

School of Design and Built Environment

**The role and impact of female extension officers on the participation of
women in export crop production in Papua New Guinea**

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.



Signature:

Date: 14th April 2019

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Abstract

This study considers the gender constraints in our knowledge on the roles and impacts of female agricultural extension officers in Papua New Guinea. There has been some work in oil palm showing very large gains for women in income and status when women's needs were met and addressed through extension. However, to date there is very little detailed information about women's roles in export commodity crops such as coffee and cocoa given their significant contributions to cash crop production. The study investigated the roles and impacts of female extension officers on the participation of smallholder women farmers in the production of the major export commodity crops of coffee, oil palm and cocoa. The study was conducted in three provinces of Papua New Guinea: coffee in Eastern Highlands; oil palm in West New Britain; and cocoa in East New Britain. A mixed method approach was used involving both quantitative and qualitative techniques through the use of standardised questionnaires and a multiple case study approach. The study found that female extension officers in the different commodity crops experienced different struggles, but all had to cope with a male dominated culture instilled in many agricultural extension organisations in PNG. Furthermore, smallholder women farmers faced many difficulties and challenges, and women's empowerment initiatives through extension organisations were relatively successful in empowering women to participate fully as development partners in building stronger economies and improving quality of life. The study recommends that agricultural extension organisations should be encouraged to strengthen female extension programs by improving the status of female extension officers at the institutional level and by expanding smallholder women's empowerment programs.

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List of Acronyms and Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
AAK	Apo Angra Kange
APAARI	Asia-Pacific Association of Agricultural Research Institutions
ACIAR	Australian Centre for International Agricultural Research
AIM	Australian Institute of Management
ARoB	Autonomous Region of Bougainville
CABI	Centre for Agriculture and Biosciences International
CTP	Central Training Point
CCI	Cocoa and Coconut Institute
CPB	Cocoa Pod Borer
CBB	Coffee Berry Borer
CDA	Coffee Development Agency
CEDAW	Committee on the Elimination of Discrimination against Women
CIB	Coffee Industry Board
CIC	Coffee Industry Corporation
CIMC	Consultative Implementation and Monitoring Council
CRI	Coffee Research Institute
CRP	Customary Rights Purchase
DRDOs	District Rural Development Officers
DSIP	District Services Improvement Program
EHP	Eastern Highlands Province
ENBP	East New Britain Province
ESP	East Sepik Province
FAO	Food and Agriculture Organisation
FBMT	Family Business Management Training
FFTP	Family Farm Team Program
FSV	Family Sexual Violence
FDDE	Farmer Demand Driven Extension
FEOs	Female Extension Officers
FFB	Fresh Fruit Bunch
GPS	Geographical Positioning System
IATP	Integrated Agriculture Training Program
IFAD	International Fund for Agricultural Development
LSS	Land Settlement Scheme
LDC	Livestock Development Corporation
LLG	Local Level Government
LUCDF	Lower Unggai Community Development Foundation
MEOs	Male Extension Officers
MLF	Mama Loose Fruit
MTDS	Medium Term Development Strategy
NADP	National Agriculture Development Plan
NAES	National Agriculture Extension Summit
NAQIA	National Agriculture Quarantine Inspection Authority
NARI	National Agriculture Research Institute
NDAL	National Department of Agriculture and Livestock
NES	Nucleus Estate Smallholder

NBPOL	New Britain Palm Oil
NIP	New Ireland Province
NZOAD	New Zealand Overseas Aid Development
OPIC	Oil Palm Industry Corporation
OPRA	Oil Palm Research Association
PNG	Papua New Guinea
PRAP	Participatory Rural Appraisal Planning
PDAL	Provincial Department of Agriculture and Livestock
PDPI	Provincial Department of Primary Industry
PPAP	Public-Private Agricultural Partnership
RGSD	Research and Grower Services Division
RSPO	Roundtable discussions on Sustainable Palm Oil certification
SHCGA	Smallholder Coffee Growers Association
SSP	Secretariat of South Pacific
SSSP	Smallholder Support Services Project
SABL	Special Agriculture Business Leases
SIB	Spice Industry Board
SMS	Sustainable Management Services
T&V	Training and Visit
UNDP	United Nations Development Program
UNRE	University of Natural Resources and Environment
VCEs	Village Community Educators
VOP	Village Oil Palm
VAC	Vunaiting Agro-farmer's Cooperative
WNBP	West New Britain Province
WiADF	Women in Agriculture Development Foundation
WiCD	Women in Coffee Development

CHAPTER ONE

INTRODUCTION

1.1 Overview

Agriculture is not simply an economic activity, but rather a social enterprise that is influenced by family roles, inter-personal relationships and gender norms. These complex dynamics often drive if and how individual households members-especially women-contribute to and benefit from agricultural-related activity, including their participation in programs designed to enhance smallholder productivity (Anjala, 2012, p. 3).

For any successful agricultural extension program, the challenge lies in going beyond the technical agricultural issues to address the underlying gender-related norms, priorities and constraints that may prevent women farmers and female extension officers from reaching their full potential in agricultural work. The above quote summarises the key themes of this thesis which examines the role of female extension officers and women farmers in export cash crop production in Papua New Guinea (PNG). Women in PNG are major players in agriculture. They contribute significantly to household food production and household income through their labour input in subsistence farming as well as in export crop production (Overfield, 1998; Koczberski *et al.*, 2001; Curry *et al.*, 2007; Linibi, 2009). Previous studies have reported that women contribute immensely to household export production in coffee, oil palm and cocoa, yet are unfairly compensated for their labour relative to men (Overfield, 1998; Koczberski *et al.*, 2001; Cahn & Liu, 2008; Ajani & Igbokwe, 2011; Inu, 2015; Pamphilon & Mikhailovich, 2017).

Despite the significant involvement of women in agriculture in PNG, agricultural extension work has been largely male dominated, and women's roles in export cash crop production often went unrecognised. While there have been several reviews and reports documenting extension in PNG and assessments on the effectiveness of extension (e.g. Mendano, 2012; Sitapai, 2012), few have given consideration to female extension officers and women's roles in household export crop production. Further, very little is known about the participation and involvement of professional career women in agriculture, for example, female agricultural extension officers who often drive change and impart agricultural knowledge and skills to both female and male (smallholder) farmers. This thesis will address this knowledge gap

through my study in the main coffee, cocoa and oil palm growing provinces of PNG: namely, East New Britain Province (ENBP), West New Britain Province (WNBP) and Eastern Highlands Province (EHP) (Figure 1.1).

This chapter begins with a background introduction to export commodity crop production in PNG, followed by a brief description of my study sites. The thesis research objectives, significance of study are then presented followed by the thesis outline.

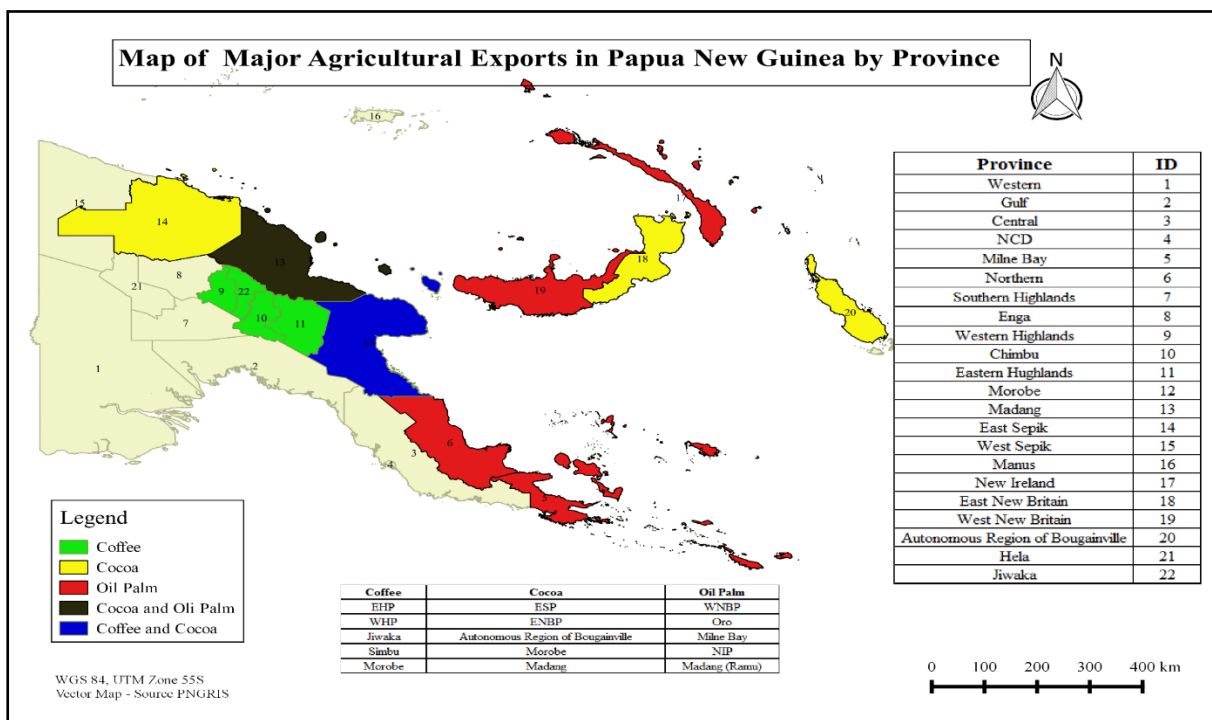


Figure 1.1: Map showing the top five export commodity crop growing provinces of coffee, cocoa and oil palm in PNG and my study sites (Source: Map produced by Kingsten Okka, 2017).

1.2 Background to export commodity crop production in PNG

The production and sale of cash crops is one of the most important sources of income at the national and household levels in PNG. The majority of rural Papua New Guineans earn income from the sale of commodity export tree crops, with coffee, cocoa and oil palm being the main export cash crops. In declining order of importance by value, PNG's major agricultural export crops are palm oil, coffee, cocoa, copra oil, vanilla, tea and rubber (Bourke & Harwood, 2009). My thesis focuses on the three major export crops of oil palm, coffee and cocoa.

Despite the significant contribution of coffee, cocoa and oil palm smallholders to PNG's national and rural economies, their yield relative to plantation production per hectare is low (Bourke & Harwood, 2009). Although a few technologies have been developed to increase productivity in export cash crop production in PNG, the adoption rate by smallholders has been very low (Omuru, 2003; Apis *et al.*, 2013). The low adoption rate by most smallholder cash crop farmers in PNG may be because farmers are reluctant to take risks and utilise a low labour input system of production that results in low productivity levels compared to plantation levels in coffee (Inu, 2015). For example; while farmers know that pests and diseases contribute to crop loss, they have very limited knowledge of pests and diseases and limited ability to apply appropriate control measures. Similarly in cocoa, through field observations, it was revealed that farmers commonly accept and tolerate high rates of losses from pests and diseases. Also, many coffee farmers display very little understanding of the relationship between shade levels and the occurrences of the three common pests and diseases: green scale, pink disease and coffee leaf rust (Curry *et al.*, 2007; Curry *et al.*, 2017 e.g. ASEM/2008/036).

Studies have also identified other socio-cultural factors that constrain smallholder productivity in cocoa, oil palm and coffee (Curry *et al.*, 2017; Koczberski *et al.*, 2001). Apart from the limitations on the supply of labour, the low level of farm inputs, tools and equipment often result in very inefficient use of labour and low returns to labour. Poor transport infrastructure and limited access to extension training and other factors explain the low productivity of smallholders. There are other factors that also contribute to low levels of smallholder productivity in coffee such as poor market access, prolonged parchment storage in poor conditions and inadequate technical knowledge on coffee farming and post-harvest processing, senile planting materials (old ageing coffee tree stock) and lack of tailored extension packages (World Bank, 2009; Curry *et al.*, 2017).

Coffee

Coffee is grown in 17 of the 22 provinces covering all four regions of PNG including the Highlands, Momase, New Guinea Islands and Southern regions. As noted by Sengere (2016), 90% of the national coffee production is mainly Arabica coffee which is produced in the Central Highlands region. Most of the Highlands coffee is produced in the Western Highlands Province (WHP) and Jiwaka Province. In 2015, EHP produced the most coffee (Figure 1.2) and this was due to the fact that the coffee mills in Goroka in 2015 were paying higher prices

than mills in other provinces (Sengere, 2016). This has seen provinces such as Jiwaka, Simbu, Morobe and Madang selling their coffee to mills in EHP.

There are 2.5 million people representing 524,400 households engaged in coffee production in PNG (Bank of PNG, 2016). The coffee industry is the largest agriculture sector employer in PNG. It is the main source of income for most households in the highlands of PNG. PNG is one of the 57 coffee producing countries of the world and produces just 1% of the world's total coffee production (Sengere, 2016). Sengere (2016) noted that, "coffee is said to be the main source of income for remote rural farmers of PNG. Coffee is embedded in a wider socio-economic and political landscape in rural areas of PNG, and therefore has major influence on the socio-economic and political lives and activities of farmers". In 2012 it was estimated that the average net income per annum from coffee for smallholders in the Central Highlands was K4,900 per household followed by livestock at K1,219 and sweet potato at K246 (UniQuest, 2013). The smallholder contribution to total coffee production in PNG has increased over the years and now accounts for 85% of over-all production.

In PNG, the coffee industry remains one of the country's most important agricultural export crop in terms of employment. Coffee is the third largest earner of foreign exchange after petroleum products and palm oil. According to the Coffee Industry Corporation (CIC) (CIC, 2016), coffee earned foreign exchange proceeds of K393.55 million (AUD \$197 million) in 2015. In 2006, oil palm surpassed coffee and became PNG's leading export commodity crop. However, only a small proportion of the rural population is engaged in growing oil palm with 33% of oil palm production produced by smallholders (Koczberski *et al.*, 2001), while coffee is mainly produced by smallholders and accounts for 85% of the total coffee production (CIC, 2008a).

The weight of green bean bags of coffee exported was 60.5 thousand tonnes in 2016, compared to 42.8 thousand tonnes in 2015 (Table 1:1). The increase was from higher yields attributed to the favourable impact of trees bearing more fruits from the El Nino dry weather, combined with the biennial seasonal harvest. The average export price of coffee was K9,445 per tonne in 2016, an increase of 2.7 percent from 2015. That increase reflected the higher international prices due to low production from Brazil, Vietnam and Columbia. The combined increase in export price and volume resulted in coffee earning foreign exchange revenues of K571.4 million in 2016 compared to K393.5 million in 2015 (Bank of PNG, 2016).

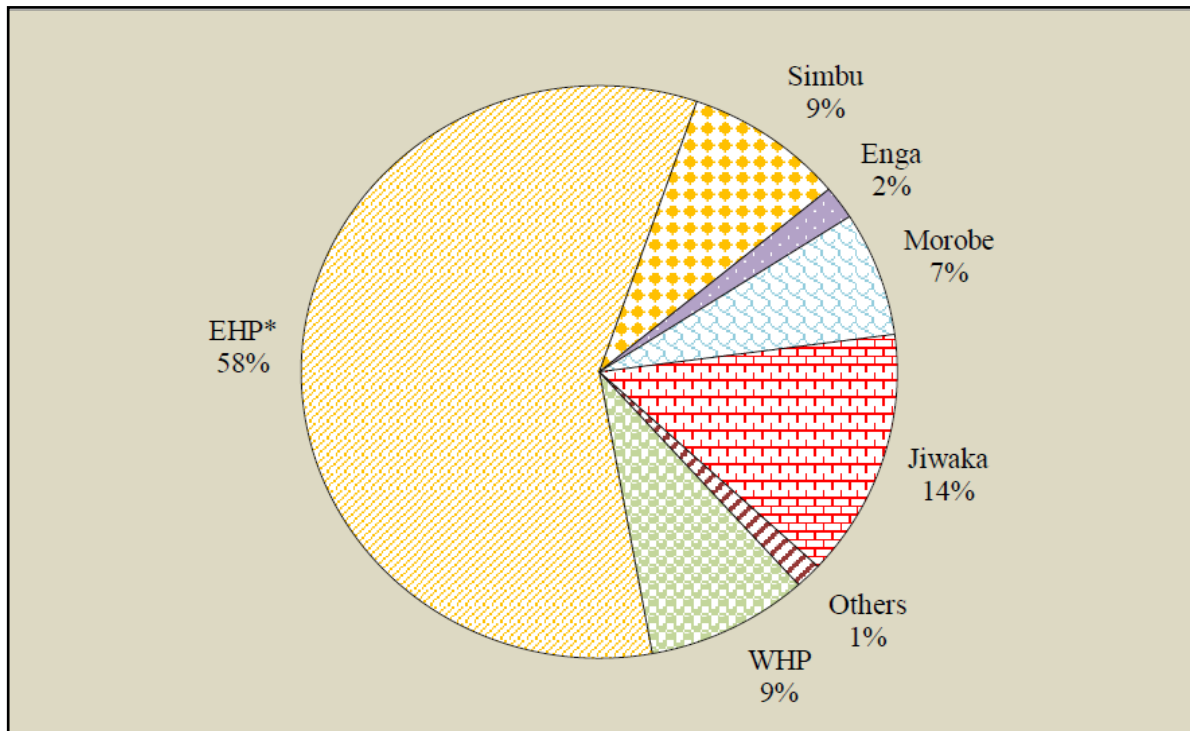


Figure 1.2: Coffee production by province in 2015. *Some production recorded for ‘EHP’ is coffee produced in other provinces (Adapted from Sengere, 2016. p.29).

Oil Palm

PNG’s palm oil industry comprises a plantation sector and a smallholder sector. The smallholder sector represents 40% of the total area planted, but accounts for only 32% of total production. Approximately 200,000 people’s livelihoods are dependent on oil palm (Koczberski *et al.*, 2001; CIMC Workshop, 2011, p.35; Fisher *et al.*, 2012). The oil palm industry has been a strong performer and is now the country’s leading export tree crop. It is expected to continue to increase with further industry growth. Oil palm production has grown at a much greater rate than any other export tree crop (Bourke & Harwood, 2009).

Smallholder oil palm is grown in six project sites in PNG. These include the Hoskins and Bialla areas of WNB, Higaturu in Oro Province, Alotau in Milne Bay Province, Lakuramau in New Ireland Province (NIP) and in the Ramu and Markham valleys in Madang and Morobe Provinces respectively (Figure 1.3). All these developments are based on the nucleus estate and smallholder (NES) model whereby smallholders grow oil palm, and supply oil palm fruit to the mills owned and operated by the estate companies. The milling companies also provide technical services to smallholder producers (Mendano, 2012). All of the original milling companies in PNG and their associates and the communities have roundtable discussions on sustainable palm oil (RSPO) certification. More recently, new oil palm developments have

started in PNG. These new players operate with special agriculture business leases (SABL) and none has RSPO certification (see Nelson *et al.*, 2013). In 2009, 67% of the total Fresh Fruit Bunches (FFB) were from the plantations while Land Settlement Scheme (LSS) and Village Oil Palm (VOP) smallholders accounted for the remaining 33%.



Figure 1:3: Map of PNG (Source: Adapted from Inu, 2015. p. 3).

In WNB and Oro provinces, the smallholder oil palm blocks are located on the state LSS, on customary land in villages (Village Oil Palm -VOP) and on customary rights purchase (CRP) where ‘outsiders’ lease customary land from customary land owners (Fisher *et al.*, 2012; Mendano, 2012). The smallholder component of the NES model was initially based on a LSS which saw settlers mostly from mainland PNG who were granted 99-year agricultural state leases over each 6 ha block purchased from customary land owners by the state. The objective of the LSS was to resettle these migrants from the PNG mainland. The LSS also aimed to shift their focus from traditional subsistence farming to cash crop farming with the view to raise export crop production (Bourke & Harwood, 2009). After the successful establishment of the LSS schemes in Hoskins and Biella project areas in 1968 and 1972 respectively, the VOP scheme was established in the mid-1980s. The VOPs were established with the aim of encouraging local villagers to participate in the oil palm industry as smallholder growers. The

provinces that have VOP schemes are located in WNB, Oro, New Ireland, Milne Bay and Ramu in Madang (Koczberski *et al.*, 2001).

The volume of palm oil exported was 540.7 thousand tonnes in 2016, compared to 486.9 thousand tonnes in 2015 (Table 1:1). The increase was because of higher production and shipments from the major producing areas, as well as a new exporter who has started operations in ENBP. In 2016, the average export price of palm oil increased by 9.1 percent to K1, 877 per tonne in 2016 from 2015. The increase in the international prices occurred because of high demand and lower production from major producing countries like Indonesia and Malaysia. That combined increase in export price and volume resulted in palm oil earning foreign exchange revenue of K1014.7 million in 2016 compared to K837.6 million in 2015 (Bank of PNG, 2016).

Cocoa

Cocoa is the third largest agricultural export tree crop in PNG and more than 80% of cocoa in PNG is produced by over 150,000 smallholders farming less than 5 ha of land (Lummani, 2003; Bourke & Harwood; 2009; CABI, 2016). Despite PNG's place in the world as a supplier of fine premium flavour cocoa and a rising global demand for cocoa, the cocoa industry in PNG is in crisis with the infestation of cocoa pod borer (CPB). CPB has been a threat to the industry since 2006. Revenue earned through cocoa exports halved between 2011 and 2012, but with the market price predicted to rise to more than USD\$3,000/tonne, production may increase (CABI, 2016).

Around 1905, cocoa was introduced into PNG by German settlers. Cocoa was initially a plantation crop grown by the European expatriates in the colonial administration before 1950. However, after 1950 the Australian Administration introduced and promoted the crop among smallholders. Smallholder cocoa plantings increased after 1965 and by mid-1980s contributed approximately 70% to national cocoa production. In the 1980s, many of the former plantations were returned to the traditional landowners who then operated the facilities with the assistance of relevant management agencies (Lummani, 2003). Plantations operated under high farm intensive input conditions while smallholder growers rely heavily on family labour and practise low farm input production strategy.

Cocoa is grown in 14 of the 22 provinces of PNG. In the 1980s, the main cocoa producing provinces in PNG were Bougainville producing about 49% of PNG’s cocoa prior to the civil war, East New Britain (31%), Madang (6%), East Sepik (5%) and other provinces (9%) (Lummani, 2003). However, with the incursion of CPB, the traditional high cocoa producing provinces such as ENBP and the Autonomous Region of Bougainville (ARoB) began doing badly (Figure 1.4). The East Sepik Province (ESP) seems to be making up for some of the decline in the formerly high producing provinces.

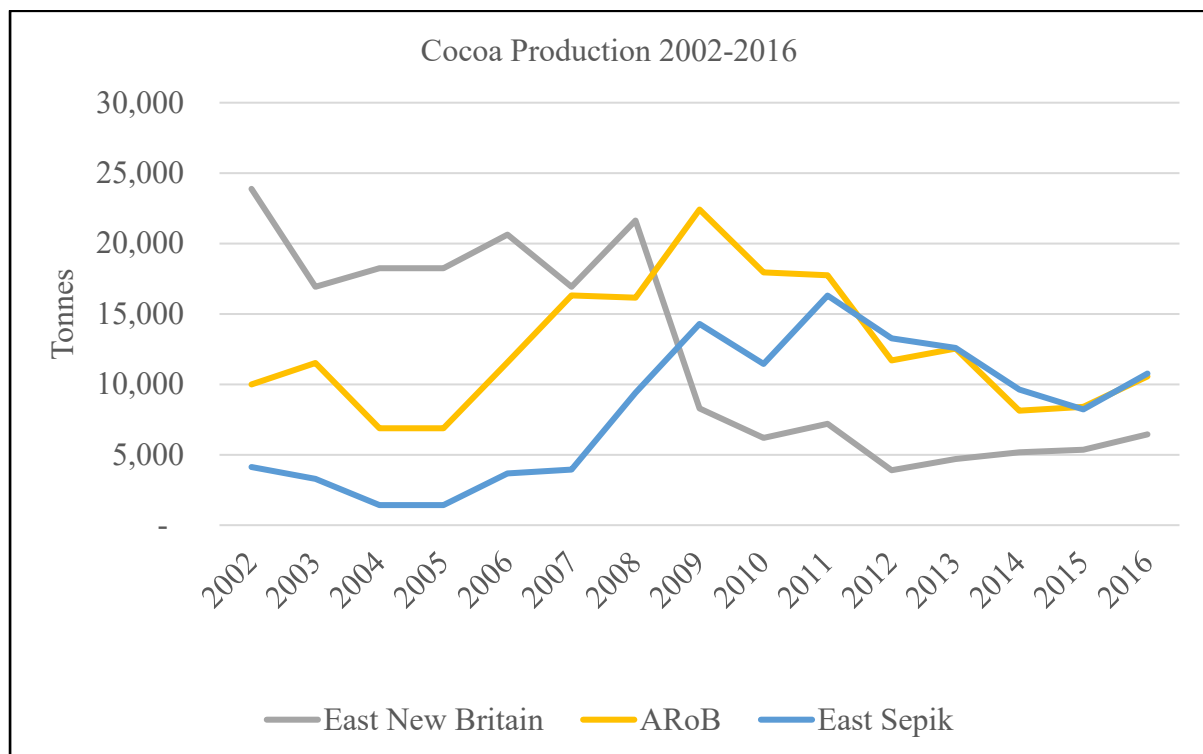


Figure 1.4: Three top cocoa producing provinces of PNG in 2016 (Source: Data held by Cocoa Board of PNG).

The volume of processed cocoa beans exported was 35.6 thousand tonnes in 2016, compared with 30.9 thousand tonnes in 2015 (Table 1.1). The increase occurred as a result of the partial successful implementation of the intervention programs dealing with the effects of CPB as well as using the freight subsidy scheme to assist producers in transporting their cocoa beans. The average export price of cocoa increased by 8.4 percent to K8,975 per tonne in 2016. The increase occurred as a result of higher international prices offered because of the unfavourable dry weather conditions and low production from the world’s major producers of the Ivory Coast and Ghana. This combined increase in export price and volume resulted in cocoa earning

foreign exchange revenues of K319.5 million in 2016 compared to K255.7 million in 2015 (Bank of PNG, 2016).

1.3 Improving women's participation in agricultural productivity

Research has shown that when women have the capital and opportunity, they make distinctive and positive contributions to development outcomes ranging from agricultural productivity to poverty reduction (Anjala, 2012). Throughout the world, gender roles are culturally defined in all facets of farming from the control of resources in farm production to marketing, and these areas can have constraints that marginalise women. It is not surprising that even within the field of agricultural research and development, most scientists and extension agents are male. It has long been argued that if agricultural research, development and extension system paid more attention to gender issues there would be more successes (Meinzen-Dick *et al.*, 2010).

More than a quarter of the world's population is represented by women farmers. In developing countries, on average, women made up 43% of the agricultural workforce ranging from 20% in Latin America to 50% in Eastern Asia and Sub-Saharan Africa (FAO, 2011). Yet women have less access to agricultural related assets, inputs and services than men. As farmers, agricultural workers and entrepreneurs, women form the backbone of agricultural rural economy in developing countries, and yet, together with children, they remain one of the most vulnerable groups. The constraints and opportunities that women face in agriculture today vary across regions and countries, depending on the socio-cultural and agro-ecological contexts (FAO, 2011). In recent times, there has been a growing realization and commitment of the global community to address and achieve more sustainable broad-based agricultural growth through addressing gender related issues in agriculture through national, regional and global initiatives and partnerships.

PNG is culturally and geographically diverse with a rapidly growing population of over seven million people. It has several thousand distinct communities, different languages, customs and traditions (Hanson *et al.*, 2001). In the rural communities of PNG, gender roles and the associated gender division of labour are strongly defined (Overfield, 1998; Cahn & Liu, 2008; Koczberski, 2007; Inu, 2015). With regards to rural livelihoods, women play a major role in food-crop production including the raising of domestic livestock such as pigs and chickens for subsistence, to meet cultural obligations and to earn cash. Most women engage in 'cash' cropping and producing food for subsistence, and much of this cash income activity is in the

‘informal sector’ (Fairbairn-Dunlop, 1997). Women also play an important role in some aspects of commercial export tree-crop farming despite men’s dominance in decision-making and controlling the marketing and income from export cash crops like coffee, cocoa and oil palm (Brouwer *et al.*, 1998; Byford, 2002; Moretti, 2006).

The gendered patterns of income control also vary greatly, depending on the type of society, the crop and household characteristics. For example, generally women have more control of income and land in matrilineal societies than in patrilineal societies. PNG is largely patrilineal and patriarchal (Dickson-Waiko, 2006). The type of crop is important too, with food crop income from local markets controlled by women while men tend to control income from export cash crops. However, it is important to recognise that individual characteristics are important too: strong and assertive women can influence decision-making. Generally, women control the income from garden foods which they produce; but have a less claim than men on the cash crops harvested with their labour (Brouwer *et al.*, 1998; Byford, 2002; Lummani, 2006; Curry *et al.*, 2007; Koczberski, 2007; Inu, 2015; Sengere, 2016).

1.4 National Agriculture Development Plan of PNG

The National Agriculture Development Plan (NADP) was developed by the National Department of Agriculture and Livestock (NDAL) under the Medium Term Development Strategy (MTDS) (2005-2010) as one of the Government’s sector programs for economic recovery and development. The NADP is the vehicle through which the Government intends to refine and implement its sector strategies as formulated under the MTDS. The MTDS aims to bring about rural development and poverty reduction through export-driven economic growth, health, education and agriculture development (NADP, 2007). In pursuing the NADP in line with its vision and mission, the NADP has identified several goals and purposes, one of which is “to improve the recognition of women’s contribution to rural industries and increase opportunities for women’s decision-making in agriculture” (NADP, 2007).

Empowerment of women and girls has been advocated by many NGOs and CBOs, however, there is still a long way to go in achieving the same status as men in many rural communities. In most Melanesian societies men still dominate decision-making at the household and community levels thus making it more difficult for effective participation of women and girls. Participation of women and girls in household decision-making is important for ensuring the family makes the best decisions on matters such as income-earning opportunities, family labour

allocations, family planning and household expenditure and so forth, especially when they lack education and have limited or no access to income (NADP, 2007; APAARI, 2012). Successful empowerment programs should be initiated to help both men and women better understand their operating environment and jointly improve themselves. These issues are addressed in this thesis.

1.5 Research aims and objectives

The main aim of this study is to provide insights into the role and impact of female agricultural extension officers on women's participation in household production in major export cash crops of palm oil, coffee, and cocoa. While coffee will be the main focus of the study, information from oil palm and cocoa industries will provide a comparison with coffee with the aim that some of the lessons, pitfalls and successful strategies from these industries could be utilised to inform and develop coffee extension. This study will focus attention at the institutional level of the three major agricultural export commodity organisations in PNG, and at the smallholder household level.

The main objectives of this thesis are to:

1. Ascertain the level of 'feminisation' of the major agricultural extension agencies for each of the major export cash crops (coffee, cocoa and oil palm) and the range of extension programmes specially targeted to female smallholders over the past three decades.
2. Identify the gender constraints on women's recruitment, training and everyday activities as extension officers.
3. Assess the views of female smallholders on the role and effectiveness of female extension officers for improving their knowledge, participation and status in the production of export cash crops.
4. Identify strategies to improve the effectiveness and status of female extension officers in PNG.

Table 1.1: Values and quantities of Papua New Guinea agricultural exports 2010 – 2016.

	2010 Value (Kmillions, Amounts (‘000 tonnes)	2011 Value (Kmillions, Amounts (‘000 tonnes)	2012 Value (Kmillions, Amounts (‘000 tonnes)	2013 Value (Kmillions) Amounts (‘000 tonnes)	2014 Value (Kmillions) Amounts (‘000 tonnes)	2015 Value (Kmillions) Amounts (‘000 tonnes)	2016 Value (Kmillions) Amounts (‘000 tonnes)
Palm Oil	1024.7	1477.4	1009.9	903.5	1086.4	837.6	1014.7
	485.6	571.9	483.0	487.2	514.8	486.9	540.7
Coffee	521.0	927.4	478.5	336.7	450.3	393.5	571.4
	55.9	73.5	55.5	48.5	48.4	42.8	60.5
Cocoa	347.6	320.3	182.6	206.0	243.1	255.7	319.5
	41.3	47.4	38.1	38.7	33.6	30.9	35.6
Copra	21.9	70.8	33.1	13.2	63.7	45.0	80.4
	18.6	43.7	32.9	15.8	48.2	33.6	43.5
Copra Oil	130.2	173.9	56.1	24.5	28.7	39.2	60.1
	46.0	45.2	22.0	13.5	11.1	14.6	17.9
Rubber	32.4	40.9	33.1	19.4	13.8	7.9	8.0
	4.6	4.2	5.1	3.4	3.2	2.2	2.4
Tea	18.4	14.2	11.7	10.4	8.4	4.9	3.8
	4.6	4.0	3.8	2.9	2.1	1.3	0.9

(Source: Bank of Papua New Guinea and Commodity Boards, 2016)

These objectives underpin the main research questions in the study, which include:

- What types of extension programs and interventions have been implemented in the coffee, cocoa and oil palm industries to support women?
- What are the experiences of female extension officers working in the three different export commodity crop sectors?
- What lessons can be learnt from the successful strategies introduced in oil palm to inform coffee extension?

1.6 Significance of study

This study will be the first in PNG to fill the gap in our knowledge regarding the role and impact of female extension officers in the main commodity export crop sectors in PNG. There has been some work in oil palm (Koczberski, *et al.*, 2001; Koczberski, 2007) which revealed very large gains for women in income and status when women's needs were addressed in commodity production and when female extension officers were engaged to work directly with them. However, generally there is little detailed information about women's role in other sectors such as coffee and cocoa given their significant contribution to export cash crop production. It is therefore, necessary to shift attention to women and examine the extent to which women's needs have been met in extension.

The thesis argues that without acknowledging women's important role in export production and ways to meet their needs through extension, smallholder household's production and income will remain limited meaning that production will be lower than what is possible and women's labour will be under-utilised.

1.7 Thesis outline

The thesis is organised into seven chapters. Chapter 2 begins with a brief review of the literature on agricultural extension in PNG. This is followed by a discussion on the participation of PNG women in food and cash crop production. Chapter 2 also discusses some extension initiatives introduced in the coffee, cocoa and oil palm sectors. Finally, the chapter will provide an overview of the 'women in coffee development program' in CIC Limited and its relationship to smallholder female farmers.

Chapter 3 describes the methodology and explains why a multiple-method approach was used in this study. It explains why the qualitative method was mostly adopted and the challenges of conducting fieldwork in the three different sites for the three (3) major export crops production in PNG.

Chapter 4 presents the results of the fieldwork and examines the experiences of female extension officers in the three different commodity crops of coffee, cocoa and oil palm.

Chapter 5 presents the findings of the evaluation of an extension program known as the Mama Loose Fruit (MLF) scheme in the oil palm sector and CARE¹ 'Graduate Program'. The discussion includes the outcome on the effectiveness of the scheme, the impact and outcome of the scheme and its long-term sustainability. The chapter also discusses Women in Coffee Development (WiCD) program implemented by CIC.

Chapter 6 provides insights into the views of female smallholder farmers relating to improved knowledge adoption and their participation and status in production of export crop cash crops.

Chapter 7 summarizes the research findings and outlines recommendations for improving the effectiveness and status of female extension officers in PNG.

¹ CARE has worked in PNG since 1989, implementing long-term development projects and responding to emergencies and disasters. CARE's main work in PNG focuses on: (i) community development; (ii) water and sanitation; (iii) education; (iv) agriculture and natural resource management; and (v) HIV/AIDS prevention and care. CARE also provided gender inclusive training through their partnerships with developmental partners in the coffee industry and through their 'Graduate Program' (CARE International (PNG), 2019, Online).

CHAPTER TWO

LITERATURE REVIEW

2.1 Background

This chapter has three aims. The first is to provide an overview of agricultural extension in PNG over the last three decades. Second, it summarises the literature on the participation of women in agriculture for food and export cash crop production. Third, the chapter examines and discusses some extension initiatives for women in the coffee and oil palm sectors. Fourthly, the chapter also discusses some gender programs for women's empowerment.

2.2 Overview of agriculture extension in PNG

Agriculture extension or advisory services can be seen as a two-way communication process, involving an information source and a receiver (Blackburn, 1994). Extension involves farmers and research/extension personnel. Thus understanding those involved in the extension process is very important for effective information and technology transfer (Mortiss, 1988). Effective extension is a very important tool in improving smallholder production and incomes in PNG. However, economic development in PNG has been constrained over the last two decades due to poor growth in agricultural production because very few smallholder farmers have adopted new technological innovations. Higher productivity occurs when smallholder farmers adopt improved, sustainable technology (Caven & Mckillop, 2001) and also have good access to markets.

The overall impact of agricultural extension services prior to Independence was a mixed one. Growth was measured by areas planted with tree crops and levels of annual agricultural exports. In the early 1970s, there was an exclusive focus on the promotion of commercial tree crops and livestock which resulted in the neglect of subsistence agriculture (village farming of staple food crops and rearing of domesticated livestock) by the extension service. This situation continues to the present time (Sitapai, 2011).

2.2.1 Early history of agriculture extension in PNG

Agricultural extension can be traced back to the 1930s when it was first directed at plantation crops for overseas markets (Dennis, 1981). This focus on the plantation sector persisted until

political independence in the 1970s (Sitapai, 2012) because plantation crops like coconut, cocoa and coffee were large-scale crops managed by expatriate managers to meet the demands of overseas markets. However, immediately after the country's independence in September 1975, the Organic Law on Provincial Governments (OLPG) passed in 1976 led to decentralisation of extension services from the national government down to the provincial governments. The OLPG facilitated the establishment of Provincial Governments, and the transfer of development functions and financial powers to them from the National Government. This created one national and 19 provincial extension systems without proper planning which were poorly resourced (Sitapai, 2012).

Extension services were further decentralised to the district level in 1995 with the Organic Law on Provincial and Local Level Government. This amendment to the Organic Law allowed the Provincial Government to give recognition to districts as the focus for local development planning and service delivery. However, this had further negative impacts on the delivery of extension services because the extension staff at the district level were reporting to the district managers and thus received no direction from the agricultural advisers at the provincial headquarters. Furthermore, the government extension services at the district and provincial level were poorly staffed and resourced, so the situation did not improve (Sitapai, 2012).

In the mid-1980s, the government adopted the Training and Visit (T&V) extension system which was a top-down approach mainly focusing on technology transfer (Sitapai, 2012). The T&V system was used to deliver extension support to smallholder farmers. The main aims of this approach were to identify suitable land for planting plantation or commercial tree crops as well as promoting the establishment of estate and smallholder crops using the recommended improved varieties including technical advice. Many of the agricultural projects were delivered using this T&V approach in the 20 years before independence (Sitapai, 2012). The same extension approach was also used in the development of land settlement schemes for rubber and cocoa in the mid-1960s and oil palm schemes in the 1970s (Sitapai, 2011, Murray-Prior & Padarath, 2013).

2.3 Issues requiring reform in agriculture extension in PNG

The PNG agricultural sector has faced many difficulties and challenges and has not been performing well over the past 20 years. There are many factors identified as being responsible for the lack of performance. The poor performance began immediately after independence in 1975 as a result of the decentralisation and the under-resourcing of extension services from the National Department of Agriculture and Livestock to the 19 provinces (Sitapai, 2012). This was soon followed by the creation of commodity boards for coffee and cocoa, and an

increase in the numbers of NGOs and church-based extension services and other service providers all providing varied plans and extension approaches. This resulted in the fragmentation of agriculture extension services because the service providers were working on an *ad-hoc* basis and competing with each other for resources. Also, the different extension providers had no sustainable long-term plans in their extension programs. Furthermore, lack of collaboration, networking and proper coordination in the overall extension system has over the years led to the duplication of activities and inefficient use of resources. As a result, the performance of the agriculture sector in PNG has remained poor or stagnant for more than 30 years since independence (Dekuku *et al.*, 2005, Sitapai, 2012).

