Helping Small Farmers Think About Better Growing and Marketing

An Introduction for Trainers and Specialists

FAO Pacific Farm Management and Marketing Series 1

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Cover page photograph: Temperate fruits and vegetables
at Mt. Hagen Market, Western Highland Province, Papua New Guinea.

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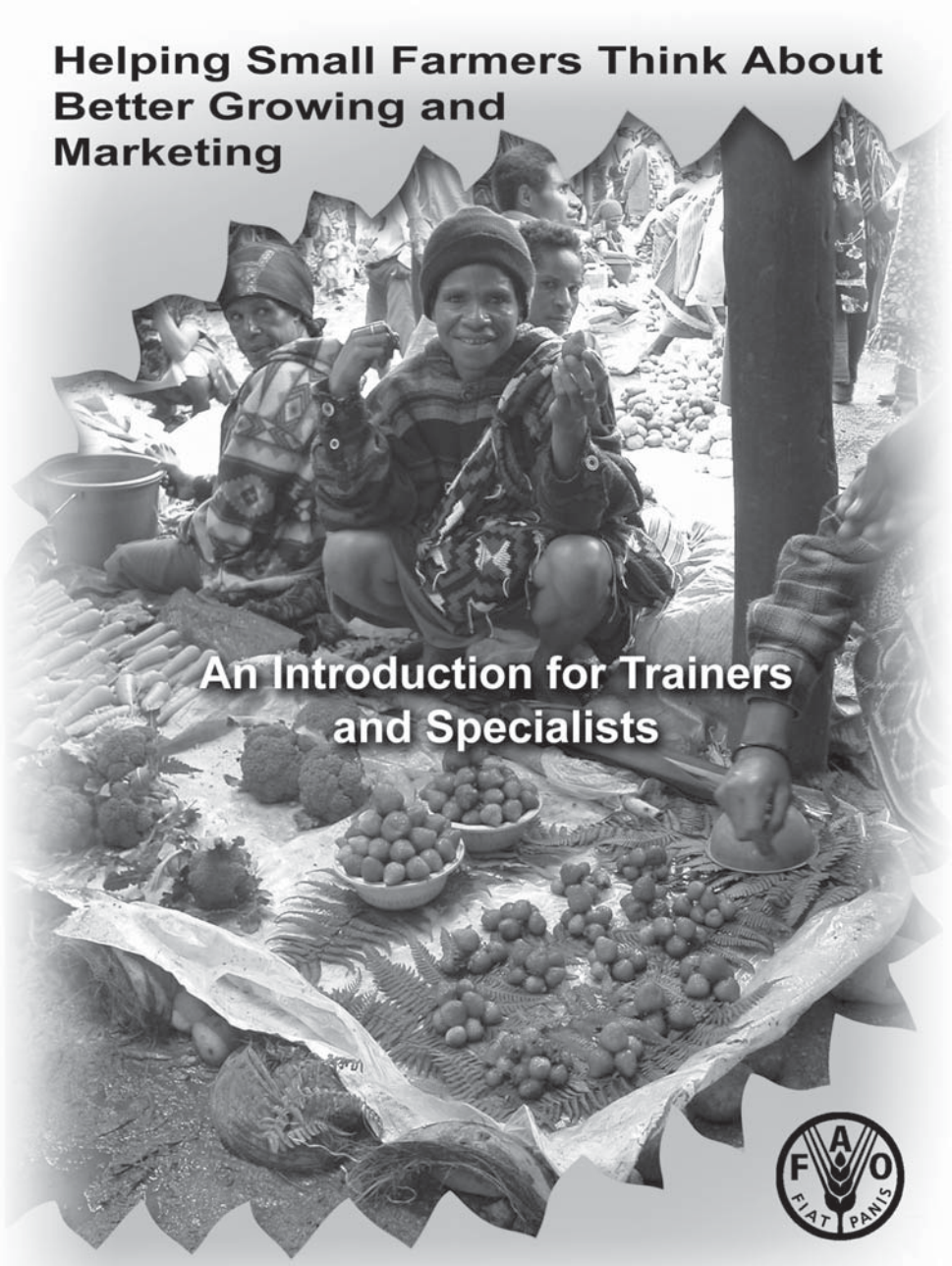

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Sub-Regional Office for the Pacific Islands
Apia 2003

ISBN 92-5-105204-2 ISSN 1813-2332

Foreword

Following a request articulated at the FAO Ministers Meeting in Vanuatu in March 2001, a study was undertaken to review the status of farm management in different Pacific Island countries where the agricultural sector still plays a fundamental role in the national economy. Most farming families in the sub-region, particularly in Melanesia, are involved in semi-subsistence agriculture. In general these farmers largely lack the entrepreneurial and management experience to move into modern commercial farming, and these weaknesses have not been adequately offset by the extension services. Furthermore, government extension workers are little involved in farm management training and farm management specialists in Agriculture Departments have little direct contact with farmers.

The study findings confirm that as traditional farm household systems modernize toward more commercial market oriented farming, a critical need emerges. This need is for training and support of farm business operations in basic farm management, and assistance for local extension services to give business support to farmers. This business support includes farm record keeping, financial analysis and evaluation of profitability of farm enterprises, developing business plans, marketing of farm products and writing loan proposals. However, especially when farmers change from traditional farming to more market oriented farming the importance of applying sustainable agriculture practices becomes even more crucial. The issue of sustainability with its environmental, economic and cultural connotations has been adopted in all of the material produced.

In order to develop extension material and training aids appropriate for the different user groups, FAO Sub-regional Office for the Pacific (SAPA) invited stakeholders from Government, the Private Sector and Non Governmental Organisations, involved in farm management and marketing advice to develop the outline and content of appropriate awareness and training and extension material. A first workshop took place at the Vaisala Hotel on Savaii, Samoa, in November 2002. Based on the recommendations of the workshop and under contract with FAO, experts prepared draft material which was then reviewed in a second regional working session. This second working session took place at the Sinalei Resort on Upolu, Samoa, in September 2003 and was attended by the authors of the material and by consultants and NGO staff working directly with FAO projects in the Pacific.

FAO SAPA is thankful to member Governments, NGOs, the Secretariat of the Pacific Community and the DSAP project to allow staff to participate in the two working sessions. Below the names of the individuals and their professional background are given.

Vaisala working session, November 2002:

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Sinalei working session, September 2003

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David Norman	FAO Consultant, Professor for Agricultural Economics, USA/UK

The participants of the second workshop contributed greatly with comments and suggestions and shaped the publications and training material. The material will be published under a ***"FAO Pacific Farm Management and Marketing Series"***. The overall title of this series is ***"Helping Small Farmers Think about Better Growing and Marketing"***. The series consists of six publications:

No. 1: An Introduction for Trainers and Specialists

No. 2: No Gud Bisnes Bagarup – Introduction for Field Extension Workers

No. 3: A Reference Manual

No. 4: A Training Aid and Exercises for Trainers

No. 5: Case Studies on Commercialisation of Small Farmers

No. 6: Awareness Poster on Farm Management and Marketing in the Pacific

When necessary in the training materials, we indicate the level of facilitators we are focusing on. For example No. 1 and No. 3 are designed primarily for extension and development officers and specialists while No. 2 is geared to field level extension and development workers. No. 4 and 5 are likely to be of interest to all type of facilitators.

