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## SMALLHOLDER COFFEE PRODUCTION IN PAPUA NEW GUINEA – EXTENSION OFFICER TRAINING GUIDE

### UNIT 2: KNOWING YOUR FARMERS

# MODULE 1: GETTING TO KNOW OUR COFFEE SMALLHOLDERS



Curry G, Tilden G, and Aroga L (2023)  
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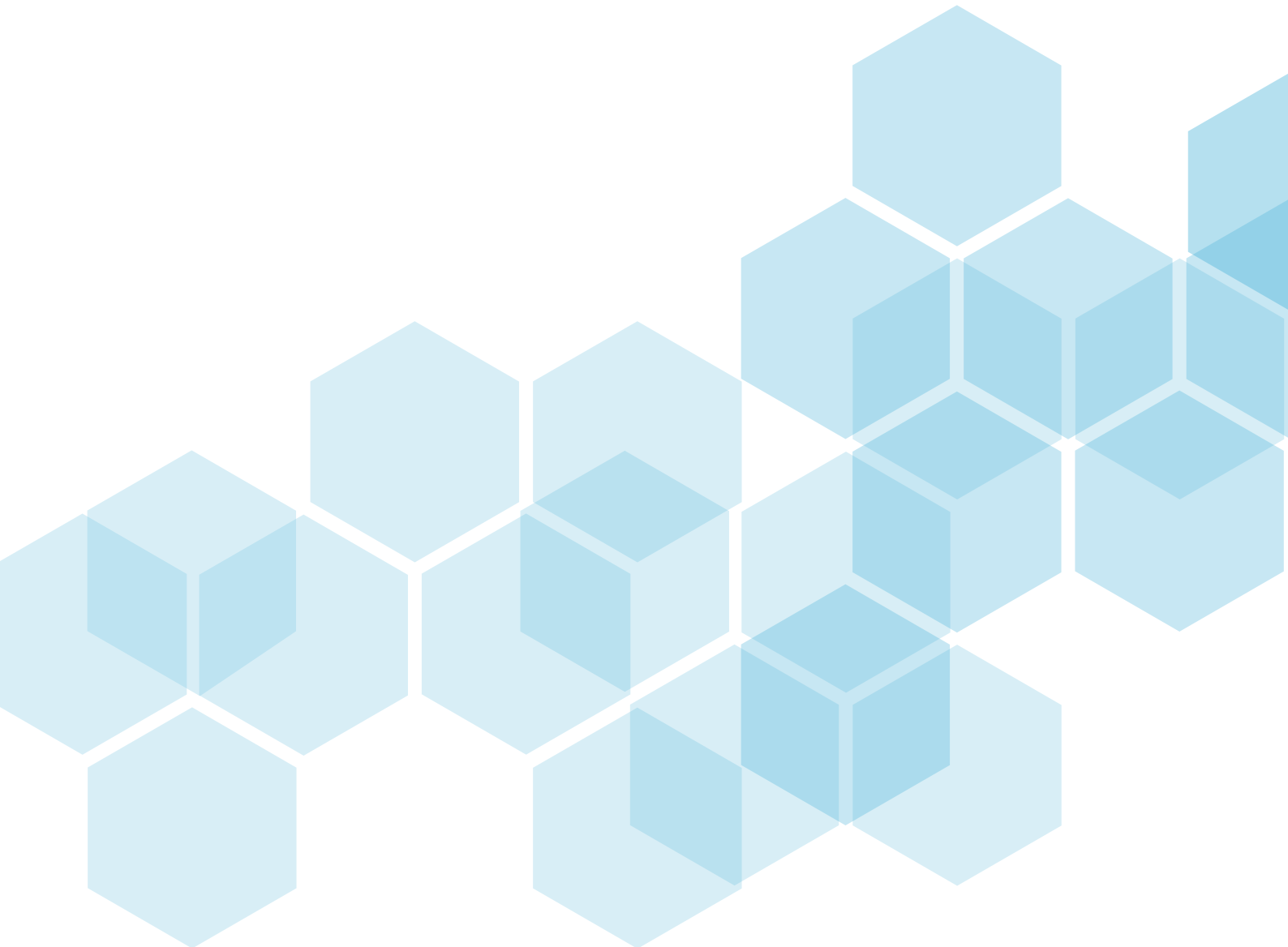
**SMALLHOLDER COFFEE PRODUCTION IN  
PAPUA NEW GUINEA – EXTENSION OFFICER  
TRAINING GUIDE**

**UNIT 2: KNOWING YOUR FARMERS**

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# **MODULE 1:**

## **GETTING TO KNOW OUR COFFEE SMALLHOLDERS**



## The Smallholder Coffee Production in Papua New Guinea Training Program

The training program contains modules prepared in partnership with the Australian Centre for International Agricultural Research (ACIAR) and by CARE-International.

The structures of the Extension Officer Training Program and the Farmer Training Program are shown in the table below.

Some modules also contain references to additional training that learners are encouraged to complete as part of their training.

## ACIAR Resource

Monograph MN220 Smallholder Coffee Production in Papua New Guinea: a training package for extension officers and farmers. This package contains the modules for both the extension officer training guide and the farmer training guide. The ACIAR monograph is available online from [www.aciar.gov.au](http://www.aciar.gov.au)

Hard copies of the ACIAR training package may be available by contacting ACIAR or the Coffee Industry Corporation (CIC)

## CARE Resources

Organisational Strengthening Training  
CARE Family Money Management Training

The CARE modules are available online from <https://pngcdwstandard.com/resources-for-use-by-cdws-working-with-wards-communities-groups-and-smes>

Hard copies of the CARE modules may be available by contacting the CIC or CARE-International.