In the mid-2000s, the government considered that it was important to address the decline in the agriculture sector, and improve extension delivery. In an attempt to do this, a two-day national agricultural extension summit (NAES) was held in May 2004 to discuss, deliberate and find potential solutions to address and revive the extension system in PNG. This was subsequently followed by two other post summit mini-workshops held in the same year in the months of May and June to further deliberate on the issues that were previously identified at the NAES (Dekuku *et al.*, 2005).

To date there has been no formal assessment or evaluation of the various extension methods that have been used in PNG in terms of their impact, sustainability, effectiveness and efficiency. However, the general conclusion drawn from the NAES reviews was that no single extension model would suit all purposes, and thus models more suited or appropriate to specific areas, needs and circumstances should be identified and promoted (Dekuku *et al.*, 2005; Lahis, 2008). The various types of extension models used in PNG are discussed further in Section 2.4 below.

2.4 Reforms to agriculture extension in PNG

Shifts in policy and the changing roles of the various levels of government in PNG over the last 30 years has brought changes in the delivery of agricultural extension (SSP, 2007). The overall aim of the changes in agriculture extension was to improve PNG's agricultural and rural development. In a country like PNG where the rural population is so diverse and dispersed, this is a challenge. Increasing direct farmer participation through the interaction between farmers and extension officers has been, and remains the main objective, nevertheless. There have been three general delivery systems of agriculture services in PNG:

the government-run system delivering on an area basis (national, provincial or district); the system targeting agricultural institutions; and the systems approach based on services provided by non-government organisations and community based organisations (Sitapai, 2012).

The first of these was essentially a centralised system until the mid-1970s (pre-independence period). Then in 1977, as explained above, the delivery of government services was assigned to 19 provinces. As a result of the 1995 amendment to the organic law on provincial and local-level government (LLG), 98 LLG districts were created with the view to fine-tune agriculture extension services. The commodity-based extension system changed dramatically during the 1980s through corporatisation and privatisation that resulted in the creation of about a dozen semi-government agencies (Sitapai, 2012).

The main challenges facing the national and provincial government extension services at the time were the adjustments required for decentralisation on the one hand while, on the other hand, trying to service the increasing extension needs of smallholders growing cash crops such as coffee, cocoa and oil palm. These competing development challenges also placed demands on the limited resources of provincial governments. Thus, while the projects initiated by the national government remained strong, agricultural development in the provinces was poor, as was extension delivery. This resulted in farmers being slow to participate in rural development (SSP, 2007).

In the late 1980s, commodity-based extension agencies were introduced with sector agencies responsible for coffee, cocoa, coconuts, fresh produce and oil palm. Four other commodity-focused agricultural organisations were also established: the National Agricultural Research Institute (NARI); the National Agricultural Quarantine and Inspection Authority (NAQIA); the Spice Industry Board (SIB); and the Livestock Development Corporation (LDC). The aims of these transformations were to meet the increased demand for research and extension on cash crops to increase productivity, to enhance program-based resource allocations and to develop the regulatory functions of the respective industries (SSP, 2007). The functions which were once controlled by the National Department of Agriculture and Livestock (NDAL) now became the responsibility of the commodity agencies targeting specific cash crops and livestock. These agencies are legally sanctioned, semi-government entities, operating under their own institutional structures and are responsible for channelling the delivery of

information, extension and research and technological innovation transfer to smallholder farmers (Sitapai, 2012).

The Government adopted the corporatization policy under which these commodity sector organisations such as coffee, oil palm, cocoa and coconuts were created. The main objective was to give autonomy to these industries, so they could be made accountable to their stakeholders. The organisations were also made responsible for their own funding through industry-imposed levies, however, they received, and continue to receive, additional funding from the annual Government budget allocations (Sitapai, 2012). For example, the PNG Coffee Industry Limited (CIC) was first established as the Coffee Marketing Board in 1964. It then became the Coffee Industry Board (CIB) in 1976. Then in 1986, the Coffee Research Institute (CRI) was established to carry out scientific research into all aspects of coffee husbandry and processing. The following year, the Coffee Development Agency (CDA) was incorporated as a company in 1987. In 1991, the three entities, namely, CIB, CRI and CDA were merged into a single entity called Coffee Industry Corporation Limited as per the *Coffee Industry (Statutory Functions & Powers) Act 1991*. Since then, the coffee research and extension functions were taken over by CIC and CIC has produced improved coffee varieties, agronomic and processing techniques and extension models for dissemination of proven technological innovations and packages to up-skill farmers to produce higher quality coffee beans (CIC, 2014).

The oil palm research was taken over by the Oil Palm Research Association (OPRA) in 1994 and the extension component by the Oil Palm Industry Corporation (OPIC) in 1991. OPRA is an industry body supported by the private estate companies and grower levies. OPIC is a statutory body funded by the government and grower levies. The oil palm industry has benefited from high yielding planting material developed from over 40 years of oil palm breeding in PNG by NBPOL (Sitapai, 2012).

Although the commodity agencies have faced similar challenges as their predecessors, their accomplishments have been mixed (SSP, 2007). Despite some successes, they still need to improve and promote partnership linkages between various agencies of the government and non-government sectors. Certainly, there is some duplication in their roles and functions that must be reorganised. The commodity agencies require more resources to boost their capacity to meet the large gaps in food crop and livestock extension services as a result of shifting

priorities (SSP, 2007). To overcome these challenges, it has been suggested that other agricultural extension models need to be adopted (SSP, 2007). These include:

- Nucleus estate extension:

This model is practised in rubber and oil palm. It has been applied relatively efficiently and successfully on a large estate scale in oil palm. The nucleus estate often involves vertically integrated companies, with the nucleus estate company being a major producer in its own right. Through the nucleus estate-smallholder model they provide smallholders with the followings:

- Seedlings
- Crop collection and transport;
- Fresh Fruit Bunch and Loose Fruit purchasing;
- Financial credit, usually interest-free;
- Pest and disease control operations;
- Direct extension and support services;
- Voluntary financial support to OPIC, the government extension service;
- Repair and maintenance of transport infrastructure; and
- Support for social infrastructure such as education, health and police (Orrell, 2011).

This model could also be applied to other crops, possibly on a small-scale, where a nucleus enterprise has a new crop or specialist product such as spice or essential oils, fresh produce or livestock, and provide technical and other outputs to growers, including the marketing of their outputs (SSP, 2007).

- Village extension worker (VEW):

This village-based approach to extension is appropriate in circumstances where funding is short to employ enough extension officers. The success of this extension approach requires VEWs to have good standing in the community and to have the heart for the community and be committed. They also need to have earned the respect and trust of the community (SSP, 2007).

- Farmer to farmer extension:

When a new farm is established under this model, the new family is linked to a trained family. Experienced and trained farmers visit new farmers and train them in the field on crop establishment and management techniques. The regular use of local language facilitates communication, so there are fewer cultural barriers to overcome (SSP, 2007).

- Output-oriented contract extension:

Contract-based extension is one of several extension approaches to providing better extension services to smallholder farmers due to the decentralisation and corporatisation of agricultural research and development in PNG that has occurred since political independence. Traditional extension services tend to be project oriented and motivated by targets such as numbers of farmers, hectares planted and livestock to be reached. Moreover, the results of traditional extension services have been characterised by poor sustainability because when funding discontinues, so too does the development they have fostered. In contrast, an output oriented contract extension approach delivers services at local levels (district, LLGs, council wards and villages), reaches remote areas and supports development of the private sector. It is cost effective and engages full stakeholder participation to develop an improved extension system. An example of this is the Smallholder Support Services Project (SSSP). The SSSPP operates as follows:

- Identification of smallholder extension needs
- Proposals for extension activity done based on needs
- Tenders are called for and contracts awarded
- Payments made on milestone basis as outputs are reached, and
- Monitoring and evaluation of activities (SSP, 2007).

Under the output contract oriented extension approach, there are funds dedicated for the award of contracts under the project. To maintain transparency, funding and management are isolated from delivery arrangements and contracts are given on the basis of technical merit and value for money, hence there is a stakeholder steering committee as watchdog (SSP, 2007).

2.5 Current status of agriculture extension in PNG

2.5.1 Agriculture extension services using farmer driven and participatory approaches in Coffee Industry Corporation

It is expected that a good extension model should promote public-private partnerships and strengthen linkages with sector agencies as well as with farmers, promote human resources and skills development and contribute towards human, financial and environmental sustainability (Dekuku *et al.*, 2005). For example, in 2004 the CIC extension services programme shifted from the traditional T&V system of farmer extension, which was characterised as a top-down approach of telling farmers what to do, to a Farmer Demand Driven Extension (FDDE) program (CIC, 2008b). CIC introduced a new extension approach, PRAP (Participatory Rural Appraisal Planning), which is a form of FDDE. The FDDE works with farmer groups to identify the training needs of farmers and where possible contract private service providers to provide tailored training to each farmer group. The core approach of PRAP was that the CIC extension officers conduct the initial farmer group profiling and carry out appraisal and training needs assessment. Then the actual training is contracted out to an independent service provider, or, by CIC staff in the absence of independent service providers (Murray-Prior & Padarath, 2013; CIC, 2008b). For example, after identifying the farmers' training needs, tenders are called for from independent service providers (private sector extension providers) who are selected on merit. The contracted service provider then delivers the specified training to the farmers. There is a preference to use local service providers who are familiar with the local context. The contractors are paid on a milestone basis until the contract is completed.

Despite the implementation of the new extension approach in coffee, it was not evaluated, until relatively recently (see below). The absence of an evaluation of the effectiveness of models such as the FDDE in CIC led to an Australian Centre for International Agricultural Research (ACIAR) funded project (ASEM/2008/036 – *Improving Livelihoods of Smallholder Families through Increased Productivity of Coffee-based Farming Systems in the Highlands of PNG*) to evaluate the effectiveness of the FDDE program used in CIC. This was to determine if there was room for improvement and how it could be scaled-up while remaining financially sustainable.

According to Curry *et al.*, (2017), the findings of the evaluation of the FDDE program indicated that the important principles of the FDDE approach were sound. The farmers have seen the value and usefulness of the FDDE program through bottom-up participatory

approach planning involving smallholder farmers themselves in identifying their problems and tailoring training provided to them to suit their needs. However, the lack of linking the farmer groups to markets, or to export firms, was a major problem. This was especially so given that group training and marketing had the potential to meet the growing traceability and quality demands of the rapidly emerging and expanding speciality coffee markets like Fairtrade, organic and single origin coffee where quality and sustainable production practices are of great importance (Murray-Prior & Padarath, 2013; see Batt & Murray-Prior, 2007). Moreover, operationally, slow administrative and financial processes within CIC greatly reduced the effectiveness of the FDDE because significant time delays in financial and administrative steps led to prolonged delays in the delivery of extension. This caused much dissatisfaction among service providers, CIC extension officers and those farmer groups affected by the delays. Other technical issues in the FDDE program were also identified, including the need to improve group screening processes, the PRAP process and the need for more training modules and materials to be developed (Curry, *et al.*, 2017).

A similar study (L. Aroga., pers.com. 2013 cited in Murray-Prior & Padarath, 2013) also evaluated the methodology used in the delivery of the FDDE in CIC's extension program. The study investigated the complete process of the FDDE methodology used, starting from conducting the training needs analysis by training providers, all the way through to the adoption of innovations acquired from the training. The study identified some areas in the training programs that required improvements. These included: the training providers lacking in-depth knowledge of the pests and diseases of coffee; knowledge of the coffee calendar and coffee pulper repair and maintenance; illiterate farmers not being able to understand training materials written in English; and the ineffective application of acquired technological innovation by farmers due to low coffee prices and cherry theft (L. Aroga., pers.com. 2013 cited in Murray-Prior & Padarath, 2013). The study recommended that CIC should improve on the knowledge gaps of its own extension officers as well as improve training programs to best address farmer's needs.

2.5.2 Public-Private Agricultural Partnership

The Public-Private Agricultural Partnership (PPAP) program was implemented in both the coffee and cocoa sectors in PNG. The PPAP program was financed by a loan facility from the World Bank and International Fund for Agricultural Development (IFAD), thus with support from the PNG Government. Its main aim was to improve the livelihoods and incomes of

smallholder farmers. The PPAP modality employs a public-private partnership model. The PPAP coffee component started in June 2011 in the four major coffee growing provinces, namely, Eastern Highlands, Simbu, Jiwaka and Western Highlands. The project has since been extended to ten provinces. The other six participating provinces are Enga, Southern Highlands, Morobe, Madang, East New Britain and East Sepik. The intervention by CIC's PPAP is making a significant contribution not only in agricultural production but also to professional skill development in PNG in the agriculture sector. The focus is on improving the delivery of agriculture services, especially extension to smallholder farmers in the communities. The PPAP model in coffee is effective (Wafiwa, 2017).

There are currently 36 private-sector partnerships (lead partners) supporting coffee development efforts, including coffee processors and exporting firms, non-government organisations and church groups. The lead partners employ extension officers and field assistants paid under project funding. These extension officers are trained by CIC experts. The primary goal of CIC-PPAP was to trial out an extension service pathway that is efficient and cost effective for coffee farmers. The project is developing an extension model that will ensure extension officers are in regular and close contact with farmers. The approach PPAP is undertaking through its partnership is to engage young men and women who have had some level of education, preferably at grade ten and above, and train them as extension officers and field assistants. These extension officers and field officers must be from the local area of operation. The rationale is that the extension knowledge and experience gained must remain in the area after the life of the PPAP project. Initially, under calls² 1 and 2 of the project, 297 extension officers were employed by 19 partnerships but only seven of those were female extension officers. From the PPAP records, under calls 3 and 4, women's participation increased to 37 of the 116 additional extension officers employed by 17 partnerships. Many of these aspiring women work as extension officers and field assistants. The design of the project is also giving women field officers increased standing in the communities as well. Extension officers live with farmers to maintain regular contact as this is now viewed as the way forward for agriculture development. The extension services under the conventional practice focused on production aspects of agriculture for years, which farmers were already

² Calls (1, 2, 3, 4) are separate rounds of calls for public tenders. Under the PPAP modality the calls are made and potential lead partners (coffee exporters/processors, NGOs) apply for funding under whatever the call number is and the successful lead partners are funded by PPAP and implement projects under strict World Bank guidelines. The lead partners provide institutional leadership to coffee grower groups that can lead to higher social capital.

familiar with. However, under the CIC-PPAP, extension services are market driven with a focus on helping farmers to find and establish market linkages to sell their produce. This has been the missing link in extension services, which is the knowledge for farmers to establish links with markets. The PPAP coffee will have served 30,000 farmers or households by June 2019 (Wafiwa, 2017).

2.6 Discussion on the PNG Literature on gender issues in PNG³

2.6.1 Role of women in agriculture

Recognizing women's involvement in commercial crop production and ensuring that they benefit from research, extension, credit, land tenure rights, market access and other elements of production, innovation and participation still requires a significant organisational shift in many agricultural services (Mehra & Rojas, 2008, p.1).

Today in many developing countries there is an emerging priority among extensionists as to how they could better serve women farmers. As cited in Rolling (1991), in many rural situations, especially in Africa, women play an important role in farm decision-making. This happens especially in cases where husbands are away working in urban centres and wives assume the role as head of household. Although women's involvement in farming varies between countries and cultures, it is common for women to perform a lesser share of commercial farming tasks than men, and for technological innovations to benefit the crops or tasks more commonly dealt with by men (Rolling, 1988). Most often technological interventions made available to assist male farmers do not necessarily benefit women and children. In fact the opposite sometimes occurs.

The way in which extension services are delivered can constrain women farmers from receiving information and training about new innovations. However, the common suggestion of having more female extension staff is not necessarily a solution to improve extension if women extension officers are prevented from travelling freely and meeting farmers due to cultural constraints or security risks. In fact, this challenge to successfully implementing effective extension activities for women may well be the most difficult problem currently faced by extension organisations in many developing countries (Meinzen-Dick *et al.*, 2010).

³ **Gender** “refers to the learned social differences between females and males throughout the life cycle. Although they are deep rooted in every culture, such differences are changeable over time, and have wide variations both within and between cultures. Gender, along with class and race, determines the roles, power and resources for women and men in any culture” (Murray-Prior & Padarath, 2013, p.8).

The PNG government's country report to the Committee on the Elimination of Discrimination against Women (CEDAW) (Government of PNG, 2009) reported that (cited in Murray-Prior & Padarath (2013, p.8).

Although men and women have equal rights under the constitution and PNG is a signatory to CEDAW, gender inequality remains a severe impediment to development and one of the most visible violations of human rights. PNG can be characterised as a patriarchal society in which women continue to face, at times, severe inequalities in all spheres of life: social, cultural, economic and political.

In PNG, even though the informal exchange economy continues to coexist alongside the cash economy, women generally hold low bargaining power concerning the distribution of household income. Women's access to income from export crop production can be a major area of intra-household conflict (Koczberski, 2007). Women in rural areas of PNG are also faced with the further problem of translating their agricultural work into economic empowerment and poverty reduction. This is due to heavy workloads; low educational status and literacy levels; lack of decision making powers; poor access to income and, limited access to capital and knowledge (Koczberski, *et al.*, 2001; Cahn & Liu, 2008; Ryan *et al.*, 2017).

Women also experience high levels of gender-based violence and discriminatory customary and statutory laws and practices that favour men's over women's access to land and other productive resources (Murray-Prior & Padarath, 2013). While many of these forms of discrimination are increasingly being addressed at the national policy level and in legislation (for example, laws against violence against women), in practice these policies and revised laws are difficult to enforce, especially in rural areas. The limitations rural women face in turn impose large social, economic and environmental costs on society as a whole and rural development is hampered, including delays in agricultural productivity growth (Murray-Prior & Padarath, 2013).

2.7 Smallholder women farmers of PNG

Women farmers are the major producers of food in PNG (Bourke & Harwood, 2009). The National Agricultural Development Plan 2007-2016 (NDAL, 2007) indicated that women contributed 50-70% of agricultural labour. They contribute greatly to diverse, local informal economic activities. Even though female smallholder farmers are the major producers of

subsistence food in PNG, as in other developing countries, inputs by women into agricultural production and their roles as economic agents are often not recognized, women's roles in family care and their domestic responsibilities in household management are over emphasised and, hence their roles as agriculture producers and economic agents are often not recognised (Koczberski, 2007; Manchon & Macleod, 2010). Because men and women have clearly defined roles in rural livelihoods, they will have different extension and training needs creating an 'invisible barrier' for women (Peters, 1986; Saito *et al.*, 1994).

The main constraints PNG women face in taking a more productive role in agriculture include limited access to productive resources such as land, lack of access to credit, low education and poor literacy levels (FAO/UNDP, 2002; Ellis *et al.*, 2006; Fletschner, 2008; Bourke & Harwood, 2009; see ACIAR, 2014, Online Report on human rights issues). Like women elsewhere, women are also disadvantaged by limited access to formal training programs and extension services (Meinzen-Dick *et al.*, 2010). In a developing country like PNG, while there is a long tradition of providing agricultural extension/training, much farmer extension training is only to the benefit of men who typically control export cash crop production. Women are largely excluded due to discrimination in extension, their lower levels of literacy and education, family responsibilities and daily demanding subsistence activities which prevents them from participating in farmer training. Women are also often excluded from extension training because policy makers do not recognise the importance of the subsistence and informal sectors (Fairbrain-Dunlop, 1997) where women dominate. Most extension targets training in the commercial agricultural sectors, where men are dominant, but women still play a significant role (Rennie, 1991).

“While extension can help in improving productivity and overall wellbeing, rural women tend to make less use of or simply have less access to extension services” (Murray-Prior & Padarath, 2013). According to Hill (2011), in an FAO (Food Agriculture Organisation) survey of extension coverage in 97 countries only 5% of all extension resources were directed to women. Furthermore, the same study showed only 15% of extension personnel were women. Fewer resources and attention are given to women than men, and extension and training in rural livelihoods has focused on the needs of men, thereby creating a barrier for women (Cahn & Liu, 2008).

2.8 Education and literacy levels

According to Ryan *et al.*, (2017), the current state of education in PNG is characterised by low levels of educational attainment and literacy, poor attendance in school, low retention rates and high levels of gender inequality. The average years of schooling received by Papua New Guineans aged 25 years and older is 3.9 years. This is low when compared with other regional Pacific nations like Solomon Islands at 4.5 years, Vanuatu at 6.7 years and Fiji 9.9 years (UNDP, 2013, 2014a, 2014b). PNG also has national literacy rates that are far below the regional average at just 62.4% of literate adults compared with a regional average of 94.4% (UNDP, 2014a). School enrolment rates are also low with a gross enrolment rate at primary level being 74.4% and secondary level at 44.4% (UNDP, 2014a).

Educational statistics also show a strong gender difference. Several studies found that PNG women are more likely to be illiterate and thus have lower levels of primary and secondary education and are less represented at university level than men (e.g. Gannicott & Avalos, 1994; Gibson & Rozelle, 2004; Kare & Sermel, 2013). The data from the United Nations Development Program (UNDP, 2013) also revealed that a higher proportion of males (69%) can read and write than females (57.3%); just 6.8% of adult women had secondary or higher educational level compared with 14.1% of men. Men also make up the majority (62%) of students at university (DFAT, 2012). Education plays an important role in development and poverty alleviation. Improvement in female literacy and education are also strongly linked to lower fertility rates, reduced infant mortality, better child health and improved household economic status (Rowe *et al.*, 2005; Boyle *et al.*, 2006).

Studies (e.g. Meizen-Dick *et al.*, 2010) have also revealed that women's low education attainment, limits their participation in training that relies heavily on written material. Low farmer literacy rates in PNG was one of the contributing factors that prompted the CIC to adopt Central Training Point (CTP) extension. CTP emphasises (informal) adult learning, action learning, and participatory methods as opposed to formal (classroom) oriented learning. Adult learning is facilitated through the use of practical garden demonstrations, field days, video shows and radio programs (Yogiyo, 2002). In 2002, the CTP was replaced by the FDDE approach because of cost-cutting measures and the need to reach farmers in larger numbers. However, under the FDDE approach, printed materials such as scientific publications and extension training manuals, posters, flip charts, pamphlets, farming notes are used. Most of

these printed materials are written in English and this hinders the transfer of information to female farmers (Sengere, 2007).

2.9 Socio-cultural barriers

Time constrains and cultural barriers also hinder women's participation in extension activities such as field days away from their villages or within mixed social groups. Furthermore, women are sometimes excluded from extension and training for cultural reasons. From my own experience as an extension officer in PNG for 20 years, contact between unrelated men and women is often not culturally acceptable, thus making extension and training very difficult for women, especially when trainers and extension officers are men. There is only a limited number of women with the education and qualifications to enable them to become trainers and/or agriculture extension officers (Rennie, 1991). Training venues present another hurdle for women's participation. Travelling to attend training courses can be difficult, especially for women living in remote villages with limited access to transport. If a bus fare is required to reach a training course, men are more likely than women to attend. Sometimes, women will be fearful of their husbands, who may disapprove of their engagement or participation in training. This is made even more difficult if the training is held for a whole day or over several days (Byford, 2002; Cahn & Liu, 2008). Finally, in some parts of PNG, security issues are a major concern for women travelling long distances or staying away from their villages.

2.10 Labour and demands

Gender inequality in PNG often means women experience major barriers to participating in decision-making in their communities (Murray-Prior & Padarath, 2013). For example, one such barrier to participation is women's heavy workloads. As previously noted by Koczberski (2007) and Manchon & Macleod (2010), women are sometimes unable to attend training because of their high workloads associated with their roles in income generation, food gardening, in addition to household chores, childcare and community care. To sufficiently support their families, communities and themselves, rural PNG women engage in various livelihood strategies. For the wellbeing of their households, many work for long hours (Uniquist, 2013). Although there are differences in the literature regarding the gendered division of labour in agricultural production in PNG (Koczberski, 2007; Cahn & Liu, 2008; Manchon & Macleod, 2010), it is generally accepted that gender roles are strongly defined. Bourke & Harwood (2009, p.432) argued that both men and women typically worked together in their food gardens, sharing almost all of their labour. However, in a participatory mixed

method study in the three geographically diverse regions of PNG: Western Highlands, East New Britain and Central Province, Mikhailovich *et al.*, (2016) reported that there were different agricultural labour demands between men and women, and between young and old. They concluded that women had longer working hours in subsistence production and a greater number of responsibilities than men taking into account the work women do within the home. This was confirmed by Overfield (1998) among coffee smallholders' households at Bena in EHP. Overfield showed that women worked over three times as long as men on household tasks such as rearing children, attending to sick and old as well as preparing and cooking meals.

This unequal division of labour within the household creates a heavy time burden for rural women that is aggravated by inadequate or inaccessible social and health services, and a lack of facilities and institutional support. Although Overfield (1998) demonstrated that coffee is a household activity that drew on men and women's labour, women still tend to work more hours than men. This is especially true during the coffee harvesting period, when women face even greater workloads, working on average around 12 hours each day during the coffee season. Similarly, in a study in the Lufa District, Eastern Highlands Province, where coffee production is a main livelihood activity, women had difficulties supplying enough labour to tend to food crops and coffee (West, 2012). Lufa women often discussed their unequal burden in terms of horticultural labour and the need to assess the time and returns from food gardening work against the time and returns they achieve from doing coffee work. They put more time into coffee but were not compensated well by their husbands compared with what they could earn from vegetable farming. For efficiency in weeding, these women engaged in communal weeding work. They did this on a reciprocal basis. Each woman's weeding job is achieved in the least amount of time given the volume of labour involved. These weeding parties are mostly multigenerational and multi-lineage (West, 2012). The women also considered their own health status in the wake of these labour burdens and thought the number of miscarriages was on the rise. Whilst men believed miscarriages were due to increased sorcery in the district due to jealousy over the proposed mine nearby, the women believed miscarriages were linked to overwork (West, 2012).

2.11 Access to income earned from export crop production

Despite women's significant labour contributions to coffee production in PNG, their labour is often not fairly remunerated leading them to withhold labour from production. Several studies

in PNG and elsewhere have noted the disincentive to invest labour in commodity production by women and the negative impact it has on the quantity and quality of smallholder production (Carney & Watts, 1991; Collett, 1992; Mackenzie, 1993; von Bulow & Sorensen, 1993; Overfield, 1998; Dolan, 2001; Koczberski *et al.*, 2001). Whilst women provided much needed labour for harvesting they often were not compensated adequately or fairly. Overfield (1998), argued that the poor returns to women's labour affected the supply of female labour in coffee production with women withdrawing all or part of their labour resulting in a significant reduction in smallholder coffee production and household incomes. Income from cash crops including coffee typically belongs to the head of the household, usually the men. Most times, the men spend the income without having much consideration for their wives and households.

Where women's labour in commodity production such as coffee production is remunerated adequately, their labour contribution tends to be greater and there is more likelihood that the household will work together cooperatively to achieve higher production and income (Mackenzie, 1993, Dolan, 2001; Sengere, 2016). As Dolan (2001) noted in her study of French bean contract farmers in Meru District of Kenya, when women learnt that they were able to retain a certain portion of income for themselves, they diverted their labour from food production to commodity production (cited in Koczberski, 2007). Koczberski *et al.*, (2001) in their study of improving productivity of the smallholder oil palm sector in PNG reported that access to family labour was a critical factor explaining smallholder productivity. The most productive smallholder households tended to be those with high levels of inter-and intra-household co-operation during harvesting and a fair distribution of the income earned from oil palm.

The PNG Gender Assessment Report 2011-2012 (Schoeffel & Meleisea, 2012) discusses the problem of identifying the household as the production unit, with the view that members of the household share common economic interests and production incentives. However, many men do not consider their wives or other family members when income is distributed from commodity crop production, and this often results in disputes over allocation of income and/or withdrawal of women's labour which can be a major source of conflict in smallholder households.

Women on average receive approximately a third of all coffee income compared with their male counterparts in PNG (Overfield, 1998). Overfield also indicated that this disparity

becomes more extreme during high coffee prices, indicating that men hold onto most of the price increase with few or little benefits of the price increase being passed on to women. Therefore, despite the overall high income potential from coffee, many women focus on vegetable production as they have more influence and control in planting and harvesting food crops for sale and more ownership of the income earned from their sales (Overfield, 1998; Inu, 2015). Inu (2015) noted that it was difficult for women to access land for coffee because it is a long-term crop and also land is owned by men. However, women can cultivate other food crops like pineapple and broccoli for sale independently of their husbands because land use for these crops, like subsistence food crops, is on a short-term basis. This has led to women switching their labour from coffee to vegetable production because they have more control over the income earned and can receive good returns on their labour.

Lummani (2006) indicated that, it is a cultural norm in a patriarchal Iamaru Village in Buin Autonomous Region of Bougainville (ARoB) for male household heads to exercise a decisive influence over family resources and control of income. This is not perceived negatively in cultural terms as many male household heads stressed that a wife duly recognises a husband's role. However, some men confided to Lummani that in some families, a wife may exercise greater control over the use of family resources. This may be due to an influential personality that recognises female household heads are good managers of household resources. In such cases, a husband may allow his wife to exercise greater control over household finances, especially if he feels that he might easily acquiesce to requests for money from friends and relatives to buy alcohol or engage in gambling or other entertainment. He is less able to do this if his wife controls the money.

2.12 Decision making in coffee production

PNG is predominantly a patrilineal society and the land in many parts of the country is controlled by men. Despite, women having a large role in coffee production, they have no rights over land ownership as coffee grown in patrilineal societies is owned by men. Thus, female rights to independent access to land are limited within coffee farming communities (Inu, 2015). Considered to hold secondary use rights, women may never access land without prior activation of their use rights by their husbands. Coffee is thus deemed belonging to men (Overfield, 1998). It is for this reason that men in coffee producing households play the major role in decision making and also control the marketing of coffee (Cahn & Liu, 2008). Furthermore, in PNG's mostly patrilineal society, there is that deep-rooted belief that women

should play a secondary role in household decision-making and are expected to obey men (Cahn & Liu, 2008). Thus, even women who were able to attend extension trainings, were often unable to apply their knowledge to coffee gardens as decisions over farm inputs were largely male dominated (Cahn & Liu, 2008). However, as stated above not all husbands restrict their wives from participating in decision-making and many women do exercise agency in household decision making (Murray-Prior & Padarath, 2013). Thus socio-cultural factors can influence farm decision-making as much as economic factors. However, there is little understanding of these socio-cultural factors. In some areas with the support of their husbands or other men in their lives, women are forming their own groups for producing and marketing coffee and beginning to establish links with other women's organisations (Murray-Prior & Padarath, 2013).

2.13 Access to capital and knowledge

Although women can sometimes have access to extension services, the benefits may not always be obvious. For example, this was shown in a case study of the Integrated Agriculture Training Program (IATP) in East new Britain Province (ENBP) aimed to understand the program's goal to integrate the interests of rural women into the training program (Cahn & Liu, 2008). It was found that despite the success in implementing training suitable for women, meeting their needs and having a positive impact on women's livelihoods, the program's success in responding to gender concerns was limited. This was because constraints themselves were due to gender inequalities. These comprised low participation rate of women in the training courses, low educational levels of women, and the difficulties women faced in implementing changes to their livelihoods after training. Also, only those women with suitable educational levels and qualifications were able to become trainers and/or agricultural extension officers (Cahn & Liu, 2008).

Similarly in Kenya, the contact with extension providers by both male and female farmers contributed significantly and positively to the plots managed by men but not necessarily to the plots managed by women (Saito *et al.*, 1994). It was also reported that extension service providers had more regular contacts with male farmers than with female farmers because of the general misperceptions that women do not farm and that information and extension advice received by male household heads will 'trickle down' to all other household members. Also, it was noted that extension services were more likely to be directed towards farmers who were perceived to be more likely to adopt innovations, for example, by those farmers who have

access to resources and are in well-established areas. As discussed above, women are seen to have less access to resources, which may result in them being bypassed by extension service providers (Meinzen-Dick *et al.*, 2010).

2.14 Family and sexual violence

Gender inequality and family and sexual violence (FSV⁴) are very serious problems throughout PNG (Macintyre, 2008; UNDP, 2014b). As stated by Murray-Prior & Padarath (2013, p.11), “the endemic levels of violence towards women have implications for public health and social policy, economic development, and law enforcement”.

The main reason for such violence is the low status of women in PNG. This stems mainly from the way in which boys and girls are raised to accept the given gender norms and the subordinate position of females in the society. Consequently, many women and men tend to think that the roles and responsibilities of women, including agriculture production and childcare are normal capabilities of their biological capacities (Murray-Prior & Padarath 2013). It is often believed in PNG that women’s role is to fulfil their domestic responsibilities to the satisfaction of men in the household, and if they fail to do so then they deserve to be rebuked and sometimes physically hurt (Murray-Prior & Padarath, 2013). Research in PNG indicates that one of the common reasons men give for committing violence against women is women’s failure to fulfil their domestic responsibilities (Murray-Prior & Padarath, 2013). Furthermore, Wardlow (2006) argues that the practice of bride price in modern times only demonstrates and signifies ownership thus giving men the ‘right’ to physically hurt their wives.

Haley & Muggah (2006) reported that early marriage often increases women’s vulnerability by disrupting educational opportunities and social ties. Women are being watched very closely, castigated and socially excluded if they are found to be in breach of their boundaries of kinship, custom and convention. Infidelity, polygamy and promiscuity are also fuelling violence against women in communities.

⁴ FSV includes intimate partner violence, violence against children, broader family violence, violence within the community and violence perpetuated by the state.

2.15 Gender inclusion programs for PNG female farmers

The education of PNG farmers through agricultural extension has typically focused on technology transfer and on training for the development of cash crops (Sitapai, 2011). As noted earlier, it is often the men who have benefited most from such a form of farmer education. Much extension, therefore, overlooked women's work in the informal sector. Moreover, as pointed out above, it often excluded women because they often have lower levels of education and literacy, high family responsibilities and their daily work on subsistence crops prevented them from taking part in farmer education.

The section below provides a brief overview of the recent extension programs that have been introduced in PNG that have specifically targeted female farmers.

2.16 Family farm teams program

The Family Farm Teams Program (FFTP) was designed and implemented in parts of PNG (Pamphilon & Mikhailovich, 2017). The FFTP had two aims. The first aim was to develop experimental learning modules that would assist male and female farmers to consider their family roles and develop them in a way that would improve and benefit the family farm. The program had four learning modules, including: (1) Working as a family farm team for family goals; (2) Planning your family farm as a family team; (3) Communication and decision-making as a family farm team; and (4) Feeding your family farm team.

The second aim of FFTP was to train and build local teams of village community educators (VCEs). The VCEs contributed their local knowledge to the design and delivery of the learning modules and the evaluation of the FFTP. VCEs (at least 60% women) were selected by the PNG partner agencies such as National Agricultural Research Institute, East New Britain Provincial Department of Primary Industry, Baptist Union Church, Sonoma Adventist University and the local communities of Tinganagalip and Vunapaladin in ENBP. After each learning module, the VCEs were to apply the learning in their own family, then share the learning with their extended family and clan, and with groups through their local networks or affiliations such as churches.

The FFTP demonstrated the effectiveness of working with both men and women farmers in PNG. Both genders found the family teams' approach to farming activities relevant and constructive. The resonance of the gender-inclusive family teams' philosophy with PNG

farming families indicated an effective pathway to facilitate more equitable and productive family environments for women (Pamphilon & Mikhailovich, 2017).

2.16.1 Women empowerment programs

In 2002, the National Agriculture Research Institute hosted the Women's Voice in the Food Chain Program which began a formal process in capturing and facilitating the role women play in food production and food security (Philpott *et al.*, 2004). The programme highlighted the issues faced by women, including those discussed previously such as poor literacy, cultural barriers and the lack of capital and information. It highlighted the critical role women play in agricultural production without formal recognition, and the need to formalise a process of facilitating women's meaningful involvement and contribution to food and cash crop production that requires much more than simply inclusion in training. Instead, it is necessary to study the whole system; the larger community in which women live and ensure that the community members and industry stakeholders understand the economic and social benefits of women's involvement throughout the coffee and other export crop industries (Murray-Prior & Padarath, 2013). Moreover, the same study explained that the women's empowerment framework such as that of the International NGO, CARE (Australia), offers a more holistic approach. According to CARE's definition of empowerment (cited in Murray-Prior & Padarath, 2013), women's empowerment is the combined effect of change in:

- A woman's ability to own knowledge, skills and abilities (agency);
- The power relationship through which she can negotiate her path (relations); and
- The societal norms, customs, institutions and policies that shape her choice in life (structures).

As discussed above, such holistic approach to empowering women should be adopted and implemented in the coffee industry. Several other participatory extension approaches have developed in an effort to shift from the top-down model of extension service provision to a more farmer friendly approach that targets women.

There are three gender specific programs in oil palm and coffee that have extension initiatives specifically for women farmers. These have been assessed as part of the thesis and are discussed in Chapter 5. The first is the 'Mama Loose Fruit' scheme in oil palm which started

in 1997. The scheme pays women for harvested oil palm fruitlets (loose fruit) separately from their husbands for oil palm harvests. It is managed by the agricultural extension body, the Oil Palm Industry Corporation and the milling companies.

The second program is the ‘Women in Coffee Development’ program in CIC which has been in place since 1996. The program provides training to women on various aspects of coffee husbandry and management practices such as nursery establishment, fertilizer management, pruning rehabilitation, pest and disease management, harvesting, pulping, drying, packaging and marketing (Chapter 5).

The third program is the ‘CARE Graduate Program’, initiated by CARE International (PNG) in 2015 as part of CARE’s work with coffee companies. The graduate program was established to empower women and young female agricultural graduates from colleges and universities. Its aims are: improve the companies’ policies and practices so they are more gender equitable and inclusive; support stakeholders to increase women’s access to extension services and improve family business management practices; and address intra-household socio-economic issues to improve gender equality.

2.17 Conclusion

This chapter has reviewed the agricultural extension system in PNG, the difficulties and challenges faced in the delivery of extension services, and issues in agriculture reform. It also reported on the reforms of agriculture extension itself including recommendations and measures taken to address issues in the agricultural extension system at the national policy level. The chapter also summarised some relevant PNG literature on gender issues affecting the participation of women in agricultural production in PNG, and also included brief overview of extension initiatives and gender programs for women’s empowerment (discussed further in Chapter 5). The next chapter discusses the research methodology that was employed for data collection, and also explains how the data were analysed.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the field sites, data collection methods and the research and methodological framework applied in this study. Data collection focused on gathering information to identify the range of extension programs targeted to female farmers, to evaluate extension programs for women and to examine the every-day experiences of female extension officers (FEOs) in terms of their recruitment, training, employment constraints and the challenges they face. Data were also gathered from smallholder female farmers on the uptake of technological knowledge and their experiences of working with male and female extension providers. This chapter also discusses the ethical and moral considerations of the research and assesses the advantages and disadvantages of the research approach used in this study.