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FAO Pacific Farm Management and Marketing Series Terms

A number of non-technical terms are used frequently throughout the FAO Pacific Farm Management and Marketing Series. In order to avoid constant repetition, we have explained here what they mean in the context of these publications:

Facilitator. Trained individuals using an interactive approach to help farming families benefit from greater integration into the marketplace. This includes individuals from the public sector (field level extension workers and extension officers and specialists) as well as from non-profit or non-governmental organisations (field level development workers and development officers and specialists). Occasionally, the term may refer to individuals from commercial operations (such as firms selling inputs or buying farm products).

Farming Family. The household of the small farmer. "Farming family" is often used rather than the individual "farmer" for two reasons:

- To emphasise the close linkage between the family as the consumption unit and the farm as the production unit.

- To provide a blanket term for the decision-making role, since it is often impossible to define a single decision-maker for all farm-related matters. (For example, in some countries decisions on trees, cash crops and livestock are made by men and decisions relating to food crops are made by women.)

Growing. All of the activities done on a farm to improve a farm family's welfare, including: growing annual crops, perennials and tree crops; raising livestock; gleaning from the forest; value-adding activities (such as processing) carried out on the farm; and marketing-related activities done by the farming family.

Inputs. Resources that are used to produce products on the farm. These include land, labour (both hired and family), and non-labour inputs of various types (for example, planting materials, tools and equipment, artificial or inorganic fertiliser, and organic fertilisers such as manure, green manure, and seaweed). Inputs can be broken down in two ways as follows:

- Whether or not cash is involved in obtaining them. If they are paid for in cash, they are called ***cash inputs*** (for example hired labour, taro suckers for planting, or inorganic fertiliser) and if no cash is involved they are called ***non-cash inputs*** (such as family labour or planting materials not paid for even if they come from off the farm).

- Whether or not they are ***external inputs***. In the FAO Pacific Farm Management and Marketing Series, external inputs refers to a specific type of cash input usually associated with agribusiness firms and what is often viewed as modern agriculture. They include items such as improved planting materials, inorganic fertiliser, pesticides of various types, mechanical equipment and tools, etc.

Off-Farm Activities. Activities undertaken by the farm family to improve their welfare that occur off the farm, such as working on farms of other farming families, hunting, fishing, making handicrafts, or working for wages.

Modern Agriculture. The type of agriculture usually associated with large fully commercialised farms. Monocropping is often practiced and farms tend to be highly specialised and heavily reliant on external inputs such as inorganic fertiliser, pesticides, improved crop varieties, and mechanical equipment.

Pacific. All the Pacific island countries and territories in the Pacific region, excluding large countries such as Australia and New Zealand.

Pacific Way of Life. The positive aspects of the traditional way of life in the Pacific. Great value is attached to fulfilling family and community obligations. The growing and sharing of food is an important part of the Pacific Way of Life, along with the use of the natural environment for many different things like clean water, building, and materials for weaving and medicine, and hunting.

Small Farmers. Farmers who market only part of their farm's production, as opposed to fully commercialised farmers . Other terms are often used in the Pacific for small farmers. These include semi-subsistence farmers (Fiji), small holder farmers (Vanuatu), market gardeners (Palau), small scale farmers and semi-commercial farmers.

Social Obligations. Obligations of various types are an important component of the Pacific Way of Life. In the Farm Management and Marketing Series, the term means commitments relating to religious activities, clan, community, traditional groups, and the extended family. These obligations are met in a variety of ways, with work, food and/or money.

Support Systems. The network generally required by farming families if they are to use new agricultural technologies and benefit from marketing more of their agricultural products. The two main components of the network of supports are:

- Means of purchasing inputs (credit, if needed) and access to knowledge about how to use the inputs, usually via facilitators

- Distribution and marketing systems to ensure:

  - External inputs required for the adoption of the improved technologies are available to purchase locally when they are required

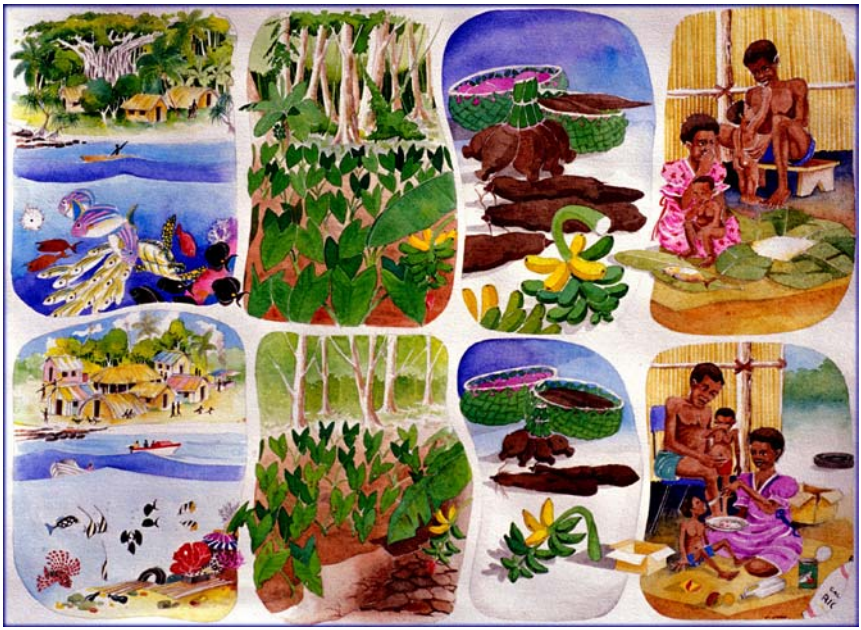
  - A market is readily available for at least some of the products produced so that any loans can be paid back and/or external inputs can be directly purchased

Previously these support systems were often provided by government but with downsizing of government budgets they are increasingly being left to the private sector, both non-government (NGOs) and commercial organisations. Unfortunately in some areas of the Pacific support systems are not very well developed, partly because their presence and efficiency depends on good means of transport and communication.

Traditional Agriculture. The type of agriculture based on indigenous knowledge and techniques implemented by Pacific Island farmers over many generations. Soil fertility was traditionally maintained using very diverse cropping systems, crop mixtures, organic matter, shifting cultivation, and slash and burn techniques. No external inputs were used.

Introduction

The world today is very different than it was 50 years ago and changes are occurring more rapidly now than ever before. In the Pacific, the outside world now has a far greater influence on rural towns, villages, and farms than ever before, placing new demands on individuals who may need guidance as they begin to adapt to these dramatic changes. This booklet attempts to address the needs of a large group of people in the Pacific: farming families living and working on small farms.