## Extension Officer Training Program

Title	Module reference
Introduction to smallholder coffee production in Papua New Guinea	ACIAR Smallholder Coffee Production in Papua New Guinea Training Package
<b>Extension Principles</b>	
Introduction to the Coffee Extension Officer and Farmer Training Guides	ACIAR Extension Officer Training Guide Unit 1 Module 1
The extension officer - roles and effectiveness	ACIAR Extension Officer Training Guide Unit 1 Module 2
<b>Knowing Your Farmers</b>	
Getting to know our coffee smallholders	ACIAR Extension Officer Training Guide Unit 2 Module 1
What factors affect smallholder coffee production?	ACIAR Extension Officer Training Guide Unit 2 Module 2
Strongim grup: course facilitator guide	CARE Organisational Strengthening Training

## Farmer Training Program

Title	Module reference
<b>Becoming a Coffee Farmer</b>	
Knowing your coffee tree	ACIAR Farmer Training Guide Unit 1 Module 1
Coffee nursery development	ACIAR Farmer Training Guide Unit 1 Module 2
Establishing a new coffee garden	ACIAR Farmer Training Guide Unit 1 Module 3
<b>Managing Your Coffee Garden</b>	
Weed control	ACIAR Farmer Training Guide Unit 2 Module 1
Maintenance pruning and rehabilitation	ACIAR Farmer Training Guide Unit 2 Module 2
Shade management	ACIAR Farmer Training Guide Unit 2 Module 3
Drainage	ACIAR Farmer Training Guide Unit 2 Module 4
Pest and disease management	ACIAR Farmer Training Guide Unit 2 Module 5
Coffee berry borer management	ACIAR Farmer Training Guide Unit 2 Module 6
Soil fertility and nutrient maintenance	ACIAR Farmer Training Guide Unit 2 Module 7
Intercropping in your coffee garden	ACIAR Farmer Training Guide Unit 2 Module 8
<b>Harvesting and Processing Coffee</b>	
Coffee harvesting and processing	ACIAR Farmer Training Guide Unit 3 Module 1
Coffee grading systems and pricing	ACIAR Farmer Training Guide Unit 3 Module 2
Establishing a mini wet factory	ACIAR Farmer Training Guide Unit 3 Module 3
<b>Coffee Marketing</b>	
Understanding the domestic coffee market	ACIAR Farmer Training Guide Unit 4 Module 1
Kamapim ol prairiti	CARE Organisational Strengthening Training
Kamapim ol eksen plen	CARE Organisational Strengthening Training
Setim gutpela kastom bilong ronim grup	CARE Organisational Strengthening Training
Wok bilong meneja na memba na lida	CARE Organisational Strengthening Training
Coffee certification	ACIAR Farmer Training Guide Unit 4 Module 2
Fairtrade certification	ACIAR Farmer Training Guide Unit 4 Module 3
Family money management	CARE Family Money Management Training



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## Recommendations for additional training

In addition to this extension officer training module, it is recommended that trainee extension officers also complete the CARE-CIC or Family Farm Teams Program to develop a collaborative approach to training. These training programs can be found at:

### CARE-CIC Training Manuals

<https://pngcdwstandard.com/resources-for-use-by-cdws-working-with-wards-communities-groups-and-smes/>

### Family Farm Teams Program

The PNG Family Farm Teams Manual

[www.aciar.gov.au/publication/books-and-manuals/png-family-farm-teams-manual](http://www.aciar.gov.au/publication/books-and-manuals/png-family-farm-teams-manual)

Building gender equity through a Family Farm Teams approach

[www.aciar.gov.au/publication/books-and-manuals/building-gender-equity-through-family-teams-approach](http://www.aciar.gov.au/publication/books-and-manuals/building-gender-equity-through-family-teams-approach)

The farmer-to-farmer adult learning manual

[www.aciar.gov.au/publication/books-and-manuals/farmer-farmer-adult-learning-manual](http://www.aciar.gov.au/publication/books-and-manuals/farmer-farmer-adult-learning-manual)

Business Training for Family Teams – A Facilitator’s Manual

[www.canberra.edu.au/research/faculty-research-centres/csc/archive/family-farm-teams-program/family-farm-teams-resources/PAU-Business-Skills-Facilitators-Manual.pdf](http://www.canberra.edu.au/research/faculty-research-centres/csc/archive/family-farm-teams-program/family-farm-teams-resources/PAU-Business-Skills-Facilitators-Manual.pdf)



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Improving Livelihoods of Smallholder Coffee Communities in Papua New Guinea (ASEM/2016/100)



# INTRODUCTION

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## Aim of Module:

This module introduces the extension officer to the smallholder system of coffee production so that they can develop effective extension strategies compatible with this complex coffee farming-livelihood system.

Smallholder coffee production is characterised by a low input system of production. This is because coffee smallholders have diverse livelihoods and allocate time and effort to each livelihood activity. Not all coffee farmers are the same: they have different priorities, problems and lifestyles and this influences their decision making. Furthermore, their livelihood opportunities vary depending upon their location and market accessibility. When developing extension strategies for smallholders it is important for extension officers to have a good understanding of their complex livelihood systems.

## LEARNING OUTCOMES:

By the end of this module trainee extension officers will have:

- ✓ An understanding of the diverse livelihoods of smallholders
- ✓ An understanding of the low input coffee production system of smallholders
- ✓ A better understanding of the factors affecting the decision-making of coffee farmers
- ✓ An awareness of the different types of households growing coffee and the range of livelihoods they pursue, in addition to coffee
- ✓ An improved ability to address the diverse needs and circumstances of smallholder coffee farmers

## LESSON PLAN:

The module has three parts:

Section 1.1 The coffee smallholder sector and the low input production system

Section 1.2 The diverse livelihoods of smallholders

Sections 1.3 to 1.6 The diversity of individual coffee farming households and customising extension

## TIME REQUIRED TO COMPLETE THIS MODULE: 3 DAYS

## TEACHING AIDS:

- Butchers paper and marker pens (or white board and white board marker pens)
- Pens and paper

## PRELIMINARY ACTIVITY:

### **Quiz**

Before beginning the module topics, have the extension officers complete the quiz at the end of this module. The quiz will then be repeated on completion of the module topics.

# 1.1 KNOWING YOUR COFFEE SMALLHOLDERS

Villagers in the highlands of PNG have been growing coffee since the 1950s on small holdings. Since the demise of the plantation sector, smallholders have become a very important part of the coffee economy. Most of PNG's coffee is now produced by the smallholder sector and it has an important role to play in sourcing foreign income for the country.

