean around my cocoa trees*" (FI 5, 2012). Employment in such cases, however, is only short term.

[32] A period during which there is not much to do in the gardens except for weed control and harvesting tasks. See chapter 5, section 5.6

**Social aspects**

For some households, members work together both in gardening, household chores and cocoa production activities. As such, they indicated that they relish both the sense of unity in the family and the benefits cocoa brings into their lives. On the other hand, in some households, the husband has left all the gardening activities along with all the household chores to his wife, even after the cocoa trees required less time than during the establishment period. As two farmers highlighted:

> I hardly go the garden, I only visit the garden about four times a year, all I do every day is work in the cocoa plot and fishing. My wife does all the gardening for the family (FI 7, 2012).

> I don't work in the garden anymore; my wife does that while I maintain the cocoa and run the store (MFI 15, 2012).

Even though cocoa may have allowed them to live a better life than before they planted cocoa, some women are not happy with the arrangements in the household division of labour. A male farmer and a woman interviewed made their feelings clear:

> My wife seems unhappy, and complains a lot that I am not helping her work in the garden (MFI 15, 2012).

> I do all the garden work myself; its hard work but I have no choice. If I don't, we won't have food. I feel upset at times and sometimes wish I could just go back to my parent's village (WFI 19, 2012).

These statements highlight the frustration some women felt with the current division of labour in their household.

Alcohol is one if the items purchased with cocoa income. Until 2011[33], quarrels between husbands and wives over the use of income on alcohol were common. As one interviewee noted:

> Our neighbour is 'a person for beer'; he and his wife fight a lot every time he sells his cocoa. We will all know then that he has been drinking again. Many times his wife

[33] The village committee banned taking alcohol in the village after 2011???. Those who wish to purchase alcohol must consume it where it is purchased.

> has run away to her parent's village, stays for few weeks and then comes back when she cools down from their fight (FI 9, 2012).

Domestic rows have become more common compared to the past, thus putting added tension on family cohesion.

On the same note, relationships between extended family members have become more strained over demanding money to pay for alcohol. One farmer explained that he had a physical fight with some younger members of his extended family when he refused to give them money which they demanded from him for alcohol:

> They know that I save my income from cocoa so they always come and demand money from me. To avoid fighting like we did when they first came, I simply give them the amount they want (FI 1, 2012).

Having such a bad relationship with other members of his extended family forced FI to move out of the village and settle further inland where his cocoa plot is. Alcohol related rows escalated to a point where the village committee banned taking alcohol in the village or entering the village in a drunken state. Those who fail to comply must pay a fine.

**Community cohesion**

Villagers in Maranu'u saw that the only way to raise funds to build their much wanted permanent church building was to be involved in cocoa production. They have all cooperated and as a result every household has established their own cocoa plot. Even though the VCD is buying their cocoa at a much lower price than they would receive if their wet beans were sold for the normal price, all households gladly take their cocoa there to sell. This shows their dedication to their church project, which extended as far as making time available to provide labour for the processing of the cocoa at the VCD. Some farmers worked even harder to expand their cocoa operations so they can contribute more to the church project when they sell their cocoa.

On the other hand, there has been a change in villagers' attitudes to helping each other with manual tasks in the community. The traditional 'help each other out' approach they had practised in the olden days is dying out. Instead, people expect payment in return for work done. This is because cash has become more important in their lives and people prioritise working to earn money rather than just helping. Further, knowing that cocoa brings in a

steady income; farmers prioritise cocoa work over communal work and are reluctant to attend communal work. The majority of the farmers interviewed confirmed that there was a weakening attendance at community work events is a result of their involvement in cocoa. One farmer claimed that money is the root cause of this situation as he commented when interviewed:

> It is not cocoa that makes people reluctant to attend communal work, but money. People want their cocoa trees to bear good fruit so that they can earn more money so they prioritise the most important cash earning activity (which is maintaining their cocoa plot) instead of communal work (FI 9, 2012).

While the establishment of the VCD is seen as an important market for the majority of cocoa farmers in the village, it is a hindrance to a few who wish to process their own cocoa for a better income. Those who had set up their own cocoa driers prior to the VCD being set up are not permitted to process their own cocoa unless they pay fines to the VCD. This arrangement resulted in arguments over this issue and a cocoa drier owner leaving the village. In this respect, cocoa has negatively impacted on some social relationships amongst some farmers in the village.

**Education**

Cocoa from Maranu'u village has financially assisted the community high school serving the area. The village Vestry Committee (who runs the VCD) responded positively to the call by the school principal for the community to assist the school. During one harvest, the VCD bought village cocoa as they normally did using cash provided by the school instead of church money. Labour required to process the cocoa was provided free by men in the village and all the income earned from the cocoa processed from that particular harvest was given to the school. The chairman of the Vestry Committee stated that the community is willing to assist with their cocoa in the same way they did for the school, especially for a good cause.

All the farmers interviewed stated that cocoa has made it easier for them to pay for their children's school fees, school stationary and uniforms. One farmer in particular saved income from his cocoa plot to pay for his carpentry tuition at a vocational school. This farmer stated that his parents were not able to meet his educational expenses when he was younger. Cocoa made it possible for him train in the area he wanted.

Many parents see sending their children to school as an investment, from which they will benefit once their children acquire better jobs in future. Some hope that their children will someday put to good use the knowledge and skills learnt in school in the village. Two parents expressed their hopes for their children saying:

> I want my children to have a better education so that they are able to get a good job (FI 2, 2012).

> I want my children to go to school because even if they do not make it to the tertiary level, they can look after our cocoa plot and manage the income better than I do and better still be able to make good decisions on what is best for the family (FI 8, 2012).