Picture 1: Changes in the Pacific environment, agriculture and human nutrition - A poster by John Joseph for TCP/VAN/0165

There are a few big changes affecting farming in the Pacific. One is the improvement in infrastructure.[1] Things like new roads and wharfs, roll-on-roll-off ferries, and more telephones mean it is easier to bring goods to the market, even for farmers on distant islands. The new infrastructure also means there is easier access to farm inputs (such as fertilizer and seeds), which are important for farmers who want to increase the output from a piece of land without letting

1 Unfortunately, due to current governmental financial constraints in much of the Pacific, progress on this front is somewhat erratic.

it lie fallow for as long as their parents or grandparents did. The other major change affecting farmers is that governments are allowing the market to determine prices and are also reducing import and export barriers. This means that farmers are faced with both greater competition and new opportunities, so they need to understand what is happening in the marketplace if they want to buy farm inputs and sell their goods and make a profit. Relevant market information includes factors such as the price they must pay for fertilizer, how much they can charge for their products, and whether there will be a demand for the products they want to sell when they are ready for harvest.

Of course, farmers are not required to buy farm inputs or sell farm products. But new financial pressures mean that farmers in the Pacific are increasingly likely to do so. There is an increasing desire to make money for family needs (such as health needs and educational opportunities, as well as fees for electricity and telephones), and also a need to create more jobs and to produce enough food for the growing number of people living in villages and in urban centres.

This booklet aims to show how facilitators can help farming families make beneficial decisions as they consider producing for the market. It is designed to be used by those who are training or supervising facilitators, but it may also be useful for others who are working with farmers (such as those designing farmer empowering initiatives). It is not designed to be used by field level facilitators directly. Those readers are likely to benefit from another booklet, No Gud Bisnes Bagarup (Part 2 of the Farm Marketing and Management Series), which will present the material in this booklet in a more practical format. Similarly, issues concerning more commercialised farms will be better served by the more complex economic tools in the Pacific Farm Management and Marketing Series Parts 3 and 4.

Points to Remember

Introduction

Making changes usually involves risk because we do not know for certain whether the changes will be beneficial or detrimental until after they have been made. Farm management and marketing is no exception; making changes in this arena also involves risk.

Some examples:

- ***Changing the way a crop is grown*** An example of this kind of change is buying inorganic fertilizer; the risk is whether the additional cost of the fertilizer is worthwhile. Another example is using a new seed variety; the risk is whether the new variety will give a satisfactory and reliable yield and additionally whether the farming family will like it (if it is eaten by the family) or if there will be a good market for it (if it is to be sold).[2]

Picture 2: Solomon Islands farmers on their taro demonstration plot

- ***Increasing the production of a crop*** The result of this change might be that more is produced than is required for the farming family's consumption and social obligations. Therefore some of the extra production will need to be sold.[3] The risk involved in this situation is whether the extra production can be taken to market and sold at a reasonable price.

2 Changes need not necessarily of course involve external inputs. They could be changes in non-cash inputs from the farm. Indeed, whenever possible the use of such inputs is likely to be highly desirable. However, as time goes on, external inputs are likely to become more common, especially as agriculture becomes more commercialised.

- ***Giving up growing one crop and growing another one*** With this kind of change, a major risk is how efficiently the new crop will meet the farming family's needs in terms of food, meeting social obligations, and cash from marketing. Another risk is if the new crop will fit in as well with the rest of the farmer's farming system (such as the time the farming family has available for farming activities and their cash expenditure needs).

Of course, a farming family should not reject every opportunity for change because of the risks involved; this would also mean losing the chance of experiencing a positive change.

But before a farming family decides to undertake a change, it is important that they:

- Understand the risks involved
- Decide whether they can and are prepared to accept the risks

If a particular change is very risky and could cause some damage to the farming family if it fails, the change may not be worthwhile. However, if there is little risk and the benefits are potentially greater than the costs, then making the change is probably a good idea. In other words, the secret to deciding about making a change is to estimate the level of risk involved: What are the chances the farming family will be better off after making the change?

Obviously the farming family is in the best position to determine what makes them feel better off. But it is crucial to understand that in the Pacific, the sense of well-being extends far beyond tangible monetary terms, incorporating less tangible qualities including the preservation and nurturing of relationships, way of life and culture, and ecological concerns. Development practitioners often focus on the goal of enhancing ***sustainable livelihoods***, which means finding ways to reliably improve the incomes of people (in this case, farming families) using methods that can be economically sustained in the long-run and will not negatively impact the ecological or socio-cultural environments. In terms of the Pacific this can be thought of as making people better off while at the same time nurturing the continuance of the Pacific Way of Life.

How does one estimate the risks—that is, the potential benefits and costs—of making a specific change? There are a number of technical, social and

3 There is an important distinction between ***selling*** and ***marketing***. Many small farming families engage in selling almost as an afterthought, a way of handling any production left over after fulfilling food needs and social obligations. However, as agriculture becomes more commercialised, farmers need to become increasingly concerned with marketing per se. Marketing involves producers finding out what consumers want and as a result producing a product that satisfies those needs in the expected quality, time and place.

economic factors that need to be considered; some of the most important ones are discussed in this booklet. Information and opinions for evaluating these factors can be gathered from a variety of sources, with the most valuable being:

- The farming family, whose knowledge, expertise and experience are of primary consideration
- Farmers, neighbours, elders and friends
- Experts, such as extension and development agency staff and individuals associated with marketing

Each of these three sources of information are discussed below:

Information from the Farming Family

It is worth emphasising that the opinions, knowledge and experience of the farming family is of the highest value in making good decisions and should always be considered.

Obtaining the opinions of the farming family is critically important because:

- ***The family is free to do what they want.*** They will be the ones, therefore, who make the final decision about whether to change or not.
- ***Family farms are units of production and consumption, and any proposed changes will have an influence on both.*** Therefore in suggesting and evaluating proposed changes it is important to remember the complex interactive relationship between the two. Naturally, the farming family is in the best position to evaluate the potential effects (both positive and negative) of any proposed change on this interaction.

The experiences of the farming family, along with the wisdom and understanding they have gained from them, provide further valuable insights into evaluating the potential risks (and therefore possible impacts) of proposed changes. Most small farmers in the Pacific have lived in the same communities (often on the same farms) all of their lives.

As a result they understand their production, their environment, and their family, clan and community better than anyone else. For example, they intimately know the topography, soils, production problems (including common weeds, pests and diseases) and weather cycles on their farms. In addition, they have in-depth knowledge about the type, quantity and quality of the inputs available. They also often have very good information about the communities in which

they live (such as what is acceptable and what is not acceptable behaviour, what additional resources can be accessed, and what the community would like to see happen). Such knowledge, sometimes called ***indigenous knowledge***, can be very helpful in determining whether a proposed change is risky or not, so it should always be tapped in planning and evaluating the potential value and impact of proposed changes.