## What does the smallholder coffee sector look like?

See Box 1 for a description of the smallholder coffee sector.

### Box 1. Smallholder coffee sector - facts and figures

- Smallholders produce over 85% of PNG's coffee exports
- The average smallholding is less than 1,000 coffee trees
- Most smallholders (87%) process their coffee cherry to produce parchment
- Smallholders in remote sites are limited to selling their coffee as parchment but those with greater access to markets sell a mix of cherry and parchment. Cherry can fetch a price premium of over one-third and a lot of labour can be saved on processing
- The advantage of parchment is that it can be stored and when the need arises for cash, smallholders sell the parchment to roadside traders or directly to the dry factories, where the parchment is processed further to produce green bean
- In remote locations coffee parchment may have to be flown out, adding to production costs
- Smallholder coffee quality varies mainly due to poor harvesting and wet processing techniques
- There is a perception among buyers that the quality of PNG coffee has fallen since the demise of the plantation sector and as a result the price that PNG smallholders receive is below the price for premium coffee
- Yields from the smallholder sector are well below potential levels. It has been estimated that yields could be increased three-fold with good management of coffee gardens
- The smallholder sector is dominated by an ageing tree stock. Nearly 80% of smallholders planted their coffee prior to 2000. Almost 50% of coffee trees were planted prior to 1990
- Earning an income from coffee production is becoming harder for smallholders in some areas because road infrastructure is deteriorating and other government services such as extension are lacking



Some smallholders close to markets sell coffee cherry  
*(Source: Susan May Inu).*



Most smallholders process their coffee and sell it as parchment coffee  
*(Source: Pr. Albert Ukaia).*



Coffee is carried or flown out of some remote areas.  
*Source: (a) Joeri Kalwij, NGHCE; (b) Susan May Inu*

## What are the characteristics of the typical coffee smallholder?

- The population of smallholders is made up of men and women, and it would be a mistake to think of only men as coffee producers
- Most smallholders are subsistence farmers, on collectively-owned land, residing in rural villages
- Food gardening, family and clan obligations, church activities, income generation and general household activities are part of smallholders' everyday routines
- For coffee smallholders, coffee is their primary source of household income, especially in remote areas where other income generating activities are limited
- For smallholders located close to markets, coffee is part of a food garden/ cash crop farming system
- Coffee is the main source of cash income used to pay school fees, purchase store goods and meet traditional social obligations
- Few households employ hired labour to overcome labour shortages in coffee due to the cost and effort in employing them
- Unlike producers in the plantation sector driven by profit and practising a high input style of production, coffee smallholders (like those in cocoa and oil palm) instead follow a low input system of production

### The role of women in coffee production

- While men do most of the coffee maintenance and marketing, women play a central role in coffee harvesting and processing
- To help reduce labour shortages during the coffee season, women play a very important role in reciprocal labour exchange where they provide a reserve harvesting labour force through social and kinship networks

## What is a low input production system?

The low input system of production, common to all PNG smallholder producers of export cash crops, is characterised by the following:

- Low inputs of labour in coffee garden maintenance (but level of input varies with price)
- Low rate of uptake of new technologies and other extension inputs
- Limited understanding of good husbandry practices
- Poor knowledge of best practice harvesting and processing techniques to maintain quality
- Minimal financial reinvestment in the coffee garden (most coffee trees are very old)

## Why do smallholders typically practise a low input production system?

### Profit satisfiers

- Smallholders tend to be profit or income ‘satisfiers’ rather than ‘maximisers’, that is, they have a target level of income in mind and when this is achieved labour inputs drop off markedly
- Smallholders are involved in a diverse range of agricultural, livelihood, social, cultural and church activities in addition to coffee production (see Section 1.2)
- The high demands on their time often means they are unable to channel too much labour into a single activity
- The low input system of production enables farmers and their families to maintain a diverse range of livelihoods for insurance reasons, so that, for example, if coffee prices collapse, they can scale-up another livelihood activity such as production and marketing of garden foods
- The low input system of production also gives more time to farmers and their families to pursue social, customary and church objectives

### Non-labour farm inputs (e.g. fertiliser, herbicides and machinery)

- Non-labour inputs are very low due to a lack of knowledge of their use to some extent but primarily because they are expensive
- Mechanisation of production and processing is very limited. The coffee hand pulper is the most prominent form of mechanisation in on-farm coffee processing
- The use of organic and inorganic fertilisers is low although this varies considerably depending on land pressures and level of intensification of coffee and commercial vegetable production. Fertiliser is being used increasingly for the commercial production of European vegetables like cabbage and broccoli
- There is very little use of pesticides and herbicides, though use of herbicides for weed control is increasing in areas near towns in the highlands provinces

### Labour inputs

- Labour inputs are typically low and largely consist of harvesting labour
- Smallholders rely largely on family labour for harvesting and coffee garden maintenance
- The size of the family, the age and gender of children, the age of the parents and intra-household relations, particularly gender relations, determine how much labour is available and how household labour is allocated to different activities
- Many smallholders have more coffee than they can manage effectively using only family labour. As a result coffee garden management is often poor
- There is a lack of regular pruning of coffee and shade trees
- Smallholders’ knowledge of post-harvest processing is poor resulting in high quality cherry being processed into low quality parchment which earns lower prices
- Coffee production and income is mostly controlled by men, but women play a central role in coffee production, particularly harvesting

## The diversity among smallholder households

Smallholder coffee farming households are not all the same. There is tremendous diversity amongst them that must be considered when planning extension programs. Differences amongst smallholder families include:

- Economic differences between smallholder families who are land short with few livelihood opportunities, and families with access to sufficient land to enable them to develop a range of livelihoods
- Some farmers may grow coffee as a means of locking up land for their family's future needs, and therefore may not be motivated to produce coffee from that land
- There are also differences between smallholder households in family size, income, household assets, education and diet quality
- Smallholders have competing demands on their time and labour and this explains why some growers are more willing or able to commit labour to coffee production than others
- Some farmers have plenty of household members willing to contribute labour to coffee production while others are short of labour, especially for harvesting
- Some farmers are 'mixed' coffee/vegetable growers while others depend largely on coffee as their primary source of income
- There are major differences in the livelihood priorities and strategies of smallholder men and women and these often reflect market accessibility
- Smallholders in remote areas and accessible areas have different needs, different levels of government and private sector services, different livelihood options and different constraints on coffee production
- Many smallholder communities lack government services such as schools, health clinics and agricultural extension services
- More household members from remote villages live away, often to seek employment, education or other services
- There are also differences in accessibility to inputs required for coffee production such as planting material, tools and processing equipment. For example, there is a much greater diversity of coffee planting material available to smallholders in accessible sites than at remote sites where smallholders tend to rely mostly on a single variety of coffee
- Ownership and quality of assets of remote smallholders tend to be much lower than those of smallholders at accessible sites. These assets include items such as, mobile phones, generators, kerosene stoves, mosquito nets and mattresses
- Farmers at remote sites tend to have lower education levels than those at accessible sites
- Some farmers belong to grower groups while some do not
- Some farmers are certified coffee growers and some are not

So, farmers have different problems, priorities and lifestyles, and these affect the decisions they make regarding how much land, labour and other resources to commit to coffee production.





A smallholder family working in their coffee garden.

## 1.2 COFFEE FARMER HOUSEHOLDS AND COMMUNITIES

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Being a successful coffee farmer does not just rely on having good technical knowledge of growing coffee. Strong household and community relationships are important for sustaining the array of livelihood activities in which households are engaged, including coffee. Coffee households differ in their demographics, household relations and how they act on and influence certain situations. It is important for extension officers to try to understand as many of the factors as possible that define individual coffee households. This will enable them to customise advice based on each individual household's situation and needs.

### Demographics of a coffee farming household

A coffee farming household includes all individuals that share meals together daily. Husbands and wives and older children often live in separate houses but usually near each other. The household members may vary in age, gender, marital status and relationship to each other, level of education and capability. A household may typically include the following members:

- Male head of household
- Female head of household
- Men/boys dependent
- Women/girls dependent
- Children
- People with special needs (elderly and disabled people)

Learning about the demographics and relationships that make up individual households will help guide the extension officer when developing customised advice for each smallholder household unit.

### Women and men as part of a coffee farming household

- When extension officers are providing advice it is important that it is not only directed at the male household head as the whole household is involved in coffee production either directly or indirectly
- Women make a large contribution to coffee production through inputs of labour for harvesting, processing and maintenance. Directly and indirectly, they are involved in food production, childcare and other livelihood activities that enable the household to function as a unit
- Older children and dependents may also contribute to livelihood activities

## Coffee farmers and their household relations

Families are more able to improve their wellbeing if both men and women contribute to household livelihoods and responsibilities in ways that promote trust and caring relationships. This can be achieved by:

- Fathers sharing parenting and household tasks with mothers and encouraging their sons to do the same amount of housework as their daughters
- Men using income they have earned so that daily household needs are covered before spending money on themselves
- Women having more influence in decision-making processes around household assets and the use of the household coffee income
- Shared planning for the future, and men and women agreeing about how their income can be managed fairly to meet household and personal needs

## Community – coffee farmers and their social settings

A successful coffee growing community relies on cohesiveness and constructive input from all members. The community as a whole needs to do things to support men and women in working together so:

- There is less anti-social behaviour and less violence across the community
- Young men become involved in productive, economic activities, alongside young women
- Men act as positive role models to other men
- Male leaders take responsibility for community safety alongside women leaders
- Women are able to take a leadership role in mixed groups of men and women
- There is space for women's voices to be heard and respected on a range of community issues and in decision-making processes

## Coffee farmers as individual agents

Women's increased standing, confidence and opportunity means that women (and men) are more likely to insist on equal treatment in their household and community, and have better access to and control of resources. Coffee growers will be seen to be enjoying a shared benefit when:

- Men share with women access to resources and skills necessary to create an income
- Men support women in increasing the number of cash income sources and increase the cash or non-cash benefit for each hour worked
- Women can contribute to their community through skills, cash or in-kind gifts
- Families and communities support women to take up new leadership, learning and economic opportunities within coffee grower groups
- Men and women share control over how their income is spent
- Men support and encourage women to have an increased voice within their family networks and community
- Men encourage and support women in taking time for learning, networking and recreation

## 1.3 THE COFFEE FARMING-LIVELIHOOD SYSTEM OF SMALLHOLDERS

### Diverse livelihoods

Coffee farmers are not just coffee farmers. They are like smallholder producers elsewhere in PNG in that they pursue a diverse range of livelihood activities as shown in the figure below.

Business is only one of a complex set of activities in which households allocate time and labour. There are also other highly valued activities that are undertaken to maintain and strengthen the household as well as the village economy and community.



Coffee farming-livelihood system of smallholders.

A characteristic of the coffee farming-livelihood system is that coffee farming is closely entwined with food production for household use and for sale at local and distant markets. Not only is coffee often intercropped with food crops but the amount of labour allocated to coffee depends on how much work there is to do in food gardening and vice versa. So, when thinking about coffee production it is important to consider how it relates to other livelihood activities and how they interact in terms of labour availability. The livelihood activities, shown in the figure above, are a central part of everyday life and each activity draws on the labour and time of family members.