Now that households have a regular income from cocoa, many parents expect their children to have a better education as they are in a better position to financially support their education. For some, their wish is well answered and their children are regularly attending school. However, for others, it has not worked out as they had anticipated. Many children are starting to give up school as they see it as a waste of time and effort. This is because they see their parents earning an income from cocoa and thus want to do the same (Figure 17). Some even started planting cocoa alongside their parents' plots and are losing interest in school. One farmer commented that his son sometimes helped him harvest their cocoa instead of attending school. While leaving school in the past was due to financial constraints, children nowadays wish to leave because they see it as a waste of time since they can earn money from planting cocoa.

**Figure 13: A boy (on the left) selling cocoa beans harvested from their family plot.**

**Source: Author's field data observation**

## 6.6 Chapter conclusion

During the establishment period, households experienced varying changes to their food production activities (which affected food quantity and quality), household labour shifts, social relations and network of labour. Once households started harvesting their cocoa plots, changes also occurred in food production activities, household income, labour, and social relations in the household and community level. Some of the changes impacted negatively on the household and the community while others are beneficial for both the household and the community. Cocoa also enabled farmers to venture into other livelihood activities and greatly improved the local economy, which was not possible in the past. Despite some negative aspects associated with cocoa, households now experience a better lifestyle than before cocoa was grown.

# Chapter 7 Discussion

## 7.1 Introduction

This thesis examines the impact of smallholder cash cropping on the livelihoods of rural households in the Solomon Islands. This study aimed to focus on households; however, the involvement of the community in many aspects of household activities cannot be ignored. The main focus of this chapter is to place the key findings highlighted in Chapter 6 within the wider literature while answering the research question. This chapter begins with a description of the characteristics of the case. This is followed by a section which positions the case with other studies in relation to the livelihood strategy adopted by households and the category in the transition process. The next section discusses the impact of cash cropping on households' livelihoods, which is then followed by a discussion on the attributes which make the involvement of the majority of the households in cash cropping possible. The impact of cash cropping at the community level follows before concluding with a summary of the findings.

## 7.2 Characteristics of the case

The purpose of this section is to describe the unique features of the case to provide a context within which the results can be interpreted and compared to other studies. The case is a village community in a developing country who has recently adopted cocoa as a cash crop as part of their livelihood. The community is isolated in terms of poor communication and lack of transport facilities. The majority of the farmers in the village have primary education and only very few reached secondary school level. Villagers remain in the village after leaving school and formal employment is rare.

Before their involvement in cash cropping, the main source of income for the majority of the households was through the sale of surplus produce at the nearby village and casual labouring outside the village. A small number of households (less than ten) owned coconut and cocoa plots established in the late 1980s and 1990s and obtained income from these old coconut and cocoa plots. However, difficulties in accessing market and low production from aging cocoa trees resulted in low and infrequent incomes. In general, incomes for the households in the village were low and intermittent and many villagers found it hard to meet their basic monetary needs. Many parents could not afford to have their children continue in school, and many children in the village left school before completing their primary education or secondary education for those who managed to go further.

Subsistence agriculture has traditionally provided the community with sustenance. However, a change from primary reliance on subsistence to a lifestyle supplemented by cash in a cash economy has occurred in most communities around the case village. As such, cash is becoming more important for the community and is needed to buy clothes, kerosene (for lighting) and other various basic household needs as well as pay for children's school fees, and medical expenses (such as trips to the hospital). Further, cash has also become an indispensable item in many non-market transactions such as for bride price payments, compensation, church contributions, and other social obligations determined by kinship. With their involvement in cocoa production, households in the case village now participate in a cash economy, although cash is relatively new to them.

Social, cultural and church activities are an important part of village life. Villagers are obliged to make substantial contributions in cash or in-kind to village events. Everyone in the village shares the same religion (COM) and the church is an important part of village life. Community members have a strong commitment to any organised church activity/project, including cocoa production to finance the community church project. Local processing of cocoa is made possible because of the church through the establishment of a fermentary (the VCD), where households can sell their cocoa in the village. Further, commitment to the church means community members contribute their labour free to the running of the fermentary.

Access to a market venue in the village initiated by the church through the VCD drove the rapid expansion of cocoa planting by almost every household in the village. Planting materials for cocoa were sourced locally from the aging cocoa trees established in the 1980s. Cocoa can be intercropped with some of their garden crops (during the establishment phase) which allowed households to regularly maintain cocoa with their food crops. Land is abundant and customarily owned and used by five tribal groups who live in the village. As such, there is no need to substitute land for growing food with land for cash cropping. Many farmers in the village had existing skills and knowledge in the production of cocoa prior to the church cocoa initiative. The CLIP program came in when the majority of households had already established cocoa plots.

Due to unreliable transport services to the village, cocoa, being an export crop, is a more suitable cash crop to be involved in than perishable food crops. This is because cocoa can be processed at the village level into a product which can be stored for a longer period awaiting

transport to the market in the urban centre. On the same note, households can sell their cocoa in the village thus overcoming the market constraints experienced by the few cocoa farmers of the 1980s. Cocoa is perennial thus can be harvested all year round, providing a regular income for households compared to the intermittent income from selling garden surplus or casual labouring.

Cocoa can be produced under the low input system normally carried out for their subsistence food production. Household labour is the main source of labour for cocoa production; however, households do have access to labour reciprocity among their kinship groups during peak labour demand periods (establishment phase). Except for the period during crop establishment, labour requirement for cocoa is low and every member of the household can take part. Processing activities are undertaken cooperatively by the men in the village. For most farmers in this study, both food and cocoa production are now equally important livelihood activities. With cocoa, villagers are able to earn a regular income and to become actively involved in a cash economy within their community.

## 7.3 Positioning of the case

This section places the case within the literature reviewed. It defines the type of livelihood strategy rural households in this case are involved in.