3.2 Study sites

The large majority of fieldwork was undertaken in three provinces: Eastern Highlands Province (EHP), West New Britain Province (WNBP) and East New Britain Province (ENBP) (Figures 3.1 – 3.3). The three provinces were selected because they are the major producers of coffee (EHP), palm oil (WNBP) and cocoa (ENBP). These three provinces also had the head offices of the major extension agencies (institutions) of the export crops examined in this thesis.

In EHP the data were collected at Arikayufa Village, in Goroka. In ENBP, the data were collected at Ramalmal village while in the WNBP the data were collect at Sarakolok Land Settlement Scheme (LSS) sub division, Morokea Customary Rights Purchase (CRP) block and Matavulu Village Oil Palm (VOP) blocks. All these block types are in the Hoskins area. Data was also colled at Vilelo LSS in Bialla area. The study sites can be seen in Chapter One (Figure 1.3, p. 6).

3.3 Research methods

Research methodology is concerned with the ways in which research is conducted, especially with its structure and process and how the information is analysed (Creswell, 2009). There are two main approaches to research methods: quantitative and qualitative. Both approaches were used in this study. Quantitative and qualitative research approaches are further explained below including a summary of the two approaches in Table 3.1.

Quantitative and qualitative research

Quantitative research is used to quantify a problem or phenomena by way of generating numerical data or data that can be transformed into usable statistics (Bryman, 2001). It can be used to quantify attitudes, opinions, behaviours and other defined variables and generalise results from a sample to a population from which the sample is drawn (Creswell, 2014; O’Leary, 2014). It uses measurable data to formulate facts and uncover patterns in research. It is a means for testing and verifying objective theories by examining the relationship among variables. The variables are measured so that the data can be analysed using statistical procedures. Quantitative data collection methods are much more structured than qualitative data collection methods.

Qualitative research is most often used to gain an understanding of underlying reasons, opinions and motivations (O’Leary, 2014). Qualitative methods also may be used to study personal experiences or structures within a particular society (Winchester & Rofe, 2010; Creswell, 2014). Qualitative methods are good for providing insights into the context of problems and help to develop ideas or hypotheses for potential quantitative research. Qualitative research is also used to uncover trends in thoughts and opinions and to dig deeper into research problems. Qualitative techniques typically seek to answer the questions of how, what, when and why of a given situation (O’Leary, 2014). These structures and experiences may include personal attitudes, on the value systems or viewpoints of respondents. Qualitative methods not only identify opinions and attitudes but also help in assigning experiences among various responses and how they relate to everyday life (Hay, 2010). Qualitative data collection methods vary, using unstructured or semi-structured questionnaires. In the social sciences, the most common qualitative methods include: online surveys, face-to-face questionnaire surveys, structured and semi-structured interviews, systematic observations (Creswell, 2009). Sample sizes are typically smaller than samples for quantitative surveys.

Mixed methods approach

In 2003, the *Handbook of Mixed Methods in Social Sciences & Behaviour Sciences* (Tashakkori & Teddlie, 2003) was published providing the first comprehensive overview of this strategy of inquiry. Now there are several journals that also emphasize mixed methods research such as the *Journal of Mixed Methods Research*, *Quality and Quantity*, and *Field Methods*, while numerous others encourage this form of inquiry (e.g., *Qualitative Health Research*, *Annals of Family Medicine*, and *International Journal of Social Research Methodology*). The mixed methods approach also recognises the limits of other various methods (Brannen & Moss, 2012; Greene, 2012).

As mentioned above, my study used a mixed method approach. Mixed method research is an approach to inquiry that combines or associates both quantitative and qualitative forms and it is widely used in the social sciences (Table 3.1). It involves philosophical assumptions, the use of quantitative and qualitative approaches, and the mixing of both approaches in a study. Thus “this approach is more than simply collecting and analysing both kinds of data: it also involves the use of both approaches in tandem so that the overall strength of a study is greater than either quantitative or qualitative research could provide on its own” (Creswell & Plano Clark, 2007). There are numerous published research studies which have incorporated mixed methods research in social and human sciences in many diverse fields (Lysack & Krefting, 1994), interpersonal communication (Boneva, Kraut, & Frohlich, 2001), AIDS (Acquired Immune Deficiency Syndrome) prevention (Janz *et al.*, 1996); and agricultural development (Koczberski *et al.*, 2001; Curry *et al.*, 2007; Cahn & Liu, 2008).

Multiple forms of data and the triangulation of data are very important components of mixed methods, and they are used to compare quantitative and qualitative data to determine if there is convergence, differences or some combination. For example triangulation can be used to cross-check the results of quantitative and qualitative research. The complementary application of both quantitative and qualitative research approaches can lead to making intelligent and practical synthesis (Johnson *et al.*, 2007; Creswell, 2014).

Mixed method approaches are commonly used on smallholder socio-economic studies in PNG. For example, some of the studies in PNG that have successfully used mixed methods to investigate problems faced by the smallholders farming communities include Koczberski *et al.*, (2001); Koczberski & Curry (2003); Curry *et al.*, (2007); Koczberski (2007); Cahn & Liu

(2008); Chambers *et al.*, (2011); Apis *et al.*, (2013); Chang *et al.*, (2013); Palaniappan *et al.*, (2013); Pamphilon *et al.*, (2013); and Spriggs *et al.*, (2013). The mixed methods used in these and smallholder studies have proved suitable and successful because they provide flexibility into the research process and allow the use of multiple approaches to obtain data and validate data through triangulation.

Table 3.1: Summary of quantitative and qualitative methods and mixed methods.

Quantitative methods	Mixed methods	Qualitative methods
Pre-determined.	Both pre-determined and emerging methods.	Emerging methods.
Instrument based questions.	Both open-and close-ended questions.	Open-ended questions.
Performance data, attitude data, observation data and census data.	Multiple forms of data drawing on all possibilities.	Interview data, document data and audio-visual data.
Statistical analysis.	Statistical and text analysis.	Text and image analysis.
Statistical interpretation.	Across data base interpretation.	Themes, patterns interpretation.

(Source: Adapted from Creswell, 2009).

Drawing on previous smallholder studies in PNG, my research approach draws on multiple collection methods data. These include structured, semi-structured and informal interviews, focus groups, observations and secondary data, such as government, organisational and industry reports and documents, and industry website pages. I chose this approach because it was considered the most likely method to lead to an in-depth understanding of my research questions and best to assist in exploring the research objectives of my study. Other advantages of mixed methods are summarised in Table 3.2. Moreover, I am also conscious of some of the disadvantages of the mixed methods approach in my data collection (Table 3.2) (see also Brannen, 1992; Johnson *et al.*, 2007; Mertens, 2014)). This type of approach requires lengthy fieldwork and it can be challenging when triangulating a large number of data sources.

Table 3.2: Summary of the advantages and disadvantages of mixed methods.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Offer multiple ways of investigating a situation rather than using a single approach and method to understand a situation. • Multiple methods in which observations, secondary data, questionnaire surveys and pictures can be used. For example, using multiple methods also helps to further explore the same underlying phenomenon in a single study or in a series of studies. • Assist to increase findings of reliability and credibility through triangulation of the different results. The data generated by the approach are complementary and thereby reinforce confidence in explanations of data being interpreted. • Preliminary and in-depth data collection and analyses can generate new theories or hypotheses which can lead to new areas for further research. 	<ul style="list-style-type: none"> • Time consuming and expensive. • Large quantity of data can be collected and in many cases, not all data will/can be used. • Not easy to interpret conflicting results. • Limitation in researchers with poor statistical skills in analysing quantitative data.

(Source: Johnson, *et al.*, 2007; Mertens, 2014).

3.4 Fieldwork and data collection

Data collection at my field sites in ENBP, WNBP and EHP was carried out over nine weeks from 6th February to 12th April, 2017. Three other minor study sites were chosen to undertake data collection among female and male extension officers, mainly for coffee, and these included the provinces of Morobe, Madang and Oro. I had another follow-up trip of three weeks to collect additional data in January of 2018 to fill any gaps in my data (Table 3. 3).

My main respondents can be categorised into six main groups:

- (1) Female Extension Officers
- (2) Male Extension Officers
- (3) Female Farmers
- (4) CARE Graduate Program, female agricultural graduates
- (5) CARE Graduate Program, CARE staff member and
- (6) CARE Graduate Program: Supervisors.

Data sourced from interviews, focus group discussions and documents regarding the three export cash crops were verified through triangulation. For instance, the data from the survey questionnaires of female extension officers were analysed and explained in combination with the results from focus group data with female extension officers. The female farmers who participated in the interviews and focus group discussions were members of Cocoa Cooperatives, Coffee Farmer Groups, and women who benefited from the Mama Loose Fruit scheme (see Chapter 5). The data sourced from the male extension officers were recorded on the questionnaire sheets while all the other qualitative interviews with the female extension officers and female smallholder farmers were audio-recorded. The data from the interviews with male extension officers provided a basis to compare and contrast the way in which the female extension officers' stories were different from the men's stories. This will also assist in identifying the gendered nature of the narrative stories of the everyday experiences of extension officers.

From my experience, the Coffee Industry Corporation (CIC) Limited has a very good working and collaborative relationship with other commodity sector organisations such as Cocoa and Coconut Institute (CCI) and PNG OPRA (Oil Palm Research Association). This enabled me to easily make contact with these institutions to make arrangements for my first period of fieldwork and data collection. Furthermore, given my close working relationship and experiences with farmers, especially smallholder coffee farmers, I am familiar with the socio-cultural context of the respondents. This assisted me when conducting interviews and analysing my data. Moreover, I am also aware that because of my experiences with the coffee farmers and their socio-cultural environment context, it may have some influence on my interpretation of the data collected.

3.4.1 Sample selection

Female extension officers

The sample size of the FEO respondents in my study are small because there are very few female extension officers in PNG. In total there are approximately 20-30 female extension officers across cocoa, coffee and oil palm in PNG. Thus, I interviewed around 60% of the total number (12) of FEO in these industries. My interviewees included: a total of 12 female extension officers with representation in all three export cash crops (Table 3.3). Most of them had over ten years of experience and therefore were very experienced extension officers (see Chapter 4). There were three female extension officers in CIC interviewed. For confidentiality,

the provinces where the three CIC's FEOs are living and working are indicated as 'X', 'Y' and 'Z' respectively. 'X' and 'Y' Provinces were briefly visited to interview CIC female extension officers while another female officer from 'Z' Province was interviewed while she was doing her fieldwork in EHP. In the oil palm industry, six female extension officers working for Oil Palm Industry Corporation (OPIC) were interviewed, and for cocoa I interviewed three female District Rural Development Officers (DRDOs) from the Provincial Department of Primary Industry (PDPI). At the time of fieldwork there were no female extension officers employed by CCI. The three DRDOs are the only female DRDOs heading the three out of the four districts of ENBP. These DRDOs are government officers performing duties of extension officers in the public sector.



Plate 3.1: Interviewing female oil palm farmers at a Morokea Customary Rights Purchase block in Hoskins, West New Britain Province.

Male extension officers

A total of 17 male extension officers (MEOs) were interviewed across the three export crop sectors. Eight MEOs out of the total of 22 officers in CIC were interviewed. Most of the CIC

officers were unavailable for interview as they were out in the field carrying out urgent surveillance and pruning of coffee due to outbreak of the Coffee Berry Borer (CBB) pest in 2017. Six male extension officers from OPIC and three from the CCI participated in the interviews.

Female farmers

Female farmers were selected from the successful Lower Unggai Community Development Foundation (LUCDF) women farmer's group in coffee (for description of the groups see Chapter 5). Female farmers for cocoa were members of the Vunaiting Agro-farmers' Cooperative (VAC). There were four members of each group taking part in the interviews bringing it to a total of eight female farmers interviewed in both coffee and cocoa (Table 3.3).

In the oil palm industry in OPIC, the female farmers were not randomly selected but were targeted in their selection. I wanted to interview women who were part of the Mama Loose Fruit (MLF) scheme from the start in 1997 and also women who recently joined the MLF scheme. The MLF extension officers assisted me to identify the women and a total of 19 women were interviewed.

CARE Graduate program: Female graduates

The female agricultural graduates in the program were interviewed. Three out of the total of four female graduates were interviewed. One could not make it to an interview because she was pregnant.

CARE Graduate program: Organisational supervisors

Two major coffee export companies located in Goroka, EHP are partners to CARE Graduate Program. The Supervisors from these two organisations were interviewed. One supervisor from PNG Coffee Export/'Apo Angra Kange' Cooperative (AAK) was interviewed, while four supervisors from Monpi Coffee Exports from the Sustainable Services Section participated in a focus group discussion I conducted. A CARE staff member at the CARE office at Goroka was also interviewed to capture her views on the program as she was the one heading the CARE graduate program.

3.4.2 *Primary data*

My fieldwork involved interviews, focus group discussions and observations. They were carried out in five sections:

- Part A consisted of qualitative questions for smallholder female farmers (Appendix 1).
- Part B consisted of qualitative questions through oral history for female extension officers (Appendix 2).
- Part C consisted of qualitative interviews through standardised questionnaires for male extension officers (Appendix 3).
- Part D consisted of qualitative questions for CARE International graduates under the graduate program (Appendix 4) and
- Part E consisted of qualitative questions for CARE International (PNG) graduate program, supervisors from partner organisation whom the graduates of the program were attached to in their job placements (Appendix 5).

Interviews with smallholder female farmers were conducted in Melanesian Pidgin or English. I was aware that during the translation of English into ‘Pidgin’, some of the meanings could have been misinterpreted or taken out of context. Therefore, when I made translations, I tried to ensure my translation was consistent with the intent of the questions and if necessary I sought clarification with the officers of the participating institutions who were assigned to assist me with my fieldwork.

The interview questions for male extension officers were designed to elicit information on employment history, attitudes of male colleagues to working with female extension officers, promotions, human resource capacity building, working with female extension officers, major challenges or constraints when working with female extension officers, major challenges or constraints when working with female smallholder farmers. These questions were aimed to collect male views on the involvement of women as female extension officers and women’s involvement in export cash crop production.

Through the focus groups with female farmers, data were collected through informal discussion and observations. The discussion was recorded in notebooks and recorded using an audio recorder. The purpose of the focus groups was to seek detailed understanding of the expected norms and behaviours of each group and to find out their opinions about certain topics (Morgan & Kreuger, 1993). Another reason was to obtain the first-hand information from the

respondents' experiences, attitudes and reactions in a way that would not have been feasible using other methods such as observation or through questionnaire surveys.

Table 3.3: The categories of respondents, data collection methods, topic covered and purposes of the research methods used.

Respondents	Numbers	Methods	Topics covered	Purpose
Female Extension Officers (FEOs) (n =) Coffee = 3 Cocoa = 3 Oil palm = 6	12	Qualitative interviews through oral history e.g. Case studies through "Individual Testimonies".	In-depth personal/life experiences/testimonies. Year of recruitment, feelings of being employed (first time/or not), first deployment experiences, number of years employed, overall job experiences over the years, recognition through promotions, experience through human resource capacity building training, constraints faced in execution of duties.	Identify constraints on women's recruitment, training and deployment of FEOs as extension officers
Male Extension Officers (MEOs). (n =) Coffee = 8 Cocoa = 3 Oil palm = 6	17	Face to face structured interviews through standardised questionnaire.	Collegial experiences working with FEOs, advantages and disadvantages of working with FEOs. Should more women be employed as extension officers and why?	As men how do they wish to see women's involvement in coffee farming? Women as agriculture educators (e.g. FEOs), and as women farmers
Successful female smallholder farmer groups (coffee, cocoa & oil palm). (n =) Coffee = 4 Cocoa = 4 Oil palm = 19	27	3 x case studies (one case study each for a successful women's farmer group in coffee, cocoa and oil palm). Coffee (n=4 members) Cocoa (n=4 members) Oil palm (n=19 members)	Multiple case study approach. Information gathered through qualitative interviews, focus group discussions and observations. The topics covered were from the semi-structured interview transcripts appropriate to each case study group of coffee, cocoa and oil palm.	Assess the views of female smallholders on the role of FEOs for improved knowledge, participation and status in production of export cash crops. Factors contributing to the success of each group.
Female agriculture graduates from CARE International (PNG) Graduate Program.	3	Qualitative interviews through oral history e.g. Case studies through "Individual Testimonies".	Knowledge about the CARE graduate program, duration of the program, why applying for the program, expectations from the program, experiences about the program, recommendations, attitudes of male extension officers from partner organisations, experiences working with women	Being a graduate of the program, this is to capture their views about the CARE Graduate Program.

			farmers, challenges or constraints faced and additional comments.	
Supervisors from partner organisations taking part in the CARE Graduate Program (PNG Coffee Export/AAK)	1	1x case study with supervisor from PNG Coffee Export/AAK Cooperative.	Thoughts about the CARE graduate program, organisation's involvement in the program, advantages and disadvantages of the program, how the program can be improved, thoughts about female agriculture graduates participating in the program, recommendations and additional comments.	To capture their views as an organisation about the CARE Graduate Program.
	4	1x focus group with 4 staff members from Monpi Coffee Export, Sustainable Services Section.	Thoughts about the CARE graduate program, organisation's involvement in the program, advantages and disadvantages of the program, how the program can be improved, thoughts about female agriculture graduates participating in the program, recommendations and additional comments.	To capture their views as an organisation about the CARE Graduate Program.
CARE staff: The Graduate Program Coordinator.	1	Qualitative interviews through oral history e.g. Case studies through "Individual Testimonies".	Recruitment history; years of service; first job with organisation; position; experiences of working with women coffee farmers; attitudes of women coffee farmers; thoughts on women's involvement and participation in export crop production; challenges or constraints faced; brief on the 'paper presented at the conference at University of Goroka (UOG) campus about women farmers and female extension officers' and additional comments.	Share experiences and views about her job and the CARE Graduate Program.

1. Female extension officers

Interviews with the FEOs began by collecting their biodata (personal information) such as their names, the year they joined their organisation, current position, age category, home province, education level, marital status and commodity type. Then an interview guide sheet was used to collect information on recruitment, first job with the organisation, feelings of being newly employed, deployment, attitudes of male officers, years of employment, promotions, capacity building, everyday challenges and experiences as a female extension officer, experiences about the involvement and participation of women farmers in export crop production, experiences of working with women farmers and any additional comments that the interviewees wished to provide.

I also drew on my experiences as a FEO. I have 22 years of experience as a FEO as well as being a research field assistant in my previous two careers before joining CIC in 1998. Since 1998 I have continued as a female extension officer. I have much experience of working in a male dominated environment facing many challenges, capitalising on available opportunities as well as working very hard trying to earn the trust and respect of my male colleagues. Most recently I worked as the Training Course Coordinator, which is also in a male dominated environment. Furthermore, I also had extensive work experience with smallholder coffee farmers. Thus, I am very familiar with the socio-cultural context of my respondents in the study. Having had these experiences and knowledge, I am able to draw on my own experiences to illustrate some of the concepts or points I am trying to explain.

2. Male extension officers

Data collection meetings were held for each organisation for MEOs to meet with me, where I discussed the study and then had each officer complete a questionnaire survey during the meeting.

Interviews with the male extension officers began by collecting their biodata such as their names, the year they join their organisation, current position, age category, home province, education level, marital status and commodity type. Then an interview guide sheet was used to collect information on recruitment, first job with the organisation, feelings of being newly employed, deployment, attitudes of male officers towards female extension officers, years of employment, promotions, capacity building, comfortable working with female extension

officers, challenges or constraints faced working amongst FEOs, challenges or constraints faced working with female farmers, experiences about the involvement and participation of female farmers in export crop production and any additional comments that the interviewees wished to provide.

3 Female farmers

Interviews with women farmers began by collecting their biodata such as their names, the year they joined their group, position in the group, age category, home province, education level, marital status and commodity type.

Interview guide sheets were prepared for the women farmers in coffee, cocoa and oil palm. Each guide sheet was designed to pick up on the main issues for each crop. For oil palm, questions were focussed on the Mama Loose Fruit scheme.

4. CARE International (PNG) Graduate Program

The interviews with CARE International (PNG) Graduate Program were done in two parts. First, interviews were done with the graduates and, second, interviews were carried out with the supervisors of the organisation where the graduates were employed or were to be employed.

Female graduates

Interviews with female graduates began by collecting their biodata such as their names, the organisation they were attached with, home province, academic institution, educational level, marital status and age category.

Interview guide sheets were prepared for the female graduates. Each guide sheet was designed to pick up on the main issues about the CARE Graduate Program such as knowledge about the CARE Graduate Program, duration of the program, why they applied for the program, their expectations of the program, their experiences with the program, recommendations, attitudes of male extension officers from partner organisations, experiences working with women farmers, challenges or constraints faced and any additional comments they wished to provide.

Supervisors from partner organisations

Interviews with supervisors from the partner organisation began by collecting their biodata such as their names and organisation. Interview guide sheets were prepared for the supervisors of the different organisations who had partnered in the CARE Graduate Program. Each guide sheet was designed to pick up on the main issues about the CARE Graduate Program at the organisational level for the partner organisations such as thoughts about the CARE Graduate Program, the organisation's involvement in the program, advantages and disadvantages of the program, how the program could be improved, thoughts about female agriculture graduates participating in the program, recommendations and any additional comments they wished to provide.

CARE staff: The graduate program coordinator

An interview was also held with the CARE staff member who is the coordinator of the program. The interview began by collecting the biodata such as name, organisation, home province, education level and marital status.

An interview guide sheet was prepared for the supervisor or coordinator of the CARE Graduate Program itself. The guide sheet was designed to pick up on the main issues regarding her employment and about the CARE Graduate Program such as recruitment history, years of service, first job with organisation, position, experiences of working with women coffee farmers, attitudes of women coffee farmers, thoughts on women's involvement and participation in export crop production, challenges or constraints faced, and any additional comments she may wished to provide.

3.4.3 Secondary data

Prior to and following the fieldwork, the study drew on the following resources of secondary data:

- 1) Industry and organisational reports, for example, CIC and OPRA reports.
- 2) Institutional websites such as International Coffee Organisation (ICO), CIC, PNG OPRA, CCI and Bank of PNG (BPNG).
- 3) Socio-economic studies conducted among cocoa, coffee and oil palm industries in PNG.

3.4.4 Data analysis

After returning from my first period of fieldwork, the audio recordings of all 49 interviews were replayed and then transcribed to identify themes and patterns. Field notes and handwritten responses taken during interviews were reconciled with the audio recordings to confirm accuracy of the interview data. This also formed the basis of my quality checks on the data collected.

Interview data were categorised and coded by key themes and checked before entering into a computer spreadsheet. The categorising and coding system allowed for easy identification of common themes, topics, concerns, and experiences that emerged from the interviews.

The data were then analysed for each of the main respondents groups (FEOs, MEOs, female farmers, CARE Graduate Program female officers, staff and organisational supervisors). These data were then used to develop case studies and stories.

The quantitative data collected from MEOs were entered into an Excel spreadsheet and were summarised using Pivot Tables and Pivot Chart Reports.

3.5 Ethics

This research was approved by The Curtin University Human Research Ethics Committee (HREC) (Project approval reference number: 11762). The legal, moral and ethical dimension of my research were considered to be very important. Since my study was focusing on the three major export crops of PNG, I personally had written to the heads of the organisations seeking their permission to engage their staff and farmers in their respective commodity industries in my study. Each organisation granted me approval for the research.

Prior to the start of my first fieldwork period, I provided my travel itinerary and fieldwork plans in advance to the respective organisational heads of the three commodity crops so they could assist me with field logistics and local researchers during my fieldwork. Prior to the first stage of fieldwork in each province a meeting was held with the different stakeholders I wished to include in my study. I sought approval for their participation. I assured participants of the confidentiality of information obtained in the study.

Prior to conducting face-to-face interviews, meetings and focus groups with respondents, I made it known to the respondents that it was their decision to engage in an interview and they could withdraw from the interview at any time. After explaining to them their ethical rights and gaining their consent to participate, the interview or focus group would begin.

3.6 Limitations

Whilst, overall my fieldwork was successful, a few minor disruptions occurred during collection of data for coffee. There was a major outbreak of a serious coffee pest called CBB that occurred in EHP during the same month of my fieldwork in March 2017. When CBB was detected all CIC's resources such as vehicles, Global Positioning System (GPS) equipment and manpower were diverted to preventing the spread of the pest. This meant the number of intended respondents for the CIC MEOs was reduced from 15 to 8. I also was required to extend the period of my fieldwork because no vehicle was available until a later date. There were also no GPS tools available for my use to record the locations of my coffee study sites as the all the GPS tools were used in the CBB outbreak areas. This means I was unable to produce an accurate map of my study site in EHP.

3.7 Conclusion

To conclude, this chapter presented the research methodologies that were used in this study, the types of data collected and the purpose for which the data were collected. As it will be shown in the following chapters, the use of a mixed methods approach has allowed me to provide:

1. A detailed examination of the level of feminisation of the extension organisations for each of the major export cash crops (coffee, cocoa and oil palm).
2. To identify gender constraints on women's recruitment, training and everyday experiences as female extension officers.
3. To assess the views of female smallholders on the roles and effectiveness of female extension officers for improving their knowledge, participation and status in production of export cash crops.
4. To identify strategies to improve the effectiveness and status of female extension officers in PNG at the policy level.

The next chapter identifies the gender constraints on women's recruitment, training and everyday activities as extension officers in the three different commodity crops' institutions.

CHAPTER FOUR

EXPERIENCES OF FEMALE EXTENSION OFFICERS IN THE DIFFERENT COMMODITY CROPS

4.1 Introduction

Chapter 1 stated that the study explores how female extension officers make sense of their everyday experiences in their workplace in the different stages of their careers. Although there have been significant improvements for women in the workplace in PNG, particularly in terms of career opportunities, constraints on these improvements continue to exist (Mate, 2013). The way women make workplace decisions is often considered to be problematic because the choices they make seem to reflect the way they identify themselves, their experiences as well as the constraints they face in their place of work. One of the aims of this research is to develop an overall narrative that explores how female extension officers experience everyday work activities as well as to capture the constraints and challenges they face. In this chapter, I examine the most frequent experiences of female extension officers in the three different commodity crops. Seven case studies are presented of individual experiences of female extension officers. The case studies highlight the gender constraints on women's recruitment, training and the everyday work activities as female extension officers. The chapter begins by presenting an overview of the main characteristics of female and male extension officers I interviewed.

4.2 Participants in the study

Tables 4.1 and 4.2 outline the details of each participant interviewed and some background information. The identities of extension officers participating in the research have been concealed and pseudonyms have been used to preserve their anonymity.

4.2.1 *Female Extension Officers*

The 12 Female Extension Officers (FEOs) interviewed held various positions within the different commodity crops and have served their organisations for between five and 36 years. In terms of work experiences, the FEOs in the coffee and cocoa sectors have worked for longer periods and are more experienced than those FEOs in the oil palm sector (Table 4.1). All have tertiary qualifications. Most were married or single mothers. Only one officer was single and

without children. Most of these women were working in different provinces in PNG from where they were born. They experienced both living and working in other provinces and/or in their own home provinces with their husbands or on their own and with their children. Their ages ranged from mid-20s to 60 or more years of age. All are currently employed as extension officers, although with different job titles. The CARE International (PNG) female graduate officers were not included in Table 4.1 because they were recent graduates with less work experiences and were not full-time employees. Their experiences are discussed in more detail in Chapter 5. For confidentiality, some locations or provinces are indicated with X, Y and Z (Table 4.1) especially for female extension officers of Coffee Industry Corporation (CIC). Although they have different positions, however, they will all be classified as CIC Officers including their home provinces are indicated as A, B and C.

4.2.2 Male Extension Officers

The 17 Male Extension Officers (MEOs) who were interviewed held various positions within the different commodity crops and had served their organisations for between three and 25 years (Table 4.2). Most of them had college qualifications, while a few of them had university degrees. These male officers came from different ethnic groups in PNG and had experienced living and working in a number of provinces in PNG, and several had worked in their own home provinces with their spouses and children. Their ages ranged from late 20s to mid-50s.

In this chapter the discussion mainly explores the experiences of FEOs by analysing their experiences using six key categories:

- Recruitment processes
- Constraints/challenges in the job
- Training needs
- Promotion prospects
- Experiences with male colleagues, and
- Experiences working with female farmers.

These categories provided a framework for my data analysis of the: everyday experiences of female extension officers; the constraints and challenges they have faced; opportunities for capacity training; and recognition of their skills through promotion.

Table 4.1: Female extension officers' biodata.

N0.	Names (pseudonyms)	Industry & location	Age category	Education	Position	Year joined the extension	Years of service	Home province	Marital status
1	Mary	Coffee (X)	40-49	College	CIC Officer	1999	18	A	Single mother
2	Betty	Coffee (Z)	30-39	College	CIC Officer	2014	3	B	Married
3	Rosina	Coffee (Y)	40-49	College	CIC Officer	1999	18	C	Single mother
4	Margarete	Cocoa (ENBP)	40-49	College	PDPI-DRDO ⁵	1990	27	MBP	Married
5	Angela	Cocoa (ENBP)	60-69	College	PDPI-DRDO	1981	36	ENB	Married
6	Marilyn	Cocoa (ENBP)	60-69	College	PDPI-OIC ⁶	1992	25	MBP	Married
7	Cynthia	Oil Palm (WNBP)	30-39	College	Senior Extension Officer-Mama Loose Fruit Coordinator	2011	6	Western	Married
8	Michelle	Oil Palm (WNBP)	30-39	College	Extension officer	2012	5	Morobe	Married
9	Edna	Oil Palm (WNBP)	50-59s	College	Mama Loose Fruit Coordinator	1997	20	WNB	Married
10	Maureen	Oil Palm (WNBP)	20-29	College	New Development Officer	2012	5	WNB	Single mother
11	Vanessa	Oil Palm (WNBP)	-	College	Data Entry Clerk	2009	8	SHP	Married
12	Tora	Oil Palm (WNBP)	30-39	College	Administration Clerk	2016	1	WNB	Single

⁵ Provincial Department of Primary Industry-District Rural Development Officer.

⁶ Provincial Department of Primary Industry-Officer In-Charge.

Table 4.2: Male extension officers' biodata.

N0.	Name (pseudonyms)	Industry	Age category	Education	Position	Year joined	Years of service	Home province	Marital status
1	Roland	Coffee	30-39	College	PFTEC ⁷	2014	3	Jiwaka	Married
2	Joss	Coffee	30-39	College	Acting PFTEC	2014	3	Simbu	Married
3	Matthew	Coffee	40-49	College	Mobile Extension Officer	2014	3	Simbu	Married
4	Kevin	Coffee	40-49	College	Mobile Extension Officer	2014	3	Morobe	Married
5	Tony	Coffee	30-39	College	Mobile Extension Officer	2014	3	Madang	Married
6	Ralph	Coffee	40-49	College	PFTEC	2004	13	Morobe	Married
7	Anthony	Coffee	40-49	College	Manager-Omuru Research Station	1994	23	Simbu	Married
8	James	Coffee	40-49	College	Certification Officer	2014	3	Simbu	Married
9	Samson	Oil Palm	50-59	College	Divisional Manager	1992	25	WNB	Married
10	Edmund	Oil Palm	50-59	College	Extension Officer	2012	5	WNB	Married
11	Michael	Oil Palm	30-39	College	Senior Extension Officer	2004	13	ESP	Married
12	Richard	Oil Palm	30-39	College	Senior Extension Officer	2003	4	Morobe	Married
13	Alfred	Oil Palm	40-49	College	Extension Officer	2012	5	NIP	Married
14	Petrus	Oil Palm	30-39	College	Extension Officer	2014	3	ESP	Married
15	David	Cocoa	50-59	College	Extension Training Officer	1999	18	WHP	Married
16	Charles	Cocoa	30-39	College	SELFO ⁸	2002	15	MBP	Married
17	Steven	Cocoa	30-39	College	LCBO ⁹	2005	12	ENB	Married

⁷ Provincial Farmer Training and Extension Coordinator.

⁸ Senior Extension Learning and Facilitation Officer.

⁹ Learning and Capacity Building Officer.

I also analysed the attitudes of male colleagues towards FEOs as well as the attitudes of female colleagues towards their male colleagues. This information is included in this chapter.

4.3 Recruitment

The 12 FEOs were all recruited on merit through formal recruitment procedures of applying for their positions which were advertised in PNG's two daily newspapers. They were interviewed, and accepted their positions. Some coffee FEOs were recruited through the CIC industry recruitment drive. This recruitment drive operated in 1999, and recruited final year Agriculture students at the University of Natural Resources and Environment (formerly known as Vudal University College) in ENBP. These students were later asked to submit their curriculum vitae and copies of educational qualifications to the human resource section at CIC. Other FEOs were recruited because they had university qualifications such as diplomas and certificates in agriculture from recognised agricultural institutions as well as experience from previous work in agricultural related positions.

4.4 Constraints and challenges in their work roles

My interviews with the FEOs indicated that they faced many everyday constraints and challenges while performing their duties in the office and out in the field.

Table 4.3: Most frequently noted constraints and challenges by female extension officers.

Constraints and challenges	Percentages (n=12)
Lack of funding and management support to carry out their work	75
Difficulty working with males	58
Cultural barriers	50
Security and safety	25
Remoteness of work location	17
Bad weather	8

The results from the interviews showed that the main constraints faced by the FEOs were lack of funding and management support, followed by the difficulty of working with male colleagues, and cultural barriers (Table 4.3). These are explained in more detail below.

4.4.1 Lack of funding and management support

Lack of institutional management support in terms of funding and resource allocation has often hindered the work progress of FEOs according to their annual work plans. This is a major problem faced by the FEOs working in the coffee growing provinces of 'X' and 'Y'. For example, support in terms of quarterly operational budget allocations was often not allocated to 'X' provincial office to implement programs in that province. This has been an ongoing problem for some years including 2017 and this means that all annual budget programs have been put on hold in the province. Allocation of physical resources is also a major problem affecting the operations in 'X' Province. For example, there is no vehicle allocated to 'X' Province which makes it very difficult to service the vast coffee growing areas in the province. Staff movements and transportation of field materials including other programmed activities to field sites are severely constrained. This has resulted in the cancellation of all planned and budgeted field programs for the coffee project sites in the province. The office is also not resourced well either with office inventories such as computers, printers, facsimile, telephone and internet connections and email systems for ease of communication. In 'X' provincial office none of the office equipment is functioning. There are no funds to pay office bills (electricity, telephone and water bills) which has resulted in the disconnection of these vital services to the office. Extension operations in 'X' Province have effectively ceased.

Similar sentiments were also expressed by the FEO in 'Y' Province. The provincial quarterly budget allocations were not allocated. The office was not resourced well with the necessary office equipment for effective communications. Although 'Y' Province was allocated a vehicle, there were no funds for fuel, repairs or maintenance making it difficult to keep the vehicle on the road for official uses. Although numerous requests were made to the Head Office for the 'Y' office to be renovated because of health and safety concerns with the debilitated state of the building and inadequate sanitation, nothing has been done. None of these matters has been addressed at the time this thesis was submitted. The office is in a state of disarray. Like the 'X' office, most of the operations in 'Y' Province have been scaled down or suspended. Murray-Prior & Padarath, (2013, p.41) also identified financial costs to be a major ongoing problem in CIC in staying within its budget in their evaluation of CIC extension.

The FEOs in the oil palm sector also experienced the problem of not being resourced well to carry out their duties, although not to the extent of the FEOs in coffee. There was a lack of logistical support in terms of motor bikes and vehicles for field extension. For example, when

motorbikes are being serviced, there is no replacement for use. They rely on the divisional manager for transport, but when he is away from the office, his vehicle is not available. However, despite these problems the oil palm FEOs did have access to computers, printers, telephone and occasional internet access (although very poor speeds).

In the cocoa sector the female officers who managed the district operations (DRDOs) are also faced with funding problems to maintain their offices and implement their programs in their respective districts of Kokopo and Gazelle in Rabaul, ENBP. The funding allocation was not forthcoming from the Provincial Department of Agriculture and Livestock (PDAL). The female officer in charge of projects in the Baining Local Level Government (LLG) of Gazelle district also said transport is a major problem thus making it hard for her to make regular visits to the project sites.

The problem of severe funding constraints has affected the delivery of extension services in all the commodity crop sectors in PNG. This is due largely to the decline over many years of the allocation of funds to extension services in PNG (Sitapai, 2012). As mentioned in Chapter 2, cutbacks in funding of extension services remains an ongoing problem. The funding by the Government for agriculture extension programs has varied greatly over the last 20 years. It is impossible to give an accurate estimate of the annual budgetary allocation for agriculture extension support because of the proliferation of public and private sector entities involvement in providing agriculture extension services (Sitapai, 2012). Although, there has been an improvement in the provincial funding for agriculture extension over the last ten years under the District Services Improvement Program (DSIP) and other grants, the support for agriculture services overall has not improved compared to other sectors (Sitapai, 2012). It was also recognised in the recent agriculture summit held in Port Moresby in November of 2017 that the Government is currently very short of funds following several years of budget deficits and unexpectedly low revenue, notably from extractive industries (Barker, 2017). The summit participants therefore emphasised that the Government should focus on core functions of the state while allowing the private sector to conduct business as usual which they are best able to do, while the state provides public goods, including infrastructure, regulatory frameworks and a focus on law and order and governance, but also provides support for research and development and biosecurity and specialist services such as quarantine and veterinary (Barker, 2017).

The problem of severe organisational funding constraints together with the misallocation of resources and sometimes inadequate management support are factors hindering the work of both the FEOs and MEOs in all the commodity crop sectors in the provinces and the rural districts in PNG. These are very challenging issues when they are not being addressed adequately by the organisational management. These are especially challenging for FEOs when working in the major export commodity organisations which are typically dominated by men whose preferences and work needs often receive priority and attention over those of females. This is illustrated by Mary's story (Box 4.1).

Safety or security issues (25%) are a major concern for female officers especially when working alone in the field and without easy communication with colleagues. There are additional risks for women, because female officers are vulnerable to physical and sexual assaults in PNG. Security and safety issues are not often resourced well, for example, with a vehicle to enable female officers to travel long distances. A 4-wheel vehicle should be used to access remote sites which are accessible by road rather than expecting FEOs to walk for many hours as many FEOs have experienced in coffee, which exposes them to greater risks. Murray-Prior & Padarath, (2013, p.40) also identified safety and security as one of the constraining factors restricting the attendance of women in training, in their evaluation of CIC extension. Although none has experienced any physical assaults to date, such threats are still prevalent in society, especially in rural and remote PNG (see also section 7, Box 5.2 in Chapter 5).

Box 4.1: Mary's experiences of working in a male dominated environment.

Mary was recruited by her organisation through a recruitment drive in 1999. This was her second job with the organisation. Previously she was employed by Coconut Products Limited. She was overwhelmed and happy to work with her organisation as she believed that the job would be a permanent position for her. She said she looked forward to what the organisation could offer her in her job and how best she would contribute to the organisation. Mary took up her first posting in Simbu Province and looked forward to taking up the challenges and excitement of working in a new environment. Mary is a CIC officer in 'X' Province. She has been with CIC for 18 years. Mary is a single mother of two children.

When Mary initially began work she experienced some hostility from her male colleagues (see Box 4.2 for more information). These problems were eventually resolved.

However, in the interview Mary spoke more of the problems for women when there is a lack of institutional and financial support for women when working in a male dominated organisation. She said "I see that the resources and stuff like that, that the male counterparts are considered first and later female officers. They [management] are not listening to women counterparts in whatever they are trying to say or raise. Most of the time it is the males who are at the upper end to gain advantage over female officers".