## Why is it important for smallholders to be engaged in a range of livelihood activities?

When we think of coffee smallholders we must remember that **coffee production is just one of the different activities in which smallholders are engaged**. All these activities together make up the coffee farming-livelihood system of smallholders and are important because they act to:

- Strengthen household economic and social security, and well-being
- Maintain household food security
- Minimise the risk of livelihood failure
- Support kinship and community networks
- Give meaning to people's lives

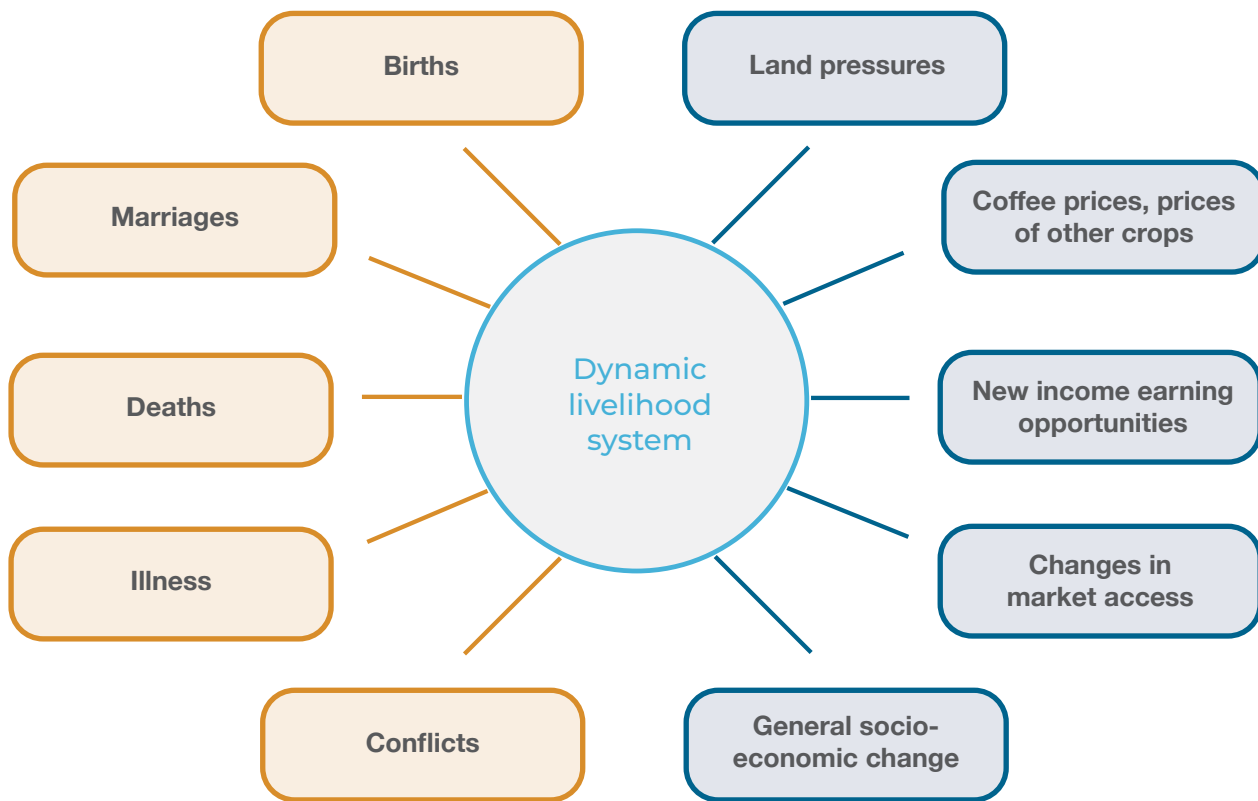
## A dynamic livelihood system

The coffee farming-livelihood system is a dynamic system that is **constantly changing**

- Over the longer term the system can change as children are born, grow up, marry and form their own families (think of how household coffee production might change from when the household has school-age children to when the parents are much older and the children have grown up and married)
- Market factors also affect how families manage their livelihoods in coffee-based farming systems. Families change the emphasis on the various livelihoods they will pursue depending on need and prices, by varying labour inputs amongst the different livelihood options open to them
- This shift between livelihoods is not only due to changing prices of different crops (e.g. changing coffee prices relative to cabbage prices) but is also due to changes occurring within the household (e.g. deaths, conflicts and illness) and wider external factors affecting the household such as market access and pests and diseases such as Coffee Berry Borer

**Within the household**

**External to the household**



Factors that can cause a shift between livelihoods.

All these factors can influence the various activities of coffee farmers and how much time and labour they will put into coffee production.

Sometimes the labour demands of the different activities compete with coffee production as some households find it difficult to manage all the demands on their time. Many smallholders are not willing to commit large amounts of time and labour to coffee production if it means taking time and labour away from other highly valued activities.

## Some facts and figures about the smallholder coffee farming-livelihood system

To learn more about the coffee farming-livelihood systems of smallholders see Box 2.

### Box 2. Smallholder livelihoods

#### DID YOU KNOW?

- 80% of women spend more time in food production than coffee production. Almost one third of men spend more time in food production than coffee production
- More smallholders, especially women, living close to roads, are shifting their labour into commercial production of food crops like vegetables and pineapple as the income returns can be higher than from coffee
- Farmers who are spending more time on the commercial production of food crops are less likely to put time into coffee garden maintenance
- Coffee smallholder households draw on at least two other main income sources apart from coffee
- Over 80% of households are actively involved in marketing vegetables, fruits and processed goods. Most of this is done by women
- Over 30% of households engage in small-scale retailing or operate a tradestore
- Animal husbandry is a very important subsistence and cash income activity. Almost half of smallholder households identify animal husbandry as a source of household income
- Smallholders allocate a considerable amount of time to leisure and customary and community activities. These activities are highly valued and resistant to change and are part of a 'way of life'

**Objective:**

To brainstorm and identify various livelihood activities and levels of engagement of men and women smallholders.

**You will need:**

Butchers' paper and marker pens (or pens and paper)

## EXERCISE 1

### Livelihood system of smallholders

**Step 1:** Refer to the diagram 'Coffee farming-livelihood system of smallholders'.

**Step 2:** Prepare a table as shown below listing the livelihood activities in the first column.

**Step 3:** Allocate two columns to men (activities + rank) and two columns to women (activities + rank).

**Step 4:** Brainstorm different livelihood and social activities men and women smallholders are involved in. Some examples include garden vegetable production for marketing (cash income) or home consumption (subsistence); cooking (household & domestic activities); cultural and community activities (festivals, church and sports activities).

**Step 5:** Discuss the level of engagement and the amount of time men and women spend in various livelihood, social and cultural activities.

**Step 6:** Rank each livelihood system for both men and women in terms of time spent and importance of each, with 1 being the highest.