### Type of livelihood strategy

The literature identified three types of livelihood strategies open to rural people: agricultural intensification/extensification; migration; and livelihood diversification (Scoones, 1998). The majority of households in the village have chosen agricultural extensification based on cash cropping as a livelihood strategy in addition to subsistence food production. The selection of cash cropping as a livelihood strategy by the majority of households was greatly influenced by access to assets as emphasised by Ellis (2000b). This research identified three assets households have access to: abundant land (natural capital); existing knowledge on the crop of choice from past experiences plus labour availability (human capital); and social and village institutions (social capital). These will be discussed later in this chapter. In support of the literature (Allison & Horemans, 2006; de Haan & Zoomers, 2005; Ireland et al., 2004; Niehof, 2004; Soussan et al., 2001), this study highlights that the choice of livelihood activity (cash cropping in this case) is influenced by the peoples' own preferences or priorities, events in the past, and access to market .

This study revealed that cash cropping replaced as an income source, the temporary migration in search of employment outside the village which was a livelihood activity men in some households undertook in the past. It has been argued that migration as a livelihood strategy is important for households with little or no land resource (Pingali et al., 2005). In this case, however, land resource is unlimited but men in some households still undertook this option. This was because, in addition to poor access to markets, projects which motivate farmers to become involved in cash cropping, such as assisting in the financing of the building of the church did not exist in the past. This study shows that when opportunities exist for farmers to utilise land resources in the village, cash cropping as a livelihood strategy is preferred to migrating to find employment for income.

**Transition from subsistence to cash crop production**

The case study shows that farmers in Maranu'u village are shifting from primarily depending on subsistence food production to depending both on subsistence food production and smallholder cash cropping. The transition experienced by farmers in this study appears to fall in stage one described by Barlow and Jayasurija (1986) in the development of smallholder tree crop production. Transition in this study, however, is not the same as that described by Myint's (1980) transition schema, who stated that when an economy develops, farmers rely on subsistence food producing, while producing for the market is a spare time activity. In this study, both subsistence food production and cash cropping are equally important for households. This means that producing for the market (cash cropping in this case) is not a spare time activity as described in Myint's (1980) first stage, but rather an important part of a household's daily livelihood. Findings in this case suggest that the characteristics of stage one transition from subsistence to cash economy vary according to context. This case highlights that stage one of the transition occurs when households move from depending entirely on subsistence food production to depending on subsistence food production and cash cropping, with both activities being equally important, sharing household resources and using simple production techniques. The stage of transition by the community in this study is likely due to the fact that this community is late to enter the cash economy and are surrounded by communities already involved in it. As such, subsistence activities sustain their daily food requirements while cash cropping allows them to meet their monetary needs and, thereby, enable them to actively participate in the cash economy. Participating in both subsistence and cash cropping is a way in which households can cope with the risks

associated with cash cropping, meaning if there is a drop in income, households have their food gardens for survival.

### 7.4 Effects of cash cropping on livelihoods

This section discusses the impact of cash cropping on households. It includes the effects on the household's food production and income.

#### Food production

Findings from the study revealed that there was a temporary reduction in food grown in the food gardens in the early stage of cocoa growing by some households interviewed. This was largely due to the diversion of household labour to cocoa establishment and away from food production. This reduction was compensated with an increased variety of food grown because of the opportunity for inter cropping on fertile land cleared for cocoa. However, as argued by Takane (2008), in developing countries labour is the key asset for rural farmers and in this case, it is no different. The temporary reduction in food grown in the food garden shows that even in a relatively land abundant situation, diverting household labour to cash cropping can negatively impact on food production. In the longer term, cash cropping, as revealed in the study, did not necessarily adversely affect food security for households. This is because when there is abundant land and the cash crop can be intercropped with food crops, food crops are not substituted for cash crops. In addition, households use income from cash cropping to purchase food. This is dissimilar to Manivong and Cramb's (2008a) findings and those of Nayaga and Doppler (2009) who reported where land is limited, that cash crops substitute food crop. As explained by these authors, income obtained from cash cropping is not sufficient to meet all household needs in the long term and as a result, households are exposed to food insecurity. This study suggests that in a land abundant situation, households will need to allocate their time and labour wisely when being involved in cash cropping in order to avoid an adverse impact on the amount of food they grow. On the other hand, where land is limited, cash cropping is more likely to substitute food crops, leading to food insecurity if income from the cash crop is not sufficient.

An unintentional impact of growing cocoa is that there is a reduction in the cultivation of yams, a crop which has cultural significance in the community. Farmers claimed that they no longer have time to cultivate yams as more of their time is diverted to producing cocoa. Although the reduction in yam cultivation does not affect food production, in the longer term, households are potentially losing a crop which has been part of their culture.

**Income**

Cash cropping is illustrated by this case study to be an important strategy for rural development in the Solomon Island, a finding consistent with research in other developing countries (Adetunji et al., 2007; Koczberski, 2002; Riedl, 2009). As revealed in this study, cocoa as a cash crop is the main source of income for the majority of households in Maranu'u village. Not surprisingly, findings show that cocoa has substantially increased household incomes and the economic status of the community. This finding supports the literature which reports that cash cropping is a means to increase income for the rural poor (Brown & Kennedy, 2005; Demont & Stessens, 2009; Koczberski et al., 2001; McKillop & Wood, 2010; Nyaga & Doppler, 2009; Susila, 2004; Wamalwa, 2011). The emphasis on income highlights a difference between this case study and other studies into cash cropping in developing countries. The literature highlights that cash cropping is labour-intensive and gaining employment as hired labour is an opportunity linked to cash cropping (Curry et al., 2007; Koczberski et al., 2001; Susila, 2004; Wamalwa, 2011). In these studies, the direct benefits from cash cropping are obtained by a few who then employ others and, therefore, there is an indirect flow of benefit through the community. Results from this study revealed that provision of employment opportunities is not significant because the whole community is involved in cash cropping. Households in this case directly benefit through gaining incomes from cash cropping instead of the indirect benefit of being hired by those involved in cash cropping as is in the main report in the literature. As such, there is a direct distribution of benefits through cash incomes throughout the community. The significant difference with this case compared to others reported in the literature is that land for cash cropping is not limited,and that all in the community, through the involvement of the church, were given the opportunity to become involved in cash cropping at a similar time. The involvement of the church, in processing and providing access to the market, meant that the few entrepreneurs who were already growing and processing cocoa prior to the church's involvement were not able to gain a competitive advantage over the other members of the community. The role the church played in moderating the entrepreneurial behaviour of a few and in securing relatively equitable access by the community to direct benefits from cash cropping has to date not been reported in the literature.