Information from Farmer Associates

Like most people, farmers and their families value most the opinions of, and information from, those closest to them and those they respect most. These are likely to be friends, elders and neighbours, especially if they are farmers, and possibly professional agricultural experts (such as facilitators) particularly if the family sees them on a regular basis. In the Pacific, as in many parts of the world, farmers consider other farmers to be the most reliable sources of information about agricultural matters. Therefore, it is important that facilitators, when working with a farming family:

- Be sensitive to and seek advice from these other sources of information, and be careful not to criticise the value of such information
- Consider using such people or information from such people in activities such as helping guide the farming family in a decision-making process

Information from Professional Agricultural Experts

Agricultural experts (usually facilitators) can play three very important roles as far as farmers and their families are concerned:

- ***Making suggestions about possible changes.*** Facilitators have knowledge and expertise, such as an economic training and information about markets and market forces, that a small farming family may not have access to. This additional input can help broaden the farming family's understanding of possible changes and their potential outcomes.
- ***Helping farming families make informed decisions on possible changes.*** Based on their special training and knowledge, facilitators can help provide a systematic approach to making a decision and help in applying the analytical tools required to reach it.
- ***Helping farming families decide on how to implement those decisions.*** Facilitators may help farmers decide where to purchase inputs, how to produce the product, package the products for marketing, or even help them apply for loans from banks or other loan agencies.

Before Thinking About Change: The Need To Understand

Introduction

The Pacific Way of Life places a lot of importance on family, community and other social obligations. The growing and sharing of food is an important part of the Pacific Way of Life along with the use of the natural environment for many different things like clean water, building materials, and materials for weaving and medicine, and hunting. As people, including farmers and their families, look for new ways to earn money they need to think carefully about the changes they will undertake and how they might affect other parts of their lives.

The starting point in making a change is for the farming family to establish their goals. Next, they must consider the quality and quantity of their farm resources as well as the various external influences (such as climate, what the community considers acceptable, and accessibility to a market for purchasing inputs and marketing products) that affect the use of those resources. These combined

Picture 3: Keeping farm records is important to monitor changes

factors—what the farming family would like to do and what they are potentially able to do—will help guide their actions.

In summary, before thinking about specific changes, the farming family should do some serious thinking about three areas, namely:

- Their goals
- The resources at their disposal
- External factors that influence—or could influence—their farming system

An understanding of these is important in deciding not only what types of changes are *desirable* but also in assessing the *feasibility* of those changes.

The three areas are examined in the following sections. Included are some questions, worded so that they address the farming families directly, that may be used by facilitators to obtain information. They are intended to be a starting point for discussions with farmers and their families rather than a complete list of questions. Participatory learning and action (PLA) techniques[4], which were developed to help farming families (with the aid of facilitators) systematically analyse issues relating to their farms, may be of value in the effort of getting answers to many of the questions. They are not described in this booklet, but a detailed explanation of the techniques can be found in the Pacific Farm Management and Marketing Series Reference Manual (Part 3).

Goals

Many commercial farmers in high income countries treat farming purely as a business, much as an owner of a factory would. As a result, farming is viewed more as an occupation rather than a vocation. The goal of their business is primarily, if not solely, to make money—or, in other words, a profit. However, as we indicated earlier, farming families in the Pacific are likely to have a number of goals, only one of which may be to make money. It is fine to have multiple goals. In fact, in the Pacific balancing family goals is important for a good quality of life for the family as a whole.

Therefore, when helping farmers make decisions, it is very important to get a good idea of:

- What their goals are
- A ranking of those goals in terms of priorities

4 They are also called participatory rural appraisal (PRA) techniques. However, in these training materials we have chosen to use the term PLA techniques since the objective of using these tools is to provide an understanding which is necessary in making decisions and planning action.

Such information is important in helping the farming family decide how important growing and marketing products is to them. Some guiding questions that may help the process are listed in Box 1. As the last two questions indicate, there may be some disagreement within the family on goals and priorities. For example, men might be more interested in producing for the market, while women are likely to be more concerned about making sure enough food is produced to feed the household. It is important, if the subject does not appear to be too sensitive, to try and bring the issues out in the open and attempt and resolve any obvious disagreements before making a decision such as whether to grow products for the market. If it is obvious that the goals of the men and women in the family are very different then they will both need to be taken into account when evaluating the desirability or feasibility of a possible change later.

Box 1: Goals of the Farming Family

What are the goals of you [the household head] and your family?

Which is the most important goal? Which is the second most important? Etc.

Do all the men and women [adults] in your family agree with the goals you have indicated and the order you have indicated above?

If not, where are they different and why are they different?

The goals of the farming family are likely to include, among others, the following:

- Providing the family with enough food to eat
- Meeting social obligations
- Earning money that can be used to meet all kinds of commitments (such as paying for education and health needs), possibly also to meet social obligations

The latter two examples indicate that a farming family's goals can often be reached in different ways. For this reason, it is valuable to learn how flexible the farming family may be in their approach to meeting their goals. Box 2 gives some questions that can help in the process.

The objective of the exercise in Box 2 is to get the farming family to think through how committed they are to the idea of marketing farm products. Of course, there is no way to put a quantitative value on their commitment, but it will indicate how important marketing is likely to be in relative terms as far as the farming family is concerned. It is very important that the facilitator not attempt to influence the farming family in determining the goals, prioritising those goals, or deciding how the goals should be met. The farming family should have complete freedom in making those choices. The facilitator's role is to help the family achieve those goals in ways they will be most comfortable with.

Box 2: Flexibility in Meeting Goals

Do you aim to produce all the major food requirements for your family from your farm? If you don't, what proportion do you buy (e.g., one quarter, one half, etc.)?

Do you aim to produce all the products that you need for fulfilling your social obligations from your farm? If you don't, what proportion do you buy (e.g., one quarter, one half, etc.)?

Would you be prepared to meet some (or a greater part) of the above commitments by producing a product to earn cash and then using the money to buy food for your family and for social obligations? If so what proportion would you be prepared to buy (in addition to what you are now doing)?

Inputs

Farmers use four major types of inputs that they combine together to produce products:

- ***Land*** is required to grow food crops and other products.
- ***Labour*** is required to enable those products to be produced.
- ***Capital*** (such as equipment and cash for buying seeds, fertiliser, etc.) is required for the production of those products and to make it easier to produce them.
- ***Management*** in the form of experience, knowledge and skills is required by the farming family to make decisions and provide the expertise required to produce and market the products.

Operating a farm can become very complex because the farming family has to make a number of important decisions relating to:

- ***What products to produce*** Small farms in the Pacific often have very diverse and therefore complicated farming systems. A large variety of crops (both field and tree) are grown (often in mixtures), livestock is kept, and sometimes family members also have other occupations (such as fishing and off-farm occupations). Decisions on what to produce are influenced by:
  - What can be produced on the farm given the quantity and quality of the different inputs available and the existing external influences (see earlier discussion and the following section on external factors)
  - The goals of the farming family (see earlier discussion) and how the different products can help fulfil them
  - How the production and growing cycles of the different crops and other commodities produced on the farm fit in with each other
  - In terms of marketing products, what customers want and are willing to buy
- ***How to produce the selected products*** The decision on how to produce particular products will also be difficult. It will be influenced by such factors as:
  - Once again, the quantity and quality of the different inputs available and the external influences
  - How the proposed methods of production fit in with the demands on inputs (such as labour) needed for other products produced in the farming system
  - How much of the products the farming family wants to produce, including consideration of what potential customers want and are willing to buy (such as organic products)

  There are usually several ways to produce a particular crop using different combinations of inputs and technologies (for example, using some form of mechanisation instead of some form of hand labour, using some or no inorganic fertiliser, planting early or late, and using a local or improved variety of a crop).