Livelihood system	MEN		WOMEN	
	Activities	Rank	Activities	Rank
Coffee activities				
Other cash income activities				



Livelihood system	MEN		WOMEN	
	Activities	Rank	Activities	Rank
Subsistence activities				
Household & Domestic activities				
Cultural, church & community activities				

## 1.4 WHY IS IT IMPORTANT TO HAVE A GOOD UNDERSTANDING OF SMALLHOLDER LIVELIHOODS?

### Extension strategies used in the past

- In the past, agronomic recommendations delivered through extension were geared towards high-input, capital-intensive plantation style production where the motivation was solely profit maximisation
- Extension strategies in PNG across all the commodity crops have been premised on the assumption that smallholder farmers were in transition from low-input farming to high-input modern farming, and the purpose of extension was to facilitate this trajectory
- Efforts to encourage smallholders to adopt high-input coffee farming through increased labour inputs have been resisted by farmers, in the same way that cocoa farmers have resisted high-input cocoa farming methods. This is because such a change would require them to make major adjustments to their lifestyles and broader livelihood strategies
- Even though women play a vital role in coffee harvesting and maintenance, they are often overlooked in extension training with the result that most coffee extension has been directed at men

### Developing effective extension strategies for smallholders – men and women

- It is very important that extension strategies recommended to smallholders are compatible with the wider coffee farming-livelihood system of smallholders. If not, smallholder coffee farmers are unlikely to adopt the advice of extension officers
- By understanding how the various livelihood strategies interact with coffee production, more appropriate interventions aimed at increasing smallholder production and productivity can be developed
- To optimise household labour allocations to coffee, extension training must be inclusive of both men and women as both contribute significantly to coffee production
- Recommendations should include incentives for women. Even though women play a vital role in harvesting and maintenance, women will allocate their labour where they can obtain the best economic returns. Without favourable economic incentives for women to commit labour to coffee production, women are likely to allocate their labour elsewhere, such as to vegetable production where they have more control over the income generated



Smallholders undertaking different livelihood activities.

# 1.5 CUSTOMISING EXTENSION FOR DIFFERENT COFFEE HOUSEHOLDS

## Customising extension for different situations

Because of the large differences found among coffee smallholders there is not one set of extension strategies suitable for all farmers. For example, farmers living in remote areas with easy access to land but very limited access to markets will have different problems and constraints on their coffee production than coffee farmers in accessible sites. In accessible locations, farm inputs can be purchased easily and markets for coffee and other agricultural outputs are good, but land may be short.

An extension officer must be aware of these differences and the factors influencing farmer decision-making, and offer advice and training that is suitable to the everyday lives and challenges faced by farmers in each locality.

## Types of coffee households

Despite the differences found among coffee farming households, four main types of coffee farming households can be identified as shown in the table below. Each type of farming household has a set of characteristics and constraints on coffee production that must be taken into consideration when giving extension advice to growers.

### Types of coffee growers, characteristics and constraints, and strategies to overcome constraints.

Type of coffee grower	Main characteristics and constraints on increasing coffee production & productivity	Strategies to overcome constraints
<b>Coffee growers with poor market access (Remote location without road access)</b>	<ul style="list-style-type: none"> <li>• Live in remote villages with no or poor road access</li> <li>• Few tools for coffee production</li> <li>• Low-income households, many without pulpers</li> <li>• Heavy reliance on coffee as main income as few other income sources available</li> <li>• Poor knowledge of coffee production as limited access to extension services</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage farmers to organise themselves into farmer groups (e.g. either formalised or informal groups)</li> <li>• Seek out a processor/exporter with whom the farmer group can set up a supply/transport arrangement, and access equipment</li> <li>• Receive training in production and wet processing (and certification) as part of the arrangement with processor</li> </ul>

Type of coffee grower	Main characteristics and constraints on increasing coffee production & productivity	Strategies to overcome constraints
	<ul style="list-style-type: none"> <li>Lengthy walk to buyers</li> <li>Labour shortages as many young people have migrated from village in search of work or for education</li> <li>Few income sources available apart from coffee</li> </ul>	<ul style="list-style-type: none"> <li>Plan for future purchase of hand pulpers or an ecopulper for group, to reduce labour demands, increase coffee quality and income</li> <li>Offer training in shade tree management to reduce need for fertiliser and weeding</li> </ul>
<b>Coffee growers close to markets (with good road access)</b>	<ul style="list-style-type: none"> <li>Good access to competing buyers</li> <li>Labour shortages because of competing demands on labour</li> <li>Households have access to a range of income sources in addition to coffee. These other income sources may compete with coffee for land, labour and time</li> <li>Coffee may not be the primary income source</li> </ul>	<ul style="list-style-type: none"> <li>If producing parchment, join a farmer group, plan for future purchase of eco-pulper for group to improve labour efficiency and increase coffee quality and income</li> </ul>
<b>Vegetable/coffee growers</b>	<ul style="list-style-type: none"> <li>Some coffee farmers with good and easy access to markets are reducing the area of land planted to coffee and expanding vegetable production for local and distant domestic markets</li> <li>Most income earned from the sale of vegetables and/or fruit</li> <li>Family labour shortages in coffee, especially of women who shift their labour to vegetable production where they have more control over the income</li> </ul>	<ul style="list-style-type: none"> <li>Encourage intercropping of coffee with vegetables in preference to mono-cropping of vegetables (maintenance of coffee while maintaining intercrops)</li> <li>Encourage the use of fertiliser on intercrops as this will most likely improve coffee yield and quality</li> </ul>
<b>Subsistence/coffee growers</b>	<ul style="list-style-type: none"> <li>Subsistence food production is the main priority of household so low labour inputs to coffee</li> <li>More likely to be elderly growers</li> <li>Limited range of livelihoods</li> <li>May have large holdings of coffee but limited harvesting</li> </ul>	<ul style="list-style-type: none"> <li>Offer training in shade tree management to reduce need for fertiliser and weeding</li> </ul>

## 1.6 COFFEE FARMING DECISION-MAKING

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### What factors influence a farmer's decision-making?