The research found that households are receiving a regular income from cash cropping. This is because cocoa is a perennial crop and can be harvested and sold all year round as opposed to cash crops, such as coffee, which are seasonal. The increase in income allowed

households to have access to basic services that increasingly required cash such as education, and medical expenses as well as being able to contribute to community events and other obligations. Households are now also able to save to reduce potential risk in the future. Although there is no formal saving facilities such as banks, which are a common feature in many rural areas as argued by Jaleta et al. (2009), some farmers interviewed do save some of their income through house savings (keeping cash in their houses). A similar pattern of saving is reported to have been used by smallholder farmers in Papua New Guinea in the 1960s (Shand & Straatmans, 1974).

The increase in income has motivated individuals to invest in other assets and activities to make their lives easier and improve their livelihoods. This finding has been also reported as an outcome of cash cropping in other developing countries (Curry et al., 2007; Wamalwa, 2011). Examples of activities farmers undertook that improved their livelihoods in this study include:; the purchase and raising of livestock for sale; the purchase of garden tools and kitchenware; the investment in the building of a family home; and entrepreneurship. Although not a new finding (see for example, Wamalwa, 2011), this study shows that cash crop production increases household income which then contributes to improving other household assets and the overall household standard of living.

A finding from this case study not reported in the literature reviewed is that with the increase in household income, farmers are enjoying the novel simple pleasure of spending money. Households no longer feel cautious of spending cash as they did in the past. The community now hold a weekly market day where farmers can buy and/or sell their excess produce and there are increased monetary transactions within the community. Individuals in the community are not only enjoying the benefits of what they can buy with their income, but also the simple act of purchase.

Cash cropping is highlighted in the literature as being a male dominated activity and income from cash cropping is therefore mostly controlled by men (Curry et al., 2007; Enete & Amusa, 2010; Jansen & Maike, 2011). In contrast, findings from this study show that access to income and the decisions as to how to use income from cash cropping varies across households. In some households, the use of income is a joint decision by husband and wife; while in others, the use of income is dominated by men. The more equitable decision making in this case study may be because cocoa production involves all household members (and is not a male dominated activity as reported in literature). As such, the extent to which men

control the cash income depends on the particular dynamics between the men and women in individual households, and the dominance of the husband in household decisions. This varies across households in the community studied.

**Labour**

Cash cropping has implications on household labour, but, in this study additional labour requirements did not fall on women alone but were spread across household members. This study revealed that with involvement in cocoa, both men and women have an increased workload, especially during the establishment period. Although the literature reviewed reports that cash cropping increased women's workload (Demont & Stessens, 2009; Frazer, 1987; Rennie, 1991), the overall household labour increase was spread across the household in this study.

Finding from this study revealed that households directly sourced their income at home through cash cropping. As stated earlier, cash cropping in this case substituted the male migration outside the village in search of employment. Men who before left the village to work now stay at home to assist women in food production activities which consequently also reduce women's labour in the longer term. This dynamic in terms of cash cropping positively impacting on women's workloads is not reported in the literature reviewed.

This study also shows that even though there was high labour demand associated with the establishment of cash cropping, households were able to access the labour needed through a range of mechanisms. Labour was accessed by reducing their leisure time, using family labour (including children), working in reciprocity with other farmers (in accordance with the cultural norm of sharing household labour), and transferring labour into cocoa and away from food crops that required more of their time (such as yams). The reciprocity of labour seen in this case is similar to that identified as occurring in Papua New Guinea and Indonesia with cash cropping (Curry et al., 2007; Orr & Mwale, 2001). This study also finds that farmers developed an innovative way to overcome labour demands by establishing a work group which households could hire at a cheap rate. Reciprocity of labour and the establishment of the work groups were possible because almost all households were growing cocoa and the majority of households had similar demands for labour at the same time for both food and cash cropping activities. The households' approach in utilising labour made it possible to cope and to successfully establish cocoa plots. This study shows that when social norms include reciprocity and when similar demands for labour fall across a large numbers of

households in a community, the benefits of cash cropping falls across the community. The findings of this study also illustrate how households can and have responded to requirements of labour linked to cash cropping.

### 7.5 Negative impacts of cocoa production on the household

By having an increased and regular income from cocoa, individuals are able to choose from a wide range of options on which to spend their income. Some of these options have a negative impact on the social harmony within a household. The study revealed some negative impacts of cocoa on the household. Frequent domestic rows in some households resulted due to the use of income from cocoa by men on items such as alcohol and activities such as gambling. The issue of men spending in this way has been highlighted in other studies, (e.g. Jansen & Maike, 2011; Kerr, 2005; Koczberski, 2002). Using income on items/activities not beneficial for all household members often contributes to household disputes and domestic violence as reported in other developing countries also (Kerr, 2005).

### 7.6 Impact on the community

The study shows that cash income has an adverse impact on the traditional norm of working together and helping each other in the community. Although the norms of reciprocity of labour were evident in the community, the erosion of some social norms was highlighted to be a consequence of the community's involvement in growing cocoa. Now that there has been increased cash flow in the village as a result of cocoa, many in the village (especially the younger generation) expect cash in return for doing tasks in the community, which in the past were seen as part of one's accepted social obligation. Communal work has also been eroded as farmers prioritise income earning activities over participation in communal work. The conclusion drawn from this study is that while cash cropping and processing facilitated by the church binds villagers together working towards a common goal, it also is contributing factor to the breakdown in the traditional community cohesion. This has not been reported in the literature reviewed.