  Obviously the inputs used for implementing the different technologies–such as labour and cash–could be used to produce other products rather than

the one being considered. Therefore inputs have what is called an ***opportunity cost.*** When inputs can be put to more than one use, the farming family must evaluate the possible sacrifice in terms of producing other products or using the input in another way. In that case it would be important to discuss with the farming family the benefits and costs of using the resources in the way proposed by looking at its potential impact on the farming system. (In the unlikely event that the inputs would not be used if the production of the product is not done in a certain way–in other words, the opportunity cost of all the slack resources is zero–then the issue of fitting in with the whole farming system would not be a serious problem.)

The decision of how much of the products the farming family wants to produce will be influenced by a number of factors which we discuss below. However, if the farming family does not want to produce much of a particular product then it would be unwise to:

- Adjust the production of other more important crops to accommodate the new product
- Use a technology that is likely to cost a lot of money

- ***How much of the selected product(s) to produce*** Factors that will be important in making this decision include:
  - How much the farming family wants to produce to meet not only family consumption needs but also to fulfil social obligations
  - An assessment of the risk and potential profitability of producing some of the product(s) for sale in the market once family needs and obligations have been met

This booklet emphasises the factors that must be considered in deciding whether or not to produce a product that will be marketed. However, many of the same factors have to be considered when the farming family makes any decisions about changes in:

- The way their farm resources are used
- What products are produced and how much of each is produced
- The ways in which the different products are produced–that is, changes in technology used

Farmers and their families are quite used to making decisions about changing their farming system – they are, after all, natural experimenters – even if they have never before considered marketing some of the production from their

farm. If they are asked how they go about making such decisions, it may be difficult for them to describe the factors influencing their decisions in a systematic manner. Most likely, this is because they have a very intimate knowledge of the production environment in which they operate and may subconsciously consider relevant factors when making decisions. As their farming activities grow more complex, these methods become less reliable because some important issues may be overlooked. Boxes 3 and 4 provide some questions about some of the factors farming families need to consider concerning their resources. Box 3 addresses the issue of available land and other natural resources and the possible constraints farmers may face in using them. Box 4 explores analogous issues relating to labour and cash and capital.

Box 3: Inputs Available to the Farming Family: Land and Other Natural Resources

Do you have enough area of land of the right quality (factors such as fertility and slope) to produce the food you need for family consumption and social obligations? [In terms of family consumption, please take into account whether you have a good and balanced diet and enough food at different times of the year.]

Do you have additional land available that you would consider using to grow crops for sale? If so how much do you have? [Try and get it in terms that mean something in the local situation.]

If you are willing to buy some of the food for family consumption and social obligations, how much more land would you have available to grow crops for sale? [Once again try and get it in terms that mean something in the local situation.]

Is the land you are thinking about growing crops on for sale your own or does it belong to someone else?

If it belongs to someone else, do you have freedom to do what you like with it?

If not, do you have the permission of the owner to grow a crop on the land for the market? [If not, then it would not be advisable to go ahead with your plans.]

Is there a natural water source available, and/or items such as forest litter, seaweed, etc.?

Box 4: Inputs Available to the Farming Family: Labour and Cash

Are some of the specific activities on your farm done only by women and some only by men?

If so, what are they? [If so answer the following questions relating to labour from both the point of view of women and of men.]

Do you now have sufficient family labour for operating your farm throughout the year?

If not, during what times of the year is family labour fully occupied or insufficient?

If it is insufficient, how do you solve the problem?

Do you use just hand labour or do you use some form of mechanisation? [If so, what type?]

What do you have in the way of farm tools, equipment, etc.?

Are they adequate?

If not, in what way are they inadequate?

Do you have enough cash throughout the year for hiring labour, and if you need to, for purchasing inputs and marketing products?

If not, when during the year, and for what purpose, do you have a shortage of cash?

Clearly, a farming family needs to have access to land to be farmers. However, other inputs (such as labour and cash) can be substituted for each other to some extent. For example, mechanical equipment plus traction (animals or tractors) can be substituted for labour by making labour more productive, and cash can be used for hiring labour. Therefore, questions relating to these are combined together in Box 4.

The questions are designed to help the facilitator and the farming family to identify what labour, equipment and cash they have available for their farm, and also to give some indication as to whether such inputs are limiting farm activities at certain types of the year. This is a common problem, due to the cyclical (or seasonal) nature of agriculture. Recognizing seasonal constraints is valuable because if a planned change involves, for example, more labour and cash at the times during the year when they are in short supply, it is unlikely that making such a change will be very attractive to the farming family.

External Factors

When considering a change, the farming family must recognize the external factors that influence, or could influence, their farming operation. There are two primary types of external factors:

- ***Community Influences*** Traditions, ethnic linkages, shared history and experiences, and religion are still very important in the Pacific. Improved communication with the outside world and increased mobility of people are weakening their influence, but the community often continues to expect a certain set of behavioural patterns and informal rules. Because the community has traditionally provided security for its members, failure to observe such norms could result in a family not being supported in times of trouble. Therefore where the sense of community and its related benefits are still significant, it is important that the farming family does not plan any changes that go against those norms. For this reason, facilitators need to understand the do's and don'ts as far as the community is concerned.
- ***Access to Purchased Inputs and Product Markets*** Since many changes are likely to involve accessing and purchasing inputs (such as fertiliser, other chemicals, seed, cuttings, etc.) and/or marketing products, it is very important to understand or know the extent to which these possibilities exist.

In Box 5 are some questions that can help in obtaining information about the external factors.

Box 5: Reality Check on External Factors

Is there a strong sense of clan/community where you live?

If so, does the community have an influence on what you can or cannot do as an individual farming family?

If so, is the community likely to be influential in your decision as to whether you should or should not make a change?

If yes, in what way?

Is it easy to purchase external inputs (such as fertiliser) at the time they are required for implementing the change?

Is there a time when external inputs are not available? If so, when and why?

Is the market for the product produced readily available and reliable?

Concluding Comment

Most likely, by the time the issues in the preceding sections have been explored, the facilitator and the farming family will have a good understanding of the production environment within which that change is being considered. This understanding and information are very important in helping identify not only what change might be desirable, but also in evaluating the potential suitability of such a change.