It is important to be aware of the full range of factors that shape coffee farmers' decisions and behaviours. As discussed above, coffee farmers are not all the same, and coffee production is just one of many livelihoods and agricultural activities in which smallholders are engaged. Therefore, when coffee farmers are making decisions on whether to work in their coffee gardens or to focus on another activity, their decisions are influenced by:

- The type of household production unit
- External factors – beyond the control of the household
- Alternative livelihood strategies
- Internal household factors

The following table lists some of the main factors that may influence decision-making regarding coffee production. Farming decisions are usually influenced by a mix of interacting factors.

### Factors influencing coffee farming decision-making.

Type of household production unit	Alternative livelihood strategies	External factors	Internal factors
<ul style="list-style-type: none"> <li>• Size of household</li> <li>• Age of household heads (elderly or young)</li> <li>• Ownership of tools</li> <li>• Cultural obligations</li> <li>• Division of labour within the household (who does what)</li> <li>• Level of engagement in the cash or subsistence economy</li> <li>• Availability of family &amp; extended family labour</li> <li>• Access &amp; willingness to hire labour</li> <li>• Time management</li> <li>• Access to land</li> <li>• Reliance on coffee as a major income source</li> <li>• Commitment to coffee production</li> </ul>	<ul style="list-style-type: none"> <li>• Subsistence gardening</li> <li>• Commercial production of vegetables or fruits</li> <li>• Betel nut</li> <li>• Informal retailing</li> <li>• Number of alternative income sources</li> <li>• Small business enterprises</li> <li>• Formal sector employment</li> <li>• Marketing</li> </ul>	<ul style="list-style-type: none"> <li>• Land security &amp; disputes</li> <li>• Access to buyers &amp; markets</li> <li>• Tribal warfare</li> <li>• Price of coffee</li> <li>• Environmental constraints (e.g. poor water supply)</li> <li>• Road condition</li> <li>• Access to transport</li> <li>• Access to credit</li> <li>• Village leadership</li> <li>• Coffee theft</li> <li>• Law &amp; order</li> <li>• Pests &amp; diseases</li> <li>• Access to extension advice &amp; training</li> <li>• Alternative income opportunities other than coffee</li> </ul>	<ul style="list-style-type: none"> <li>• Education level of household heads</li> <li>• Personal characteristics of household heads</li> <li>• Relationship between husband and wife</li> <li>• Distribution of income among family members</li> <li>• Who in the household controls the income</li> <li>• Gambling problems</li> <li>• Capacity of family to work together for a common purpose</li> <li>• Family leadership</li> <li>• Family conflict</li> <li>• Work burden of female household members</li> <li>• Cash needs for family &amp; cultural purposes (e.g. number of kids in school)</li> <li>• Cash management</li> </ul>

## The importance of understanding an individual farmer's situation

As an extension officer you should be aware of the main factors that may influence a smallholder household to allocate time and labour to coffee production. When talking to farmers and their families it is important to keep in mind the range of internal and external factors affecting household decision-making. Sometimes, these factors are not obvious, and you may have to discuss these with the farmers to fully understand which factors are affecting their coffee production.

Understanding the main internal and external factors affecting coffee production is the first step in finding out the difficulties and barriers faced by the farmer to increase his/her income from coffee. Working with farmers to find ways to overcome these barriers is taken up in the next module which deals with the factors affecting smallholder coffee production.

### Objective:

To identify the factors influencing the decision-making of coffee farmers

### You will need:

Butchers' paper and marker pens (or paper and pens)



## EXERCISE 2

### Factors influencing farmers' decision-making

#### PART A: Identify factors

**Step 1:** On butchers' paper prepare a table with two columns; column A for internal (household) factors and column B for external (beyond household) factors.

**Step 2:** Divide participants into two groups: men and women (they will have different views).

**Step 3:** Discuss various factors affecting farmers' decisions and behaviours based on your experience or interactions with smallholders. List them in columns A & B. Some examples have been given.

A. Internal factors	B. External factors
Family labour (e.g. workloads, willingness of family members to work, etc.)	Price
Control and distribution of Family income	Roads
Relationship between husband and wife	Transport



## A. Internal factors

## B. External factors

A. Internal factors	B. External factors

**PART B: Rank factors from most influence to least influence**

With further discussion, rank the factors depending upon the farmers' local context.

**Step 1:** On a new sheet of paper, prepare another table with three columns.

**Step 2:** In column A, list both the internal and external factors.

**Step 3:** In column B, list the impacts of each factor.

**Step 4:** In column C, based on a discussion among the extension officers, assign a score to each respective factor. For example, a score of 1 is the highest score, and this factor would be perceived to have most influence; a score of 5 would be the factor perceived to have the least influence of the five factors listed (see example below).

A. Internal & external factors	B. Impacts	C. Rank/Score
Price of coffee	The price of coffee is low, so farmer not motivated to harvest and maintain coffee garden	1
Labour shortage	Not all coffee can be harvested during peak season	2

A. Internal & external factors	B. Impacts	C. Rank/Score
		5
		4
		3

## 1.7 KEY MESSAGES FOR THE EXTENSION OFFICER

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What are the key messages for the extension officer?

- Smallholders produce over 85% of PNG's coffee exports with most possessing less than 1000 coffee trees
- Smallholders follow a low input system of production characterised by: low labour inputs; limited use of other inputs like fertiliser; minimal use of mechanisation in production and processing; limited knowledge of good husbandry, harvesting and processing practices; and minimal financial reinvestment in the coffee garden
- Extension advice and training should be directed to both men and women involved in coffee production
- Coffee smallholders have diverse livelihoods and coffee is only one of a range of activities in which households are involved. Other activities include domestic, cultural and community, subsistence and cash income activities. Farmers' involvement in these activities influence how much time and labour are allocated to coffee production
- It is very important that extension strategies recommended to smallholders are compatible with the wider coffee farming-livelihood system of smallholders
- To optimise household labour allocation to coffee, extension training must be inclusive of both men and women as both contribute significantly to coffee production
- Farmers have different problems, priorities and lifestyles, and these affect the decisions they make regarding how much land, labour and other resources to commit to coffee production
- Each farmer or farming group has a set of characteristics and constraints that influence coffee production and these must be taken into consideration when giving extension advice to growers
- An extension officer must be aware of the factors influencing farmer decision-making, and offer advice and training that is suitable to the everyday lives and challenges faced by farmers and their families in each locality
- Understanding all aspects of coffee farming households, their livelihoods and communities enables extension officers to better provide targeted advice for individual farmers

The next module discusses in detail the many constraints that affect smallholder coffee production. This will further add to the knowledge base of extension officers and empower them to provide good advice to their smallholders.