This study also found that there were disputes over land during the early stage of cocoa expansion in the village. However, villagers see cocoa as an important crop from which the whole community benefit. This common understanding about cocoa supersedes disagreements over land use between concerned parties, allowing them to encourage each other to continue growing cocoa. This is in contrast to findings by Frazer (1987), who

reported that involvement in cash cropping by villagers of Malaita in the Solomon Islands resulted in disputes over land use among clan members. The disputes Frazer (1987) reported were difficult to resolve because villagers did not have a common goal for being involving in cash cropping (unlike in this case study) and consequently social relationships among clansman deteriorated.

Proponents of cash cropping, such as Govereh and Jayne (2003), claimed that this practice facilitates public infrastructure development such as the improvement of roads, transport systems, and communication services. From this study, there is no evidence of public infrastructure development as a result of the community's involvement in cash crop production. This might be because cash crop development was the community's initiative, and not the initiative of local or central government or an external aid agency. Nevertheless, cocoa has enabled the construction of the community's permanent church building.

A unique finding not reported in the literature is the unintended consequence of cash cropping and having access to income on young people's attitude towards education. Earning a regular income from growing cocoa enables parents in Maranu'u village to afford their children's school fees. However, interviews with farmers revealed that some children see attending school as a waste of time. This is because they now see they can earn income from growing cocoa without going through formal education. Besides, there are limited options for income gaining employment without leaving the village which many do not intend to do. Although cash cropping brings in cash and the positive benefits associated with increased income, it has a negative impact on the children's views on and interest in education.

### 7.7 Attributes which make it possible for households to grow cash crops

Cocoa as a cash crop is part of the household activity of all but two of the families in Maranu'u. The factors that have allowed the majority of households in the village to successfully integrate growing cocoa into their livelihoods were identified in this study.

First, the development of cocoa production was a community driven initiative through the church. This contrasts with other cases reported in the literature (Akiyama & Nishio, 1997; Manivong & Cramb, 2008a; Rist et al., 2010) where household cash cropping was triggered by factors external to the farmer and their community, such as government policy, improved transportation and infrastructure, and market demand. One of the important findings in this study is that the majority of households in the community were motivated and enabled to

participate in cocoa production because of their common goal to finance their church project. The common goal bound the community together with strong support to grow cocoa, thereby allowing almost all households to earn an income. Earning income through such cash crop production would have otherwise been difficult if households had worked individually. This study shows that the whole community influences the extent of household participation in cash cropping. In isolated rural areas, it is easier for individual households to participate in cash cropping in order to earn incomes when an internal institution to which they are strongly linked provides the motivation. In this case, the church motivated the household involvement.

On the same note, the church provided access to marketing of the cocoa grown by households in the village through the establishment of the VCD. This further encouraged farmers to grow cocoa to earn an income. This is in agreement with the literature reviewed which identifies access to a market as important for the development of cash cropping, encouraging farmers to earn incomes (Leavy & Poulton, 2007; Wiggins, 2000). In this study, the VCD is the middle-man in the marketing chain of cocoa in the village. Being a church project, there is strong community support from all households to supply cocoa which works to encourage more households to become involved in growing cocoa. Households trust the VCD as a reliable and stable market for their cocoa and see the VCD as something that will benefit the whole community. This is in contrast with Wamalwa (2011) who reported that the fact that farmers were discouraged to dedicate their time and resource to planting the cash crop, jatrohpa, was due to the unreliable market and mistrust in the middlemen who were dishonest and paid low prices (in this case, the middlemen benefited more than the farmers). This study suggests that in areas where farmers experience market difficulties, households can still successfully venture into cash cropping if a reliable form of market is organised for them. This is even better when as is this case, the ‘middleman’ between urban market and the community is deemed reliable and has the support of the whole community.

Another significant finding is that cocoa can be grown without undermining food production. Farmers have employed a cropping system which maximises the benefit of land use through the production of both a food and a cash crop. This is similar to the energy crop, jatropha, as reported by Wamalwa (2011). Farmers adopted the cash crop because food production was not undermined as it could be mix cropped and also grown as a boundary hedge. Cash crops such as cocoa, which can be intercropped with food crops, suits smallholder farmers who still rely on subsistence food production for the household food supply.

There is also abundant land so households can continue to expand cocoa plantings if they wish. This is in contrast to Frazer (1987) who reported that cash cropping activities occurred on the best land for subsistence food production and in order to avoid this, households stopped planting cash crops. Findings from this study suggest that in areas where land is abundant and where subsistence food production is an important livelihood activity, cash cropping is more likely to be a success compared to where land is limited.

Finally, every member of the household takes part in most activities in the production of cocoa, and as such, household members share the responsibility of earning the income for the whole family. This is in contrast to what some farmers in this study experienced when producing copra, where only the men did most of the activities to earn an income. This study suggests that when there is a cash crop which allows every household member to participate in its production, such as cocoa, it has the total support from the household which allows it to be easily integrated as part of a household's livelihood and as a result, the benefits of cash cropping fall across the whole community. Other aspects around labour have been discussed earlier in this chapter.

### 7.8 Chapter summary

This chapter compares and contrasts the findings of this study in relation to the literature reviewed. This study reveals that household involvement in cash cropping is facilitated by the church with very limited support from central government. This study identified that in addition to subsistence food production, households have extended agriculture production to include cash cropping as a livelihood strategy. Cash cropping, in this case, substitutes migrating in search of employment outside the village, thus farmers no longer leave the village to find jobs to earn an income. Findings show that the community in this study has experienced a transition from subsistence food production to relying both on subsistence food production and cash cropping. Both subsistence and cash cropping are equally important for households.

This study revealed that there are both positive and negative impacts of cash cropping on the household and the community. The study shows that cash cropping does not adversely impact on food security because there is abundant land and, therefore, the cash crop does not substitute food production. The study also shows that there has been a significant increase in household income as a result of growing cocoa and households now have a regular source of income. Consequently, households are able to meet their many financial needs in a cash

economy which is relatively new to them. Households are able to not only pay for the children's school fees and other educational needs, but also actively participate in social obligations and save for future needs. There is increase in monetary transactions within the village compared to the past. The income from cocoa has opened other income earning opportunities such as in trading goods (food crops, livestock and imported goods). The villagers are enjoying both the luxury of spending money and the experience of improved lifestyle and wellbeing.