Box 4.1 Cont.

Mary continued to stress the difficulties of being a female officer in an organisation where a lack of funding and management support prevail:

Some of the constraints I faced while working in partnership with other organisations are things like no functioning office computer, fax machine, internet connection and telephone. In my case in 'X' Province, most times I am not being resourced by my organisation properly. I was never given a vehicle to move around. By walking on foot for long distances I am putting my life at risk. As a woman I am prone to risks and my safety is very important. I am a one-woman operation here in 'X' Province. I don't have a Clerk or anyone under me at the moment and there are so many things I am loaded with. Now I am trying to offload these things. We are always talking about networking and partnership and trying to get people to assist me since I am not resourced. I keep on going to offices of DAL and CCI to seek assistance. I can't be forever going knocking on their doors. I have been doing that for the last so many years I have been working here. I feel bad about it. I am a beggar. I become another beggar in the streets of this town in 'X' Province begging people to give me this and that. It is a shameful thing for my organisation. Being a female I can't go on like this. I have to be backed up with resources. I have ended up with so many problems in the process of going through and begging people for assistance and services. I might end up selling myself to get things done. It is unethical and unprofessional of not being fully resourced and I don't like it and I become a laughing stock as you can see by other organisations who are being fully resourced.

The bosses and the officers there are all male counterparts and for a female officer going around asking for help (looking back at the PNG way of thinking, for a lady going around begging male officers every now and then asking for help) is not good. How are they going to think of me? I am being put in an awkward position. It brings shame on the image of my organisation. I have to be resourced just like my male counterparts in other provinces of PNG who are on the same level as me. Why are they being resourced and I am being over-looked? What is the thing that I lack? I should be resourced the same way as my male counterparts. I just don't understand.

(Translated and paraphrased from Melanesian Pidgin) (Mary, February 2017).

4.4.2 *Difficulty of working with male colleagues*

From the interview data it was revealed that being a female working in a male dominated environment can be very challenging for FEOs and can constrain their work performance. From my interviews, 58% of FEOs indicated (Table 4.3) that they had experienced difficulties working with their male colleagues. The difficulties and challenges faced by FEOs in the coffee sector are much greater than those faced by FEOs in the oil palm and cocoa sectors. For example, the male extension officers have been dominant in the workforce in the coffee industry for a long period and coffee is considered to be a male dominated crop among farmers. Hence, it was unusual for women to be employed as extension officers in the industry, thus causing some controversial and negative attitudes towards the FEOs when they were first recruited in 1999. Most of the FEOs at the time when they were first recruited were single mothers and having to start their careers in the coffee industry with the stigma of being a single mother.

However, the oil palm and cocoa situations were quite different because some of the FEOs, when recruited, had husbands working in the organisation before them making the work environment more receptive to them. As shown by Mary and Cynthia (Box 4.2), whilst there were some initial difficulties they gradually developed a good relationship with their male colleagues and male coffee farmers. Furthermore, the challenges were also different. For example, although coffee is smallholder based like cocoa and oil palm, it is grown by many smallholders in the remotest and most rugged terrains in the highlands of PNG. In contrast, oil palm and cocoa are grown on relatively flat land near the coast and have a high level of transport infrastructure.

The attitudes of male colleagues, whether they are happy or unhappy to have female colleagues working among them, can be challenging and cause discontent and unrest resulting in poor work performance. Men for example, have built a masculine workplace culture that favours men and excludes women to an extent. Mates (2013) stressed that, it is still not clear as to how women make sense of this workplace culture and how they recognise it to be the way in which this constrains their acceptability and performance. As Mary highlighted (Box 4.1), it is difficult or not always culturally accepted for a female to seek help from male officers. Given the way females are raised in PNG and even if one is educated, it can still be socially unacceptable for a woman to assert her authority in a male dominated workforce. Sometimes, as Mary stressed (Box 4.1), the lack of management's commitment to provide support for working in partnership with other organisations in service delivery has given a bad image of the organisation, as well as reflecting poorly on her character of a female officer who must go from office to office 'begging' for assistance. This of course is not limited to women. Both male and female extension officers faced similar problems with funding and resource allocation. However, women are more likely to receive less priority than their male counterparts when extension resources are allocated, and as outlined above it is culturally more difficult for women to assert their authority to gain greater access to resources.

Some of the FEOs interviewed referred to the unethical conduct of some male officers such as insubordination in performance of their duties when instructed by females as their supervisor. This is another major challenge for those FEOs in supervisory positions. Some of these difficulties are highlighted by Rosina, Mary and Michelle's stories in the four case studies presented in Box 4.2.

Box 4.2: Female extension officers' stories and experiences regarding male attitudes.

Rosina's Story

Rosina was recruited as a FEO through the recruitment drive employed by her organisation in 1999. This was her first job with the organisation. She currently holds the position as a CIC officer in 'Y' Province. She has faced many challenges over her 18 year career with the organisation. She is a single mother of two children. Rosina said:

I need to say this out. As a female officer I faced a lot of challenges with my male counterparts. I am currently managing this office and I have male officers working with me. It is very challenging especially with the PNG mentality where we are saying men are superior to women. It is a challenge for me with many things I face, like sometimes when instructions are given to men, they are not followed. Also as a female officer there is also the issue about male counterparts' wives' where it brings personal problems. Management should look into this. Although, it is challenging I want the management to look into these matters (Rosina, March 2017).

Mary's Story

Mary recalled her attitudes and impressions of the reactions to her by her male colleagues when she first started working as a FEO. She said coffee was a male dominated crop and since women were not 'traditionally' part of the workforce or employed as field extension officers, for her to be one of the first females recruited to work amongst the male colleagues in Simbu Province was difficult and considered not to be right. In the minds of her male colleagues it was not considered appropriate that a female work alongside them. As such she was placed in an awkward position. Her male colleagues doubted her ability and questioned how a female officer would impart coffee information to the large population of male coffee farmers and how these farmers would react to her. Mary also had similar thoughts in her mind but she kept them to herself. However, as she settled down in her new position, gradually all the negative thoughts held of her by her male colleagues faded as she proved them wrong in the sense that she performed her duties just like them. From there on she gradually gained the respect and trust of her male colleagues and has since worked well with them (Mary, February 2017).

Cynthia's Story

Cynthia was recruited in 2011 as a field assistant and was posted to a specific area to work alongside her husband who was also employed by the organisation two years before her in 2009. This was her first job with the organisation and she was very excited and happy in her new role. She said she had no problems working with her male colleagues. They were happy to have her on board and she had a good working relationship with them. The main initial challenge she faced was that the organisation was male dominated so she had to consider herself as being a male officer too and follow their rules. She has been with the organisation for six years and Cynthia said she has had no problems with the oil palm farmers as the farmers respect her as an officer. The farmers greet and talk to her politely when she rides her motorbike to visit their blocks (Cynthia, February 2017).

Michelle's Story

Michelle was recruited for the position of field assistant in 2012 and was posted to a relatively remote site. When she first joined the organisation she was nervous. This was her first job with the organisation. She has been with the organisation for five years. She is a single mother of two children. The initial attitudes of her male colleagues towards her were not good. She did not have a good working relationship with them. Even her immediate boss was not supportive and helpful towards her. Despite the negative attitudes of some of her male colleagues, she persevered to carry out her duties. Some male and female farmers supported her and encouraged her and this motivated her to perform well in her work.

Michelle has faced some major constraints and challenges in her job. The bad working relationship she had with her boss and male colleagues affected her performance and completing her work programs well. Male officers would talk behind her back and make false accusations against her. On one occasion they accused her of being absent from work for several weeks which resulted in her having her pay docked for three consecutive fortnights. Michelle said she actually had a few weeks off as sick-leave because her child was very sick.

Box 4.2 Cont.

She also faced the challenge of working with illiterate farmers. Some male farmers were very aggressive to her and demanded that their payslips from the sale of their oil palm fruit, be produced in a timely manner to them by the officers including her.

Payslips are produced at the company head office and is a management issue that she has no control over. Both male and female officers are often harassed if the payslips are not produced on time to the concerned farmers. However, being a female officer this aggression can be very intimidating (Michelle, February 2017).

It was interesting to find that while all male officers claimed to be happy working with female colleagues, around one-third of them in cocoa and coffee were not happy working with other MEOs (Table 4.4). This was not true in oil palm. These negative attitudes amongst male colleagues towards other male colleagues occurred for various reasons such as no cooperation amongst them, differences in educational levels and years of work experiences. It is possible the results reflect the greater competition amongst men for status in their organisation. It was also interesting to note that while all male officers claimed to be happy working with female officers, 58% of FEOs said they had difficulties working with male colleagues (Table 4.3). The negative attitudes of male colleagues raised in interviews by FEOs occurred for various reasons; such as some MEOs considered 'extension' to be a men's job only; for cultural reasons men obviously don't want to be seen to being on equal footing with women working as extension officers and/or get instructions from female officers. Also differences in educational levels where some FEOs have high educational qualifications than the male officers. For example, most of the FEOs are recent graduates and have diplomas while most of the middle-aged MEOs had their education in the pre-or early post-independence days and only had training certificates.

Table 4.4: Attitudes of male extension officers towards female and other male extension officers.

Sector crops	Percentages (%)
A: Coffee (n=8)	
Happy working with FEOs	100
Happy working with MEOs	63
Unhappy working with MEOs	37
B: Cocoa (n=3)	
Happy working with FEOs	100
Happy working with MEOs	100
Unhappy working with MEOs	33
C: Oil palm (n=6)	
Happy working with FEOs	100
Happy working with MEOs	100
Unhappy working with MEOs	0

Generally, it is perhaps ‘normal’ for men to say they had a good working relationship with female colleagues in workplace. However, in reality their attitudes towards female colleagues speak otherwise; this is highlighted in the interviews with FEOs. As stated previously, it was an interesting contrast for men to think that they had no problem working with women while women thought there was a problem working with men. Women were often forced to comply with men’s views when working in a male dominated environment. Also, male officers tended to overlook their responsibility to ensure their wives understood their job and working relationship with FEOs in the workplace. Misunderstandings can sometimes arise resulting in conflicts between the wife of a male colleague and a female extension officer.

4.4.3 Cultural Barriers

The most common form of cultural barrier FEOs identified was communicating with male farmers. Communicating information, especially to male smallholder farmers from a female officer, can be very challenging in PNG where patriarchal attitudes are widespread and entrenched (Manjor, 1999; Wardlow, 2006; Macintyre, 2008). Culturally, traditional norms mean that men are perceived to be superior to women (Cahn & Liu, 2008) and as such men are often reluctant to listen to woman officers or they dismiss the information given to them by women. The stories and experiences shared by the FEOs clearly showed that women in supervisory positions had more difficulties managing male staff because of the cultural bias and norms that give men more authority and status over women. This brings up the question of how do female agriculture extension officers deal with and overcome the cultural barriers affecting their performance in the provision of delivering extension services to both male and

female farmers, but more specifically to male farmers? One female officer adopted the approach of spending more time with female farmers. As Mary said:

There is the challenge of working on your own without subordinate staff while trying to break the cultural barrier of speaking to male coffee farmers. I had to use women farmers to get to the male farmers and such a proactive approach worked well for me. It was anticipated that whatever information I talked about or taught women farmers, they would share with their husbands and their husbands would listen to them (Mary, February, 2017).

For other female officers they also found that cultural barriers slowly declined over time as farmers continued to work more closely with them. Rosina explained that she experienced strong cultural barriers as an FEO especially when she worked in very remote locations in 'Y' Province. She found being female was a major problem in communicating coffee knowledge especially to male coffee farmers. But as she added the tide is slowly changing as male farmers are now beginning to have trust in female officers who would attend to them quickly when male officers are not there at the office as promised (Rosina, March 2017).

The experiences of Mary and Rosina, were similar to that experienced by other FEOs interviewed. These types of problems have been faced by women in the workplace in PNG for several decades. As Kambuou noted (1976, p.133):

Women (in PNG) in any field of work face all sorts of problems, both big and small. Fieldwork is pretty hard and often very difficult for a woman to handle. Here women are dealing with men from the village, especially in research work where all the labourers employed are male. It is tough at times and very difficult for a woman field worker to tell or give orders to middle-aged men who were never ordered by women before, especially when our country has been male dominated all along. Women doing extension work are likely to face the situation where the village men refuse to listen to them because they are women. There is no evidence reported of this problem. However, it is a likely problem in the future.

It is interesting to note that the situation has not changed much since the above was quoted in the 1970s. Looking back at female field workers' experiences in the 1970s to the present time, there is still a considerable way to go for FEOs to be accepted as equals by their male colleagues and by male farmers.

Women have much to contribute to the building of society, yet the education and advancement of women have caused insecurity among some men, who believe that educated women will compete with them for their jobs (Nagari, 1985). Sai (2008) found that educated men in PNG,

while respecting women's ambitions to be educated, still prefer women to occupy supportive roles and not to be in equal or senior positions in an organisation. Again this was attributed to their traditional/cultural beliefs concerning the 'proper' roles of women. As expressed in this quote from an interview from Sai (2008, p.112):

I interviewed forty men [in PNG] who occupy very senior key positions in the public and private sector on how they see the role of women in the workforce and most have said they would rather see women in supportive roles and not in leadership roles. While they don't mind women participating, they are not prepared to accept them as equals or bosses. Much of this perspective, I believe has to do with traditional beliefs and traditions which most men based on. They prefer women to play supportive roles (Sai, in interview with Aiva Tamata, 2008).

The quote reflects the current situation in PNG, and for many FEOs interviewed in this story. The cultural barriers faced by FEOs stem from the general inferior position of women to men in PNG. This can be cross-referenced to Rosina's story (Box 4.2) about insubordination by male colleagues when a female is in a senior position and is the boss.

The cultural barriers faced by FEOs in PNG also extend to female farmers. There is a long tradition of agricultural extension/training in PNG focussing largely on men to their benefit. Men typically control cash crop income. Women have been excluded from agriculture extension training that mainly involves reading and writing, because of their lower levels of literacy and education, their family responsibilities and large daily workloads in food gardening which take up much of their time (Mikhailovich *et al.*, 2016).

Similar cultural barriers are also experienced in other developing countries where traditional norms about women are dominant. For example, according to a FAO report (2017) in Ghana, redressing the issues of gender differences in extension services to farmers remains a major problem. Women farmers were disadvantaged by a lack of agricultural graduates which resulted in less female extension workers in many districts, especially in areas where cultural norms meant it was difficult for a female farmer to talk to a male extension worker. While in Sri Lanka more female farmers brought their crops to female plant doctors raising the possibility that female farmers were more likely to choose female plant doctors to work more closely with them than male plant doctors.

Despite being faced with major constraints and challenges, female extension officers in PNG continue to serve with loyalty and distinction in their different capacities. This is reflected in the long period that FEOs have served in the positions they held in their organisations (Table 4.1).

4.5 Experiences and involvement with female farmers

All the FEOs interviewed indicated that they were comfortable working with female farmers. However, due to cultural barriers in communication with male farmers, and male officers taking the front stage, often FEOs usually had to take the back seat. It is evident that female officers have shifted focus to drive changes for women through proactive training to reach female farmers as well. For example, some FEOs have used their social networks and worked in partnership with women's groups to teach women about coffee with the aim of changing the mindset of the female group members to shift their focus not only to coffee but also to increase their participation in cash crop production more generally (Box 4.3). More on the advantages of female farmers benefiting from the employment of female officers is discussed in Chapter 5, where I assess the impact of the Mama Loose Fruit scheme.

Box 4.3: FEO's comments on their experiences of working with female farmers.

Mary

Mary said while performing in her capacity as an FEO in coffee she has seen and experienced the involvement of female farmers in coffee production starting from the nursery all the way through to marketing. She said coffee is a household crop and so women are very much involved. She also felt more comfortable working with female coffee farmers and Mary emphasised that women are usually the first point of contact in the field and welcome her. She believes that there should be a shift in focus to drive positive changes in the coffee industry. For example, she said women should be empowered through incentive programs and there should be tailored training to women farmers to drive positive change by changing the mindset of individuals, especially the husband in the family unit (Mary, February 2017).

Rosina

Rosina highlighted that women play important roles in coffee production. As she explained: women play the role of labourer from nursery to picking and processing. Although men are the head of the household, women still play major roles in assisting men in coffee production. Generally speaking, women coffee farmers don't speak up and talk freely to male officers. Rosina said that female farmers would rather talk to her and are more open and comfortable with her. She believes women can do better if there were more awareness and training targeted at female farmers to empower them to do better along the coffee value chain. She said there is an all-women's coffee group called 'Gumase Women's Cooperative' established in the remote Nankina area in the 'Y' Province consisting of 300 members and the group is progressing very well.

The 'Gumase Women's Cooperative' group used to fund and transport their own coffee to the local markets. Also, the first Smallholder Coffee Growers Association (SHCGA) representative is a female from 'Y' Province and she also holds the position of Treasurer. Rosina explained that women are/or can be good managers, like herself in the position she holds. She ended the interview by saying that it would be good for CIC to promote the work of women in coffee or gender issues in the organisation at a higher level (Rosina, March 2017).

Cynthia

Cynthia also mentioned that there are many female farmers who are heavily involved in oil palm production. The biggest problem faced by many women is when it comes to the distribution of the oil palm income. Generally men (husbands) are often reluctant to distribute income fairly with their wives. If the money is not shared fairly, then women become reluctant to help their husbands with oil palm work and they resort to other means of making money such as marketing garden produce and selling cooked food at local markets. Female farmers who are members of the Mama Loose Fruit scheme were very comfortable working with Cynthia. Women farmers talked freely and openly to her about many issues even sharing their personal problems too. During training, in the presence of male participants the female farmers won't ask questions, however, they will approach her after training and ask her questions (Cynthia, February 2017).

From the above stories it is evident that female farmers were usually the first point of contact for FEOs in the field. This is perhaps because it is women's cultural role to welcome visitors warmly and to make them feel accepted. The FEOs were comfortable working with female farmers through training as it was through such an approach that they could impart the knowledge to women knowing that women will feel obliged to share what they have learnt (information) with their husbands, or use the knowledge themselves to initiate change in household units. This is especially the case when a woman is educated or trained – it is more likely to improve her children's health and education prospects (Quisumbing & Pandolfelli, 2010). The three commodity crops are said to be household crops indicating that women, as part of the household, are also involved in production and harvesting of these crops. This means that women contribute much time and labour to cash crop production. Therefore, it is critical that FEOs are available to work closely with female farmers.

4.6 Training received

My results show all FEOs received full in-house training related to their work, such as coffee extension programs on different pruning techniques and fertilizer applications and rehabilitation of coffee. The same was true for oil palm training, where FEOs received training in management practices related to fertilizer application, cover crop establishment, pruning, the correct way of stacking fronds and computer software training. Cocoa's FEOs received in-house training for cocoa such as management policy training for staff. Half of the FEOs underwent collaborative partnership training. Some FEOs sponsored themselves (25%). Collaborative training was jointly held and conducted in partnership with other sector organisations, international NGOs and international donor-funded programs, having a common interest and with the understanding of promoting networking and, sharing of resources including their expertise for capacity building. For example, in coffee collaborative partnership short training such as 'How to approach farmers in the field' was done in association with

CARE International (PNG) and CIC. Also, speciality market certification (requirements) training was carried out by Fairtrade New Zealand and Australia in association with CIC. In cocoa, collaborative sector training such as financial literacy, agronomic practices such as pruning, bud grafting, fertilizer application and integrated pest and disease management practices was carried out for MEOs and provincial DPI staff by CCI, UNRE and IATP. In oil palm, training on ‘roundtable on sustainable palm oil (RSPO)’ best sustainable practices and requirement for speciality palm oil markets was conducted by different international RSPO consultants attached to NBPOL and Hargy Oil Palm Limited. The training was provided by these different consultants to the field extension officers of which four FEOs from OPIC and one FEO from NBPOL participated in the training.

There was no institutional support from any of the extension organisations in coffee, cocoa and oil palm to facilitate opportunities for staff to have access for further training to upgrade their academic qualifications through their respective organisation’s capacity building programs. This applies to both FEOs and MEOs. Nevertheless, more of the FEOs received external collaborative training because they were not supported by their organisations to go for further studies or attend short courses either in PNG or overseas. The female officers who did not receive training abroad sponsored their own training (25% that is three FEOs out of the 12 interviewed) knowing that their organisation would not assist them to enhance their capacity in career development. However, they considered the training to be very important for them in the long-term and therefore took the opportunity to sponsor themselves to do diploma programs through flexible learning at college level. For example, at Divine Word University and Hagen Agriculture College, one FEO completed her studies while two FEOs were forced to withdraw from studies because of financial problems.

Of the FEOs interviewed, one-third (33%) undertook short overseas training courses at some point in their lives (Table 4.5). The training was made possible through networking partnerships with other organisations and not through their own organisations (Boxes 4.4). Although both female and some male officers were not considered for capacity development by their organisations, especially with external training, however, several female officers were given opportunities to attend short overseas training if they sourced their own external funding. Of the 17 male officers I interviewed, only one had attended an overseas short training course compared with four females (33%) out of the 12 that I interviewed (see Box 4.4). Taking a broader view, it appears that female officers may now have more opportunity for capacity

building due to gender inclusion programs becoming a priority in donor agencies and NGOs and in all areas of development in PNG. This is a recent positive step for capacity building amongst FEOs.

There was no difference between the organisations in terms of capacity building. Male officers did not appear to receive priority over women in in-house training. Most of the training provided was in-house for both female and male officers. Some FEOs believed external training should be encouraged and promoted in organisations because it would expose staff to broader views and experiences and thus build confidence and fill knowledge gaps of staff.

Table 4.5: Types of training received by female extension officers.

Human resources capacity development	Percentage (n=12)
In-house training	100
Collaborative partnership training	50
Short training overseas	33
Self-sponsored training	25

Box 4.4: Stories from female extension officers about professional development.

Mary

Mary said that for her professional career development she only attended in-house job related training such as extension programs of coffee pruning, rehabilitation, nursery and pest and disease management practices provided by her organisation. There were no funding opportunities made available by the organisation for external training for field extension staff to enable them keep abreast of new knowledge and skills especially with new developments such as emerging markets and their requirements in the changing global coffee market. Mary only had one life-time opportunity in attending an overseas training in Jamaica in 2012 sponsored by an NGO and not her own organisation. The one-week training course was mainly about the participation of women in the coffee value chain (Mary, February 2017).

Betty

Betty said she only attended in-house job related training provided by her organisation. There were no opportunities made available by the organisation for external training to gain new knowledge and skills. In 2015, she attended a one-week in-house training jointly conducted by CIC/CARE International in 'Z' Province. The in-house training was about how to deal with different farmers out in the field (Betty, March 2017).

Rosina

Rosina explained that she only attended in-house job related training such as extension programs on coffee pruning, rehabilitation, nursery, pest and disease management practices provided by her organisation. There were no opportunities made available by her organisation for external training. Rosina self-sponsored herself to study at Divine Word University in Madang Province under the flexible learning program to do a management course but could not complete the course due to financial constraints. She also funded her attendance at other training provided by external organisations such as World Vision who provided training on record and book-keeping which she believes will enhance her capacity and fill knowledge gaps (Rosina, March 2017).

Edna

Edna recalled, she only attended in-house job related training provided by her organisation. There was no organisation support at all for human capacity building in her organisation especially for external training for

Box 4.4 Cont.

staff. They used to have in-house job related training such as fertilizer application rate, pruning, and correct way of stacking fronds, Integrated Pest Management, provided by the Oil Palm Research Association (OPRA). She had a few short external overseas trips sponsored by other partner NGOs such as Asia-Pacific Association of Agricultural Research Institutions (APAARI) and Women in Agriculture Development Foundation (WiADF). In March 2012 she travelled to India and in November same year she travelled to Ethiopia. In 2014 she travelled to Melbourne to participate in the Australian Women in Agriculture Conference (Edna, February 2017).

Marilyn

Marilyn said for professional career development mostly in-house training was provided to staff. The training was provided by partner organisations such as CCI, NARI, University of Natural Resources and Environment (UNRE), IATP and Provincial Health Division. Marilyn believed priority was given to friends and families of those in authority over other staff. After declining her requests on numerous occasions for further studies, she facilitated her own studies and won a sponsorship under the New Zealand Overseas Aid Development (NZOAD) program and graduated with a post-graduate diploma certificate. She was part of the ENBP WiADF and took part in the Australian Women in Agriculture Conference in 2014. Through the provincial WiADF she also attended training in Italy. The short training she gained overseas was through networking and partnership with other organisations. She was more empowered through the provincial WiADF to enhance her capacity than through the ENBP DPI (Marilyn, February 2017).

Cynthia

Cynthia explained that she only attended in-house job related training provided by OPRA (same as Edna with in-house job related training). There was no organisation support at all for human capacity building in the organisation especially for external training for staff. She had plans to do further studies in 2018 but it would be self-funded (Cynthia, February 2017).

Michelle

Michelle stressed that there was no qualified human resource officer at her organisation's head office since 2000 who would facilitate training for staff. There were no external training opportunities for staff except only in-house job related training provided by OPRA (Michelle, February 2017).

The capacity building of human resources in any organisation is very important. For example, with regard to training, it facilitates employees' exposure to a variety of knowledge and openness to creativity as well as innovative ideas (Beatty & Schneier, 1997; Brockbank, 1999; Jaw & Liu, 2003). Firms may also provide their employees with broad and various training programs to develop new knowledge, skills and innovative capability necessary to perform their work (Mumford, 2000; Chen & Huang, 2009). Training is one such example that motivates staff to perform better and is thus reflected in the overall improvement in productivity, performance and the image of an organisation (McNamara, 2008). McNamara (2008) highlighted many reasons for general benefits of employee training and development such as:

- increased morale and job satisfaction among employees;
- increased motivation in employee;
- reduction in employee turnover;
- improved organisational image;

- increased capacity to adopt new knowledge, skills and technological innovations;
- increased efficiencies in strategic planning and processes resulting in financial gain; and
- risk management, for example, training about sexual harassment and diversity training.

4.7 Promotion prospects

Most of the FEOs interviewed have been promoted (83%). However, some FEOs (42%) complained that although they were given promotion, they have seen male staff, promoted which they considered to be undeserved. A few FEOs said (8%) that several staff promotions were due to nepotism because the promotions were given by people in authority favouring certain male or female officers because of special relationships such as relatives or friends.

Some male promotions were considered to be unfair because although the FEOs were recruited with the same qualifications as their male colleagues and were performing the same jobs, their male colleagues were promoted more quickly than women who often took more than 10-15 years to be promoted compared with 3-5 years for men. Some FEOs shared their experiences and stories about promotion as outlined in Box 4.5.

Given the importance of women in coffee industry, however, there are still very few women in extension positions, on the CIC board and in management according to Murray-Prior & Padarath (2013, p.40). In the same evaluation they suggested that since women have subordinate status in many communities they should be represented more fairly in consultative activities such as taking part in surveys and training activities.

Box 4.5: Stories and experiences of promotion.

Mary

Mary worked as a female mobile extension officer for 15 years and recently was promoted to a senior position in 2014. She was the first female to be promoted to that position. She acknowledged the promotion, however, she said the promotion was well overdue. She said it was unfair she had to wait so long before being given the promotion. She was performing exactly the same duties, getting the same pay, and graduated from the same college as her male colleagues who were promoted 3-5 years earlier. She asked why was it that they got promoted quickly while it took so long for her to be considered for promotion? (Mary, February 2017).

Betty

Betty said she has been with the organisation for 3 years now and has not yet been promoted. She said she is still on job probation despite being first employed in 2014. Betty thought her probation period was far too long without any valid reasons. She believed it to be unfair and to be a case of gender discrimination (Betty, March 2017).

Box 4.5 Cont.

Rosina

Rosina's story is similar to Mary's because they were both recruited in 1999 and promoted in 2014. Mary was promoted first, a couple of months before Rosina.

Rosina also worked as a female mobile extension officer for 15 years and recently was promoted to a senior position in 2014. She was the second female to be promoted to that position. She shared the same sentiments as Mary. She acknowledged the promotion. However, she said the promotion was well overdue and unfair. She said it was unfair because although she was performing exactly the same duties, getting the same pay, graduated from the same college as her male colleagues, many of them had been promoted before her. She asked why it took so much longer for her to be promoted (Rosina, March 2018).

Edna

Edna received several promotions. She started as a field assistant in 1997 and then was promoted to extension officer and senior extension officer. Eventually, she was promoted to the main office in 2008 and took up the position of coordinator for the MLF scheme. She has held this position since then. Edna was initially recruited to coordinate the MLF scheme and started off as a field assistant to finally reaching the position of MLF coordinator. That is the limit she can rise in the organisation (Edna, February 2017).

Michelle

Michelle was promoted in 2015 to extension officer position. She has been with the organisation for five years. She is still based in one of the most remote rural area of Hoskins (Michelle, February 2017).

Cynthia

Cynthia said she got several promotions along the way from starting as a field assistant and after three years she was promoted to extension officer in 2014. Recently she was promoted in 2016 to a new position as the assistant coordinator for the MLF scheme and will be on a promotional transfer out of Siki Division to Head Office at Nahavio in Kimbe in 2017 (Cynthia, February 2017).

Marilyn

From Marilyn's experiences, she believed nepotism is widely practised in the province and it is very prevalent in the organisation she was working for. She said after years of working with the ENBP DPI, it was not easy to be promoted especially as an outsider [non-Tolai¹⁰]. It takes a very long time to get promoted and you may not be promoted at all (Marilyn, February, 2017).

From the interviews with the FEOs, some believed that women with the same qualifications and experiences as men were passed over for promotion. Even when women have the same experience, tenure and work responsibilities as men, the interviews indicated that they are less likely to be promoted. It was noted that the promotion structures are not the same in the three organisations and the length of time to be promoted also differs. This is because different organisations have their own policies, missions and visions that govern their operations. For example, in the oil palm sector the FEOs are getting promotions from one position to another within 2-3 years (see Cynthia, Edna and Michelle in Box 4.5) while in the coffee and cocoa sectors it takes over 10-15 years to be promoted (Box 4.5). Perhaps the reasons behind the quick promotions for FEOs in oil palm than for cocoa and coffee were because:

¹⁰ Tolai - Are the indigenous people of Rabaul, East New Britain Province in Papua New Guinea.

- the industry was providing an attractive environment by providing accommodation and motorbikes encouraging women to work hard and stay with the organisation;
- the industry has a performance based appraisal assessing officers according to work outputs and;
- it is a risky job riding on the motorbikes on their own going into the field.

Considering the above reasons, it could perhaps also be that in the oil palm industry there is better support and governance and that the senior management in New Britain Palm Oil Limited (NBPOL) and OPIC are keen to see women rewarded for their work in the industry.

In PNG, one of the Government's aims is to provide equal job opportunities for men and women. However, the reality is that most of the executive positions in the public service and private sector are occupied by men (Dobunaba, 1995 & White, 2007 cited in Potek, 2009, pp.110). Similar research findings in the education sector in PNG suggest that male dominance in the education structures discourage female teachers from aspiring for more education and promotion (Yeoman, 1985; Nongkas, 2007; Sai, 2008, Department of Education, 2009; Country Partnership Strategy: Papua New Guinea, 2016). The underlying factor causing gender inequities in employment or promotion stemmed from the deeply embedded cultural beliefs that women are secondary to men. These attitudes still exist in the minds of many senior male decision-makers or men in positions of authority in PNG (Yeoman, 1985).

There are widely accepted traditional norms that continue to play an important part in PNG societies. Even those who have received western education or have lived for many years in urban areas, cannot escape from what is considered to be customary ways. That is simply because something that is considered to be of traditional importance is preserved and is automatically perceived to be significant (Lawson, 1997). Although many PNG men are aware of the changing role of women, they adhere to traditional customs and values which impede the advancement of women as equal partners with them. "It seems though, while many men themselves were willing to adapt to many non-traditional roles, they, however, want the assurance of knowing that, in a fast changing world, their women will remain confined to customary roles of caring, producing offspring, producing food and being in the kitchen" (Nagari, 1985, p.119). This confirms the United Nations Country Team (2001) report on PNG stating that raising awareness and sensitivity of men to gender issues cannot be over-emphasised because it was found that men hold most of the positions of power in PNG. The

report argued that until these men are convinced that empowering women does not threaten them, it will be difficult for women alone to achieve equality. Women and men with the same educational qualifications reach different levels in occupational status, however, men in PNG usually have easier access to formal sector employment in managerial, technical or corporate entrepreneurship positions (Jayaweera, 1997).

From my own personal experience, another factor that is hindering women's advancement professionally relates to the women themselves in also having 'mindsets' or stereotypical attitudes about their gendered roles that stand in their way of advancement. For example, in coffee production, many female farmers still accept that coffee is a male crop which can deter them from taking an active role in decision-making. This confirms Potek's (2009, p.111) claim that, even when women have the advantages of education, training and visibility they still hold onto traditional views regarding their roles and position in PNG society.

Flaherty & Gutuma (2003:49) have claimed that women in PNG have entered the workplace where the barriers between gendered divisions of labour determined by cultural norms are disappearing. Although greatly under-represented, women are now in the public workplace sector as teachers, agriculturalists, doctors, lawyers, engineers and parliamentarians. However, despite this the majority of the women are unfairly treated and unrepresented in senior decision-making roles (Flaherty, 1998; GIRIS & RYNKIEWICH, 2005; NONGKAS, 2007). Many of the FEOs expressed these sentiments. Also, the usual reasons why some women in PNG do not attain or are not considered for promotions or senior positions are because of family commitments and family problems (such as being single mothers or have husbands opposed to their work, or domestic violence) making it difficult for them to devote their time, energy and creativity that would make them eligible for promotion (Avalos, 1995). Although female leadership is gaining credibility, both men and women continue to expect the leadership role to be reserved for men (Stivers, 1993).

The problems that FEOs complained about are not just confined to PNG. Other developing countries face similar issues of gender inequalities. For example, in some parts of Uganda women are regarded as second/third class citizens (Kagoda, 2004 cited in Potek, 2009, p.111). Even in Australia, where there is more workplace equality for women, gender bias continues in the workplace. In a recent study conducted by Australian Institute of Management (AIM) (2014), on Workplace Gender Equality Agency, it was reported that "gender stereotypes and

bias are major factors in determining pay outcomes as a result of unconscious biases and practices in recruitment, promotion, performance and remuneration decisions. Gender bias can be conscious or unconscious and may manifest in many ways, both subtle and overt (AIM, 2014). This may arise as a result of different views about the roles of men and women should play in the workplace and more widely in a society. For example, women are not only perceived to be more communal than men but they are *expected* to be more communal as having communal traits such as being caring, communicative and encouraging while men are said to be agentic having characteristics like being more ambitious, assertive, decisive and self-reliant (Prentice & Carranza, 2002; Prentice & Carranza, 2004). Women could miss out on opportunities for promotion, being excluded from training and development or even taking leadership roles due to these stereotypes. Usually such bias often escalates for women who are pregnant, who are casual employees or having just returned from maternity leave (AIM, 2014). Moreover, there is a clear disparity between how women perceive their opportunity for advancement and how their organisations see it (LeanIn. Organisation & McKinsey & Co, 2015).

4.8 Conclusion

The experiences of female extension officers in the different case studies highlights the different struggles they have experienced and coped with in the male dominated culture instilled in many extension organisations in PNG. By exploring their stories, this chapter has provided deeper insights into the ways in which they have identified themselves and coped with the different circumstances in their professional career development and how they are recognised and constrained by their situation. The chapter also shows how these women of different age groups and marital status can continue to work despite all the negativities they face. The stories told by the participants were based on their own life experiences and reflections on their own interactions and performance at work.

In all, I have used six key categories in this chapter in analysing the experiences of FEOs mainly in the areas of: recruitment process; everyday constraints/challenges they face in their job; training needs, promotion prospects, and they experiences working with male colleagues as well as they experience working female farmers.

In the next chapter, attention is turned to look at extension programs that target women farmers and female extension officers in oil palm and coffee industries in PNG.

CHAPTER FIVE

WOMEN'S EXTENSION INITIATIVES IN OIL PALM AND COFFEE

5.1 Introduction

This chapter evaluates extension initiatives for women in the oil palm and coffee industries by organisations such as Oil Palm Industry Corporation (OPIC), Coffee Industry Corporation (CIC) and CARE International (PNG). These extension initiatives are programs implemented by the organisations to promote and empower female farmers to participate actively in the value chains of export cash crop production. The implementation of such initiatives by the agricultural institutes and export firms can play a critically important role in enhancing women's participation and involvement in cash crop production as well as helping them to access commodity income.

Extension for female smallholder coffee farmers is very limited, so a simple evaluation method was employed where I sought opinions from the very small number of women from a focus group who were identified as having received extension. Unfortunately, there were no women's extension initiative programs in cocoa at Cocoa & Coconut Institute (CCI) at the time of my study so the cocoa sector is not evaluated in this chapter.

The first part of the chapter examines the Mama Loose Fruit (MLF) scheme implemented by OPIC. The three main criteria that I will use to evaluate the MLF scheme in oil palm are: (i) Effectiveness; (ii) Impact and outcomes; and (iii) Sustainability challenges in terms of family and gender relations, including inheritance. The second part of the chapter discusses the 'Women in Coffee Development' (WiCD) program currently being implemented by the coffee industry. Finally, in the third part of the chapter, I will examine the 'Graduate Program' of CARE International (PNG). This is a new graduate program initiated by CARE International to empower female extension officers and female coffee farmers.

5.2 Overview of the oil palm Mama Loose Fruit scheme

In 1997 the MLF scheme was introduced by OPIC Nahavio, Hoskins, with the aim of improving loose fruit collection by increasing women's share of the oil palm income. A long-term concern for the oil palm industry, prior to the MLF scheme, was the high rate of loose fruit wastage among smallholders during harvesting.

Prior to the MLF scheme, the fruitlets (loose fruit) dislodged from the main bunch during harvesting were left to rot on the ground. This accounted for up to 14% of crop loss during harvesting (Turner & Leach, 1980; Landell Mills, 1991 cited in Koczberski *et al.*, 2001). Industry experts at the time identified the loss in the revenue by the industry. This was backed up by a report which showed that poor loose fruit collection by smallholders resulted in the annual loss of palm oil worth an estimated to be K1.2 million, over 30 years ago (Turner & Benjamin, 1982).



Plate 5.1: Picture taken with some members of the mama loose fruit scheme and the OPIC and OPRA officers

Prior to the establishment of the MLF scheme, there was a single monthly payment made by the milling company to each smallholder leasehold block owner for both oil palm bunches and loose fruit with the cheque payable to the male leaseholder (husband/father). During that time most women's involvement in household oil palm production through the collection of loose fruit was low, because men were not giving their wives a fair share of the oil palm income for their labour contribution. As a result, women spent less time in oil palm production and instead concentrated on alternative income generating activities such as selling garden produce and cooked food at local town or roadside markets (Koczberski, 2007). As Koczberski *et al.*, (2001, p.191), noted "the collection of loose fruit during harvesting was always considered to be 'women's work, as men did the heavier task of cutting the large oil palm fruit bunches from the palms. But because of underpayment, women were not keen to collect loose fruit, and it meant that a large proportion of loose fruit was left to rot on the ground. This was lost income for both the families and the milling companies".

5.3 Evaluation of the Mama Loose Fruit scheme

Evaluation is the reflective link between the dream of what should be and the reality of what is (Kahan, 2008, p.11).