Deciding on Change: Issues to Consider

Introduction

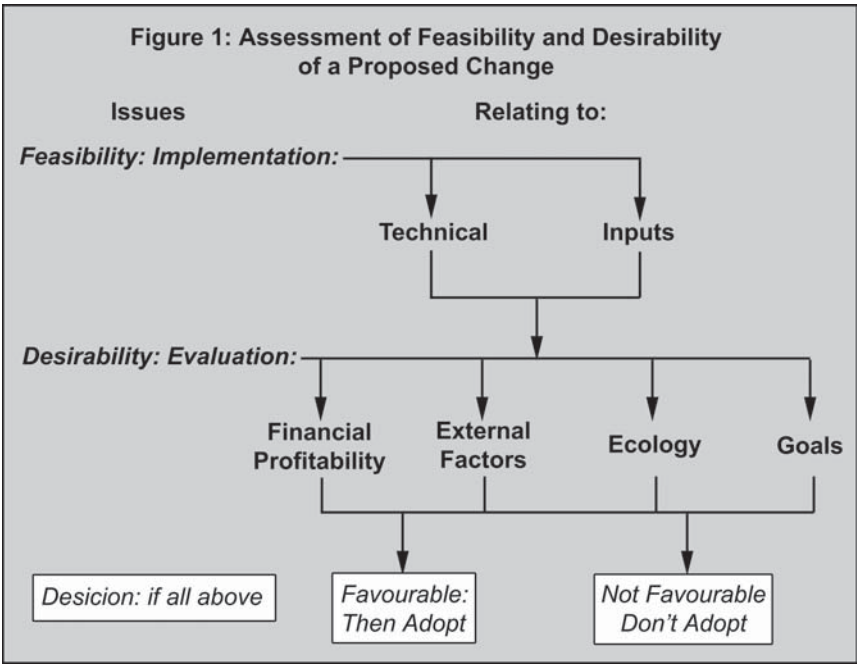
After the farming family's current situation has been explored, the next step is to consider the potential suitability of a change. Thinking about making changes in a farming operation usually arises because of one or more of the four following reasons:

- A change in priorities and goals (such as the desire to market some production from the farm)
- The desire to overcome or avoid a problem (for example a plant disease or a labour bottleneck problem)
- An opportunity (such as certain purchased inputs becoming available in the market or a market developing for a particular product)
- A change in the inputs available (for example, if the children in the family leave)

Picture 4: Samoan farmers with leaf blight affected Colocasia taro on Savai'i island in 1996

In assessing whether a planned change is suitable for the farming family, a number of issues have to be considered. These can be grouped into an analytical framework for assessing the feasibility and desirability of the proposed change (see Figure 1).

Figure 1: Assessment of Feasibility and Desirability of a Proposed Change



As indicated in Figure 1 the various issues that need to be examined can be grouped under the following general headings.

- Feasibility or implementation-related issues:
  - Technology
  - Inputs
- Desirability or evaluation-related issues:
  - Financial profitability concerns
  - External factors
  - Ecology
  - Goals

These headings provide a convenient structure for facilitators to follow as they guide a farming family through the considerations of whether or not a potential change is feasible and desirable. However, it is important to remember that the factors are interdependent. For example, implementation-related issues will have a major influence on whether the proposed change is likely to be financially beneficial (in other words, profitable) or not.

Before discussing each factor, the farming family must first decide the size of the change they are considering.[5] This could be thought of in terms of the amount of:

- An input (ideally, the area of land) that will be devoted to the change
- The output or product the family plans to produce as a result of the change
- Usually it is easier to consider this question in terms of the area of land they are going to devote to the change, since there is often some uncertainty about the amount of product that will be produced. In addition, the practicality of the change is best evaluated in terms of the inputs required: even if the farming family starts thinking about the change in terms of the amount of product they want to produce, they will still have to estimate the amounts of inputs required to implement the change. Without an estimate of the size of the change it is not possible to deal satisfactorily with the issues relating to implementation and evaluation.

Feasibility or Implementation-Related Issues

Technical

The main issue here is to determine whether the farming family will be able to technically implement the planned change. The skills and managerial ability necessary for implementing such a change might come from past experiences. They could also be obtained from other sources, such as another farmer who has knowledge of the technology or written materials about the technology (if someone in the family is literate). The ability to handle the technical aspects of the change is a critical factor in determining the potential return from the change and therefore assessing whether it is potentially suitable for the farming family. The more complicated the proposed change is, the higher the demands on the family's levels of skills and managerial abilities. For example, just changing a crop variety is much less complex from a management viewpoint than a change involving the way a crop is managed (for example, adding fertiliser, changing plant density, etc.).

5 Another important part of the decision is whether there will be a market for the product. This is addressed in the section on external influences.

The questions in Box 6 are designed to indicate the farming family's familiarity with the technical aspects of implementing the proposed change. If the change involves a number of different interacting components, then it becomes increasingly important that guidance or advice be sought and provided.

Box 6: Implementation: Technical Issues

Are you or is someone in your family familiar with the technical aspects of implementing the proposed change?

If not, or even if someone in the family is familiar with the technical aspects, is there someone you can consult with when you need help or advice during the implementation stage?[If not, and it is a complicated change, you probably should reconsider whether it is wise to make the change]

To make the change, do you need to get inputs that are different from the ones you use now (for example, planting material or chemicals)? If so:

- Which ones and how much of each do you require?
- Will they be available at a reasonable price when you require them?

To make the change, do you need to use techniques (such as methods and tools) that are different from the ones you use now? Do you know how to use them?

Will there be harvesting, processing, storage, perishability and marketing issues that you have not dealt with before as a result of the change?

- Do you know how to deal with them?
- Can you deal with them when they are necessary?

Inputs

The next concern is whether the farming family has the resources necessary to implement the change. For this to be assessed properly, two sets of information are required:

- As discussed previously, an understanding of the availability of different

inputs and a sense of how intensively they are used at different times of the year

- An idea of the inputs (such as cash and labour) required to implement the change, not only the total amount required but also the amounts required throughout the production cycle

The next assessment exercise is to determine whether there is a good fit in terms of what resources are available and what are required, as indicated by the questions in Box 7. Three levels of difficulty indicate how hard it is likely to be for the farming family to implement a potential change based on the input levels required:

- ***Unused Inputs (lowest level of difficulty).*** This arises when an excess of the required inputs is available throughout the year. This is the easiest situation to assess.

Box 7: Implementation: Input Issues

[It is important before asking the following questions that the farming family first have a good idea of the amounts of inputs (such as planting materials, fertilizer, and labour) required for implementing the change and when they will be required (e.g., January, July).]

Could you implement the change with inputs (particularly labour) that are currently unused and do you have the money available to buy the external inputs (such as planting materials and fertiliser) when they are required? [This is the best possible situation — if this is possible and desired then no further question needs to be asked in this box.]

If not, could you implement the change by using family labour when it is underused and buying or hiring the extra inputs (such as fertiliser and labour) when they are required? [This is the next-best possibility – if this is a possibility and also desired then no further question needs to be asked in this box.]

If neither of the above are possible or acceptable, would you be willing to consider implementing the change by giving up producing something you are currently producing?

If so what would it be and how much production would you need to sacrifice? [This is likely to be the least desirable choice, especially if it is likely to compromise the goals of the farming families].