The study also revealed that cash cropping has implications for household labour but was not equitably placed on women, but spread across the household members. In fact, cash cropping allowed men to remain in the village to assist in food production and lessen the workload on women in the longer term.

On the other hand, growing cocoa has some unintended consequences. These include the change in children's attitude towards attending school; the weakening of traditional community cohesion and the threat of losing an important traditional food crop. Despite these negative impacts, cocoa has substantially increased the economic status of the community which was regarded as 'economically poor' by the surrounding communities in the past.

The factors which enabled the majority of households to take up cash cropping as a livelihood include: community support through the Church; access to reliable markets, labour, and planting materials; a cropping system; unlimited land; and the fact that cocoa production activities involve all members of the household.

The next chapter concludes the thesis.

# Chapter 8 Conclusion

## 8.1 Introduction

This research aimed to investigate the impact of cash cropping on rural livelihoods in order to inform policy. A qualitative case study approach was utilised to answer the research question: How does cash cropping impact on the livelihoods of rural households in the Solomon Islands? This study used the SLF as a guiding tool in the investigation of the livelihoods at the household level. This study provides an empirical example of how a community integrate cash cropping as part of their livelihood. This study is also an empirical example that shows that the transition from subsistence food production to producing for the market is not simple but involves a more complex process rather than a clear shift from one extreme to the other.

Based on the research findings and the subsequent discussions in previous chapters, a summary of the main research findings is contained in the last section of the previous chapter, Chapter 7. Chapter 8 provides the conclusion of the research, policy implications of the research findings, and suggestions for further research. A summary concludes this chapter.

## 8.2 Conclusion of research

How cash cropping is integrated by households as part of livelihood is influenced by a number of factors. First, the motivation to participate in cash cropping is not only driven by the motivation to access cash but also by the community commitment and/or is culturally based. Second, the access to market and the security and trust of how that access to market is organised encouraged households to participate in cash cropping. Third, the nature of the crop; in this case, it being a perennial crop and could be harvested throughout the year, providing a regular income for households and therefore contributing to the cash crop's uptake and expansion. Fourth, a cash crop that is not a food crop can be integrated into livelihood without undermining food production when there is abundance of land suitable for growing the crop and also when the crop can be grown with the food crop. Andfinally, a cash crop can be integrated as part of the households' livelihood when the labour required to establish and maintain the crop can be provided by the household and/or available through reciprocity arrangements within the community.

Cash cropping has some broader implications for households and the community as a whole. The distribution of benefits from cash cropping within a community will spread across all households when all households are willing and able to grow the crop and therefore gain direct benefit. The direct benefit of cash cropping, through access to cash, opens up opportunities to purchase a variety of food which results in a shift in household diet from locally produced food to imported foods. Cash cropping is also linked to a shift in the types of food grown and the types of food available for a household. Another benefit is that it also opens up opportunities for households and/or individuals to venture into other livelihood activities within the community. In communities where cash is becoming important, cash cropping contributes to the increase in the community's participation in the cash economy.

Access to cash through cash cropping may also result in a change in cultural expectations towards cash. Individuals will expect some forms of cash payment for tasks they are culturally obliged to do. This access can also contribute to household abuse of the use of cash which can lead to increased domestic violence within the household. Other unforeseen consequences of cash cropping include a change in children's attitudes towards education. In communities where employment opportunities are limited, and where having a good educational background is a requirement for income generating employment, being able to access income through cash cropping adversely impacts children's interest towards attending school; education is seen as a waste of time by some.

### 8.3 Recommendations and policy implication of the research findings

Based on the findings from this research, I have put forward some recommendations for policy. They are as follows:

This study revealed that cash cropping has greatly benefitted households and the community, hence smallholder farmers should supported. Support could be through the maintenance of village institutions (the VCD in this case) through which households have access to cash cropping, enabling the benefits to be spread across the community rather than only affecting a few households. As discussed earlier, the community's involvement in growing cocoa is due to their commitment to finance the construction of their church building. Once the church project is completed, the question that arises here is: Will the community continue to be involved in cash cropping? Given the fact that the individually owned cocoa processing unit was not a reliable venue for villagers to sell their produce in the past, there is a need for outside assistance in the planning of community projects which will enable the community to

have a common goal to work towards and, hereby, continue to motivate all households to continue to participate in cash crop production. The government could also support smallholder farmers in securing markets and providing reliable transport systems in the rural areas. An improvement in road networks and transport is very important.

In the situation where land is limited and where households depend entirely on subsistence food production, the government should consider cash crops which can be easily intercropped with household food crops. This is to avoid disagreements over land use within clansman.

There is a need to facilitate community awareness programmes on simple household income budgeting which seems to be lacking amongst the majority of households in the community. This will allow for better management of household income and enable households to save efficiently for the future.

### 8.4 Suggestions for future research

The following are some suggestions for further research:

- There is an increase in the consumption of imported processed food in the community now that households can afford to purchase such items from the trading stores in the village. It would be interesting to find out if the change in household diet due to the access to cash from cash cropping has some impact on the nutritional standard of villagers, especially children.

### 8.5 Chapter conclusion

Overall, it is evident from the findings that cash cropping has implications on both the households and the community as a whole. Cash cropping has significantly increased cash income for households which contributes to an improved standard of living in the community. While households find life in the village easier with their involvement in cash cropping, a few negative aspects of cash cropping have been also highlighted in this study. At present, the positive benefits of cash cropping in this case supersede the negative impacts.

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# APPENDICES

## Appendix: 1 Ethics Approval

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA

20 April 2012

Dorcas Hivu
18 Rakaia Place
**PALMERSTON NORTH 4410**

Dear Dorcas

**Re: Smallholder Cocoa Production and its Impact on Rural Livelihoods**

Thank you for your Low Risk Notification which was received on 17 April 2012.