## 1.8 QUIZ

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Place an '✓' in the correct box.

- Which one of the following is a characteristic of the smallholder coffee sector?
  - Smallholders produce 50% of PNG's coffee exports
  - Yields are high due to the use of good management practices
  - Most growers process their coffee cherry to produce parchment which can be stored
  - Yields are poor as most coffee trees are too immature
- Which of the following is not a characteristic of the typical low input system of smallholder production?
  - Low inputs of pesticides and fertilisers
  - Low inputs of labour
  - Little knowledge of new technologies
  - Production of high-quality coffee
- Inputs of labour in coffee production are dependent on:
  - The price of coffee
  - Labour demands of other livelihood activities
  - The number of alternative income generating activities
  - The amount of cash income required to pay school fees, purchase store goods and meet traditional social obligations
  - All of the above
- The primary reason smallholders maintain a diversity of livelihoods is:
  - To minimise risk
  - To keep themselves busy
  - To maximise their knowledge of a range of business enterprises
  - To maintain and strengthen the village economy and community

5. To make a significant income, smallholders, particularly women, in accessible areas are shifting their labour into:
- A Bilum making
  - B Commercial fruit and vegetable production
  - C Flower arranging
  - D Formal employment
6. To optimise household labour allocation to coffee, extension training must:
- A Focus on how much income can be made from coffee
  - B Be inclusive of both men and women as both contribute significantly to coffee production
  - C Recommend that smallholders reduce the diversity of their livelihoods so they can concentrate on coffee production
  - D Explain that a high input of labour always results in the production of high quality coffee
7. Which of the following is not a typical coffee smallholder household type?
- A Coffee growers with poor market access
  - B Coffee growers close to markets
  - C Coffee grower only
  - D Vegetable and coffee grower
  - E Coffee and subsistence grower
8. Which type of coffee grower could be described as being remote, having few tools, few income sources available apart from coffee, a shortage of labour and a poor knowledge of coffee production due to a lack of extension services?
- A Coffee grower with poor market access
  - B Coffee grower with good market access
  - C Vegetable and coffee grower
  - D Plantation grower
9. What factors influence smallholders' decision-making when allocating labour to coffee production?
- A Time of year, the coffee berry borer and the age of the coffee trees
  - B Alternative livelihood strategies are all that should be considered
  - C The size of the household and age of household members
  - D The type of household production unit, external factors, alternative livelihood strategies and internal household factors

10. Some of the internal factors within a household that can cause a change in a farming-livelihood system are:
- A Childcare, illness, food production and road conditions
  - B Tribal conflict, illness, coffee prices and land pressures
  - C Births, marriages and changes in market access
  - D Illness, deaths, births, marriages and conflicts
  - E None of the above
11. Earning an income from coffee production is becoming harder for smallholders in some areas because:
- A Road infrastructure is deteriorating
  - B Government services such as extension are lacking
  - C Many farmers have an ageing tree stock that has not been rehabilitated
  - D Coffee extension has been directed at men
  - E All of the above
12. What is important when developing effective extension strategies for smallholders?
- A Develop them quickly and efficiently and do not waste precious time
  - B Prepare them for the men and they will share them with the rest of the household
  - C They must be compatible with the wider coffee farming-livelihood system of smallholders and include both men and women
  - D Do not develop strategies that include incentives for women as they are better off earning income from vegetable production
13. What were the weaknesses of extension strategies used in the past for smallholders?
- A They did not educate farmers in good coffee production practices
  - B They were geared towards high-input, capital intensive, plantation style production which did not take into consideration farmers' diverse livelihoods
  - C They concentrated on coffee processing
  - D They did not encourage smallholders to adopt a high-input coffee production model
14. It is important for coffee extension officers to have a good understanding of the smallholder livelihood system so that:
- A They can develop extension strategies for growing vegetables and other market crops
  - B They can develop extension strategies that are compatible with smallholders' diverse livelihoods
  - C Advise farmers on all of their livelihood activities
  - D Advise farmers on how to allocate their labour to each of their livelihood activities

## 15. True or false.

	True	False
a. So extension does not become complicated, it is best to use one set of extension strategies for all farmers.	<input type="checkbox"/>	<input type="checkbox"/>
b. Farmers, particularly women, will allocate their labour to where they are rewarded with the best economic returns.	<input type="checkbox"/>	<input type="checkbox"/>
c. Coffee extension for farmers in remote areas is very important as they have few other income sources available apart from coffee.	<input type="checkbox"/>	<input type="checkbox"/>
d. Women should not be rewarded for their labour contribution to coffee production as they can earn income from marketing.	<input type="checkbox"/>	<input type="checkbox"/>
e. Coffee farmers in areas with good access to markets have the opportunity to sell their coffee as cherry but it is less valuable than parchment as it has not been processed.	<input type="checkbox"/>	<input type="checkbox"/>
f. Encourage farmers to form farmer groups as this will improve accessibility to information, tools, equipment and markets.	<input type="checkbox"/>	<input type="checkbox"/>

## 1.9 SOURCES OF FURTHER INFORMATION

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Other training manuals complementary to the Extension Officer and Farmer Training Guides can be found at the following websites:

### CARE Training Manuals

<https://pngcdwstandard.com>

### Family Farm Teams Program

[www.canberra.edu.au/research/faculty-research-centres/csc/livelihoods-and-learning-for-sustainable-communities/family-farms-teams-program](http://www.canberra.edu.au/research/faculty-research-centres/csc/livelihoods-and-learning-for-sustainable-communities/family-farms-teams-program)







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