- ***Input Acquisition (intermediate level of difficulty).*** This arises when there are insufficient resources available, at least at certain parts of the production cycle. It is a common situation because, as indicated earlier, inputs—especially labour—are usually fully used at some period during the year. Two possible ways of dealing with this bottleneck problem:
  - Avoid the bottleneck by adjusting the planned change so that it does not need so many resources at the bottleneck period (for example, by changing the planting day of the crop); Alternatively, reduce the size of the planned change (in other words, devote a smaller area of land to it) so that the other resources required to implement it are lower
  - Overcome the bottleneck in some way (for example, hiring labour or borrowing money)
- ***Input Substitution (highest level of difficulty).*** This arises when the inputs required by the planned change necessitate giving up the production of something else. The assessment exercise then involves adding what inputs are available in the current situation to those that are freed up, and comparing that with those that are required.

Participatory Learning and Action techniques, referred to earlier and explained in the Pacific Farm Management and Marketing Series Reference Manual (Part 3), can help the facilitator and the farming family think through the different input situations outlined above.

Desirability or Evaluation-Related Issues

Introduction

Evaluating the desirability of a possible change is the final stage in determining whether a potential change should be attempted. The criteria under consideration are whether a proposed change will be:

- Financially profitable
- Desirable given the external factors faced by the farming family.
- Not harmful from an ecological viewpoint
- Compatible with the goals of the farming family.

If there is a negative result for any of the desirability criteria, the farming family should not implement the proposed change.

Financial Profitability Concerns

A change that involves producing something for sale on the market can usually be justified only if it makes a profit. To estimate profit, information is needed on a number of items:

- For the product produced:
  - An estimate of the amount produced, in specific units such as number of bags, number of kilogrammes, etc.
  - The price per unit (such as price per bag or per kilogramme) the product could be sold for
- For the inputs used in producing it:
  - The amount of each input used (such as 1 hectare of the farming family's own land, 1 bag of seed, 3 bags of fertiliser, 50 hours of family labour and 10 hours of hired labour) and an indication of when during the year they are used
  - The prices per unit of the inputs used (for example, cost per bag of fertiliser and seed and cost per hour of hired labour)

Picture 5: Measuring yield and keeping records on a farmer's demonstration plot on Paama Island, Vanuatu

The principle is that:

'Profit' = Gross revenue (i.e., income) – cost of production

= [(Number of units of production produced) x (price per unit the product could be sold for)]

– [the sum of (Number of units of each input used) x (price per unit of each input used)]

Although the principle looks simple, applying it in real life can be complicated. These complications are explored in detail in the Pacific Farm Management and Marketing Series Reference Manual (Part 3).

However, three important components are explained here:

- ***Variable and Fixed Costs.*** Variable costs are those that vary with the level of output and can easily be linked to producing a particular product. In other words, they increase as production of that product increases and decrease as production of that output decreases. The inputs listed above in the 'profit' equation are variable inputs. Fixed costs on the other hand have to be paid whether or not production takes place (examples include rent on a piece of land or paying off a loan obtained for buying a piece of equipment). They usually provide inputs/services for more than one production cycle (such as more than one crop) and usually cannot easily be allocated to the production of one product. In the 'profit' equation above, only variable costs are considered. Note that fixed costs tend to be much higher in more commercialised agriculture where farmers have much more in the way of buildings, equipment, land, commercial loans, etc.

- ***'Profit' and Gross Margins.*** Technically, true profit really involves inclusion of both variable costs and allocation of some of the fixed costs in the costs of producing a particular product. However, there are difficulties in calculating and apportioning fixed costs so we often simply take variable costs into account in the estimation of the costs of production. Therefore we use 'profit' in inverted commas (to indicate it is not the real or true profit) or instead use the term gross margin that is defined as follows:

  Gross margin = gross revenue – variable costs

- ***Cash and Opportunity Costs.*** Inputs used in producing a product on the farm are either owned by the farming family or bought with cash. When calculating the expected variable costs of cash inputs, there is no problem in estimating the cost per unit. However, putting a cost on the inputs that originate from the farm (non-cash inputs) is more difficult. This is necessary

because, for farmers who market little of what they produce, most of the inputs (especially labour) come from the farm and the family itself. In contrast with more commercialised businesses, agriculture is rarely mechanised—equipment is not used as a substitute for labour. Likewise, on small farms family labour can often be substituted for hired labour. Therefore, estimating the gross margin using only hired (paid) labour would result in a much lower gross margin than one using only family (unpaid) labour. If non-cash inputs provided by the farming family would have a value off the farm—in other words, if family labour could obtain paid work elsewhere or if organic fertilisers (manure) from the farm could be sold to others—then a value needs to be assigned to them. If the non-cash inputs are not likely to have another use, then their opportunity costs are zero and no value needs to be assigned. With this in mind, the gross margin equation is rewritten as follows:

Gross margin = gross revenue – costs of purchased inputs – costs of inputs from family farm

= gross revenue – cash variable costs – opportunity (non-cash) variable costs

The three situations described in the section on inputs can now be re-examined using gross margin analysis:

- ***Unused Inputs (lowest level of difficulty)*** This is the easiest situation in which to calculate the gross margin. Since at no time of the year would the change mean giving up the production of anything else, the gross margin can be estimated as the gross revenue minus the cost of purchased inputs.[6]
- ***Input Acquisition (intermediate level of difficulty)*** This situation assumes that the farm family inputs needed for the proposed change are available during some parts of the year, but at bottleneck periods they are fully used. During those times, the inputs must be purchased or hired. Therefore, once again, the gross margin would be gross revenue minus cash variable costs.
- ***Input Substitution (highest level of difficulty)*** In this situation, because the change involves giving up the production of something else, non-cash inputs from the farm/family that are shifted from some other use to implement the change have some value (in other words, they have an opportunity cost of more than zero). Therefore it is important to put a value on those reallocated inputs. For example, if family labour has to be reallocated at certain times of the year to enable the change, then an appropriate value to

6 One could argue that the change does involve giving up some leisure and therefore there is an opportunity cost to family labour. However, it is not easy to put a value on leisure so we usually ignore it.

put on it would be what it would cost to hire this labour instead. This means the gross margin calculation would not only involve subtracting the variable cash costs but also opportunity variable costs (in this case, for family labour).

For the Unused Input and Input Acquisition situations above, the farming family must decide whether the gross margin (or 'profit') is enough to make the change worthwhile. Obviously, for this to be the case the estimated gross margin must be greater than zero. If the gross margin is negative—in other words the cost of growing and marketing the crop outweighs the value received for it when marketed—the farming family will end up losing money and should not consider adopting the change.

In the case of the Input Substitution situation, the decision will be somewhat more complicated, because in the production process something else had to be given up in order to consider adopting the proposed change. An example: A farming family is considering a change that would involve producing rice for sale, but it will require them to sacrifice some of the taro production that was used for home consumption and for fulfilling social obligations. In deciding whether the change makes economic sense, the farming family would need to estimate whether or not the gross margin is big enough to cover the cost of buying the taro that is no longer produced and still leave a positive gross margin. If this is not the case, then it would probably not be attractive for the farming family if they still want to eat taro and use it to fulfil their social obligations.[7] We will return to this issue when we look at the change in terms of the goals of the farming family.