Your project has been recorded on the Low Risk Database which is reported in the Annual Report of the Massey University Human Ethics Committees.

The low risk notification for this project is valid for a maximum of three years.

Please notify me if situations subsequently occur which cause you to reconsider your initial ethical analysis that it is safe to proceed without approval by one of the University's Human Ethics Committees.

Please note that travel undertaken by students must be approved by the supervisor and the relevant Pro Vice-Chancellor and be in accordance with the Policy and Procedures for Course-Related Student Travel Overseas. In addition, the supervisor must advise the University's Insurance Officer.

**A reminder to include the following statement on all public documents:**

> *"This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The researcher(s) named above are responsible for the ethical conduct of this research.*
>
> *If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher(s), please contact Professor John O'Neill, Director (Research Ethics), telephone 06 350 5249, e-mail humanethics@massey.ac.nz".*

Please note that if a sponsoring organisation, funding authority or a journal in which you wish to publish requires evidence of committee approval (with an approval number), you will have to provide a full application to one of the University's Human Ethics Committees. You should also note that such an approval can only be provided prior to the commencement of the research.

Yours sincerely

J. O'Neill

John G O'Neill (Professor)
**Chair, Human Ethics Chairs' Committee and**
**Director (Research Ethics)**

cc Ms Janet Reid
Institute of Natural Resources
**PN433**

Dr David Gray
Institute of Natural Resources
**PN433**

Prof Peter Kemp, HoI
Institute of Natural Resources
**PN433**

## Appendix 2: Research Permit

FORM – R.B

# THE RESEARCH ACT 1982
# (No. 9 of 1982)

## RESEARCH PERMIT

Permission is hereby given to:

1. Name: Dorcas Oroi Hivu
2. Country: Solomon Islands
3. To undertake research in (subjects): Smallholder cocoa production and its impact on rural livelihoods: A case study from Makira, Solomon Islands.
4. Ward(s): Arosi one District
5. Province(s): Makira Ulawa
6. Conditions:
   a. To undertake research only in the subject areas specified in 3 above.
   b. To undertake research only in the ward(s) and Province(s) specified in 4 and 5 above.
   c. To observe with respect at all times local customs and the way of life of people in the area in which the research work is carried out.
   d. You must not, at any time, take part in any political or missionary activities or local disputes.
   e. You must leave 4 copies of your final research report in English with the Solomon Islands Government Ministry responsible for research at your own expense.
   f. A research fee of *SBD300.00* and deposit sum of *SBD200.00* must be paid in full or the Research Permit will be cancelled. (See sec. 3 Subject. 7 of the Research Act).
   g. This permit is valid until 30/7/2012 provided all conditions are adhered to.
   h. No live species of plants and animals may be taken out of the country without approval from relevant authorities.
   i. A failure to observe the above conditions will result in automatic cancellation of this permit and the forfeit of your deposit.

Signed: .....
Minister for Education and Human Resources Development

Date: 8/6/12

## Appendix 3: Participants' Information Sheet


**Research project title**: **Smallholder cocoa production and its impact on rural livelihoods**

My name is Dorcas Oroi Hivu. I am from Makira. I am a student in the Institute of Natural Resources in the College of Sciences at Massey University in New Zealand. As part of my Masters Degree in AgricScience, I will be doing research on rural livelihoods and I would like to invite you to participate in this research. My research topic is to assess the impact of cash cropping on smallholder rural farmers using the case of the cash crop, cocoa. The purpose of this study is understand how rural livelihoods are affected by their involvement in cash cropping as a lot of rural farmers have been encouraged to take part in producing cocoa lately. Please read this document carefully before deciding to participate in this study.

My intention is to interview farmers who are producing cocoa in your village, the agriculture extension officer working with the cocoa farmers and key informants in your community. I invite those in the mentioned groups plus others who wish to share their information with me to take part. This will give me information that will enable me to give reliable conclusions about the impact of smallholder cocoa production on rural livelihoods.

I have selected your community as a case study for this research. The selection was based on this being a subsistence rural community, having poor infrastructure (anchorage for sea transport, far from school and medical posts),and having a good number of cocoa farmers.

As part of this community, you have been selected as a possible participant for this research. Your participation in this research is voluntary. In accepting to take part in this research, you will be asked to answer questions that will provide me the information needed to answer my research questions for this study. Interviews will be carried at a place and during the time most convenient for you. You may decline to answer questions you are not comfortable with, ask questions about the study to clarify your doubts and may have access to the information you will provide me. You will also remain anonymous unless you wish me to use your name in any part of the study. You can withdraw from participating in the research at any time.

The information you will make available to me will only be used for the purpose of writing this thesis and other related academic use and will only be accessed by me and my supervisors during the time of storage.

There is no anticipated harm of any form to any one taking part in this study; however, if you feel this research may cause you any form of harm, then you are free to raise your concern. I will be happy to discuss it with you before the start of the interview.

This project has been evaluated by peer review and judged to be low risk. Consequently, it has not been reviewed by one of the University's Human Ethics Committees. The above named researcher is responsible for the ethical conduct of this research.

If you have any concerns about the conduct of this research that you wish to raise with someone other than the researcher, please contact Professor John O'Neill, Director, Research Ethics, telephone 06 350 5249, email humanethics@massey.ac.nz.

Kind regards

Dorcas Oroi Hivu

Massey University
Manawatu Campus
Palmerston North

## Appendix 4: Participants Consent Form

MASSEY UNIVERSITY
COLLEGE OF SCIENCES
TE WĀHANGA PŪTAIAO

**Participation consent form**

I have read the Information Sheet and understand the details of the study. I understand that I may ask further questions at any time.

I wish/do not wish to have my answers returned to me.

I wish/do not wish to have data placed in an official archive.

I agree to participate in this study under the conditions set out in the Information Sheet.