Since 2000, there has been no formal evaluation of the scheme, although anecdotal evidence suggests that the scheme continues to run successfully with over 8000 women involved (Table 5.1). The year 2017 marked the twentieth anniversary of the MLF scheme. The focus of my evaluation was smallholder households, especially women. In my evaluation, I interviewed women who were initially involved in the introduction and implementation of the scheme as well as other women who have more recently joined as members of the scheme. In my evaluation I interviewed a total of 19 women. From those interviewed, there were seven women (out of the first ten women) who were the founding members of the MLF scheme. The other 12 interviewees had more recently joined the scheme.

5.4 Effectiveness of the Mama Loose Fruit scheme

To assess the effectiveness of the scheme, I examined the goal and purpose of the scheme. I also examined the extent to which the MLF scheme achieved its intended goal and purpose.

The high rate of loose fruit wastage among smallholders was previously a long time concern for the oil palm companies. In an effort to encourage loose fruit collection and to provide

women with their own income source, the MLF scheme was introduced by OPIC. This involved direct payment to women for collecting the loose fruit (Plate 5.1), with payment by cheque and later into their bank accounts which the women were encouraged to open.

The MLF scheme started in February of 1997 with a pilot group of ten women from Sarakolok LSS subdivision in Hoskins. The women were issued with their own harvest nets and a harvesting payment card (*mama card*) which enabled them to sell the loose fruit to the milling company and receive their own monthly cheque payment separate from their husbands. When other women heard that the scheme was paying women separately from their husbands for the collection of loose fruits they went to OPIC office at Nahavio and registered their interest to join the scheme. The women spread the word among themselves and by the end of the September the same year (1997), over 500 women had signed up to the scheme to gain their own payment card. By the end of the year the numbers had risen to 1,612 women (Koczberski *et al.*, 2001). By December 1998, there were just over 2,800 women registered (Koczberski *et al.*, 2001). At the end of August 2001, a total of 3,271 women had their own payment cards, representing 67% of all smallholder blocks (Koczberski *et al.*, 2001). The ‘mama’ card complemented the *papa card* which is the payment system used to pay leaseholders who are typically men. The scheme was soon introduced to other oil palm growing areas of PNG such as Bialla and Popondetta. The scheme is managed by the agricultural extension body, OPIC and the milling companies. Since 2001, the number of women joining the scheme and the adoption rate have continued to increase (Table 5.1). This demonstrates the large success of the scheme; it is one of the very few extension initiatives in PNG that has shown such success in uptake rates.

Table 5.1: Participants in the ‘mama’ loose fruit scheme in 2016.

	Participants	Smallholders blocks	Adoption rate
	No.	No.	%
Hoskins	6,184	7,126	87
Bialla	2,479	3,522	70

One of the main reasons for the rapid uptake of the scheme was the economic incentive for women being able to collect loose fruit and be guaranteed payment for their efforts. The husbands also supported the scheme because they could see that women were using the income on essential household items and food to help the family (Koczberski *et al.*, 2001). The scheme also received overwhelming support from all members of the household, OPIC and the milling

companies. Now, approximately 25-30% of the total smallholder oil palm income is paid directly to women (Unpublished data, 2018) and most women sell loose fruit to the company regularly at least once or twice each month. This is an amazing achievement in a country where men typically control the income earned in a commodity production as well as where extension is largely directed to male farmers (Koczberski *et al.*, 2001).



Plate 5.2: Loose fruit in the foreground and fresh fruit bunches (FFB) in the background at Morokea.

5.5 Impacts and Outcomes of the Mama Loose Fruit scheme

Below are some indicators of change identified for households and women under the MLF scheme.

5.5.1 Household livelihood advancement

Since 2007 when the scheme was introduced, the increased participation of women in oil palm production has expanded beyond loose fruit. Now, it also includes block maintenance activities and harvesting of young palms, with payment for this work in FFB placed on their loose fruit nets by their husbands. Women can now be paid in FFB in addition to their earnings from loose fruit collection. While loose fruit typically makes up only 14% of the total crop harvested, women at Hoskins in 2016 were earning approximately 31% of the oil palm income which

reflects the addition of FFB to their nets. This regular source of income has led to marked improvements in quality of life for women and their families.

In 2000, the scheme was evaluated by OPRA as part of an ACIAR-funded project. The evaluation found substantial economic and social benefits for women and smallholder households (Koczberski *et al.*, 2001). The benefits of the ‘mama’ card have been enormous not only in terms of increased income but also in more qualitative improvements in the status of women. Some of the women whom I interviewed have shared their stories of benefiting from the ‘mama’ card and the changes it brought to their lives and households in Box 5.1

Box 5.1: Stories of women benefiting from the ‘mama’ card from different block types.

Agnes Bruno

Agnes is from Sarakolok LSS in Hoskins area. She said her husband used to misuse the money he earned from the ‘papa’ card on alcohol and gambling. Agnes was happy with the ‘mama’ card because she saw the ‘mama’ card as an opportunity for her to earn her own income. She said, she used the money she earned through the ‘mama’ card to buy household items such as kitchen wares, food, and clothes for herself and her children. Agnes said also assisted in paying for her daughter’s children’s school fees (Agnes, February 2017).

Waida Lele

Waida from Sarakolok LSS, said the ‘mama’ card gave an opportunity to earn money. She controls the money she earned from the ‘mama’ card. She buys food for the house and clothes for her children. She also looks after her husband and children’s medical needs when they are sick. Waida said she can now travel places to visit her families and friends anytime because she has money (Waida, February, 2017).

Maria Sairas

Maria from the Morokea CRP in Hoskins area said, the money she earned through the ‘mama’ card has assisted her to help her husband to build a permanent house for her family. She also buys household items such as mattresses, solar lighting system, kitchen utensils, clothes, food and school fees for her children. She also has money on hand to assist with any social, religious and customary obligations (Maria, February, 2017).

Edwick Gila

Edwick is from the VOP in Hoskins area. She said that the money she earned from ‘mama’ card is used for many purposes such as: customary and social obligations, school fees, clothes and personal needs as well as assisting other family members who are in need (Edwick, February, 2017).

Sussie Moibe

Sussie is from the Vilelo LSS in Biialla area. She is very happy with the ‘mama’ card. She said she earned her own money through the ‘mama’ card, she buys food for the house, clothes, meet family’s medical expenses, school fees for her children. She also assists in customary obligations (Sussie, February 2017).

Although many women in interviews with me commented positively on their increased control of income and the greater financial autonomy they had from the ‘mama’ card, there are still certain obligations that women must meet regarding expenditure distribution. My research confirmed that most women were expected to share the mama card money with immediate family members and kin. Also, most of the women’s responses indicated that they spent their

earnings on a limited range of household items such as food, clothes and cooking utensils, and also contributed towards customary/community obligations, school fees and assisting relatives.

My interviews with women confirm Koczberski *et al's* (2001) finding, that the card systems have delivered significant benefits to women and their households (Figure 5.1). The women (95%) indicated that, the card system has improved their living standards because they now have money in their own hands to be able to meet their short-term needs as well as those of their children. With the opening of bank accounts, savings have improved among women and 79% of women now have personal bank accounts. Women (68%) also reported now having enough money to contribute to social or customary obligations and they are in a position to regularly assist other family members (47%) when there are in need. The women now have a sense of control over the income they earn from loose fruit and they can independently make decisions on how to use their income for livelihood advancements (Figure 5.1).

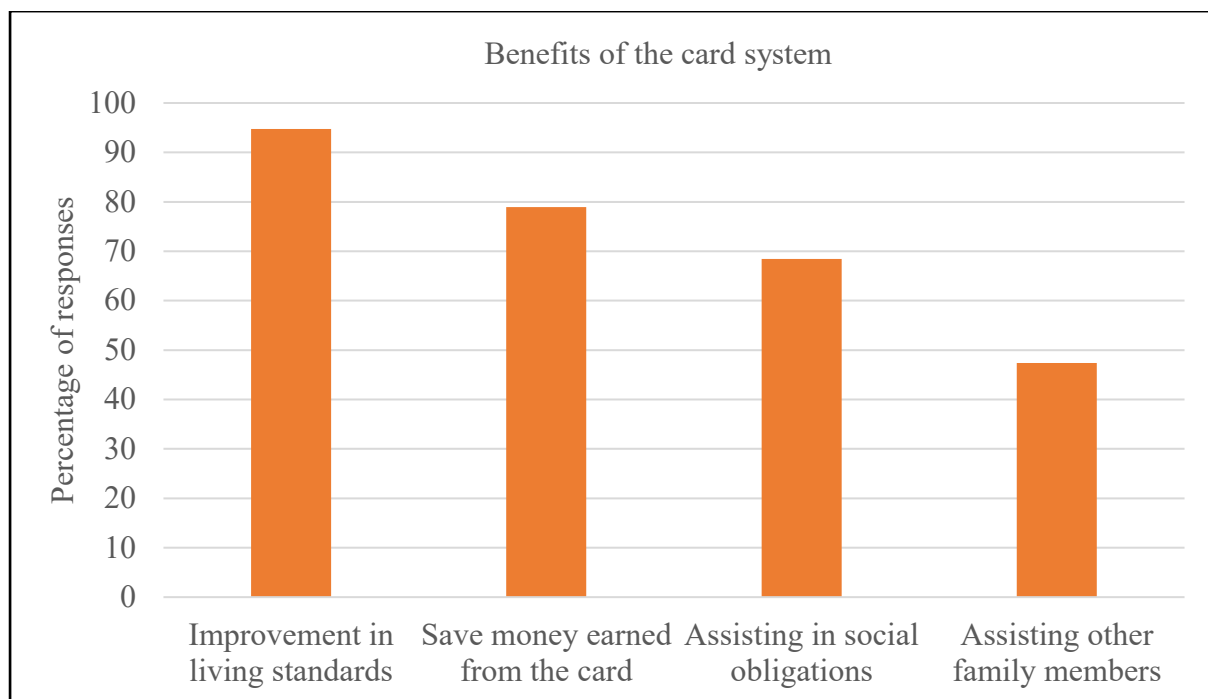


Figure 5.1 Women’s perceived benefits of the MLF scheme.

5.5.2 Individual agency

Koczberski *et al.*, (2001) reported that prior to the MLF scheme women relied on market income as their primary source of income, particularly the sale of garden foods at local markets. The women I interviewed confirmed this situation (Table 5.2). Prior to the scheme, very few women collected loose fruit collection because they said they did not receive what they

considered to be fair remuneration. In addition, their ability to earn income in oil palm and the choices in their decision-making over income before the MLF scheme was limited. Most women indicated that they spent most of their time doing food gardening for family consumption and also selling garden produce to earn money to assist with family needs (Table 5.2). Some women prior to the MLF scheme helped their husbands with oil palm fruit harvest and cleaning of the block while a few were involved in selling cooked food and sewing clothes. Fewer women spent time in full time paid work and religious activities.

Table 5.2: Allocation of labour before and after the introduction of the ‘mama’ loose fruit scheme.

Activities	Prior to MLF percentage (%)	After the MLF percentage (%)
Food gardening	84	63
Picking loose fruit	0	68
Help husband in harvesting oil palm fruit	21	11
Help husband to clean the block	21	21
Selling cooked food	16	16
Sewing	16	16
Paid job	11	0
Religious activities	11	NA

After the introduction of the MLF scheme, women said they allocated more time to collecting loose fruit and some women spent less time on food gardening (Table 5.2). Women spent less time on food gardening than they did before the ‘mama’ card because they now can earn a good income from the ‘mama’ card and are able to buy food from markets and stores. Women continue to be involved in food gardening perhaps because they value home produced garden foods for household consumption and there is status for women in maintaining their own food gardens. The additional income from food marketing and selling cooked food also provides supplementary income to support their family. Women continued to help their husbands to clean the oil palm block but they allocated less labour to helping their husband with harvesting fresh fruit bunches as they shifted their labour to collecting loose fruit.

The women shared with me their experiences of life before and after the ‘mama’ card. More than half of the women (58%) said life was hard for them before the ‘mama’ card because they depended on their husbands for money while the husbands tended to misuse the income on alcohol and gambling (see also Koczberski, 2007).

However, Koczberski *et al.*, (2001) found that a few women did not have complete control over the ‘mama’ card and did not always claim ownership and use of the ‘mama’ card, and the income earned from loose fruit (Koczberski *et al.*, 2001). However, my results indicated that, many women have gained financial independence and some of them have been able to venture into other small income generating activities like poultry businesses, tailoring businesses and selling cooked food, ice blocks and water at roadside or town markets. Other women, who had not yet started alternative businesses, said that they had savings plans and intended investing in other income generating activities including property rental and transport businesses (Figure 5.2). Most of these activities have recently emerged and are expected to expand in the future as women develop new ways of leveraging the benefits from MLF scheme, as indicated in their interview responses.

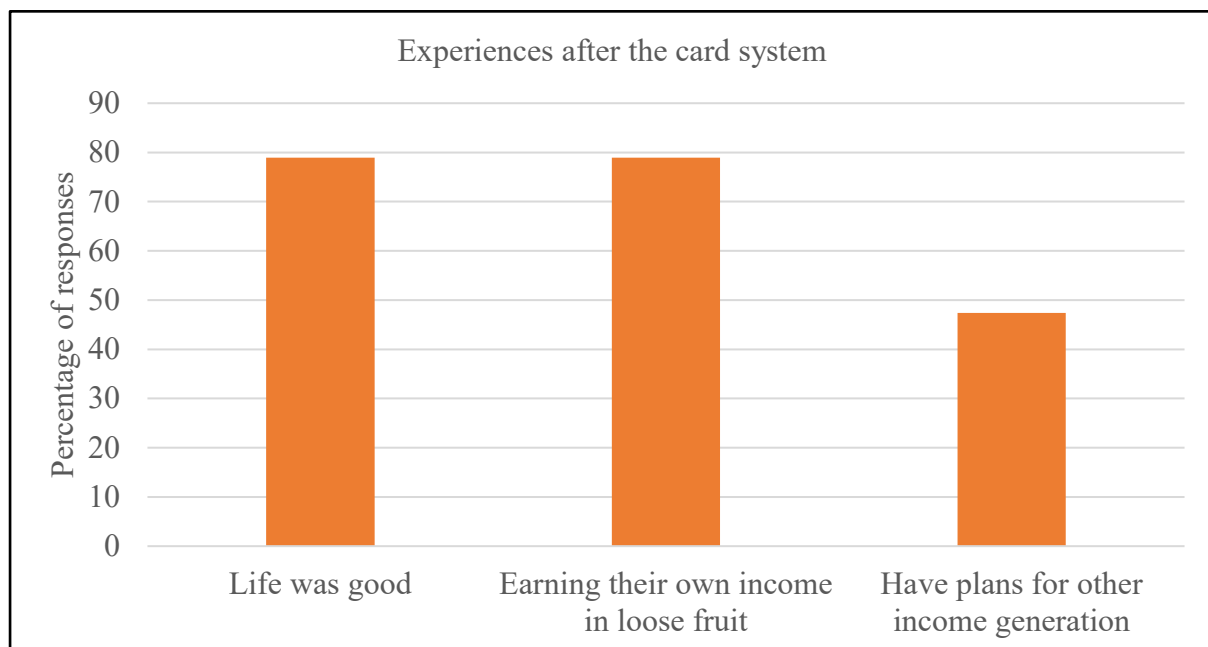


Figure 5.2: Experiences of women after the introduction of the ‘mama’ card system.

After the ‘mama’ card system was introduced most women I interviewed thought life was good for them and their families because they had the opportunity to earn their own income through the ‘mama’ card (Figure 5.2), and better still, were able to earn and have control over their own income from oil palm. The women no longer depended on their husband/spouse for money.

5.5.3 Organisational environment

The successful adoption of the MLF scheme not only reflected a pre-existing need, but also reflected a successful strategy of promotion by recruiting FEOs to working directly with

smallholder female farmers. With the establishment of the MLF scheme, OPIC recruited its first female extension officer to coordinate the scheme in 1997. OPIC now has three female extension officers working with women. The recruitment of female extension officers has created better access to extension information and training for female farmers, and so has motivated and empowered them in household decision-making, saving money and stimulated them to generate alternative income through financial literacy training (Cahn and Liu, 2008). With the inclusion of a female smallholder representative to the oil palm growers' Local Planning Committee and the Bialla Oil Palm Growers Association (S. Jimmy, pers. comm, 16 February 2017) the interests of women are now much better represented in the oil palm smallholder sector.

The majority of the smallholder female farmers said they were happy to work with female extension officers because female extension officers understand them as females better than male officers. Some smallholder female farmers said they were not willing to work with male extension officers (Table 5.3). When male extension officers visit the blocks they tend to speak only to men and to overlook the female farmers. Although female extension officers were recruited by OPIC to work with the MLF scheme, they, however, do not visit female farmers on a regular basis and in some areas of Hoskins and Bialla female extension officers never visited some of the female farmers I interviewed (Table 5.3). This is because there are too few female extension officers in the oil palm industry with the ratio of 1 female extension officer to 2,887 women. Several women indicated that there is a need for more female extension officers to be engaged to work with women (Table 5.3).

Table 5.3: Response of female farmers to engagement of female extension officers.

Type of responses from participants	(n=19)	Percentage (%)
Happy to work with female extension officers	11	58
Unwilling to work with male extension officers	9	47
Infrequent visits by female extension officers	8	42
No extension training or visits at all by female extension officers	7	37
Need for more female extension officers	7	37

The female farmers also shared their experiences of working with female extension officers. Although the women were happy with the engagement of female officers to work with them in the MLF scheme, there were some complaints (Table 5.4). The majority of the women indicated that since they were initially signed up for the ‘mama’ card, and after that there was no extension training of any sort provided to them separately by OPIC female extension officers. Although, the male extension officers who regularly visited the blocks sometimes delivered messages to women farmers from female extension officers at Nahavio, they conducted extension work with their husbands/men only. Female farmers would prefer to talk with female extension officers over male extension officers because they saw an opportunity for female extension officers to provide advice and assistance in addressing other social issues confronting female farmers (Table 5.4).

Table 5.4: Experiences of female farmers working with female extension officers.

Types of experiences	Responses (n=19)	Percentage (%)
No separate training provided for female farmers	17	89
No female extension officer working with female farmers	13	68
Prefer to work with female extension officer than male extension officer	10	53
Female extension officers only introduced the mama card and signed up female farmers	10	53
Male extension officers visit the block regularly but do not talk with female farmers	9	47

5.5.4 Household social relations

Another benefit of the ‘mama’ card was that it helped increase the range of strategies available to families to share oil palm income and opened up new ways of allocating oil palm labour among family members. The majority of the women interviewed said that they used the ‘mama’ card for their own personal use which shows again the ability of women to control the ‘mama’ card (Figure 5.3). Some women shared the ‘mama’ card with their children by taking it in turns to have a fortnightly harvesting round, until each child, mostly the daughters and sometimes the daughter- in-laws, each had a turn. Then the card would go back to the ‘mama’ card holder (mother) and then the cycle was repeated. A few women reported sharing the ‘mama’ card money with relatives who assisted with loose fruit collection, and others helped relatives in need by allocating the card to them when they needed financial assistance (Figure 5.3).

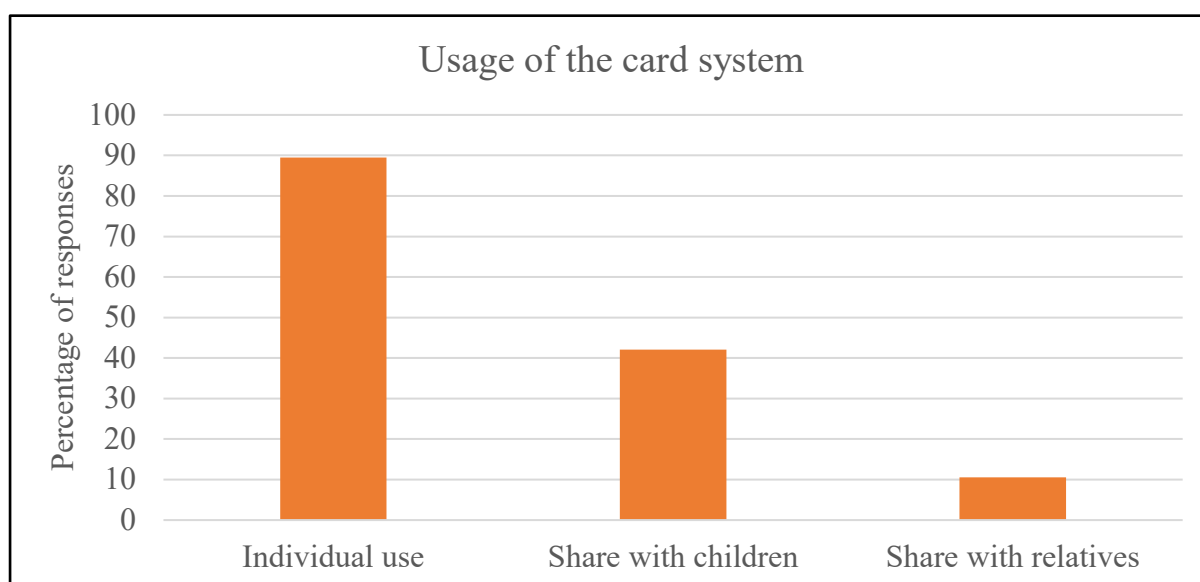


Figure 5.3: The most common ways that the ‘mama’ card was used.

5.5.5 Increased involvement and participation of women in oil palm production

The MLF scheme has been very successful in encouraging women to collect loose fruit. For example, in 2016, in Hoskins, 6,184 women had their own harvesting card (Figure 5.4). A total of 98,605 tonnes (31%) of the overall total production of 322,878 tonnes of loose fruit was collected and sold by women with a value of around K23,592,952. On average, fortnightly income earned by women for 2016 was K239 per ‘mama’ card holder. The statistics for Bialla for 2016 showed that, a total of 2,479 women had their own harvesting card. The total tonnage weighed on ‘mama’ card in 2016 was 39,593 tonnes, which was approximately 21% of total

production and income. The total payment to women on the ‘mama’ card was K9,404,990. The average fortnightly income earned by women in Bialla was K237.

Finally, the scheme also received overwhelming support from male extension officers, OPIC field managers and the milling companies. OPIC which works closely with the milling companies previously implemented smallholder policies and provided agriculture extension and advice to men, and women were regularly left out. Due to the institutional context of smallholder oil palm production together with indigenous cultural norms regarding women, household labour and rights to own land and crops served to exclude women from active participation in oil palm production, especially on the LSS blocks (Koczberski *et al.*, 2001). Women were considered to be housekeepers and earned their income through marketing of food garden produce (Koczberski, 2007). Women taking ownership of loose fruit was aligned with men’s perceived gendered roles as it was a woman’s job to collect loose fruit. This has resulted in a paradigm shift in women’s roles from being “household helpers” to “Loose Fruit Mamas” – producers in their own right (Koczberski, 2007).

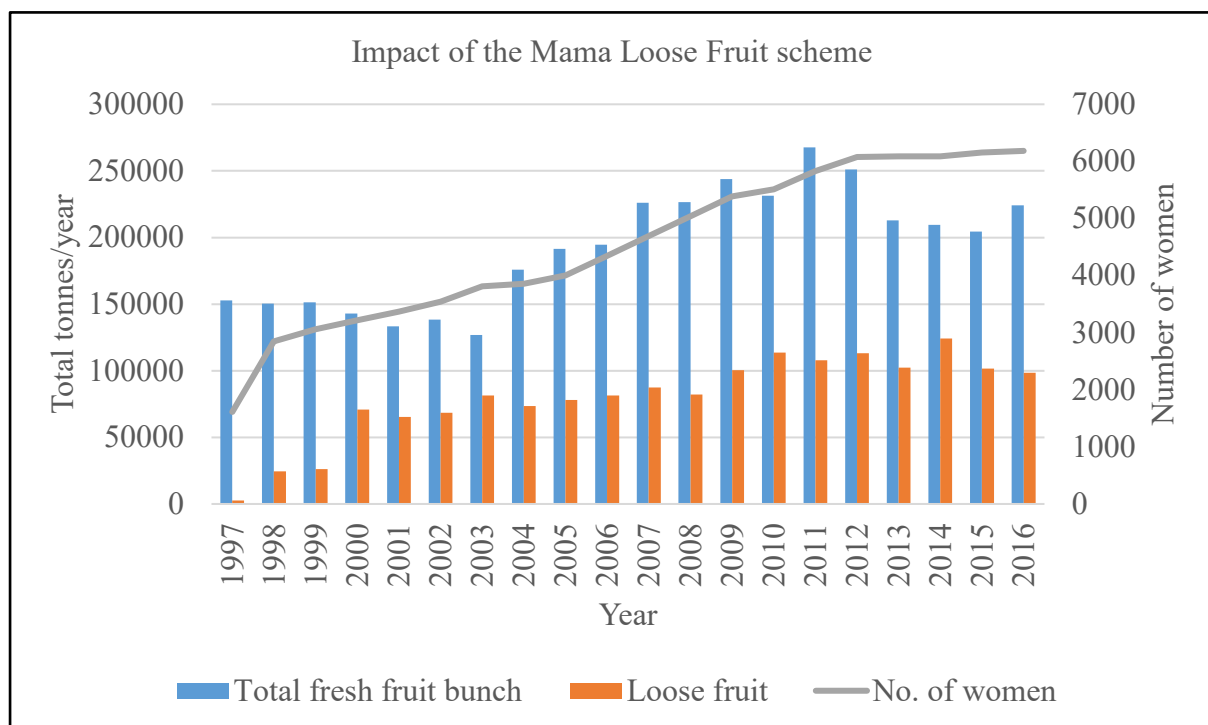


Figure 5.4: Numbers of women participating in the MLF scheme and total FBB production (tonnes) in Hoskins from 1997-2016 (Source: OPIC data 2016 & OPRA data 2016).

In summary, the MLF scheme has brought greater financial autonomy for women and this was highlighted in the interviews. Women have greater financial independence because of the

scheme and the social relationship between wife and husband has improved (less strained) (Koczberski, 2007). Women no longer need to ask their husbands for a share of the oil palm income as their husbands have already made their financial contributions to the household by adding FFB to women's loose fruit nets during harvesting (Lewis, 2000). Women have greater access to cash income and control over the use of income earned from the 'mama' card which has led to improved living standards. More women have bank accounts, and their financial independence has enabled them to engage in other income generating activities. Women are also better able to meet social and community obligations, pay a share of school fees as well as meet short-term family needs (see Figure 5.1). There are fewer disputes and domestic violence over income distribution since the introduction of the MLF scheme.

The employment of female extension officers has helped promote gender inclusion and the participation of women at the industry level in oil palm production. Women farmers now have access to information delivered to them by female extension officers. There is also improvement in farm management practices as women are now weeding around the base of the mature palms to collect loose fruit. The MLF scheme which was established by OPIC with the support of the commodity firms demonstrates the role commodity firms can play in reducing economic pressures within families that are often the source of intra-household conflicts (Koczberski, 2007).

5.6 Sustainability of the Mama Loose Fruit scheme

5.6.1 Household and social relations, especially relations between husband/wife

The MLF scheme has been running successfully for 20 years (1997-2017) and most likely will continue to do so into the future. All the women interviewed were overwhelming happy with the 'mama' card and wanted the 'mama' card to remain without significant change. An important factor contributing to the success of the MLF scheme was that the OPIC continued to monitor the effectiveness of the scheme to ensure that women continued to benefit from the scheme. Whenever there has been a threat that may undermine the benefits of the 'mama' card for women, the problem has been addressed. For example, when sons began collecting and cashing the 'mama' card cheques when the MLF scheme was first introduced, OPIC arranged for the company to directly deposit the 'mama' card income in women's individual saving accounts; OPIC also assisted women to open bank accounts for these payments. Addressing such challenges will be important for ensuring that the 'mama' card continues to benefit women and the industry as a whole, well into the future.

However, challenges to the scheme are emerging due to the rapid demographic and social changes occurring in the oil palm regions of PNG. Several challenges experienced by families, especially women have arisen, concerning the use of the 'mama' card. OPIC and the milling companies must address these challenges to ensure the sustainability of the scheme. During interviews, most women indicated that they faced some problems with their 'mama' card. The most frequently mentioned problems/challenges were in relation to demographic and socio-economic changes. There has been a large increase in the number of second generation households taking over the blocks from their fathers, the original leaseholders, who have retired or are deceased. The major challenge is the issue of inheritance as to who should take over the 'ownership' and the management of the block, especially among the married sons who live on the block. This can cause long-running disputes among both men and women over the access to oil palm income. As one female farmer in Vilelo section 5, LSS in Bialla said:

When our father passed on, our mother got remarried. She left me and my brother Robert alone on the block. I was the first born and Robert was the second born. We were the only two children in the family. Both of us used to share and use the 'mama' card equally between us. When Robert got married he allowed his wife to use the card and eventually changed the name on the 'mama' card to her name. Only when Robert and his wife are on good terms with me, will they allow me to use the 'mama' card (Joyce Tom, 16 February, 2017).

Also, population pressure, especially on the LSSs, has increased dramatically over the last two decades. In Hoskins LLS, the population density rose from 5.9 persons per block in the early 1970s to 18 persons per block in 2014, and at Bialla there was an average of 16 persons per block in 2014 (Curry *et al.*, 2012). Initially, the early farmers who took up LSS blocks in Hoskins and Bialla in the 1960s and 1970s were married couples with one or two young children. Now these blocks have multiple families as the sons grew up, married and continued living on the block. This confirms Curry *et al.*, (2012) that it is "now common for three generations and several families to be living on the one, 6 ha block and sharing the oil palm income".

Households living on densely populated blocks developed diverse livelihood strategies to alleviate economic and social pressures on the family block prior to the introduction of the MLF scheme (Koczberski & Curry, 2005; Curry *et al.*, 2012). There are few off-farm employment opportunities for the rapidly growing numbers of young people on the block, so people are highly dependent on whatever income they can earn on the block. Although having limited financial literacy skills they were able to venture into other small businesses such as poultry, sewing and trade stores. Rising demographic and socio-economic pressures have

placed much pressure on the ‘mama’ card thereby leading to new uses that are perhaps undermining its original purpose. For example, population pressure is forcing families to informally sub-divide the leasehold blocks amongst co-resident households, and the ‘mama’ card is sometimes rotated amongst co-resident households on sub-divided blocks as a way to enable household access to oil palm income. Thus on some blocks the ‘mama’ card is no longer used individually by women but as a payment card for the whole household.

Despite the challenges faced, the MLF scheme has enabled women to be financially and economically independent. The women have more control over the decisions they make in how they use their oil palm income. Although, MLF scheme has its challenges as discussed, the MLF scheme goals and purposes are still relevant today. The MLF scheme remains important because it contributes to increasing the smallholder oil palm production and maintaining household income security. Women spend more of their income than men on meeting the needs of their families resulting in direct improvements in quality of life of their families.

5.7 Overview of Women in Coffee Development program

The Women in Coffee Development (WiCD) program was established in the former extension division of the Coffee Industry Corporation in 1996. The program provides training to female farmers in all the coffee growing provinces on various aspects of coffee husbandry and marketing. It also promotes and encourages women to go into coffee farming as a business, and it acknowledges the contributions and participation of women farmers as developmental partners along the coffee value chain in the male dominated coffee industry of Papua New Guinea. The WiCD program is running into its 21st year since it was established. Since the introduction of the program there has not been any formal evaluation of the program.

The WiCD program can be described as operating on an *ad hoc* basis, meaning that the training has been largely dominated by male farmers. This happened for several reasons such as staff shortages in the coffee industry extension section which required the WiCD program coordinator to be allocated additional duties beyond the original purpose of her recruitment to coordinate the program. In addition, there was no officer within the organization, or the extension section with the knowledge and skills to conduct project monitoring and evaluation. This confirms Murray-Prior & Padarath’s (2013) final evaluation report on CIC’s extension service that it was difficult for them to assess the impact and sustainability of the program effectively without a logical framework in place to compare past and present data.

The WiCD program is a national program that should be coordinated and working closely with the provincial offices to engage in women's activities in coffee production. Although the program has its own budget and yearly work plans, there is a perception by the program's coordinator that the program has been either overlooked by the management and that the constant changing of priorities at CIC's management level resulted in its budgeted work programs not being implemented according to plans. This also affirms the sentiment shared by Rosina (Box 4.3 in Chapter 4) calling for the CIC as an organization to promote the work of women in coffee and to address gender issues in the coffee industries.

5.8 Impacts and Outcomes of WiCD program

The impacts and outcomes of the programs were based on the experiences of a few women who I interviewed in the coffee focus group as well as the coffee female extension officers. These women shared their experiences of participating in the WiCD program prior to management changes in 2004 which saw the extension division amalgamated with the research division to form the current division of Research and Grower Services (RGSD). Extension Services was transferred from the central location of Goroka to Aiyura making access to CIC extension services much more difficult for farmers, especially female farmers, from the major coffee growing provinces. During interviews all four female farmers (100%) from the focus group of Lower Unggai Community Development Foundation (LUCDF), indicated that, they had received no extension training from the WiCD program since 2004.

5.8.1 Organisational environment (recruitment of FEO)

The introduction of the WiCD program resulted in the recruitment of a female officer in mid-1997 who was given the position of 'Women Liaison Officer' who would work with female coffee farmers. However, she resigned mid-year of 1997 and the position was re-advertised in 1998 and filled by a female officer who has been in-charge of the program since then. In 1999 there were additional recruitments of female extension officers. Most of the female officers served the industry between 1-3 years and left for various reasons. Perhaps the cultural barriers for the women were insurmountable as well as the arduous work environment in the rural highlands. Only two female extension officers were left running the program until another female extension officer was recruited in 2014. This brings to date a total of three female extension officers in CIC managing the program. Three female extension officers were interviewed for this study while the fourth, was myself. As stated in my methods, I draw on my own experiences where relevant.

5.8.2. Extension Training

Data are lacking on the numbers of women who have attended training under the extension approach (also noted by Murray-Prior & Padarath 2013, p.39). Nevertheless, they said they used ‘soft’ evidence instead from the two evaluation surveys and the results were positive showing that all CIC extension staff and of course farmers who received training believed it increased access to services” (Murray-Prior & Padarath 2013). The previous extension approach saw the extension officer concentrating more on individual farmers while the current approach (FDDE-participatory) concentrates on farmer groups which is more effective and efficient.

In the same evaluation report, Murray-Prior & Padarath (2013) indicated that farmers and extension staff interviewed agreed that women have a greater participation rate in the FDDE activities than in earlier extension approaches. The goal of CIC extension is to have women make up 20% of group members; since the beginning of the new extension approach, 17.5% women attended training. The four members of the women farmers’ coffee focus group all agreed that when the WiCD program was centrally located in Goroka, they attended some extension training provided by the program coordinator. However, since the transfer of the extension services to Aiyura in 2004, they have not accessed training from CIC’s WiCD program.

5.9 Sustainability of the WiCD program

The WiCD is a good concept and should be given the recognition it needs at the management level to enable it to continue to serve its original purpose of gender inclusion. However, the program has had little impact because the program has been suppressed. Women’s involvement therefore must be strengthened. Women’s meaningful involvement in the coffee industry requires much more than just simply inclusion in training (Murray-Prior & Padarath, 2013). Having received some training or knowledge, income gains are not sufficient on their own to bring about real change for women if the institutional context including their lives, families, communities and society impose barriers on access to training (Murray-Prior & Padarath, 2013).

5.10 CARE International (PNG) Graduate Program

Many large and small employers offer formal graduate programs, which often include a structured training environment, mentoring and exposure to many areas of an organisation and

a chance to develop friendships and professional relationships with a broad range of people. Whether based in public or private settings, graduate programs are usually open to final year students and, in some cases recent graduates (Bolton, 2018, see Australian Financial Review in association with GradConnection, 2018).

CARE International (PNG) is a leading international humanitarian NGO working to end global poverty. The Head Office in PNG is in Goroka, EHP, started their 'Graduate Program' in 2015. The length of the program for the graduates is one year. This year, 2018, marks the third phase/year of the program. The graduate program is part of CARE's work with coffee export companies in the highlands to:

- Improve the policies and practices of agricultural based companies so they are more gender equitable and inclusive;
- Support coffee industry stakeholders to increase gender equality; and
- Encourage companies to employ both male and female agriculture graduates.

The CARE graduate program is about improving empowerment-changing structures, women's agency and gender relations. CARE is running a programme in Goroka, EHP, by placing female extension officers for one year with local coffee exporters such as Monpi Coffee Exports and PNG Coffee Exports and their partners such as *Apo, Angra, Kange* (AAK) Coffee Cooperative. The aim is that the exporter will see the benefits of employing women and take the female graduates on for longer-term employment. CARE has started the program with final year students or recent graduates in the field of Agriculture. CARE advertises the graduate program in PNG's two daily newspapers. The organisations participating in the program provide accommodation and allowances to the graduates. The graduates are rotated through all aspects of the business with the organisations in their internship training. It is the responsibility of CARE to provide return tickets for the graduates after the completion of their internship. There were four female graduates attached to the program in 2016/17, three of whom were interviewed¹¹. CARE is also working with CIC as part of their gender project.

5.11 Impacts and Outcomes of CARE graduate program

I chose the following five evaluation indicators to assess the impacts and outcomes of the graduate program. The indicators are used mainly for assessing change in households especially for women coffee farmers as well as their participation in coffee production:

¹¹ -The fourth female was unavailable for interview due to personal reasons.

1. Empowerment of agricultural female graduates. Since the program's introduction in 2015, eight female graduates have passed through this program (2015-2017);
2. Increased access to training for female farmers;
3. Improved participation of women in coffee production; and
4. Household livelihood advancement.

5.11.1 The views of the graduates

My interviews with the three female graduates indicated that the graduate program is perceived to be excellent. It has given them the advantage of job exposure, the opportunity of making new friends, learning new skills and working with different industry people. They also said that their active participation in the program with their host organisations has helped male field officers to learn to work more effectively with female colleagues. In addition, it gives a positive feeling during presentations to farmers, when female and male officers display cordial and respectful working relationships among themselves as professionals in front of their coffee farmers. The graduates interviewed also claim that the program has increased the number of female farmers participating in training and elevated their role in meetings because more female officers were conducting the training as well as doing coffee extension work (Boxes 5.2 – 5.4).

The three female graduates also said that they observed that the attitudes of the male extension officers in different organisations have been positive which they claimed was due to CARE's gender training that they had been conducting with these organisations prior to the graduate program (Boxes 5.2 – 5.4). Witnessing the success of the program, one of the female graduates suggested that the program should consider taking on male graduates as well and also extend the program to other courses /disciplines such as business studies and health in CARE's next graduate intake (Box 5.3).

One female graduate said that when it comes to females working in male dominated environments, it is also the responsibility of female extension officers to make an effort to work with male colleagues to maintain good working relationships because it is all about sharing ideas and knowledge in the profession. She suggested that women should be more assertive and not to be quiet and expect men to give them the recognition and respect without earning it (Box 5.3). Two female graduates expressed some dissatisfaction because they were expecting to be guaranteed a job by CARE after the graduate program but that was not the case. Perhaps,

the three female graduates did not fully understand the objectives of the graduate program. Further information about the three female graduates' experiences is presented in Boxes 5.2 – 5.4. These illustrate some of the experiences of female graduates under the CARE Graduate Program in 2016/17 (pseudonyms are used). The graduates are from the second batch of the graduate program.

Box 5.2: Story of Agnes.