Although one could argue that the way we have treated non-cash inputs in the above discussion is theoretically correct, in practice we simply treat all the three situations in the same way. This simplifies the analysis and allows comparisons of gross margins from different farms and plots, and of different types of crops. For example, in the Farm Marketing and Management Series Reference Manual (Part 3) we propose that a value is always placed on family labour.

In considering the financial value of making a change that involves producing for the market, there are two other important issues that need to be taken into account. These are marketing costs and the risks and uncertainty when growing a new crop:

- ***Marketing Costs*** There are often costs associated with the marketing of the product. For example, moving the product from the place of production (in this case, the family farm) to the place of sale (the market). These

7 There would also be nutritional considerations, since rice is nutritionally inferior to taro.

costs reduce the 'profitability' or gross margin of the product and need to be subtracted from it. There may also be other costs associated with the marketing function such as storage costs before marketing in order to take advantage of higher prices at a later time, costs of buying packaging material or for preparing the coconut leaf baskets for transporting and selling the product, processing and grading costs to make it more attractive to consumers, etc. (See the Series' Reference Manual No 3 for more details).

- ***Risk and Uncertainty*** When planning changes there is, as we have indicated earlier, a great deal of risk and uncertainty. This can relate to a number of different things such as:

  - Uncertainty about the yield of the product because of variations in factors such as weather, soils, disease and insect attack
  - Not knowing exactly what the input requirements will be for producing the products (for instance, labour requirements would probably increase if there were a weed infestation)
  - Some uncertainty about the expected prices of the inputs and the price that will be received for the product. Potential problems with respect to the price of the product may occur if the product is very dependent on external influences (such as the general economic situation); if the market for the product is very limited; if production is very seasonal in nature (this could result in very depressed prices at the peak harvest period); if the product is difficult to store (perishable goods such as vegetables);[8] or if there is a tendency for copycatting among producers, resulting in overproduction.

  Because of these risks, it is often a good idea to do some ***sensitivity analysis*** when evaluating the gross margin for a proposed change. The idea is to see how much the gross margin for the proposed product is likely to change as a result of a change in the amount produced, the levels of inputs used, the prices of the inputs, etc. The more the gross margin fluctuates as a result of such variations, the more careful the farming family should be about the decision whether or not to adopt the change. This is particularly important if there is a likelihood that the gross margin could be negative (meaning that the farming family would lose money).

8 For example, in Tonga the main yam season results in most of the marketing being done in April therefore depressing prices. This oversupply is also partially because yams do not store well once harvested. In contrast yam prices are much higher in December when yams are still immature.

External Factors

As we indicated earlier there are factors external to the farming family that are likely to influence what is acceptable (such as community influences) and what is possible (such as the ease of access to purchased inputs and to a market for the product). As farming becomes more commercialised and communication with the outside world improves, community influences—perhaps sometimes regrettably—are likely to become weaker. However, accessibility to purchased inputs and product markets are likely to become greater.

Nevertheless it is probably often still quite important for the farming family to be sure that the planned change does not go against accepted codes of behaviour in the community. It is also equally important to be certain that any necessary external inputs (for example, fertiliser) are available for purchase at reasonable prices and that a reliable market exists for the product produced. If these conditions don't exist, then it will not be feasible for the farming family to make the change. It may be difficult for the farming family alone to determine whether favourable conditions exist for purchased inputs and product markets. However, the facilitator may have the necessary knowledge or contacts with the necessary people to advise the farming family on this matter.

Sometimes access to inputs and product markets can be improved by farmers coming together in groups to:

- Buy external inputs in bulk – therefore possibly reducing cost per unit
- Market in bulk – therefore possibly reducing marketing cost per unit, improving the bargaining position of the farmers, and possibly improving their access to market information

Groups, especially if farmers' experiences with them in more traditional community activities have been positive, have major potential benefits in improving access to external inputs and product markets. However, we recognise in many parts of the Pacific setting up groups that will work satisfactorily for the benefit of all members is often a major challenge. Ideally, the facilitator will be in a position to influence and nurture their development. Further issues relating to group formation and operation are discussed in much greater detail in the Reference Manual (Part 3) of the Pacific Farm Management and Marketing Series.

Ecology

In evaluating whether it is desirable to make a change it is very important to be fairly sure that it won't have a negative impact on the piece of land where it will be implemented (for example, causing increased erosion, taking too many nutrients out of the soil without replacing them, etc.). It may not be possible to accurately evaluate all of these concerns in advance, but the farming family and the facilitator should use their knowledge, experience and common sense in deciding whether or not the change is likely to cause ecological problems sometime in the future.

Goals

Perhaps the most important criterion, as far as the peace of mind of the farming family is concerned, is the need to evaluate whether the proposed change is likely to be compatible with their goals. Even if other evaluation criteria appear positive, if the proposed change requires modifying how the farming family's goals are met, careful consideration is necessary to determine whether its adoption is in their best interest.

For example, with input substitution some food needs and social commitments may need to be met in a different way than before the change. If the farming family is uncomfortable or insecure about this modification, then the change is not for them. Action should also be avoided if the goals of the men and women in the family are very different and as a result they are in disagreement about the value of a proposed change. It is therefore critically important that the farming family understands to the greatest possible extent all the possible obligations and benefits of a proposed change. The farming family alone should make the decision about whether or not to adopt a change.

Concluding Point

Inevitably, small farmers will move towards marketing more of their production. Unfortunately, not everything about this trend is desirable. Indeed a major reason for developing these training materials is to ensure that small farmers and their families will benefit from the process. Farming families need to be cautious and preserve, to the extent possible, those positive things associated with the Pacific Way of Life. For example, in the past nutritious and balanced diets based on farm-produced products were the norm. But now, as individual incomes become increasingly monetised, there is an unfortunate tendency to buy unhealthy food items (such as mutton flaps and corned beef). Another concern is that traditional methods for maintaining long-range soil fertility should not be sacrificed for increasing short-term production. The end goal is that small farmers and their families enter the marketplace without compromising their traditional value system.

Picture 6: Traditional mixed farming plot in Vanuatu

The world today is very different than it was 50 years ago and changes are occurring more rapidly now than ever before. In the Pacific, the outside world now has a far greater influence on rural areas, villages, and farms than ever before, placing new demands on individuals who may need guidance as they begin to adapt to these dramatic changes.

This booklet attempts to address the needs of a large group of people in the Pacific: farming families living and working on small farms. It is first publication in a Pacific Farm Management and Marketing Series, published by the FAO Sub-regional Office for the Pacific and aims to show how facilitators can help farming families make beneficial decisions as they consider producing for the market. It is designed to be used by those who are training or supervising facilitators, but it may also be useful for others who are working with farmers.

ISBN 92-5-105204-2 ISSN 1813-2332

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TC/M/Y5663E/1/10.04/1000