**Signature:** ..... **Date:** .....

**Full Name - printed** .....

## Appendix 5: Interview Guide

### 1. Household Background information

Household head code name _____

Age: _____ Highest education level _____

Household composition

| No. of household members | sex | age | Relationship to household head | Highest level of education | Main occupation | comments |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |

Cocoa farm size: _____ Year of farm establishment_____

Year at start of cocoa harvesting _____

In whose initiative enables you to establish cocoa farm? (oneself, or influenced by others,- who?)____

(To get information on livelihood strategies the household undertake)

| Activities household members do before and during involving in cocoa production | | |
|---|---|---|
| Before cocoa production | During cocoa production | Income activities in the order of importance |
| | | |

(Need to know which of these activities derives income apart from cocoa (such as livestock keeping, off-farm casual labour, paid employment, remittances from relatives or children, trade)

How do you define a poor person?_____

Do you consider your household poor?_____

2. **Information on food production**

To get information on how being involved in cocoa production impact on the household's food production quantity and quality, the following questions need to be answered:

1. How do you normally spend your day? (other activities apart from cocoa)
2. What food crops do you plant in your garden? And why?

| Name of crop | reasons |
|---|---|
| | |
| | |
| | |
| | |
| | |

3. Which food crops do you no longer plant in your garden? Why?

| Name of crop | Reasons |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |

4. How do cocoa impact on food production? Probe to get information in regards to:
   a) Relocation of food gardens
   b) Size of gardens
   c) Distance to food gardens
   d) ability to produce food (explain)
   e) Number of food garden plots
   f) Purchase of food
5. Tell me about the quality of food produced before and after involved in cocoa. What has changed?
6. Do you see a need to buy food with income from cocoa? How much do you spend? Which type of foods?
   (May need to ask the questions below separately to husband and wife if there is a need)
7. How much time do you spend working in your food garden? (days in a week)
8. Do you also work in your cocoa farm? How often? Does that affect your time in your garden? How?
9. Any other information you may want to share with regards to cocoa production and impact on food production?

**3. Information on impact of cocoa production on livelihood (5 assets)**

**a) Financial assets (questions that needs to be answered)**

1. How has cocoa impact on your income?
   (decreased, no change, increase a bit, increased a lot) - Let farmer explain
2. Do you keep records of your income? What is your income from cocoa in a year?
3. Who is in control of income? (may ask wife/household members separate if needs to)
4. On what items do you normally spend money earned from cocoa?
5. Do you save some of your income? How?
6. Do you see cocoa as important income source for your family? explain

**b) Physical assets**

1. What impact has growing cocoa has on the local infrastructure - both positive and/or negative (school, clinic, road, community hall, church etc.)
2. What other physical assets do you acquire from cocoa (observe assets owned by the household, e.g. tools, machinery, livestock, household goods etc.)

**c) Human capital**

1. Do you receive educational programs from those promoting cocoa in or around your community?
2. Who provides labour for your cocoa farm?(hired? Household members?)
3. How does cocoa production impact on the total amount of labour provide by the members of your family?
   a) Women
   b) Men
   c) Children
4. How does cocoa impact on your household member's education?
   (Find out if children go to school; if not, why? Is income from cocoa used for educations such as school fees, stationary, uniform?)
5. How does cocoa impact on your household member's health? (health status of household members, sanitation measures, safe water conditions)

(Need to ask the following question to female members separately)

6. How do you see cocoa impact on your household activities as well as other activities in the community you are supposed to take part in? (Probe question: Is that a worry?)

If children are part of the household labour, may need to get information on the extent of their involvement in cocoa:

1. Do you attend school? Do you like attending school? Why?
2. Do you help your dad/mum in the cocoa farm? How often, what type of work do you normally do?

3. Do you enjoy most when working in the cocoa farm? Why?
4. Which job do you dislike when working in the cocoa farm? Why?
5. What do you get for working in the farm? (cash, incentives etc.)

**d) Natural capital**

1. How do cocoa impact on your farm size since you started growing cocoa? (e.g . enable to buy land, clear more forest, food crop area reduced, displace other cash crops, etc.)
2. Do you see cocoa a threat to other natural resources you and the community use? (water, forest products, wild animals, air, sea). Explain

**e) Social capital**

1. What are changes you have noticed since you started planting cocoa in your relationship with:
   I. Household members?
   II. Other cocoa farmers?
   III. Non-cocoa farmers?
2. What other groups or networks are formed with regards to cocoa production and how does that affect your household wellbeing? (e.g. cocoa farmer's association, men's fellowship or women farmer's network etc.)
3. How does cocoa contribute to your participation in various social activities in your community (e.g. marriage ceremonies, community sharing, church activities etc?)
4. In your opinion, how does cocoa impact on the traditional 'working together concept' in the community?

## 4 Overall view of participant

Do you think you are better off or worse than before you involved in cocoa?

## 5. Interview guide for key informants

### a) in the community (village chairman, church leader (catechist), trade store owner)

Personal and family life

Role in the community

How do you see those involved in cocoa and their contribution to community activities? ( any differences from before and after planting cocoa or from the last 5 years, are they better off or worse than before?)

(Probe into social relationship, asset, status in the community, any change in housing condition, any new development resulted from cocoa.)

**b) Agriculture Extension officer**

What is/are your role in the cocoa farming community?

Describe your opinion of farmers' attitude towards cocoa production in the area.

Over the last 5 years, what differences do you note in the quality and quantity of cocoa produced from the community studied?

From your knowledge and understanding, do you think the farmers are better off with cocoa in terms of their wellbeing? Explain.

**6. Non-participation observations**

Observe for the following

| Type of asset | QTY (if applicable) | Description |
|---|---|---|
| Physical asset<br>- Housing condition<br>- Tools<br>- Household goods<br>- Clothing<br>- Personal article (watch, clothing, jewellery etc.)<br>- | | |
| Human asset<br>- Health condition of members<br>- Sanitation & water<br>- | | |
| Others(specify) | | |