Agnes is single and from Goroka, EHP. She graduated with a Bachelor of Agricultural Science from University of Technology, Lae, Morobe Province in 2014. She had been unemployed for a while when she learnt of CARE's 'Graduate Program' for female agriculture graduates through the daily newspaper in 2016. She applied and was accepted.

As a new university graduate with no work experience, she joined the program to broaden her knowledge through first-hand job experience and working with different people.

Agnes and another young female graduate were attached to PNG Coffee Exports and later she was seconded to AAK. PNG Coffee Exports had several male extension officers while AAK had none. Agnes recalled:

The two of us were the first female graduates to work with male officers out in the field. At first it was a bit tense but after a while the male officers started opening up to us. The organisation that I was attached to, the male extension officers have been involved a lot with CARE Gender training and how to associate with farmers so their attitude towards me was good.

Agnes observed that the male farmers stood up and did all the talking and decision-making at meetings and training. Most of the female farmers did not want to participate because they relied on the men to do all the talking. However, Agnes said she always encouraged female farmers to speak out and participate in training or field activities. She used to go one-on-one with female farmers especially after training and talk to them individually or as a group. Because she was a young female graduate and having to stand in front talking to farmers, women farmers, especially the younger women, saw her as a role model and felt motivated to participate effectively. Gradually Agnes said she saw changes in female farmers who are now opening up and talking to her and her female colleagues much more than before.

One of the many advantages of the graduate program was the capacity building training with CARE. She took part in many of their in-house training courses. This helped her to prepare for work in the field with farmers. As a young single female graduate working out in the field was very challenging and one must be strong to face the reality of working in a different environment because it is the only way that one will get used to such work.

Her only concern was the security of female graduates when carrying out extension work out in the field. However, the organisation that she was attached to always took care of its employees' safety. While Agnes thought the CARE Graduate Program was very good, she wished that the graduate program would lead to guaranteed jobs after the successful completion of the internship (Agnes, 21 December 2017).

Box 5.3: Story of Phyllis.

Phyllis is unmarried and is from Western Province. She graduated from Sonoma Adventist College with a Diploma in Tropical Agriculture in 2014. She applied successfully for a position in CARE's Graduate Program which she saw advertised in the daily newspaper in July 2015. She was attached to PNG Coffee Exports and later seconded to AAK Cooperative. She applied for the Graduate Program because she wanted to put her college knowledge and skills to good use as well as getting hands on experience and exposure in a real life work environment. Phyllis recalled:

I thought I would work with an NGO but I was surprised to be engaged with a coffee industry organisation. I was used to working with livestock and not tree crops but it was very interesting. The expectation I had for the program was to gain as much experience and exposure as well as build my capacity which I did through this program.

She shared her experience highlighting the fact that she was from the lowlands and had to move to live and work in the highlands region which was a frightening prospect; even her family members were worried, but eventually she settled in and all was good. She thought she would only be engaged in office work, but this was not the case. She worked with another female graduate and the male extension officers of the organisation and spent most of her time out in the field.

It was good working amongst male extension officers as she learned from them how to work with and approach coffee farmers. The male extension officers worked well with the coffee farmers. This was because they had attended a lot of CARE gender inclusive training as well as other capacity building training which had changed their mindsets. Although working with the male extension officers was a good experience, most of them were reluctant to share workloads or their experiences with her and the other female graduate. However, eventually they did so because she made the first move in approaching a male officer to offer to assist him and then male officers began sharing workloads and cracking jokes. Some of the male extension officers lack college level knowledge and most of them were farmers with some training to do extension work. Some were primary school drop-outs.

Initially, upon her secondment to AAK Cooperative, she was unable go out in the field as there were no male extension officers at AAK. However, she travelled with CARE staff to other provinces including Simbu, Jiwaka and Western Highlands to conduct Family Business Management Training (FBMT) to AAK Cooperative members and their families. Because female officers began conducting trainings the mindset of female farmers have changed and many female farmers and wives of AAK Cooperative members began opening up and talking freely and participating in extension activities because they felt motivated by the female officers conducting training.

The advantages of this Graduate Program are that it helps fresh graduates to gain experience. It helps in capacity building of young minds and thus motivates the graduates. They experience new work environments and learn new work cultures as well as lifestyles and traditional cultures of rural coffee farming communities in the highlands of PNG. Also, there are opportunities to meet new people as well as make new friends.

Phyllis' main concerns with the program were the safety/security issues because having to work in a new environment one does not know what risks lie ahead. Therefore, safety is always on one's mind. Phyllis said she had her own encounters in the field when it comes to security issues. For example, one time, having missed the transport home, Phyllis was shouted at by a drunken male farmer who was misbehaving and saying threatening words to her and thus frightening her. The other concern of the graduate program she had was that the graduates were expected to develop their own extension programs and it was confusing for them because they did not fully understand the organisation's activities. The organisation is supposed to do work plans and engage them as graduates in their respective programs.

Phyllis thought it was a good program and should be extended to other areas, not just agriculture, for example, in business and health (Phyllis, 21 December 2017).

Box 5.4: Story of Tori.

Tori is married and is from Goroka, EHP. She graduated with a Bachelor Degree in Agricultural Science from University of Technology, Lae, Morobe Province. She saw the CARE Graduate Program advertised in the newspaper and applied and was accepted. She applied for the graduate program because she wanted to work in the field of agriculture and saw this as an opportunity. Tori was attached to Monpi Coffee Exports within the Sustainable Management Services (SMS) section. Her expectations under the program were for her to work with the organisation and gain opportunities to meet new people. Her experience with Monpi SMS section was very good. She said at first she was nervous because it was a new environment for her but as time went on, she got to know other colleagues in the organisation who were friendly and welcoming. She said she had learnt so much from them and she has no fear anymore.

The advantage of the program was that it gave her exposure that will help her when she applies for jobs in the future. One of her recommendations was for CARE to find them a job after successfully completing the graduate program.

Monpi Coffee Export has several male extension officers and she was one of two female graduates working with them in the field. While working amongst the male officers she saw that the gender training given to the male officers by CARE had actually changed the mindsets of male officers in Monpi. The male extension officers were very kind and supportive and they all got on well with each other and the working relationship was good: “We discussed and shared ideas and talked freely with each other”.

She also had good working relationships with women farmers who spoke freely with her. However, she observed that many female farmers believed that coffee was for men. When they saw the female graduates, female farmers thought that these women did not know much about coffee. For example, when she told them to prune coffee trees, they looked at her indicating that they did not believe she would know how to prune coffee trees correctly. They thought that female extension officers would not know much about coffee work. Their views of male extension officers were the opposite. When male extension officers told them to prune coffee trees, the female farmers did so without hesitating as they assumed men would know more about coffee work. However, being a female graduate taking the lead in talking to both female and male farmers, began to change female farmers’ perceptions as they gradually started to talk freely to her. She believed her presence has motivated the female farmers as well as changing their outlook about gender roles in coffee.

Tori also observed that generally speaking, many of our farmers are illiterate, especially female farmers. It was sad to see that these illiterate female farmers were unable to speak *Tok-Pisin*¹² well. She said that this would constrain the uptake and adoption of knowledge and technological innovations. While the same applies to male farmers, the higher illiteracy rate amongst women makes communication with them more difficult than with male farmers.

Tori also said that as females and working in a male dominated environment, the women themselves have to bring themselves up in line with male colleagues to maintain good working relationships because it is all about sharing ideas and knowledge in the profession. Women should be more assertive and not be quiet, hoping that men will give them recognition and respect.

However, Tori mentioned that she sometimes had to keep a distance from her male colleagues because of the jealousies of their wives. She said it was the responsibility of male officers to make their wives understand the nature of their work so there should not be any negative thoughts about female colleagues. She said the same applied to female officers in explaining the nature of their job to their husbands too (Tori, 21 December 2017).

5.11.2 The views from the companies

Hosea Mailil is the Manager of Sustainable Management Services (SMS) for Monpi Coffee Export and he shared with me his experiences of the partnership through the internship program

¹² Tok Pisin is a creole language spoken throughout Papua New Guinea. It is an unofficial language of Papua New Guinea and the most widely used language in the country.

with CARE International. There were two female officers attached to his organisation and under his supervision. The two female graduates were working in a project called ‘Training Program Improvement’. The project had two main objectives. The first was to promote an effective training program that would have a significant impact on coffee farmers’ livelihoods; and the second was to enhance an effective and productive participation with women and illiterate farmers in coffee training programs. The partnership with CARE had great benefits. He identified the program and CARE partnership achievements as follows:

SMS training overview

Under the partnership with CARE, FBMT was introduced. The FBMT aimed to help farmers understand family roles and to more equitably share household tasks within the family. According to the SMS Manager, the training had the following impacts:

- Participation in FBMT by gender has shown that female attendance has increased.
- More women and girls attended FBMT when facilitated by female officers.
- More women are now seen at the buying points for coffee.
- The total number of farmers (participants) attending training has increased since 2014.
- Both husband and wife began to share the workload and knowledge in coffee.

Improvement through SMS extension

- Improvement in coffee quality: “*consistency [of supply] in plantation AX grade coffee especially from Monpi supplies*” (S. Pok, pers. Comm., 26 January, 2018).
- Farmers continue to attend SMS trainings, but this time with their wives.
- Desired result: Farmers are now more compliant with coffee certification ‘best practice’ standards.

The experiences shared by the SMS Manager of Monpi Coffee Exports in their ‘Partnership Achievement’ through various training activities in partnership with CARE and the attachment of female graduates through the Graduate Program have brought about positive benefits for both female farmers and Monpi Coffee Exports. For example, there was an increase in the number of participants of both genders undertaking training. The companies’ records showed that the participation in FBMT by females increased significantly by 42% (and male farmers by 62%) since 2014. This shows that families are happier working together, thus creating an equal playing field for female farmers and in the process improving their social status. As

pointed out by the Manager, all these positive achievements have occurred in terms of: improved consistency in production of coffee quality; growth in the numbers of female and male participants in training; and more respect for women because of the positive outcomes for women after seeing more women trainers advocating respect for women and their contributions to household well-being (H. Mailil, pers. Comm., 26 January 2018).

Brian Kuglame is the General Manager of AAK and he said that PNG Coffee Exports signed the partnership with CARE International (PNG) to partner in the CARE Graduate Program. The AAK Cooperative was a partner to PNG Exports and Mr Edwards, the then General Manager of PNG Coffee Exports, thought it would be more appropriate for the two female graduates to be seconded to AAK Cooperative for more exposure after spending some time with PNG Coffee Exports. Mr Kuglame believed the program in itself is a good program as it grooms the graduates at an early age as they are fully equipped with theories learnt in classroom but lack field or real work experience. It gave them exposure and built their capacities for future career advancement as well. He stressed that the program reflects a trend in PNG for the private sector to contribute more meaningfully to fill the gap in services left by the government. He said the program teaches young graduates to adopt and uphold work ethics, which is a problem in PNG now. He thought that through this program there would be some younger generation workers demonstrating good work ethics in their future work careers.

The female graduates seconded to AAK Cooperative performed well in their work duties. Although AAK Cooperative does not have male extension officers to work in the field, the female officers, however, were able to participate in CARE's training programs and take the lead in providing various training to members of the AAK Cooperative in EHP, Simbu and Western Highlands provinces. Mr Kuglame believed that having young female graduates conducting training and speaking to female farmers (and men), especially younger female farmers, is motivating them to adopt these young female graduate extension officers as role models. However, he was also very aware that that young female graduates are vulnerable to security risks, particularly at remote locations, and therefore, it would be safer to organise farmers into cluster groups and work with them. He made another point and strongly recommended that more female graduates be recruited through this program because they tend to take a broader view than men and could even help address through extension the significant health and malnutrition problems in rural PNG. He concluded by saying that it would be good

to promote more female extension officers to get the house in order first before we work with male farmers.

5.11.3 Female farmers increased participation in coffee production

As indicated above, more female farmers, especially the young ones, are gradually attending training, taking part in field activities and speaking more freely than before. It is likely that young female farmers felt encouraged by the young female graduates who probably were of the same age group conducting training. Talking to them may have empowered young female farmers to participate more in coffee production (Box 5.2). The female graduates also conducted FBMT for AAK Cooperative members and their families. Seeing the CARE female staff and the female graduates' team up in conducting the training has likely empowered the wives of the male cooperative members as well as other female farmers to participate actively in the training, extension activities and speaking freely (Box 5.3). According to the graduates the female farmers were very receptive of the female graduates and having female extension officers visiting the villages to give training was a great motivation for female farmers, to increase their role in coffee production. Similar to the situation in oil palm, the employment of female officers meant village women now had another female to ask advice on coffee production and management. However, as Tori's (Box 5.4) experiences shows, it takes time for female farmers to accept that female extension officers also held sound knowledge and skills of coffee production.

Tori found that some women in the community thought that coffee is men's work and it is the men who direct women in coffee production. Therefore, some women had the perception that they could not trust a female officer's coffee knowledge. Initially, they had little trust in the female officer and preferred receiving instructions from male extension officers. However, this situation has changed since the female graduates take centre stage in conducting training and extension activities such as coffee pruning. Gradually, female farmers began to change their minds and started listening to these young female graduates and getting directives from them. The female graduates concluded that because of their presence and influence as female extension officers, female farmers have become more motivated and their perception about gender roles in coffee has also changed (Box 5.4). In addition, it was observed that illiteracy rates among female farmers were high as female farmers find it even harder to communicate in simple *tok-pisin* language as well thus making communication even harder with female farmers than male farmers (Box 5.4).

5.11.4 Household and women's livelihood advancement

Monpi Coffee has observed that the coffee farming families are now happier than they were previously. Since the training, both husband and wife are now sharing workloads and knowledge in coffee production which has resulted in much improvement and consistency (of supply) in coffee quality. Household relations also appear to have improved as men and women work closely together in coffee. More male farmers are attending SMS training with their wives and coffee households are more compliant with coffee certification 'best practice' standards.

Also, more female farmers are seen to be buying coffee, as they now have more money to shift their focus into alternative income generating activities such as coffee buying rather than only selling coffee. Women's greater role in decision-making in labour inputs has seen some women focus on changing traditional gender roles in coffee and some are now engaging in coffee buying.

5.12 Sustainability of CARE graduate program

Overall, these are minor challenges and do not undermine the long term sustainability of the program. The CARE Graduate Program is a very good empowerment program and has the potential to be sustainable and produce long term benefits to female graduates and farmers. From the above experiences reported by female graduates in Boxes 5.2 – 5.4, it is clear that the graduate program and similar initiatives should be promoted in agricultural institutions to empower female graduates not only in agriculture but perhaps other disciplines as well. The new graduates have graduated with theoretical knowledge but lack practical work experiences. Therefore, such graduate programs as initiated by CARE International (PNG) with the Graduate Program certainly motivates fresh female graduates and gives them exposure to the real workplace environment thus grooming and enhancing their opportunities for employment and career advancement. Such programs also teach graduates work ethics and instill discipline and responsibilities in them as a new generation of leaders.

However, there were also some challenges identified by the organisation in this partnership including:

- Fieldwork planning: accommodating the graduates made their fieldwork plans less flexible during the SMS field attachment.

- Logistics: This was never an issue, however, on one occasion the graduate missed the CARE vehicle in the field causing the Monpi SMS fleet to re-organise transport thus inconveniencing a team member in another location.
- Graduates faced settling in problems due to family issues.
- Graduates showed great interest to do extension work, however, they are not used to field situations.
- Graduates are assessed in the field only by an assessor from the SMS section.
- Highly qualified graduates have high expectations of the support services available to them from Monpi despite having the conditions of engagement explained to them at the initial stage of their placements.

The program also gives participating organisations the opportunity to identify graduates for long-term careers in their organisations. The benefits it would bring to female farmers would be substantial as it will increase the participation and involvement of women farmers in coffee production. The knowledge uptake by female farmers would be enhanced as more female extension officers would be working with village women. The perceptions of gender roles by female farmers will also begin to change as women will no longer see coffee work as only a man's job. The FBMT has helped to improve farming families' understanding of shared responsibilities and decision-making.

5.13. Conclusion

Women's empowerment initiatives demonstrated by organisations such as coffee and oil palm industries and graduate programs such as that of CARE International (PNG) should be encouraged. Empowering women to participate fully as development partners in nation building is crucial because it will build better and stronger economies, and improve the quality of life for women, men, children, families and communities at large. Companies gain in productivity, technological innovations and competitiveness by developing policies and practices to improve gender equality at the workplace.

The next chapter explores the views of female farmers and their experiences of participating in export cash crop production.

CHAPTER SIX

VIEWS OF FEMALE SMALLHOLDER FARMERS

6.1 Introduction

This chapter will first examine some of the difficulties and challenges facing individual women in coffee and cocoa export crop production at the household and village levels. I will not be discussing smallholder female farmers in the oil palm sector because their experiences and difficulties, were discussed in Chapter 5. However, their experiences of working with female extension officers (FEOs) including receiving extension services and the level of benefits will be compared with the situation of smallholder female farmers in cocoa and coffee. Comparing these experiences will reveal how some of the new extension strategies for women such as the Mama Loose Fruit (MLF) scheme in oil palm and groups/cooperatives initiated by female farmers themselves in coffee and cocoa are delivering benefits for female farmers.

The second part of the chapter will look at new ways in which women are participating in export crop production by examining two female farmer groups; one in coffee and one in cocoa. The two case studies highlight why women formed and joined the group/cooperative. The two case studies identify the benefits the groups provide for women and how they have helped address some of the difficulties/challenges women face as individual farmers.

6.2 Gender-constraints in export crop production in PNG

It has been estimated that crop yields and farm income could be increased by around 20-30% by improving women's access to resources (APAARI, 2012). More so, increased participation of women in household decision making can substantially contribute to improved overall well-being of the family APAARI (2012). The phenomenon of gender inequality in labour contributions and remuneration in agriculture, and in cash crop production in particular, is worrying because it serves as an affront to women's economic empowerment. It is especially of concern considering that agricultural incomes continue to be the major source of income in most rural communities in developing countries (Bright *et al.*, 2000; Lanjouw & Shariff, 2002; IFAD, 2010; FAO, 2012; Zakaria, 2017).

Empowerment of women and gender mainstreaming at the national or country level, especially in developing countries, is very important considering the role that women play in agricultural development especially in relation to agricultural productivity, food security, nutrition, education and poverty reduction. Yet considering all of these, women's vital role is often unrecognized, and they face different and greater constraints than men. Recognising these constraints is an initial step to identifying ways that agricultural research and extension can address these problems and therefore contribute meaningfully to productivity and equity.

My discussion will explore the difficulties faced by individual female farmers in the coffee and cocoa sectors by analysing their difficulties/challenges using six categories:

- Land ownership
- Decision making
- Access/usage of income
- Access to extension services
- Gender-inequality, and
- Preference to work with female extension officers (FEOs).

These categories will provide a framework for my analysis of the similarities and differences of difficulties and challenges in the two different commodity crops. These will be used to further explore the views of female smallholder farmers on the determinants¹³ of effective female participation in cash crop production. However, it should be kept in mind that benefits or advantages have been gained by women from experiencing these difficulties that are further discussed later in the chapter. My interviews with four women each in the coffee and cocoa sectors revealed the difficulties they faced (Figures 6.1 & 6.2). The results showed that the main difficulties faced by the smallholder female coffee farmers were land ownership, internal family conflicts, land shortages, lack of taking part in decision-making, not having access or use of coffee income, lack of extension services, gender inequality and preference to work with the FEOs.

¹³ **Determinants** – Factors which decisively affect the nature or outcome of something.

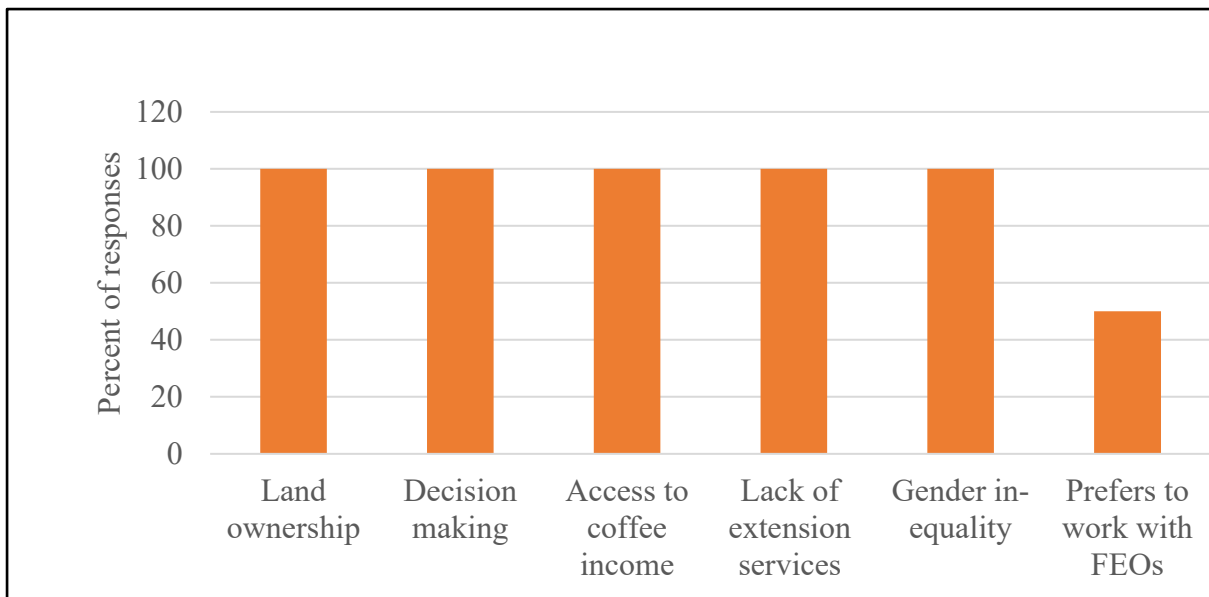


Figure 6.1: Difficulties faced by smallholder female coffee farmers.

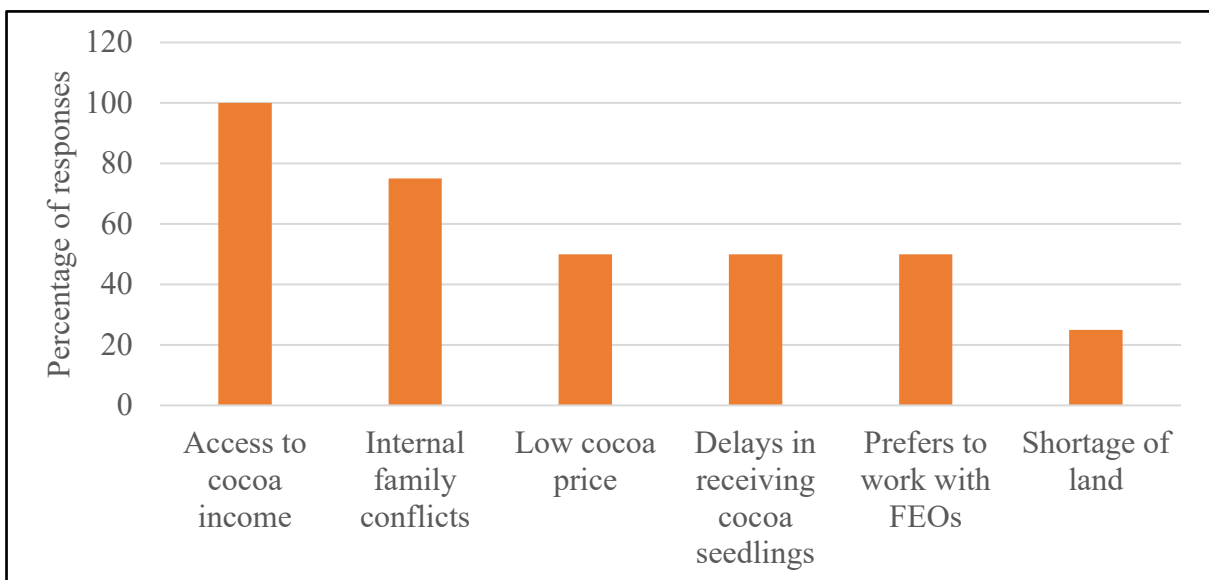


Figure 6.2: Difficulties faced by smallholder female cocoa farmers.

6.2.1 Land Tenure

Land tenure has a substantial impact on the livelihoods of smallholder farmers and agricultural growth and development. Farmers in PNG depend very much on the/their land to grow food and cash crops and rear livestock as well as engaging in other non-farming activities to sustain their livelihoods such as hunting and gathering, and building houses (Kerua, 2017). The land tenure system is culturally tied to whether the society is patriarchal or matrilineal. In patriarchal societies land is inherited through the male line, whereas in matrilineal societies land is inherited through female line (Manjor, 1999). At my study site in East New Britain Province

(ENBP), a matrilineal system of land tenure operates like in much of the New Guinea Islands region, whereas in my study site in Eastern Highlands Province (EHP) there is a strong patrilineal system of land tenure.

My interviews with female coffee farmers revealed that the land is ‘owned’ by their husbands, not by women independently. They are allowed access to the land for temporary food gardening but are not allowed to ‘own’ the land in their own names to plant long-term cash crops like coffee (see Boxes 6.2, 6.3 & 6.4). Therefore, the female coffee farmers saw ownership of land to be the main factor discouraging them from expanding their role in coffee farming. Their right to cultivate coffee is very tightly controlled. Similarly, in the matrilineal society on the Gazelle Peninsula in ENBP, my interviews with female cocoa farmers revealed that the land planted to cocoa was sometimes owned by their husbands (see Boxes 6.5, 6.6 & 6.7). Some husbands had inherited the land from their mothers, and these cocoa blocks would eventually pass to the husbands’ sisters’ sons. Although it is possible for the wife to take control of the land after the death of a husband (see Box 6.5). This shows that although matrilineal systems dominate in villages on the Gazelle Peninsula, men are still very much in control of land matters, especially long-term access rights. Access to land for cocoa production was not the main factor discouraging women at the time of my fieldwork from cocoa farming. Rather, many women commented that it was shortages of land that was a barrier to further expanding their time and labour in cocoa production.

6.2.2 Decision-Making

The literature on decision-making is discussed in detail in Chapter 2. Female coffee farmers stressed in interviews that household decision-making is dominated by their husbands. Men take charge in all decision-making which leaves little or no room for women (as wives) to take part in decision-making in coffee production (see Box 6.3). Female cocoa farmers, however, indicated that they had fewer problems with decision-making as they also contributed to household decision-making in their families. This could perhaps reflect the fact that women have more status in matrilineal societies and would therefore be in a stronger position to engage in decision-making processes with their husband when it comes to making decisions about agricultural production. These same women, however, said that they often experienced internal family conflicts with siblings over income and other matters (see Boxes 6.5, 6.6 & 6.7).

6.2.3 Access to cash crop income

Poor access to income from cash crop production is a problem faced by many female farmers in PNG (Chapter 2, 2.6-2.14). All the female coffee farmers interviewed (Figure 6.1) reported that they had limited access to income earned from coffee despite contributing much of the harvesting labour (Chapter 2, 2.6-2.14) to coffee production. There are few incentives for women to contribute their labour to coffee as their labour is used freely and is often unpaid by their husbands. Female cocoa farmers reported that they had better access to cocoa income. This demonstrates that they have more control over how the money is used at the household level than female coffee farmers. This is likely to reflect their greater economic empowerment relative to female coffee farmers.

6.2.4 Lack of extension services

Women's access to agriculture extension services is limited by many factors (see Chapter 2, 2.6-2.14). Female coffee farmers I interviewed, indicated that they had not received any extension training nor had been in contact with CIC extension officers, including the CIC Women in Coffee Development (WiCD) program (Chapter 5) that was established as the gender desk and responsible for assisting women in coffee farming. Despite the WiCD, extension services have not been channelled through that program to the female coffee farmers (see Boxes 6.2, 6.3 & 6.4). Perhaps the main reason for the lack of contact and delivery of extension services to female coffee farmers has been the disruption caused by the amalgamation and relocation of the extension services division under the new organisation's structure in 2003. The extension division was merged with the research division and relocated to Aiyura (Chapter 5, 5.7), from once being centrally located at the CIC's head office in Goroka, EHP. Other reasons would be the lack of awareness about CIC's new extension approach of FDDE as the farmers were used to the traditional T & V system (Chapter 2), and perhaps because of the decline in staff capacity at CIC. Female cocoa farmers had no problem with extension services at the time of my fieldwork as the extension service was provided by AgMark Limited, a private sector driven extension.

6.2.5 Gender inequality

Like male farmers, female farmers engage in both subsistence and commercial production, growing both food and cash crops (see Chapter 2). From my personal experience and observation, most women who farm are living in male-headed households and these women also need agricultural developmental support. Gender differences vary regionally and locally

and are changing continuously due to economic, social and cultural factors (Mehra & Rojas, 2008). Interviews with female coffee farmers revealed that there is gender inequality in the delivery of extension services (see Box 6.1). Male coffee farmers attend or receive more extension services than female farmers; female farmers tend to be neglected. The unevenness in extension services between genders including uneven access to resources should be addressed. Female coffee farmers' call for more gender inclusive awareness and training should be met through the office of CIC's WiCD program or by other developmental partners to promote gender equality between male and female farmers in agricultural farming.

6.2.6 Experiences and involvement with FEOs

Female farmers interviewed in both coffee (50%) and cocoa (50%) indicated that they appreciated working with both female extension officers (FEOs) and the male extension officers (MEOs). However, half (50%) of the women interviewed said they preferred to work only with FEOs. Female farmers who felt more comfortable speaking to a female officer than a male officer, said female officers would understand them (as women) better and therefore would work well with female farmers. The other half (50%) of women said they felt comfortable working with either FEOs or MEOs. Perhaps, these women seemed to have more outgoing personalities that made it easier for them to communicate with men.

6.3. New ways in which women participate in export crop production

Despite the widespread disadvantages faced by women, it is clear that women have confidence in how they operate as individuals and in their livelihood roles as well (Cahn & Liu, 2008). The factors inhibiting women's economic empowerment not only at the intra-household level (gendered power relations within household relating to decision-making and control of household resources and income), but more widely at the community level need to be identified and addressed (Zakaria, 2017). Improving smallholder female farmers' position in relation to power sharing and participation in household decision-making and access to household productive resources and income is necessary to boost women's interest in participation in cash crop production and help improve rural women's income and cash security (Zakaria, 2017).

Moreover, gender equality cannot be promoted and improved if women themselves do not take a leading role in creating room for change. It is clear that when training is focussed on the needs of women but at the same time also makes room for greater community participation

and is inclusive of men and youth, men's perceptions and attitudes towards women will change in a positive way (Cahn & Liu, 2008; Pamphilon & Mikhailovich, 2017). Allowing men to be part of women's community-based gender training programs will not only address women's gender-sensitive training needs but also take into consideration the gender educational gaps and differences of how men and women behave publicly (Cahn & Liu, 2008). It takes effort for women to build self-confidence and take on leadership roles, particularly in strong patriarchal countries like PNG. As previously discussed in Chapter 4, there is an entrenched stereotype mentality amongst women that they are culturally bound to be below men. This mentality is deep-rooted in women and hinders their social progress and economic empowerment. However, in today's modern times women must take ownership in creating and bringing changes for themselves, for their families and their communities, and break from this cultural mentality of women's relative place in PNG society. This is especially the case for female coffee producers who have very limited access to extension training and other resources.

6.3.1 Experiences of smallholder coffee farmers participating in a farmer group

Boxes 6.1 – 6.4 illustrate some of the experiences of individual female coffee farmers who have come together to create change in their community. All are members of Lower Unggai Community Development Foundation (LUCDF). Boxes 6.2, 6.3 and 6.4 outline the benefits the women gained from joining the group after experiencing their own individual difficulties/challenges. Sally Lomutopa (Box 6.1) is the founder of the group and was one of the four smallholder female coffee farmers I interviewed. She shared her experience in initiating and taking the leading role of forming a foundation to help the communities in her district, as well as becoming involved in a coffee business with her husband.

Box 6.1: A success story of a female farmer's leadership in a patriarchal society.

Sally Lomutopa is the founder of Gotipe Women's Group (GWG) in 1998. She formed the group with 36 female members. Sally said "I decided to start something instead of waiting for free handouts from others. So I started the GWP to make it easy for us women at the village level to receive training from development partners who would like to work with the group". The aim of the group was to improve the living standards of coffee farming families in the village.

The GWG was affiliated with the Unggai/Bena district council of women. Community members at large were also incorporated into the GWG when the men said they would like to participate and become active members of the GWG. This has resulted in the change of name from GWG to LUCDF in 2003. The group consists of women, men and youths from coffee households from 22 cluster coffee groups affiliated to LUCDF. The total number of members in the LUCDF is now 1,768. All members of the foundation aim to work together in

Box 6.1 Cont.

targeting family units to improve living standards in social and economic aspects. The main source of income for the foundation is coffee. Sally said her husband owns the land and the coffee garden. She said that in their society, culturally it is men who own the land (patrilineal). Women get married and go and live with their husband under his care thus sharing their husband's wealth and properties but not owning them. Coffee is a male dominated crop and is also used as a territorial crop to assert control over land. Sally stressed that coffee money is always controlled by men. Vegetable farming is mainly done by women and so women controlled the income from vegetable sales.

Sally explained the benefits of forming LUCDF as follows:

- Having a communal community training centre paves the way for potential developmental partners who would like to work with the group. They can come to the village and conduct training. For example, Coffee Industry Corporation (CIC) is soon to conduct training on all aspects of coffee husbandry and quality. CARE International (PNG) is to conduct training on financial literacy and gender inclusive training.
- Strengthens group cohesiveness so foundation members can work together.

Sally said she has no preference for male or female extension officers to come and work with her or with the group. She likes to work with both male and female officers who have the heart to work with rural people and are committed to work with them in their group. For 16 years now her group has been without assistance from the CIC WiCD program and now her group is engaged with CARE International to roll out coffee extension work. Sally said "I heard there is a WiCD program in CIC but I do not know if that program is in existence or not as there is no awareness about that program. I have written letters to CIC's management to consider establishing a women's desk to address women's issues and concerns but [my letters] have fallen on deaf ears. When creating a gender desk, the office must be centrally located at CIC head office in Goroka and must be fully resourced and financed so the officer coordinating the program can carry out her job effectively and efficiently with female coffee farmers, Community Based Organisations (CBOs) and so forth".

She said there is still inequality between men and women. "Therefore, we need the gender desk at CIC to work with the coffee farming families at large to address issues of inequality. We need the women's desk at CIC to work more closely with female coffee farmers. Although LUCDF is working in partnership with CARE, the coffee marketing component is not included in the CARE training programs. That is why they need CIC's women in coffee development program coordinator to work with us". Sally said; "Truly speaking, women don't want to be involved or participate in coffee farming simply because the men/husbands are the ones earning and keeping coffee money for themselves. It is always the men who make financial decisions despite the hard work and time put into coffee by female farmers" (Sally Lomupota, 7 April 2017).

Sally Lomutopa's story is an example of an ordinary rural village female farmer and wife making a difference in her community by breaking with cultural stereotypes and bringing about change in her community. The initiative taken by Sally is a 'journey of transformation', and through her established foundation men and youth also became members of the group. They then began participating in training programs through CARE International (PNG) on topics like gender equality training that would enhance their capacities and change their mindsets about women's roles and positions in society. This kind of capacity building through community education and training and awareness programs that aim to change societal roles and norms by leveraging men's support should be promoted and supported. Only with this kind of mindset change will real and lasting progress be achieved.

With her leadership style and being a role model in her community, Sally has motivated other women farmers to join the group and they too have their own stories of their experiences, difficulties and the benefits they gained from the group (Boxes 6.2 – 6.3).



Plate 6.1: Photo of Sally Lomutopa, founder of Lower Unggai Community Development Foundation.

Box 6.2: Gloria's story.

Gloria Kiawe joined the LUCDF in 2014. Gloria took her children and returned to her village and lived with her brothers after her husband passed on. Her brothers own the land and coffee gardens. She was allocated a coffee garden by her brothers to temporarily earn income from it in order to raise her children.

Gloria had a personal savings account with 'Alekan Savings and Loan Society' and she took control of her own money. She used the money she earned from the coffee sales to pay her children's school fees and their personal and household needs. She also assisted in customary/social obligations in the community.

When Gloria was given the coffee block by her brothers, the coffee trees were overgrown and waterlogged. She said the coffee trees tend to bear better in dry periods than in wet periods. Nevertheless, she weeded and managed the coffee garden as best as she could and harvested whatever coffee grew in the coffee garden.

The LUCDF is an independent group and not part of the CIC's farmer demand driven extension (FDDE)

Box 6.2 Cont.

program. Because it is not part of CIC's FDDE program, it is more difficult for her as an individual farmer to access extension services. Also, having seen the coffee trees not producing well prompted her in joining the LUCDF. Gloria said, she was very happy that she joined the group because it has enabled her to participate in group activities with other women and receive all kinds of training such as coffee extension training on pruning, financial literacy and budgeting. The training was provided by CARE International (PNG) in partnership with CIC.

When asked if Gloria had any knowledge of the CIC's WiCD program, she said: "no, I don't know about this program in CIC and therefore, I can't say much about it. But if there is such a program in the organisation, then it would be good for them to come and work with us and provide training to our group members, especially the female farmers in the LUCDF". There should be more awareness made about the program. She said: "The CIC as an organisation should support and promote the program at a higher level so we know that there is such a program in CIC". This would be the best way forward for the group to work with the WiCD program and other NGOs such as CARE International (PNG) in order to strengthen and encourage more involvement of rural female coffee farmers.

Gloria indicated that although she had great interest in growing coffee, the main factor discouraging her from expanding her role in coffee production is she has no land. The land is owned by men, in this case her brothers (Gloria Kiawe, 7 April 2017).

Box 6.3: Bulai's story.

Bulai Atore joined LUCDF when it was initially established as GWG in 1998. She said the coffee garden is owned by her husband. She uses only land that belongs to her husband but does not have land in her own name. For example, she can cultivate on his land but technically will not have access to this land after he dies. The land will be given to sons or taken by her husband's brothers if he does not have a son. "This discourages me from growing coffee because the land, even distribution of land and everything is owned by my husband". Bulai said she and her husband used to discuss how the coffee money should be used at the family level, however, her husband always has the final say, even in the distribution and usage of money because she said the husband is in charge of coffee money. She said she used to do all the coffee work because her husband was a lazy man. Bulai said, it is unfair for her husband to control the coffee income but because the coffee trees and the land are his, he is the boss. Bulai does not have a savings account because her husband controls the money and she has no money to save.

She has remained a loyal member of the LUCDF because she will receive training and other assistance channelled through the group. She said she made a good choice of joining the group because they are receiving training from CARE International (PNG) and the training will improve her knowledge so she can better look after the family's coffee gardens and increase production and earnings from coffee sales. Bulai said it is through the group she has the opportunity of receiving training on coffee extension, financial literacy and budgeting that will help improve her family's living standards through the income earned from coffee. Her husband is also part of LUCDF now and he will also receive training in budgeting which will help him to become less greedy in relation to coffee income.

When asked about the WiCD program in CIC, Bulai indicated that she heard of the program in the late 1990s and a female officer used to go and work with the group when the group was first established but not anymore now. She did not know if the program still existed in CIC or not. She said if the program still existed in CIC, then it would be good for the female officer to come and work with the group. CIC should make more awareness about the women's program because it is a good program and it will help us as female farmers too. "The CIC management must support and promote the WiCD program because such program will encourage us as women and boost our interest in participating and getting involved in coffee farming as well we will know there is a program specifically there to support female coffee farmers". Bulai said she and other group members lacked training on coffee marketing. The CIC WiCD program officer should come and conduct the marketing training for us and take our group to the next level.

Box 6.3 cont.

Bulai said she is comfortable working with female extension officers because female officers as women will understand her well. She said: “The female officer will teach me properly on how to do things correctly. I feel comfortable to talk to female officers who will understand me well and also whatever issues I may have, even personal issues, she will listen and help me” (Bulai Atore, 7 April 2017).

Box 6.4: Agnes’ story.

Agnes Michael joined GWG in 1998 and has remained in the group since then. She joined the group mainly to access training or new interventions through the group so she can improve her way of life with her family. Coffee is the main source of income for them so joining and benefiting from the group is a good thing.

Agnes said her husband had passed on and her first born son has taken over the land and the coffee garden. The son has divided the coffee garden and given part of the coffee garden to her and her daughter. Agnes and her daughter have use rights to the coffee garden but do not own the land or the coffee trees. They only use it temporarily until her daughter marries or the mother passes on. Then their portion of the coffee garden will be returned to the son. Agnes said she is happy with the arrangement and is also looking after the coffee garden by weeding and pruning.

Agnes and her daughter have looked after the coffee garden well and are selling the coffee and sharing the income between themselves. She has no restrictions on how she uses her money and she decides for herself. Agnes said she used to save money when her husband was alive but not anymore now after his death. She said because she is getting old she has no plans of saving; she will just use her money but she is also helping her grandchildren in paying for their school fees including customary and social obligations whenever she could.

Agnes indicated that family conflict has discouraged her from expanding her role in coffee farming: She said: “We have our own family issues and conflicts within the family. We also fought over the ownership of a vehicle amongst the family. We contributed our money earned from coffee towards purchase of the vehicle. The issues have not yet been resolved”. She has no knowledge about the CIC’s WiCD program. She said it is a good program for the women especially female coffee farmers, and that the officer looking after the program should go and work with their group, LUCDF. The group has grown and now includes men and youths’ too so it would be good for CIC to come and work with the group members. At the moment it is CARE International (PNG) that is working with the group and teaching them financial literacy and budgeting.

Agnes stressed that although LUCDF is not one of CIC’s FDDE groups, having learnt that CIC has the WiCD program, she suggested that CIC through the WiCD program should come and work in partnership with NGOs like CARE International (PNG) and work with LUCDF. Agnes said she does not mind working with either male or female extension officers because they also have men and youth as members of the LUCDF (Agnes Michael, 7 April 2017).

6.3.2 *Experiences of smallholder female cocoa farmers joining a cooperative group.*

Boxes 6.5 – 6.8 illustrate some of the experiences of individual women cocoa farmers which explain why they became members of the Vunaiting Agro-farmers’ Cooperative (VAC) and the benefits they derived from membership of the group.

Box 6.5: Aidah's story.

Aidah is a widow and she joined VAC in 2016 which was established by the cooperative founder and leader, Mr Lui Urawai. Aidah said she joined the group because Lui introduced the cooperative to the villagers and asked them to become members and gain benefits from the cooperative. Aidah thought it was a good idea to join as she had other income activities apart from cocoa, such as floriculture, vegetable farming, a trade store and selling fuel. She said: “because I got other small business too, I think it is good I join the cooperative as I can participate in training and other assistance that will be coming through the group”.

Aidah’s husband used to own the land and the cocoa block. He inherited the land from his mother. Before he died, he made a will that the land and the cocoa block will be passed onto his wife. Since her husband passed on, Aidah now owns the land and the cocoa block. She has total control of the money earned from cocoa including how the money is spent. Owning the land and other small business activities, she thought that training through the group would enable her to do group marketing of cocoa so she could earn price premiums to improve her family’s living standards. She is happy managing the cocoa block including her other small businesses in the village.

The VAC is a registered cooperative group established by the farmers themselves. Due to lack of access to good extension training, VAC approached the private sector-AgMark-the local cocoa exporting company. The group now works in partnership with AgMark and can now benefit from the funding from the World Bank through AgMark for cocoa extension programs. AgMark has assigned an extension officer to work with the cooperative, and this has improved access to cocoa pod borer training for both men and women.

When asked about the best way forward to work with the cooperative group since she has become a member. Aidah said: “the group members must cooperate and work together. The members must listen to each other as well as respecting each other and the group leader and executives. It is good to be able to get some training through the group too in the future”.

However, there are factors that discourage her from concentrating on cocoa farming. First is that, her land area is small which does not allow her to expand her cocoa holdings. The other issue are the constant personal family disputes with her siblings and her own children that distract her attention away from cocoa work. Her children are not always helping in looking after the cocoa block and even harvesting too. Yet her siblings and her children are always asking for money and most times she doesn’t give into their requests (Aidah Tarut, 21 April 2017).

Box 6.6: Francisca’s story.

Francisca Varvagia is a member of VAC. She and her husband joined the group in 2016. They were invited to join the cooperative by Lui Urawai, the cooperative leader. Francisca said she was interested in joining the group to receive training to raise her cocoa production and income to improve her family’s living standards. Francisca said: “The cooperative is new and has been launched recently in 2016 but nothing much has been happening as yet so I cannot comment further about my experiences and benefits or on the performance of the cooperative group”.

Francisca said her husband owns the land and the cocoa block. Her husband allows her to harvest and sell cocoa and control the income earned. She has no problem in using the cocoa money because she and her husband discuss how to use the money. Her husband does not dominate decisions about income.

The factors that discourage Francisca from cocoa farming are internal family issues on her side of the family especially with her siblings over disagreement about money issues, family members’ needs and expectations including the many troubles and court fines that need to be settled. These are some of the issues that have distracted her attention away from working on the cocoa block. Low cocoa prices is another discouraging factor as well.

Francisca does not mind working with female or male extension officers. “However, having to work with a

Box 6.6 Cont.

female officer would be nice because I may have other personal issues at some point in time and it would be more appropriate for me to be able to share with a female officer than a male officer.”

When asked about the best way forward to work with the cooperative group since she has become a member, Francisca said: “we must listen to one another and work together as a group. We must listen to the group executives. We must also respect the opinions of other members of the group” (Francisca Varvagia, 21 April 2018).

Box 6.7: Josephine’s story.

Josephine and her husband were introduced to VAC by Mr. Lui, and they joined in 2016. She said they joined the cooperative so that they could gain assistance through the group to improve their life in the village, such as extension training and marketing of cocoa through the cooperative. She cannot share her experience yet because the cooperative has been recently launched in 2016.

Josephine said her husband is the head of the family so he owns the land and the cocoa block. However, when it comes to dealing with cocoa money, they both decide together how the money should be used. She and her husband have a joint savings account, but she also has her own individual personal BSP savings account where she has saved some money earned from cocoa sales.

The factors that discourage her from cocoa farming are mainly delays in the supply of cocoa seedlings from AgMark after payment for the seedlings are made, and the continuous internal family conflicts especially on her husband’s side of family over land shortage that restrict further cocoa expansion activities.

Josephine said that the best way forward for the cooperative is for all group members to cooperate with each other and work together.

Josephine feels comfortable working with female extension officers because she can talk openly and freely with them. Female officers tend to listen carefully with patience and respond respectfully. Female extension officers conduct training and clarify things more effectively than male extension officers (Josephine Vinau, 21 April 2018).

Box 6.8: Anastacia’s story.

Anastacia was introduced into joining the cooperative by an immediate family member from the village and she joined the VAC in 2016. She said she joined the group because cocoa is the main cash crop in their community. After the infestation of Cocoa Pod Borer on their cocoa pods, she thought joining the cooperative would be good because the group will work together and benefit from whatever interventions that may come from group membership such as receiving extension information and training or marketing of their cocoa overseas.

Also, joining the group is a back-up plan for her and her husband to fall back on after his teaching career finishes. They could improve their cocoa production and income through membership of the group.

Her husband is a primary school teacher and he was teaching in West New Britain Province. She followed her husband around wherever his teaching took him. She said she had a cocoa block and owns the land as well in Ramalmal village in Rabaul, ENBP. The land with the cocoa block was passed onto her by her father who subdivided the land amongst his children. Her father inherited the land from his mother. Whenever she goes home to Ramalmal village, she harvests cocoa from her cocoa block, the same cocoa her father left her with on her family side.

Box 6.8 Cont.

She shares the income with her husband from the cocoa sales on her block of land. When it comes to decision-making, she and her husband always have discussions together about family matters and over how the money is used together both from sales of cocoa and from the formal employment from his salary.

The factors that discourage her from cocoa farming are mainly delays in the supply of cocoa seedlings from AgMark after having paid for the seedlings, and low cocoa prices.

The best way forward for the cooperative is for all group members to respect each other and work together.

Anastacia feels comfortable working with female extension officers because she feels free to talk with them openly. Also, she feels that female extension officers have a tendency to explain things clearly and calmly (Anastacia Mision, 21 April 2018).

The stories and experiences of smallholder female cocoa farmers showed that they were encouraged to participate and become members of a new cooperative group at the beginning of its formation, so that they could also benefit from extension interventions and information channelled through the group.

6.4. Conclusion

The difficulties faced by individual female farmers in coffee and cocoa sectors are different to the difficulties experienced by oil palm female farmers in terms of land ownership, decision-making and access /usage of money and gender inequality. I say this because in oil palm the MLF scheme was initiated by the leading extension organisation for the female farmers to address those difficulties experienced by female farmers. The problem of land ownership is not an issue for women as the land in the oil palm is predominantly leasehold. Oil palm female farmers are in control of their own income earned from loose fruit; and they make their own decisions about how to use their income. Further, their labour inputs are very well compensated through direct payment from the milling company and FFB contributions from their husbands. For example, women's labour invested in block maintenance is rewarded with rights to harvest loose fruit.

In the coffee and cocoa sectors, the groups/cooperatives were established by farmers themselves. For example, in coffee, the LUCDF was initiated and established by a female farmer who encouraged other women to join. In the cocoa sector, the cooperative was established by a male farmer but which was also inclusive of women. These two groups are examples of local groups initiating new ways to increase women's participation in export crop production while addressing the difficulties women face in accessing extension training.

In comparison to oil palm and cocoa female farmers, the difficulties experienced by the coffee female farmers is greater in terms of land ownership, decision-making, access/usage of income and lack of extension services. The difficulties faced by female coffee farmers are also defined by the cultural environment in which they live and operate. For example, in the highlands coffee sector, society is patriarchal and men tend to have greater influence and control over women, making it difficult for them to participate effectively in decision-making (power sharing) and also to have equitable access to income.

Although female farmers in cocoa were from a matrilineal society, they tended not to control the land used for cocoa production as one would have thought would be the case. Land is inherited through the female line, but it is women's brothers who control the land for cash crop production. However, land was not an issue for smallholder female cocoa farmers but internal family feuds were considered to be the main difficulties (see Boxes 6.5 – 6.7).

On the whole, most female farmers in the three commodity sectors indicated that they prefer to work with female extension officers rather than male extension officers because they feel more comfortable speaking openly and freely to them as they better understand the daily inequalities and work burdens village women face as farmers, wives, mothers and sisters.

In the next chapter, I provide conclusions for the thesis, make recommendations as a way forward for the CIC as an organisation and the PNG coffee industry.

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter summaries the key findings of the research and provides recommendations for Papua New Guinea (PNG) extension organisations to improve the status of female extension officers (FEOs) as well as strengthening and expanding smallholder women's empowerment programs in their respective organisations. The chapter begins with an overview of the main argument, and then it provides a synthesis of the key findings and recommendations.

The main argument of the thesis is for the key extension organisations in PNG to acknowledge the important role of women in export crop production and how, by meeting their extension needs, overall production would be improved. In the process of addressing women's extension needs and lifting overall production, the livelihoods and economic empowerment of women would be advanced with benefits for their families. It is clear from this study that there are gaps in our knowledge about the gender constraints operating to limit the roles and impacts of female agricultural extension officers in PNG. Furthermore, the target of extension, smallholder female farmers, also face many challenges and difficulties in export crop production at the household level. These remain the major challenges in PNG extension organisations and are undermining women's significant contributions to export crop production. Therefore, it is necessary for extension organisations in PNG to understand and reduce this knowledge gap to create more conducive working environments for FEOs as well as supporting and strengthening women's empowerment programs within the extension organisations.

7.2 Key findings

7.2.1 *Lack of funding and management support*

The cutbacks in extension funding remain a serious and an ongoing problem. This remains so because over the years there has been a continuous decline in the allocation of funds to extension services in PNG (Sitapai, 2012). The lack of institutional support in terms of funding and resource allocation have impeded the effectiveness of extension delivery in all commodity sectors in PNG, but seems to be more of a problem in cocoa and coffee than in oil palm. The problem of severe organisational funding constraints is faced by both female and male

extension officers in all the agricultural extension organisations in PNG, but is particularly acute for female extension officers (see below).

These are very challenging issues faced by the FEOs working in the major export commodity organisations which are male dominated. Men usually receive priority in funding and therefore receive more resource allocation for their extension activities than women. So even though the proportions of female extension officers have increased through time, their capacity to undertake extension for female farmers remains severely constrained. Without adequate funding to perform their duties, then additional recruitment of FEOs will be unlikely to fully achieve institutional goals to raise the productivity and status of female farmers.

7.2.2 Difficulties working with male colleagues

The thesis has shown that it is often very challenging and difficult for female extension officers to perform effectively in male dominated work environments. The attitudes of men to their female colleagues can cause discontent and unrest in the workplace which can result in poor work performance. The generally male dominated culture of PNG also permeates the workplace which can marginalise women and certainly makes it much more difficult for them to perform their extension roles. Furthermore, it is also not culturally acceptable for a woman to seek assistance from male colleagues or for female officers to assert their authority over their male colleagues, nor give advice to male farmers.

The culture of male dominance in the workforce has great influence as well on the performance of FEOs. For example, in the coffee industry men have dominated the senior positions since the start of the industry. Also, since coffee is considered to be a man's crop among the farming communities, many farmers saw the recruitment of FEOs in a negative light. However, the study found that those FEOs who had their spouse or partner working in the same organisation, had a more receptive work environment than other FEOs who did not have a spouse or partner working in the same organisation. This cannot be seen as an intractable problem because when there is good senior leadership promoting the role of FEOs (e.g. Oil Palm Industry Corporation (OPIC)), FEOs can perform very effectively. So there is hope for the extension organisations if they provide genuine support for their FEOs.

The study also found that male extension officers (MEOs) often did not recognise that their female colleagues were having difficulties performing their roles effectively, and this was partly due to the attitudes of the men themselves. Men reported that they had good working relationships with their female colleagues, but their female colleagues spoke otherwise, as reflected in the stories and experiences shared by the FEOs in Chapter 4. Also, male officers tended to overlook their obligation to explain to their wives their roles and working relationships with the new FEOs joining their ranks because jealousy and mistrust makes it more difficult for FEOs to work with MEOs if they are worried about what the MEOs' wives will think of them. By not allaying the concerns of their wives, MEOs inadvertently allowed conflicts to sometimes emerge between their wives and the FEOs.

The study also revealed that male officers could also have negative feelings towards their male colleagues. This was for various reasons such as different educational levels and years of work experience, and the competition amongst men for status. There was some evidence to support this argument because the period FEOs had to wait for promotion was much greater than that of their male colleagues. Women tended to be passed over for promotion and priority given to men. This suggests that the competitive culture amongst men in the workplace might make it more difficult for women to advance their careers in these organisations.

7.2.3 Cultural Barriers

Cultural barriers were the most frequently identified factors constraining the communication of extension information from FEOs to farmers, especially male smallholder farmers. Patriarchal attitudes are widespread and entrenched in PNG (Manjor, 1999) and extremely difficult to change. Culturally, men are perceived to be superior to, and more knowledgeable than, women and therefore are reluctant to listen to FEOs and will dismiss or discount the value of information given to them by women. This makes the task of communicating extension information to farmers very difficult for FEOs especially in male dominated cash crops such as coffee. Interestingly, it was noted in this study that there has been little change in these attitudes since the 1970s. There is still a long way to go before the FEOs are accepted as equals by their male colleagues and male smallholder farmers.

FEOs have indicated that they were comfortable working with smallholder female farmers. Due to cultural barriers, FEOs have shifted their focus and now direct their attention to working with smallholder female farmers through established women's social network groups to train

and disseminate information in the hope that women will inform or share with their husbands what they have learnt. While this approach has had a positive impact on training of women farmers, it remains to be seen how much of this information received via female farmers will be transferred to their husbands and other family members

7.2.4 Training received

There was no difference between the different extension organisations in terms of capacity building of their officers. Both the FEOs and MEOs participated equally in in-house job-related training and collaborative partnership training. There was no priority of men over women in these trainings. Indeed, the study revealed that one-third of FEOs undertook short overseas training courses at some point in their lives. These trainings were made possible through women's gender networking and partnership programs with other organisations other than their own employer organisations. The FEOs have more opportunities than MEOs to participate in short overseas training courses because gender inclusive training programs have become a priority in the overseas development programmes delivered by developed countries. This is a positive step for capacity building amongst FEOs.

The study found that, there is little or no support from any of the extension organisations in coffee, cocoa and oil palm to facilitate opportunities for their staff to access further training to upgrade their academic qualifications. FEOs (and MEOs) seeking to further their own studies must be self-sponsored.

7.2.5 Promotion prospects

The promotional structures were not the same in the three extension organisations and the length of time taken to be promoted also differed amongst the organisations. This is because each organisation has developed its own policies and procedures for promotion.

The study found that in the oil palm sector, FEOs were promoted within 2-3 years of starting their careers while in the coffee and cocoa sectors promotion took much longer at between 10-15 years. It could perhaps be that in the oil palm industry there was better governance and that the senior management in New Britain Palm Oil Limited (NBPOL) was keen to see women rewarded for their work in the industry. However, within each organisation, promotion of FEOs took much longer than for MEOs, reflecting a bias in favour of men in promotion procedures. Some FEOs believed that despite women having the same qualifications, job responsibilities

and experiences as men, they were less likely to be promoted or were not encouraged to apply for promotion. FEOs considered this to be very unfair.

7.2.6 Women extension initiatives

The women's empowerment extension initiatives/programs implemented through the extension organisations (Chapter 5) were relatively successful in empowering female farmers to participate fully in export crop production while at the same time contributing to building stronger economies and improving quality of life. For example, this study evaluated the Mama Loose Fruit (MLF) scheme of the OPIC and found that not only was the scheme very successful in terms of adoption, but it also brought much greater financial autonomy for women as well as improving production strategies which have contributed to increased productivity and production. Women also have greater access and control of cash income earned from the 'mama' card which has led to significant improvement in their living standards. The success of the MLF scheme has been enhanced by the employment of FEOs to coordinate the scheme. This directly created and promoted gender inclusion and participation of women at the industry level in the oil palm industry. The scheme's sustainability is because it has contributed towards increasing smallholder oil palm production and maintaining household income security. The scheme's success was also due to its coordination and promotion by FEOs who worked closely with the oil palm female farmers and the broader industry.

The Women in Coffee Development (WiCD) program of Coffee Industry Corporation (CIC) is potentially a very good women's empowerment program that has been in operation for more than two decades. However, very little has been achieved from the program in terms of empowering smallholder female coffee farmers or providing women with extension training. This has occurred perhaps because of an oversight and governance issues from the senior management. Thus, this oversight has resulted in a shift of focus from the original purpose of creating the gender desk to initiate gender programs to other projects and activities without a gender focus within the broader coffee industry. This shift in focus was reflected in the responses from female coffee farmers who were unaware of the program or who raised the issue of the poor performance of this program. Moreover, there were no reliable data or evidence to measure the impacts and outcomes of the program on women's involvement and participation in the program.

The CARE graduate program was about creating an enabling environment for gender inclusion and relations to promote and increase gender equality to support stakeholders in the coffee industry. The program assisted companies to improve their policies and practices so they became more gender equitable and inclusive. The program evaluated in this study showed that it was successful. Also, the program should not only focus on agriculture but should also extend to other disciplines such as commerce, business and health. The graduate program motivates and complements the theoretical skills of the young inexperienced college graduates by giving them exposure to real workplace environments thus enhancing their opportunities for employment and career advancement. Furthermore, such programs teach graduates work ethics and instil discipline in them which hopefully will develop them as future leaders in their respective industries and help them become role models for other women.

Most of CARE's programs were gender inclusive and as such CARE conducted many gender inclusive trainings with extension organisations such as CIC and exporting companies with which they had partnered. In doing so, these gender inclusive training have assisted the staff of these organisations and companies as well as coffee farmers to understand and appreciate the different gendered roles of men and women, and boys and girls, and how cultural and social values in PNG can serve to disadvantage women and girls

7.2.7 Difficulties and challenges of individual smallholder female farmers

This study finds that the difficulties and challenges faced by individual female farmers in the coffee and cocoa sectors are different to the difficulties experienced by oil palm female farmers in terms of land ownership, decision-making, access to income and gender inequality. As mentioned above, gender inequality in oil palm production has been partly addressed by the industry through the establishment of the MLF scheme. Although some problems remain, such as access to extension services, women in oil palm have made very large gains in status and economic empowerment. For female coffee and cocoa farmers, land ownership and access to customary land for long-term access to land for perennial export crops remains an ongoing problem.

PNG society is mostly patrilineal with a strong patriarchal culture, particularly in the highlands where men own the land making it difficult for women to use the land for long-term economic development projects like export cropping. While women do not have problem accessing land for short-term commercial crops (e.g. garden food crops sold at local markets), it is the long-

term use that is the problem for women. The study found that the difficulties or challenges faced by women in the coffee sector is greater than in cocoa and oil palm. Men control decision-making relating to production and also control how income is distributed and used.

Female farmers in the cocoa sector in ENBP are from a matrilineal society where the land is passed through the female line. However, men ‘own’ and control land access for cocoa production which serves to disadvantage women, but not to the same extent as female coffee farmers in the highlands are disadvantaged. The main difficulties faced by women in the cocoa sector were internal family conflicts with their siblings that distracted their attention from farming cocoa. These family conflicts involved demands and expectations over income allocation, and disputes over land for possible cocoa expansion. These factors contributed to low cocoa production and women’s low level of involvement in cocoa. Perhaps these issues can be addressed when FEOs are engaged to work directly with female cocoa farmers and find ways to address these problems. For example, promoting strategies to engage family labour in cocoa production through cash payment might provide an incentive for family members to contribute labour in the same way that the MLF scheme did for women farmers in oil palm. Other difficulties reported by women were the low cocoa prices and the long delays in the delivery of cocoa seedlings after purchase, and land shortages that limited potential further expansion of cocoa production. However, it was found that female cocoa farmers had more control over the income earned than female coffee farmers and were able to make decisions independently of their husbands on how cocoa money should be used.

7.2.8 Advantages of forming or joining groups/cooperatives

There are various reasons why people form groups or cooperatives or join established ones. Most service delivery organisations in PNG prefer to work in partnership with groups rather than with individual farmers. Results from a study about group cohesiveness by Sengere, (2016) confirmed that working in groups was more cost effective for service delivery and more accountable too when effective group leadership was in place. Therefore, the formation and consolidation of farmer groups is a very important strategy for farmers to access services. Also, it is a common understanding that when women who share the same interests come together to form groups their voices are more likely to be heard. My study found that the main reason why women formed or joined groups was for them to gain or access benefits such as training channelled through the group approach.

Due to cultural barriers and the security risks for women travelling long distances to attend training, it is more appropriate and much safer for women to join groups and receive training in their home communities. As we saw in Chapter 6, this was why Sally took a leadership role to establish the Lower Unggai Community Development Foundation group in coffee. When the group became strong she invited the men and youths, especially the young boys and girls, to join the group. Sally recognised that by involving men and boys in the group, gender inclusion would be promoted at the community level because men's cultural perceptions or stereotypes of women and girls would change as they saw women taking leading roles in training. The reverse process occurred in the cocoa sector where the Vunaiting Agro-farmers' Cooperative was established by a man, and women were later invited to join and become members of the cooperative. In the case of Sally's group in the much more patriarchal highlands, it was probably easier for the group to be established with women only, and then to include the men when it was fully operational.

In summary, it is evident that female agricultural extension officers can bring positive change through improved agriculture extension for women farmers. Therefore, the status and needs of female agricultural extension officers must be taken care of by the agriculture extension organisations in PNG. Similarly, if the key extension organisations in PNG acknowledge the important role of women in export crop production and are able to meet their extension needs, then overall production will rise. This would in turn improve the economic empowerment of women thereby raising their social status and enhancing the livelihoods of their families.

7.3 Policy implications and recommendations

For the advancement of women and the export crop industries it is paramount that women's roles in export cropping be recognised and their contributions to agricultural development acknowledged and supported through extension. Without this recognition and extension support smallholder production at the household level and income-earning potential will remain limited, and women's labour will remain under-utilised resulting in low or stagnant production. This study makes the following recommendations:

1) Funding for women's extension

Short-term strategy

Overall, the three extension organisations should increase the number of FEOs working in women extension initiatives to work more directly with women farmers. For example, the

Women in Coffee Development (WiCD) program in CIC is currently severely under-staffed. In the OPIC, the MLF scheme needs more FEOs because the number of women joining the scheme continues to grow. Currently there are no FEOs at Cocoa and Coconut Institute. This is an unacceptable situation and places female cocoa growers in a very disadvantaged position given the presence of Cocoa Pod Borer in one of PNG's most important cocoa growing provinces. Thus, in all three extension organisations, and particularly in cocoa, there is need for FEOs to be recruited to look after the interests of female smallholder farmers.

The extension organisations should promote and strengthen female extension programs by improving the status of FEOs at the institutional level and by expanding smallholder women's empowerment initiatives. In doing so, the FEOs should work more closely with groups of female farmers and seek funding support to scale-up such programs for female farmers. This will achieve two outcomes as a short-term strategy:

- i) Extension is likely to be much more effective when FEOs work directly with smallholder female farmers.
- ii) Smallholder female farmers are generally marginalised in cash crop production, so by improving their knowledge and skills in cash cropping, their social status is likely to be elevated with a corresponding outcome being economic empowerment.

Long-term strategy

The WiCD program of the PNG coffee industry has been operating on an *ad hoc* basis for over two decades. It is necessary for the industry, especially at the management level, to understand the economic and social benefits of women's involvement throughout the coffee industry. Therefore, CIC should look at expanding this program by creating a section of its own within the organisation with its own budget allocation to coordinate all coffee [extension] programs targeting women. Women's extension programs such as the WiCD in the coffee industry must be promoted and strengthened so women can participate more meaningfully in extension training.

In all, most of the smallholder female farmers indicated that they were more comfortable working with FEOs than MEOs. This shows that extension is likely to be more effective when FEOs work directly with the smallholder female farmers.

2) CIC to adopt the CARE Women's Empowerment Framework by CIC

The CIC should be adopting the CARE women's empowerment framework for the WiCD program because an holistic approach to empowerment as exemplified in CARE's framework is more likely to be successful. This empowerment framework such as that of CARE is gender inclusive with many gender inclusive trainings which can overcome the common problem of men taking front stage in extension training as women are pushed to the back seat.

Gender training can change the mindset of people, especially men in relation to how they see, define and value women's role in society. Eventually, this could lead to men having a better understanding of women's roles and break the cultural mentality of considering women and girls as inferior to men.

3) CARE Graduate Program

The program should be promoted and extended to all the major agricultural extension organisations and exporters.

4) Monitoring and evaluation of women's empowerment initiatives

All women's initiative programs should be monitored and evaluated to assess their effectiveness, impacts and outcomes so that the sustainability of the programs is enhanced by making room for necessary adjustments. This has happened formally for the MLF scheme. Therefore, monitoring and evaluation units should be established and strengthened in extension organisations. Although, as previously discussed in Chapter 4, despite funding shortages for extension activities, organisations should be encouraged to establish monitoring and evaluation units because it is the only way to assess the sustainability of programs so as to avoid the continuous wastage of internal funding on unmonitored activities.

5) Training

Capacity building of human resources is very important for productivity, performance and the public image of organisations, and priority should be given to upgrading staff qualifications through the human resource division of the organisations. This is clearly lacking in these extension organisations.

6) Promotion procedures to make promotion fairer for women

Staff career paths within the extension section of the coffee industry are limited, and this means that opportunities for promotion are also limited. The coffee industry through its human resources section must revisit its policies and develop staff career paths within the organisation. There should be stringent policies about promotion for its extension staff which should be based on merit and performance without gender bias. Promotion should be given when it is due and earned without delay.

For the above two points it is recommended that there should be in-house training for senior management to be made aware of the issues. This should be done by an external organisation, or senior management should attend job related training to refresh themselves about managing human resources in the organisation.

7) MEO's attitudes (and the attitudes of MEO wives) to FEOs.

A code of ethics in the workplace is very important and should be upheld at all times by employees. The attitudinal problems of staff can sometime make relationships between FEOs and MEOs difficult. Therefore, it is appropriate for new staff to undergo in-house induction training to ensure they are aware of the problems that can arise between female and male staff, especially because of jealousies/suspicious that their respective spouses might hold. Staff induction training should show staff how to address these issues.

8) Security issue

The issue of security in the field is very important especially for FEOs. The CIC should increase its staff capacity from one to two staff per province to three to four staff. This is because staff can plan and coordinate field programs and travel as a pair [group] to conduct field patrols. There is also a need to equip all provincial offices with vehicles for staff, especially FEOs, to reach distant remote sites by vehicle rather than walking on foot.

References

- Ajani, E. N., & Igbokwe, E. M. (2011). Implications of Feminization of Agriculture on women farmers in Anambra State, Nigeria. *Journal of Agriculture Extension*, 15 (1), 31-39.
- Anjala, K. (2012) *Cultivating Women's Participation: Strategies for Gender-Responsive Agriculture Programming*. Technical Brief. Washington, D.C.: International Centre for Research on Women.
- Apis, B., Aranka, J., Asiota., Bafeo, M., Bekio, J., Bore, W., Curry, G. N., Hamago, M. R., Inu, S. M., Kiup, E., Koczberski, G., Lummani, J., Nailina, R., Natera, K., Peter, E., Pundu, J., Togonave, P., and Webb, M. (2013). The use of activity diaries for understanding the daily lives of farmers and their livelihoods choices. In: G. Hickey (ed.), *Socio-economic Agricultural Research in Papua New Guinea*. ACIAR Proceedings 141, pp.36-47, Australian Centre for International Agricultural Research, Canberra.
- Asia-Pacific Association of Agriculture Research Institutions (APAARI). (2012). Proceedings of First Global Conference on Women in Agriculture (GCWA). India Council of Agricultural Research Institute, New Delhi, India.
- Australian Centre for International Agricultural Research (ACIAR). (2014). Human rights issues confronting women and girls in the Indian Ocean – Asia Pacific Region (Submission 44, House of Representatives Joint Standing Committee on the Human Rights of Women and Girls). Retrieved from: http://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Foreign_Affairs_Defence_and_Trade/Human_Rights/Submissions> on 12 July 2018.
- Australian Institute of Management (AIM). (2014). Manager briefing: Gender pay equity guide for managers. Workplace Gender Equality Agency, Government of Australia.
- Avalos, B. (1995). Women in Public Life, *Pacific Economic Bulletin* 10(1), 112.
- Bank of Papua New Guinea. (2016). QEB Statistical Tables. Port Moresby, PNG: Retrieved from <http://www.bankpng/wp-content/uploads/2017/05/December-2016-Quarterly-Economic-Bulletin-QEB.pdf> on 30 August 2016.
- Barker, P. (2017). Based upon the consultation and Break-out group discussions: In Agriculture Summit, General Themes and Some More Specific Recommendations from the Private Sector Presentations and the Group Discussions. Institute of National Affairs, Port Moresby, PNG.
- Batt, P. J., & Murray-Prior, R. (2007). Emerging possibilities and constraints to PNG smallholder coffee producers entering the speciality coffee market. Australian Centre for International Agricultural Research, Australian Government, Canberra.
- Beatty, R. W., & Schneier, C. E. (1997). New HR roles to impact organizational performance: from “partners” to “players”. *Human Resource Management* 36(1), 29-37.

- Blackburn, D. J. (eds) (1994). *Extension handbook: processes and practices* (eds), Thompsons Education Publications, Toronto.
- Bolton, R. (2018). Graduate preparedness an ongoing challenges. Universities are being urged to improve student's job readiness. In: association with the Australian Financial Review and GradConnection. *Top 100 Graduate Employers 2018*. The Australian Financial Review in association with GradConnection.
- Boneva, B., Kraut, R., & Frohlich, D. (2001). Using e-mail for personal relationships. *American Behavioural Scientist*, 45(3), 530-549.
- Bourke, R.M., & Harwood, T. (eds) (2009). *Food and agriculture in Papua New Guinea*. Land Management Group, Department of Human Geography, Research School of Pacific and Asian Studies, Canberra, ANU E Press.
- Boyle, M. H., Racine, Y., Georgiadis, K., Snelling, D., Hong, S., Omariba, W., Hurley, P., & Rao-Melacini, P. (2006). The influence of economic development level, household wealth and maternal education on child health in the developing world, *Social Science and Medicine* 63(8), 2242-2254.
- Brannen, J. (1992). Combining qualitative and quantitative approaches: An Overview. In J. Brannen (ed.), *Mixing methods: Qualitative and quantitative research* (pp. 3-39). Aldershot, UK: Avebury.
- Brannen, J., & Moss, G. (2012). Critical issues in designing mixed methods policy research: *American Behavioural Scientist*, 56(6), 789-801.
<http://dx.doi.org/10.1177/0002764211433796>.
- Bright, H., Davis, J., Janowski, M., Low, A. & Pearce, D. (2000). *Rural Non-Farm Livelihoods in Central and Eastern Europe and Central Asia and the Reform Process: A Literature Review*. Natural Resources Institute Report No. 2633, (DFID)/World Bank. Retrieved from: <http://www.nri.org/work/rnfl-transition.htm> on 18 September 2018.
- Brockbank, W. (1999). If HR were really strategically proactive: present and future directions in HR's contribution to competitive advantage. *Human Resources* 38(4), 337-352.
- Brouwer, E., Harris, B., & Tanaka, S. (eds) (1998). *Gender Analysis in Papua New Guinea*, Washington: The World Bank.
- Bryman, A. (2001). *Social Science Research Methods*. Oxford University Press.
- Byford, J. (2002). Gender and microfinance in Bougainville: a case study, *Development Bulletin* 57, 89-92.
- Cahn, M., & Liu, M. (2008). *Women and rural livelihoods training: a case study from Papua New Guinea*, *Gender & Development*, 16:1, 133-146, DOI: 10.1080/13552070701876342. Download from: Curtin University, 16 May 2016.
- CARE International (PNG). (2019). Retrieved from: <http://www.care.org/org/country/papua-new-guinea> on 27 June 2019.

- Carney, J., & Watts, V. (1991). Disciplining women? Rice, mechanisation, and the evolution of Mandinka gender relations in Senegambia. *Signs* 16, 651-681.
- Caven, R.R., & McKillop, R. F. (2001). 'Improving agricultural support services in PNG'. In: M. Bourke, B.J. Allen & J.G. Salisbury (eds). *Food Security for Papua New Guinea/ Proceedings of the Papua New Guinea Food and Nutrition 2000 Conference*, PNG University of Technology, Lae, 26-30 June, 2000, pp 503-508.
- Centre for Agriculture and Biosciences International (CABI) (2016). *Improved Management Strategies for Cocoa in Papua New Guinea*, Oxfordshire, UK.
Retrieved from: <http://www.cabi.org/projects/project/33019> on 23 September 2016
- Chambers, B., Omot, N., Pamphilon, B., Tomi, B., Linibi, M., & McGowan, C. (2011). Improving women's business acumen in PNG: working with women smallholders in horticulture. Final Report 2012-23 for Project ASEM/2009/042. Australian Centre for International Agricultural Research: Canberra.
Retrieved from: <<http://aciarc.gov.au/publication/fr2012-23>>.
- Chang, H. S., Irving, D., & Villano, R. (2013). Identifying socioeconomic constraints to improving sweetpotato quality and postharvest management in Papua New Guinea: preliminary results from a farm survey and marketability trials. In: G. Hickey (ed.), *Socio-economic Agricultural Research in Papua New Guinea*. ACIAR Proceedings 141, pp.48-66, Australian Centre for International Agricultural Research, Canberra.
- Chen, C. J., & Huang, J. W. (2009). Strategic human practices and innovation performance: The mediating role of knowledge management capacity, *Journal of Business Research* 62, 104-114.
- Coffee Industry Corporation (CIC). (2008a). *Papua New Guinea coffee industry strategic plan 2008-2018*. Goroka, PNG.
- Coffee Industry Corporation (CIC). (2008b). *Research & Growers Services Division 2005 annual report*. Aiyura, EHP, PNG.
- Coffee Industry Corporation (CIC). (2014). *Papua New Guinea Coffee Industry Strategic Plan 2013 – 2018*. Goroka, PNG.
- Coffee Industry Corporation (CIC). (2016). *Coffee Industry Corporation, Quarterly Newsletter*, Goroka, September 2016. Retrieved from: <http://www.coffeecorp.org.pg> on 12 September 2016.
- Collett, N. G. (1992). *Coffee, Capitalism, and Constraints to Agrarian Transition: A case study of smallholder coffee production in the highlands of Papua New Guinea*. Unpublished Master's Thesis, Flinders University of South Australia.
- Consultative Implementation and Monitoring Council (CIMC) Workshop. (2011). People-Planet-Profit. *Impact of LNG on the Papua New Guinea Agriculture Sector*. Retrieved from: http://www.inapng.com/pdf_files/Oil%20Palm%20Presentation-Ian%20Orrell.pdf on 24 September 2016.

- Country Partnership Strategy: Papua New Guinea 2016-2020. (2016). Summary based on *the 2011-2012 PNG Country Gender Assessment*, prepared by the Government-Development Partners Gender Forum and supported by the Asian Development Bank and the World Bank.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). California: Sage Publication Inc.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches*. Thousand Oaks, California: Sage Publication Inc.
- Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.
- Curry, G. N., Koczberski G., Omuru, E., & Nailina, R. S. (2007). *Farming or foraging? Household labour and livelihood strategies amongst smallholder cocoa growers in Papua New Guinea*. Perth: Black Swan Press.
- Curry, G. N., Koczberski, G., Lummani, J., Ryan, S., & Bue, V. (2012). Earning a Living: From Subsistence to a Cash Economy. In: M. Robertson (ed.), *Schooling for Sustainable Development. A Focus on Australia, New Zealand, and the Oceania Region*. Springer Dordrecht Heidelberg, New York, London, pp123-139.
- Curry, G., Webb, M., & Koczberski, G. (2017). *Improving Livelihoods of Smallholder Families through Increased Productivity of Coffee-based Farming Systems in the Highlands of PNG*. Final Report. Australian Centre for International Agricultural Research, Canberra.
- Dekuku, R. C., Chambers, B., Pamphilon, B., Moat, M., & Komolong, M. (2005). Summary of Discussion on the National Agricultural Extension Summit, DAL, Port Moresby. P.53.
- Dennis, M. (1981). Plantations. In Denoon, D. & Snowden, C. (eds). *A time to plant and a time to uproot: a history of agriculture in Papua New Guinea*. Institute of Papua New Studies, Port Moresby, pp.219-248.
- Department of Agriculture & Livestock (DAL). (2007). *National Agriculture Development Plan 2007-2016*. Executive Summary and Volumes 1-2, Port Moresby, PNG.
- Department of Education (2009). *Achieving Universal Education for a better Future. Universal Basic Education Plan, 2010 – 2019*. Port Moresby.
- Department of Foreign Affairs & Trade (DFAT). (2012). *Papua New Guinea annual program performance report 2011*. Canberra: Department of Foreign Affairs and Trade.
- Dickson-Waiko, A. (2006). Reflections on the women and development agenda in Papua New Guinea, *Development Bulletin* 70, 96-9.

- Dobunaba, F. (1995). *The PNG Platform for Action on Women and Development*, statement by the Head of Papua New Guinea Delegation to The Fourth United Nations World Conference On Women, Beijing, China, 11 September 1995. Retrieved from: <http://www.un.org/esa/gopher-data/conf/fwcw/conf/gov/950913183413.txt> on 18 September 2018
- Dolan, C. (2001). The 'good wife': Struggles over resources in the Kenyan horticultural sector. *Journal of Development Studies* 37(3), 39-70.
- Ellis, A., Manuel, C., & Blackden, C. M. (2006). *Gender and economic growth in Uganda: unleashing the power of women*. Washington, DC, World Bank.
- Fairbairn-Dunlop, P. (1997). Pacific women's triple role: food security, informal trade and cash cropping, *Journal of South Pacific Agriculture* 4(1 and 2), 139-144.
- Fisher, H., Winzenried, C., & Sar, L. (2012). *Oil palm pathways: an analysis of ACIAR's oil palm project in Papua New Guinea*: ACIAR Impact Assessment Series Report No. 80. Australian Centre for International Agricultural Research, Canberra.
- Flaherty, T. (1998). *The Women's Voice in Education: Identity and Participation in a Changing Papua New Guinea*, The Melanesian Institute, Goroka, Papua New Guinea.
- Flaherty, T., & Gutuma, V. (2003). Data Collection for PASTEP Gender Workshop, Port Moresby, PNG.
- Fletschner, D. (2008). Women's access to credit: does it matter for household efficiency? *American Journal of Agricultural Economics* 90(3), 669-683.
- Food and Agriculture Organisation (FAO). (2017). Committee on World Food Security- Making a difference in food and nutrition. Committee on world food security. How can we redress gender differences in extension services for farmers?/ FAO. Retrieved from: <http://www.fao.org/efs/home/blog/blog-articles/article/en/c/1071744/> on 13 July 2018.
- Food and Agriculture Organisation (FAO). (2011). *The State of Food and Agriculture. Women in Agriculture, Closing the gender gap for development*. Rome, Italy.
- Food and Agriculture Organisation (FAO). (2012). *Gender Inequalities in Rural Employment in Ghana: An Overview*. Prepared by the Gender, Equity and Rural Employment Division of FAO 2012.
- Food and Agriculture Organisation (FAO)/United Nations Development Programme (UNDP). (2002). *Gender differences in the transitional economy of Viet Nam*. Hanoi.
- Gannicott, K. G., & Avalos, B. (1994). *Pacific 2010: Women's education and economic development in Melanesia*. Canberra: National Library of Australia.
- Gibson, J., & Rozelle, S. (2004). It is better to be a boy? A disaggregated outlay equivalent analysis of gender bias in Papua New Guinea, *The Journal of Development Studies* 40(4), 115-136.

- Giris, J., & Rynkiewich, T. (2005). *Emerging Issues for Women and Children in Papua New Guinea*, Melanesian Institute, Goroka.
- Government of Papua New Guinea. (2009). Report on the status of Women in Papua New Guinea and the Autonomous Region of Bougainville 2008. CEDAW/C/PNG/3. In: Murray-Prior & Padarath 2013, 'Evaluation of the structure and performance of the CIC extension service'. Report prepared for the productive partnerships in agriculture project coffee component, Goroka, PNG.
- Greene, J. C. (2012). Engaging critical issues in social inquiry by mixing methods. *American Behavioural Scientist* 56(6), 755-773.
- Haley, N., & Muggah, R. (2006). 'Jumping the gun? Reflections on armed violence in Papua New Guinea'. *African Security Review* 15(2), 39-56.
- Hanson, L. W., Allen, B. J., Bourke, R. M., & McCarthy, T. J. (2001). *Papua New Guinea Rural Development Handbook*, Land Management Group, Department of Human Geography, ANU Canberra, Australia.
- Hay, I. (ed.) (2010). *Qualitative research methods in human geography*, 3rd ed. Oxford; Oxford University Press.
- Hill, C. (2011). Enabling rural women's economic empowerment: institutions, opportunities and participation, Background paper to an Expert Group Meeting on Enabling rural women's economic empowerment: institutions, opportunities and participation, Accra, Ghana, 20-23 September 2011, UN Women, United Nations. Retrieved from: www.un.org on 13 September 2018.
- International Fund for Agriculture Development (IFAD). (2010). *Rural Poverty Report 2011: New Realities, New Challenges: New Opportunities for Tomorrow's Generation*. Rome: Quintily. ISBN: 987-92-9072-200-7. International Fund for Agriculture Development.
- Inu, S.M. (2015). The influence of socio-economic factors in farm investment decisions and labour mobilisation in smallholder coffee production in Eastern Highlands Province, Papua New Guinea. Retrieved from: http://espace.library.curtin.edu.au/R?func=dbin-jump-full&local_base=gen01-era02&object_id=235646 on 16 September 2016.
- Janz, N. K., Zimmerman, M. A., Wren, P. A., Isreal, B. A., Freudenberg, N., & Carter, R. J. (1996). Evaluation of 37 AIDS prevention projects: Successful approaches and barriers to program effectiveness. *Health Education Quarterly* 23(1), 80-97.
- Jaw, B., & Liu, W. (2003). Promoting organizational learning and self-renewal in Taiwanese companies: the role of HRM. *Human Resource Management* 42(3), 223-41.
- Jayaweera, S. (1997). 'Women, education and empowerment in Asia. *Gender and Education* 9(4), 411-423.

- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research* 1(2), 112-133.
- Kagoda, A. M. (2004). *Merabb Determinants of Career Professional Development of Female Teachers in Uganda*, Makerere University, Kampala, Uganda.
- Kahan, B. (2008). Review of Evaluation Frameworks. Saskatchewan Ministry of Education, Saskatchewan, Canada.
- Kambuou, R. (1976). Women in Agriculture. *Harvest* 3 (3), 132-133.
- Kare, P., & Sermel, R. (2013). Providing relevant and quality learning: An aim of universal basic education, in A. Kukari (ed.), *Universalizing basic education in Papua New Guinea: Experiences, lessons learnt, and interventions for achieving the goal of universal basic education*, pp. 83-94. Port Moresby: The National Research Institute.
- Kerua, W. (2017). Beyond the cocoa farm: A new look at farmers' livelihoods in Papua New Guinea. Unpublished PhD Thesis. Charles Stuart University.
- Koczberski, G. (2007). Loose fruit mamas: Creating incentives for smallholder women in oil palm production in Papua New Guinea. *World Development* 35(7), 1172-1185.
- Koczberski, G., & Curry, G. N. (2003). Sustaining production and livelihoods among oil palm smallholders: a socio-economic study of the Bialla smallholder sector, Research Unit for the Study of Societies in Change, Department of Social Sciences, Curtin University of Technology.
- Koczberski, G., & Curry, G. N. (2005). Making a living: land pressures and changing livelihood Strategies among oil palm settlers in Papua New Guinea. *Agricultural Systems* 85, 324-339.
- Koczberski, G., Curry, G., & Gibson, K. (2001). *Improving productivity of the smallholder oil palm sector in Papua New Guinea: A socio-economic study of the Hoskins and Popondetta schemes*. ANU.
- Lahis, S. (2008). Country Report on Innovative Agricultural Technology Transfer and Extension Systems of Papua New Guinea. APEC Conference on Agricultural Technology Transfer and Extension System. APEC, Agriculture Cooperation Working Group, Taiwan.
- Landell Mills Ltd. (1991). *Smallholder oil palm productivity study*. Port Moresby, Papua New Guinea: Department of Agriculture & Livestock.
- Lanjouw, P., & Shariff, A. (2002). *Rural Non-Farm Employment in India: Access, Income and Poverty Impact*. NCAER Working Paper Series No. 81. New Delhi: NCAER. Department of Economics. Wesleyan University, Middletown. Retrieved from: <http://aisgut.web.wesleyan.edu/papers/Hnd98.v5.pdf> on 18 April 2018.

- Lawson, S. (1997). *Cultural Traditions and Identity Politics: Some Implications for Democratic Governance in Asia and the Pacific*, Research School of Pacific and Asian Studies, Australian National University, Canberra.
- LeanIn.Org & McKinsey & Co. (2015). Women are 15% less likely than men to get promoted, according to a new LeanIn and McKinsey study. Retrieved from: <http://www.BusinessInsider.com.au/ideas> on 27 March 2018.
- Lewis, F. (2000). *The Lus Frut Mama Scheme – Developing economic opportunities for women in agriculture*, Kimbe, WNP: Oil Palm Industry Corporation (OPIC).
- Linibi. M., (2009). Papua New Guinea-Women in Agriculture Development Foundation. Presentation at the PNG Annual Agriculture Council Meeting in Madang.
- Lummani, J. (2003). *Economic aspects of the cocoa industry in Papua New Guinea*, Papua New Guinea Cocoa & Coconut Research Institute, Kerevat, East New Britain Province, Papua New Guinea.
- Lummani, J. (2006). The social influences on the economic decision-making of smallholder cocoa producers in Papua New Guinea: the case of processing, transport and marketing. Unpublished Master's Thesis. Curtin University Press.
- Lysack, C. L., & Krefting, L. (1994). Qualitative methods in field research: An Indonesian experience in community based practice. *The Occupational Therapy Journal of Research* 14(20), 93-110.
- Macintyre, M. (2008). Police and thieves, gunmen and drunks: Problems with men and problems with society in Papua New Guinea, *Australian Journal of Anthropology* 19(2), 179-193.
- Mackenzie, F. (1993). A piece of land never shrinks: Reconceptualizing land tenure in a smallholding district, Kenya. In T. Bassett, & D. Crummey (eds), *Land in African Agrarian systems* (pp. 194-221). Madison: University of Wisconsin Press.
- Manchon, B., & Macleod, M. (2010). Challenging gender inequality in farmers' organisations in Nicaragua. *Gender and Development* 18, 373-386.
- Manjor, A. (1999). *Traditional Role of Women in PNG*, Workshop on Gender, Peace and Security. Retrieved from: <http://www.forumsec.org.fi/resources/article/files/Angela> on 18 September 2018.
- Mate, S. (2013). Recognising the constraints that affect professional women's choices: How do Australian women develop and grow in their professional lives? Unpublished PhD Thesis. College of Business, Victoria University, Melbourne.
- McNamara, C. (2008). *The field Guide to Leadership and Supervision for Nonprofit staff*. Authenticity Consulting LLC, North Minneapolis, Minnesota. Retrieved from: <http://managementhelp.org/training/basics/reasons-for-training.htm> on 13 October 2018.

- Mehra, R., & Rojas, M. H. (2008). *Women, Food Security and Agriculture in a Global Marketplace*. International Centre for Research on Women. Washington, DC.
- Meinzen-Dick, R., Quisumbing, A., Behrman, J., Beiermayr-Jenzano, P., Wilde, V., Noordeloos, M., Ragasa, C., & Beintema, N. (2010). *Engendering agricultural research*. IFPRI Discussion Paper No. 973. Washington, DC, IFPRI.
- Mendano, S. K. (2012). *The effectiveness of agricultural Extension Services to smallholders In West New Britain Province of Papua New Guinea*, Unpublished Master's Thesis, Curtin University, Perth.
- Mertens, D. M. (2014). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative and mixed methods* (4th edition). Thousand Oaks, California: Sage Publications.
- Mikhailovich, K., Pamphilon, B., Chambers, B., Simeon, L., & Zapata, J. R. (2016). Exploring the lives of women smallholder farmers in Papua New Guinea through a collaborative mixed methods approach. *Cogent Social Sciences*. 2:1143328
<http://dxdoi.org/10.1080/23311886.2016.1143328> pp.1-14.
- Moretti, D. (2006). The Gender of the gold: an ethnographical account of women's involvement in artisanal and small scale mining in Mount Kaindi, Papua New Guinea, *Oceania* 76(2), 133-149.
- Morgan, D. L., & Kreuger, R. A. (1993). When to use focus groups and why. In: D.L. Morgan (ed.) *Successful Focus Groups*. London: Sage Publications.
- Mortiss, P. D. (1988). *Agricultural extension: a practical manual*, Brisbane, Queensland Department of Primary Industries.
- Mumford, M. D. (2000). Managing creative people: strategies and tactics for innovation. *Human Resource Management Review* 10(3), 313-351.
- Murray-Prior, R. & Padarath, A. (2013). Evaluation of the structure and performance of the CIC extension service. Report prepared for the productive partnerships in agriculture project coffee component, Goroka, PNG.
- Nagari, Y. (1985). 'Women, Education and Development'. In P. King, W. Lee & V. Warikai (eds.) *From Rhetoric to Reality, Papua New Guinea's eight Point Plan and National Goals after a Decade*, Papers from the Fifteen Waigani Seminar, University of Papua New Guinea Press, pp.115-120.
- NDAL, (2007). National Agriculture Development Plan (NADP) 2007-2016. Policies and Strategies. Volume 1. Ministry of Agriculture and Livestock. Independent State of Papua New Guinea.
- Nelson, P. N., Gabriel, J., Filer, C., Banabas, M., Sayer J. A., Curry, G. N., Koczberski, G., & Venter, O. (2013). Oil Palm Deforestation in Papua New Guinea. *Conservation Letters* 7 (3), 188-195.

- Nongkas, C. (2007). *Leadership Education Change in Teacher Education: A Papua New Guinea case Study*, Unpublished PhD Thesis, QUT, Australia.
- O'Leary, Z. (2014). *The essential guide to doing your research project*: Los Angeles, California SAGE.
- Omuru, E. (2003). An evaluation of issues affecting smallholder cocoa production in the Gazelle Peninsula: a case study, In: B. Toreu, & C. Sailoia (comp), *Proceedings. National cocoa consultative workshop: prospects and challenges for the cocoa industry*, Cocoa Board of Papua New Guinea, Vunapope Conference Centre, East New Britain Province, Papua New Guinea.
- Orrell, I. (2011). *CIMC Workshop. Impact of LNG on the PNG Agriculture Sector-Palm Oil Model: Agro-Nucleus Enterprise*. Port Moresby.
- Overfield, D. (1998). An investigation of the household economy: Coffee production and gender relations in Papua New Guinea. *Journal of Development Studies* 34(5), 52-70.
- Palaniappan, G., Chambers, B., Bonney, L., & Birch, C. (2013). Comparing training preferences by gender in Central Province, Papua New Guinea. In: G. Hickey (ed.), *Socio-economic Agricultural Research in Papua New Guinea*. ACIAR Proceedings 141, pps.9-16, Australian Centre for International Agricultural Research, Canberra.
- Pamphilon, B., Mikhailovich, K., Simeon, L., & Chambers, B. (2013). Two-way learning: key gender lessons from participatory community workshops with smallholders in the Baiyer Valley and Kerevat areas of Papua New Guinea. . In: G. Hickey (ed.), *Socio-economic Agricultural Research in Papua New Guinea*. ACIAR Proceedings 141, pp.102-114, Australian Centre for International Agricultural Research, Canberra.
- Pamphilon, B., & Mikhailovich, K. (2017). Bringing together learning from two worlds: Lessons from gender-inclusive community education approach with smallholder farmers in Papua New Guinea. *Australian Journal Adult Learning* 57(2), 175-178.
- Peters, J. (1986). 'Planning extension programmes appropriate to rural women', in G. Jones (ed.). *Investing in Rural Extension Strategies and Goals*. pp. 149-158. London: Elsevier Applied Science Publishers.
- Philpott, S., Powaesu, I & Laraki, J. (eds.) (2004). *Women's voices in the food chain: shouts and whispers from PNG women in the natural resources sectors*, Proceedings No. 5, Volume 2: pp.38-42. Workshop Papers, ACNARS, NARI, Port Moresby, PNG.
- Potek, S. (2009). Gender Issues for women teachers in Papua New Guinea. *Contemporary PNG Studies* 10,102-123.
- Prentice, D. A., & Carranza, E. (2002). What women and men should be, shouldn't be, are allowed to be, and don't have to be: The contents of prescriptive gender stereotypes. *Psychology of Women Quarterly*, 26, 269-281. doi:10.1111/1471-6402.t01-1-00066. Retrieved from: <https://www.tandfonline.com/doi/full/10.1080/1359432X.2017.1402759> on 25 July 2018.

- Prentice, D. A., & Carranza, E. (2004). Sustaining cultural beliefs in the face of their violation: The case of gender stereotypes. In: M. Schaller & C. S. Crandall (eds.), *The psychological foundations of culture* (pp. 259-280). London, Lawrence Erlbaum Associates. Retrieved from: <https://www.tandfonline.com/doi/full/10.1080/1359432X.2017.1402759> on 25 July 2018.
- Quisumbing, A. R., & Pandolfelli, L. (2010). Promising approaches to address the needs of poor female farmers: resources, constraints, and interventions. *World Development* 38 (4), 581-592.
- Rennie, S. (1991). 'Subsistence agriculture versus cash cropping – the social repercussions', *Journal of Rural Studies* 1(2): 5-9.
- Rolling, N. G. (1988). The agricultural research-technology transfer interface: A knowledge systems perspective. In: D. Kaimowitz, (ed.), *Making the link: Agricultural research and technology transfer in developing countries*. Boulder, Westview Press and ISNAR.
- Rolling, N. G. (1991). Institutional knowledge systems and farmers knowledge. Lessons for Technology development. In G. Dupre (ed.), *Farming knowledge and development*. Paris, Editions Karthala.
- Rowe, M. L., Thapa, B. K., Levine, R., Levine, S., & Tuladhar, S.K. (2005). How does schooling influence maternal health practices? Evidence from Nepal, *Comparative Education Review* 49(4), 512-533.
- Ryan, S., Koczberski, G., Curry, G. N., & Germis, E. (2017). Intra-household constraints on educational attainment in rural households in Papua New Guinea. *Asia Pacific Viewpoint* 58 (1), 27-40.
- Sai, A. (2008). *Tamot: Masculinities in Transition in Papua New Guinea*, Unpublished PhD Thesis, Victoria University, Australia.
- Saito, K., Mekonnen, H., & Spurling, D. (1994). *Raising the productivity of women farmers in sub-Saharan Africa*. World Bank Discussion Papers, Africa Technical Department Series No. 230. Washington, DC, World Bank.
- Schoeffel, P., & Meleisea, E. (2012). (eds) *Papua New Guinea 2011-2012 country gender assessment*, Department of Religion, Youth and Community Development, Government of PNG, Port Moresby, PNG. Retrieved from: <http://www.scribd.com> on 6 September 2018.
- Secretariat of South Pacific (SSP). (2007). Pacific Extension Summit: *Bringing about change-Promoting Participatory Agricultural Extension in the Pacific*. Nukualofa, Kingdom of Tonga, Secretariat of the Pacific Community, Land Resources Division.
- Sitapai, E. C. (2011). The Status of Extension and Advisory Services in PNG. *A case study of policies, capacities, approaches and impact*. Proceedings: International Conference

on Innovations in Extension and Advisory Services, 15-18 November, 2011, Nairobi, ACP-EU Technical Centre for Agriculture and Rural Cooperation, The Netherlands.

- Sitapai, E. C. (2012). A Critical Analysis of Agricultural Extension Service in Papua New Guinea: Past, Present and Future. *CIMC National Agriculture Conference. Theme: Key Drivers for a Robust, Dynamic and Productive Agriculture Sector in PNG*. NARI Multi-Purpose Hall, Bubia, Lae.
- Sengere, R. (2007). *Communicating Information to Coffee Farmers in PNG*, Unpublished Master's Thesis. ANU E Press.
- Sengere, R. W. (2016). *The rise, and revival of the Papua New Guinea coffee industry*, Unpublished PhD Thesis. Curtin University.
- Spriggs, J., Chambers, B., & Omot, N. (2013). Towards socioeconomic change in the fresh-produce supply chains of the Papua New Guinea highlands. In: G. Hickey (ed.), *Socio-economic Agricultural Research in Papua New Guinea*. ACIAR Proceedings 141, pps.9-16, Australian Centre for International Agricultural Research, Canberra.
- Stivers, C. (1993). *Gender Images in Public Administration*, Sage, Newbury Park, California.
- Tashakkori, A., & Teddlie, C. (eds). (2003). *Handbook of mixed methods in social & behavioural research*. Thousand Oaks, California: SAGE Publications.
- Turner, P. D., & Benjamin, M. (1982). West Nakanai oil palm scheme advisory and agronomic report no. 10, 1982. London: Harrisons Fleming Advisory Services Ltd.
- Turner, P. D., & Leach, J. R. (1980). West Nakanai oil palm scheme advisory and agronomic report no. 7-1979. London: Harrisons Fleming Advisory Services Ltd.
- United Nations Country Team. (2001). *Papua New Guinea Common Country Assessment, The United Nations Country Team*, Port Moresby, Papua New Guinea.
Retrieved from: http://www.undp.org/archive_docs/1718-Papua_New_GuineaCCA on 13 September 2018.
- United Nations Development Program (UNDP). (2013). Human Development Report 2013: Papua New Guinea. Retrieved from: <http://hdr.undp.org/sites/default/files/Country-Profiles/VUT.pdf> on 12 July 2017.
- United Nations Development Program (UNDP). (2014a). National Development Human Report. Papua New Guinea. From wealth to wellbeing. Translating resource revenue into sustainable human development. United Nations Development Programme, Port Moresby and Massey University, Auckland. Retrieved from: http://www.pg.undp.org/content/dam/papua_new_guinea/docs/publications/FINAL%20PNG%20NHDR_low%20res.compressed.pdf on 12 July 2017.
- United Nations Development Program (UNDP). (2014b). Human Development Report 201: Fiji. Retrieved from: http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/FJI.pdf on 12 July 2017.

- UniQuest. (2013). *P110959: Productive Partnerships in Agricultural Project Baseline Survey. Draft final report prepared for the Government of Papua New Guinea.*
- Unpublished data (2018). Unpublished data from oil palm industry records. Oil palm data, PNG.
- von Bulow, D., & Sorensen, A. (1993). Gender and contract farming: Tea outgrower schemes in Kenya. *Review of African Political Economy* 56, 38-53.
- Wafiwa, L. (2017). Women play active role in coffee rehabilitation. *The National* 28 April, 2017. Retrieved from: <http://www.thenational.com.pg/women-play-active-role-coffee-rehab/>
- Wardlow, H. (2006). *Wayward women: sexuality and agency in a New Guinea society*, University of California Press, Berkley, CA, USA.
- West, P. (2012). *From modern production to imagined primitive: the social world of coffee from Papua New Guinea*, Duke University Press, Durham and London.
- White, N. (2007). *Looking at Us, Looking at Them, research paper*, England.
- Winchester, H. P., & Rofo, M. W. (2010). Qualitative research and its place in human geography. In: L. Hay (Ed.), *Qualitative research methods in human geography* (pp.3-25). Ontario: Oxford University Press.
- World Bank. (2009). Papua New Guinea: Coffee farmers face challenges, as demand for crop continues. Retrieved from: <http://www.worldbank.or/papua-new-guinea-coffee-farmers-face-challenges-as-demands-for-crop-continues>. Accessed: 10th September 2017.
- Yeoman, L. (1985). *Universal Primary Education: Factors Affecting the Enrolment and Retention of Girls in Papua New Guinea Community Schools*, Education and Evaluation Unit, National Department of Education, Port Moresby.
- Yogiyo, J. V. S. (2002). Extension Services Strenghts and Weaknesses. In: *Proceedings and Recommendations of the National Coffee Workshop-Raising Production of Coffee in the new Millenium*, CIC Print shop, Goroka, PNG.
- Zakaria, H. (2017). The drivers of women farmers' participation in cash crop production: the case of women smallholder farmers in Northern Ghana. *The Journal of Agricultural Education and Extension* 23(2), 141-158.

List of Appendices

Appendix 1

Part A. Qualitative questions for smallholder female farmers.

Focus Group – “Mama Loose Fruit” Oil Palm smallholder female farmers.

Group Member Biodata

Venue _____ Date: _____ Time: _____ Facilitator: _____

Interviewee's Name: _____ Year joined: _____

Informant ID: _____

Gender: _____ Age Category: _____ Home Province: _____

Education Level: _____

Commodity Type: _____

Complete Interview Transcripts

Interview with “Mama Loose Fruit Members” on Date: _____ 2017 Time: _____

Matilda: The Mama Loose Fruit Group Payment Scheme started in 1997 (NBPOL). So tell me about the group (Mama Loose Fruit). How did you get into the group and when?

Response:.....**All RESPONSES to be Audio-Recorded and Noted in notebook.**

Matilda: How do the families on the block use/share the Mama Card?

Response:.....

Matilda: What benefits does the card payment scheme bring to women (as a woman tell me your experiences)?

PROMPT- Going to shops/store and buying things etc...

Response:.....

Matilda: Do you save money from the card payment scheme income?

Response:.....

Matilda: Do you have any problems with keeping the income?

Response:.....

Matilda: What is the money used for?

Response:.....

Matilda: Do any of your sons/brothers/husbands try to control the Card?

Response:.....

Matilda: Do you have any plans of using the money (savings) to do other things? If so what are you planning to do or that you have already done?

Response:.....

Matilda: Before the use of the card system, where did you spend most of your time and labour into (what activities) and why?

Response:.....

Matilda: After the use of the card system, where do you now spend most of your time and labour into (what activities) and why?

Response:.....

Matilda: Looking back after all these years, how best would you describe your experiences before and after the introduction of the card payment system?

Response:.....

Matilda: When the Card Scheme was introduced resulting in Female Extension Officer (s) being assigned to work with the women. What have you got to say about the engagement and involvement of Female Extension Officers working with women?

Prompt Question: (Access to technical knowledge/information, talk freely etc).

Response:.....

Matilda: What was your experiences like before when there was no Female Extension Officer (s) working with women (compared to today).

Response:.....

Matilda: Is there anything else that you would like to say or add on that I may have not covered in this discussion?

Response:.....

We have come to the end of our discussion. Thank you for your time.

Appendix 1 Cont.

Focus Group – “Lower Unggai Community Development Foundation (LUCDF)” Coffee smallholder female farmers.

Group Member Biodata

Venue _____ **Date:** _____ **Time:** _____ **Facilitator:** _____

Interviewee's Name: _____ Year joined: _____

Informant ID: _____

Gender: _____ Age Category: _____ Home Province: _____

Education Level: _____

Commodity Type: _____

Complete Interview Transcripts

Interview with ‘Lower Unggai Community Development Foundation (LUCDF) smallholder female farmers’ on Date: _____ 2017 Time: _____

Matilda: So tell me about the group (LUCDF). When did the group form and why?

Response:.....**All RESEPNSES to be Audio-Recorded and Noted in notebook.**

Matilda: What was the main purpose of forming this group?

PROMPT – Only ask this to the main Key Informant (e.g. President/Group Leader).

Response:.....

Matilda: Who owns the coffee garden/block?

PROMPT – If woman/wife owns it then ask her how she comes to own it?

Response:.....

Matilda: What arrangements did you make with your husbands/sons/brothers about the coffee income before joining the group?

Response:.....

Matilda: What benefits do you get by joining the group (as a woman tell me your experiences)?

PROMPT – Earning your own income, you go do household shopping etc.

Response:.....

Matilda: What is the money used for?

Response:.....

Matilda: Do you save money from the coffee income?

Response:.....

Matilda: Do you have any problems with keeping the income?

Response:.....

Matilda: Do any of your sons/brothers/husband try to control the income you earned?

Response:.....

Matilda: Do you have any plans of using the money (savings) to do other things? If so what are you planning to do or that you have already done?

Response:.....

Matilda: Before forming/joining the group, where did you spend most of your time and labour into (what activities) and why?

Response:.....

Matilda: After forming/joining the group, where do you now spend most of your time and labour into (what activities) and why?

Response:.....

Matilda: Looking back after all these years, how best would you describe your experiences before and after /forming or joining the group?

Response:.....

Matilda: Is your group part of Coffee Industry Corporation’s (CIC) Farmer Demand Driven Extension Program?

Response:.....

Matilda: How do you access technical information/training on coffee?
PROMPT- Do you get information from CIC/NGOs or other sources?

Response:.....

Matilda: Whom do you prefer working with a Male Extension Officer or a Female Extension Officer and why?

PROMPT – Can you give any specific example from the choice you made?

Response:.....

Matilda: Are you aware that there is a Women in Coffee Development (WiCD) Desk in CIC? This office looks after women’s programs in coffee?

PROMPT _What do you have to say about this CIC’s WiCD program/office? Is the office doing enough to address/support women’s interest in coffee programs or not? What are some changes you would suggest to enhance the office’s capacity and performance of this office or what advice would you give?

Response:.....

Matilda: What is it that does not motivate you as a woman to go into coffee farming?

PROMPT – Factors that discourage you from farming coffee?

Response:.....

Matilda: Is there anything else that you would like to say or add on that I may have not covered in this discussion?

Response:.....

We have come to the end of our discussion. Thank you for your time.

Appendix 1 Cont.

Focus Group – “Vunaiting Agro-farmer’s Cooperative (VAC)” Cocoa smallholder female farmers.

Group Member biodata

Venue _____ **Date:** _____ **Time:** _____ **Facilitator:** _____

Interviewee’s Name: _____ Year joined: _____

Informant ID: _____

Gender: _____ Age Category: _____ Home Province: _____

Education Level: _____

Commodity Type: _____

Complete Interview Transcripts

**Interview with ‘Vunaiting Agro-farmer’s Cooperative’ smallholder female farmers’ on
Date: _____ 2017 Time: _____**

Matilda: So tell me about the group (VAC). When did the group form and why?
Response:.....**All RESEPNSES to be Audio-Recorded and Noted in notebook.**

Matilda: What was the main purpose of forming this group?
 PROMPT – Only ask this to the main Key Informant (e.g. President/Group
 Leader).

Response:.....

Matilda: Who owns the cocoa garden/block?
 PROMPT – If woman/wife owns it than ask her how she comes to own it?

Response:.....

Matilda: What arrangements did you make with your husbands/sons/brothers about the
 coffee income before joining the group?

Response:.....

Matilda: What benefits do you get by joining the group (as a woman tell me your
 experiences)?

PROMPT – Earning your own income, you go do household shopping etc.

Response:.....

Matilda: What is the money used for?

Response:.....

Matilda: Do you save money from the cocoa income?

Response:.....

Matilda: Do you have any problems with keeping the income?

Response:.....

Matilda: Do any of your sons/brothers/husband try to control the income you earned?

Response:.....

Matilda: Do you have any plans of using the money (savings) to do other things? If so
 what are you planning to do or that you have already done?

Response:.....

Matilda: Before forming/joining the group, where did you spend most of your time and
 labour into (what activities) and why?

Response:.....

Matilda: After forming/joining the group, where do you now spend most of your time
 and labour into (what activities) and why?

Response:.....

Matilda: Looking back after all these years, how best would you describe your
 experiences before and after /forming or joining the group?

Response:.....

Matilda: Is your group part of Cocoa and Coconut Institute’s Extension Program?

Response:.....

Matilda: How do you access technical information/training on coffee?
PROMPT- Do you get information from CIC/NGOs or other sources?

Response:.....

Matilda: Whom to you prefer working with a Male Extension Officer or a Female Extension Officer and why?
PROMPT – Can you give any specific example from the choice you made?

Response:.....

Matilda: What is it that does not motivate you as a woman to go into coffee farming?
PROMPT – Factors that discourage you from farming cocoa?

Response:.....

Matilda: Is there anything else that you would like to say or add on that I may have not covered in this discussion?

Response:.....

We have come to the end of our discussion. Thank you for your time.

Appendix 2

Part B. Qualitative questions through oral history for female extension officers.

Focus Group “Female Extension Officers” of Coffee/Oil palm/Cocoa

(Circle appropriate crop when interviewing)

Biodata

Venue _____ **Date:** _____ **Time:** _____ **Facilitator:** _____

Interviewee’s Name: _____ Year joined org: _____

Informant ID: _____ Position: _____

Gender: _____ Age Category: _____ Home Province: _____

Education Level: _____

Marital Status: _____

Commodity Type: _____

Complete Interview Transcripts

Interview with “Female Extension Officers” of Coffee/Oil Palm/Cocoa on Date:
_____ 2017 Time: _____

Matilda: So tell me how did you join the Organisation and when?
Response:.....All RESPONSES to be Audio-Recorded and Noted on notebook.

Matilda: Is this your first job with the Organisation?
Response:.....

Matilda: How would you best describe the feeling of being employed for the first time (or not) with the organisation?

Response:.....

Matilda: What was it like with your first deployment (posting). Can you describe your experiences to that new location and what was it like?

Response:.....

Matilda: What were the attitudes of the male extension officers towards you?

Prompt: On your first arrival at your new posts and after. Share your experiences. For example, where they happy to work with you?

Response:.....

Matilda: How long have you been employed with the organisation?

Response:.....

Matilda: Where you been given any recognitions through promotions? How long did it take for your promotion and what was the position of the new promotion?

Response:.....

Matilda: Can you share your experiences through human resource capacity building.

PROMPT- if you have attended any training domestically or overseas to enhance your performance? How many training have you attended so far?

Response:.....

Matilda: Can you share your experiences on what were some of the main challenges or constraints you faced as a Female Extension Officer (FEO) (whether you are promoted or not) while carrying out your duties.

PROMPT – With your (male) colleagues, organisation/management, farmers etc..

Response:.....

Matilda: From your years of experiences. What would you generally say about women’s involvement and participation in the major export crop production?

PROMPT – for example in your case is coffee/cocoa/oil palm.

Response:.....

Matilda: What was your experiences like (as a FEO) and working with women farmers.

PROMPT: - women farmers attitudes towards FEOs, up of take of technical knowledge through training, talk freely etc.

Response:.....

Matilda: Is there anything else that you would like to say or add on that we I may have not have covered in this discussion?

Response:.....

We have come to the end of our discussion. Thank you for your time.

Appendix 3

Part C. Qualitative interviews through standardise questionnaires for male extension officers.

Focus Group “Male Extension Officers” of Coffee/Oil palm/Cocoa

(Circle appropriate crop when interviewing)

Bio-Data

Venue _____ **Date:** _____ **Time:** _____ **Facilitator:** _____

Interviewee’s Name: _____ Year joined org: _____

Informant ID: _____ Position: _____

Gender: _____ Age Category: _____ Home Province: _____

Education Level: _____

Marital Status: _____

Commodity Type: _____

Focus Group on “Male Extension Officers “of Coffee/Oil palm/Cocoa

(Circle appropriate crop when interviewing)

Q1. What year were you employed? _____

Q2. How long have you been employed? _____

Q3. Is this your first job with the Organisation? Circle Yes/No

If No, Please explain _____

Q4. How would you best describe the feeling of being employed for the first time (or not) with the organisation you are with now? _____

Q5. What was it like with your first deployment (posting). Can you describe your experiences to that new location and what was it like? _____

Q6. At work how do you see your male colleagues’ attitudes towards you? Happy to work with you? Yes/No.

Can you give any specific examples – (Matilda, prompt this and record).

If No, Explain why? _____

Q7. Were you being given any recognitions through promotions? Circle Yes/No.

If Yes, How long did it take for your promotion and what was the position of the new promotion? _____

Q8. Did you attend any training/short courses through human resource capacity building whether it be in country or overseas? Circle Yes/No.

If Yes, Explain: _____

Q9. Are you comfortable working with Female Extension Officers? Circle Yes/No.

If No, Explain Why? _____
Can you give any specific examples of when you were uncomfortable or of situations where working with female EOs improved the effectiveness of the extension?

Q10. Did you ever encounter any major challenges or constraints working amongst the Female Extension Officers? Circle Yes/No.

If Yes, what were the challenge (s) and give examples (s).

Q11. Did you ever encounter any major challenges or constraints working with women famers? Circle Yes/No.

If yes, what are the challenge (s) and give explanation (s). _____
Specific Examples would be good

Q12. From your years of experiences in the industry and as a man, how do you want to see women involved in export crop farming? (coffee/cocoa/oil palm).

Q13. Have you got anything else you would like to add that I may not have covered in this interview?

We have come to the end of our interview. Thank you for your time.

Appendix 4

Part D. Consisted of qualitative questions for CARE International (PNG) graduates under the graduate program.

Bio-data

Interview with “CARE Female Graduate Officers” on Date: _____

Time: _____

Venue: _____ Interviewee’s

Name: _____

Organisation attached with: _____ Home

Prov: _____

Academic Institution _____ Educa Level: _____

Martial Status: _____ Age Category: _____

COMPLETE INTERVIEW TRANSCRIPTS

Matilda: How did you learn about the CARE Graduate Program?
PROMPT: Through media advertisements or what?
Radio/TV/Newspapers/Friends

Response:.....

Matilda: What was the length of time for the Graduate Program? PROMPT: 1 year or 2years?

Response:.....

Matilda: Why did you apply for the graduate program?

Response:.....

Matilda: Was it what you expected to get out of the graduate program?
PROMPT: You came with some expectations to join and get or learn as much as you can out of the program.

Response:.....

Matilda: What are your experiences on the job under this graduate program?
PROMPT: Where you happy/excited/scared....

Responses:.....

Matilda: What are the Advantages and Disadvantages of the Graduate Program?

Responses:.....

Matilda: Any Recommendations about the CARE Graduate Program?
PROMPT: For example how it could be improved etc....

Responses:.....

Matilda: What were the attitudes of male extension officers towards you? Share your experiences. PROMPT: For example where they happy to work with you?

Response:

Matilda: What was your experiences like (as a FEO) under the graduate program working with women coffee farmers?
PROMPT: Women farmers' attitudes towards you. Uptake of technical knowledge through training like did you talk to them freely or vice versa?

Response:

Matilda: What are some of the main challenges or constraints you faced while working as a FEO under the graduate program? PROMPT: with farmers or male officers or organisation/management?

Response:

Matilda: Is there anything else that you would like to say or add on that I may have not covered in this discussion?

Response:

We have come to the end of our discussion. Thank you for your time.

Appendix 5

Part E. Consisted of qualitative questions for CARE International (PNG) graduates under the graduate program.

COMPLETE INTERVIEW TRANSCRIPTS

Interview with “CARE Graduate Program Bosses/Supervisors” on

Date: _____ **Time:** _____ **Venue:** _____

Organisation: _____ **Interviewee’s Name:** _____

Matilda: Tell me what do you think of the CARE Graduate Scheme/Program?

Response:.....

Matilda: How did your organisation get involved with the CARE Graduate Scheme/Program?

Response:.....

Matilda: What are some of the Advantages and Disadvantages of the Program?

Response:
.....

Matilda: How could the Graduate Scheme/Program be improved?

Response:
.....

Matilda: What would you say about the female graduates under that program being engaged with your organisation? PROMPT: For example their performances.....

Responses:.....

Matilda: Any Recommendations about the CARE Graduate Program or similar initiatives that could be introduced to promote female extension officers?

Responses:.....

Matilda: Is there anything else that you would like to say or add on that I may have not covered in this discussion?

Response:

We have come to the end of our discussion. Thank you for your time.