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Introduction

Farmers have always had to decide what to produce and how to do it. Our aim is to give useful guides to those making decisions relating to farm management, in a form that is easy to understand. We deal with economic principles which underlie farm production and management, and how to apply them. We hope to help the ‘doers’ and those who help them. Our target audience includes extension workers, teachers and students of agriculture, operators of private farms, managers and planners of state farms, farm development authorities, staff of farm cooperatives, rural bankers and local government planners.

Economic analysis and planning of farm management becomes more relevant as new plant and animal breeds and methods of husbanding them become available, as needs for food and fibre change and grow, and as people’s expectations about ‘their lot’ – of what is and what could be – change (more bread, education, motor cycles, new clothes, and pictures on the wall, too). Farm management economics is simply one way of looking at, interpreting, analysing, thinking and doing something about the situation of farming families and other rural dwellers. There are lots of other frameworks for looking at their world, too. These include politics, religion, history, and anthropology. We will stick mainly to production economics in this volume.

The area of world agricultural production we deal with is ‘the tropics’. The tropics lie roughly between the Tropic of Cancer and the Tropic of Capricorn. This area has small seasonal changes in day length, relatively high average temperatures, some areas are wet and hot, and others are dry and hot. Rainfall is plentiful and reliable in some parts, low and uncertain in others. There are ‘tropics’ in Africa, Latin America, Asia, the Pacific, and parts of Australia. The range of crop

products grown includes maize, millet, sorghum, sugar cane, ground nuts, coconuts, beans, rice, bananas, pineapples, coffee, tea, cocoa, vegetables, cassava and yams. Farm animals (though of less importance than crops) include beef cattle, goats, pigs, sheep, oxen, buffaloes, dairy cattle, camels, donkeys, horses, chickens, ducks, elephants, fish – even crocodiles!

Most people in the tropics rely on local agricultural products as their major source of food, fibre and income. In most of these countries, a large proportion of the workforce lives in rural areas, works in agriculture and, relative to the rest of the world, has low levels of income per head, food (and sometimes water) supply, and education. Land-tenure arrangements are complex, sometimes seemingly unjust, and hard to change. Often there is a lack of effective support services to help farm families in such matters as health care, access to credit and to relevant advice on farming methods. Despite some popular beliefs, the tropical resource base usually does not lend itself readily to highly productive crop and animal production. Soils can be poorly structured, low in nutrients and organic matter, and prone to erosion. Attempts to use soils of low fertility successfully can be frustrated by unreliable rainfall, and by pests and diseases. Also, contrary to popular belief, labour can be scarce at critical times.

Furthermore, many parts of the tropics have populations which grow more quickly than the land can feed and service them. The ‘creeping deserts’ of Africa reflect this problem in its most dramatic form. It also occurs in a less extreme form in parts of Asia and Latin America. Slowing the rate of population growth is vital. We strongly endorse the theme adopted by enlightened population planners who say to their clients: ‘Space your children, just like you space plants.

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Then you will get better, healthier growth of your seedlings'. Since women do most of the work in growing and husbanding (mothering?) crops in tropical countries, this message is likely to have some impact over the next few decades. There are numerous factors which impinge on the feeding–breeding issue. Making small advances in each part, seems to be the best way of tackling the problem.

Part of the discipline called economics is concerned with looking at how resources are used and what they are used for. One of the reasons for doing so is to see if resources are being used in a good way. One part of using resources in a good way is to use them to meet as many of people's needs for life, and from life – sometimes called people's 'wants'* – as is feasible. Our definition of what the discipline of economics concerns itself with, goes like this:

Economics deals with a way of thinking about how limited amounts of resources are best used to create the physical commodities and to provide the services which people need. Equally important, it is about the way in which social and economic conditions are created so that people can pursue, with some chance of attaining, their many other life requirements and aspirations.

Two questions worth addressing are: what are people's wants/needs, and of them, to which can the discipline of farm management economics be usefully applied? To us, some of the wants/needs which seem to be part of the human condition are:

- 1 enough (and sufficient variety of) food and drink-able water;
- 2 shelter and clothing (these have a range of importance depending on where you live, society's attitudes, your wealth, e.g. fashion clothing);
- 3 security from violence by others;
- 4 self esteem;
- 5 freedom from oppression, freedom of expression;
- 6 sexual activity;
- 7 to be physically and mentally active, to be amused, to laugh;

*We recognise that there is a vast literature on the issue of what is a 'want' and what is a 'need'. We have not probed it – it is a study in itself. See, for example, Maslow, A.H., *Motivation and Personality*, Harper & Row (1954).

- 8 to learn (to become 'better' at something);
- 9 to have 'more' of things which may make for less misery and more 'happiness' (especially in relation to what some others in the community may have);
- 10 to do the right thing by god(s) and religious beliefs.

Farm management economics deals quite directly with items 1, 2, 8 and 9, in particular with satisfying more of these wants/needs.

The theory of production economics is often presented in a way that makes it seem unrealistic or of little use in making decisions about farm management. Here we try to provide some usable tools of analysis and planning, based on economic principles, for farming. In the tropics the two main farm situations we will deal with are: (i) where most of the labour, skills and money come from the same household, and most of the production is used at home, with little sold in markets; and (ii) the fully commercial farm, where many inputs are bought and most products are sold. The principles and techniques outlined here apply with different degrees of relevance to each of these types of farming. Most small farmers in developing countries have a semi-subsistence operation – much of the food grown is consumed by the family, but some is sold or exchanged in the market.

Existing farming practices and systems are a result of a mixture of experience, tradition, available resources, the physical environment, levels of technology, and the political, legal, economic and market conditions. There are a thousand good reasons to explain what is presently done, and how and why it is done. Simplistic assumptions about transferring western or eastern bloc economic 'models' to the developing world can be costly to the people and societies which receive such economic advice from evangelical economic 'experts'.

Economists who start talking as soon as they get off the airplane are increasingly being recognised as the burden which they may ultimately pose for the less-developed world. Was it an out-of-touch cynic or a realist who claimed that development aid is a means by which the numerous poor people of the world help the much fewer rich. We have tried to avoid the trap of taking it for granted that 'experts' from countries with highly developed economies have answers to fit the generally unique situations of farm people in develop-

ing countries. We have also remembered that trying to make the most money ‘profit’ (an oft-used yardstick in economics) is rarely the only (and often not the major) objective of farm operators, wherever they may live.

A difficulty when applying economic principles to tropical farming situations is that economics and most other aspects of life of the farm household are all part of the one picture. This is in marked contrast to more developed economies where it is easier to distinguish between production and consumption activities. While in more developed economies, most production and consumption of goods and services pass at some stage through a market, this is often less true of farms in the tropics. Furthermore, production economic theories focus on how the individual, either as a producer or a consumer, behaves. In many tropical situations it is more appropriate to focus on the family group, and sometimes the village. What one villager can do might depend on the wants/needs of all the other people in the village community.

Our focus in this text is on the production, or supply, side of the farming story. This is not to understate the importance of the other half of the story – the distribution and marketing of the production (called the demand side of the economic processes at work). We are not saying, ‘well, first grow your product’ because production cannot be done properly, or improved, without there also being well developed systems of transport, distribution and marketing. Equally important are the financial institutions and arrangements to ensure that (i) the incentives for production are ‘right’ and (ii) the facilities necessary for production and marketing of agricultural goods, and for investment in agriculture, are present.

There is some scope for applying some suitably, but sceptically, distilled parts of economic thought, particularly those principles and techniques which are relevant to better using limited resources. Our explanations of the use of farm management techniques are based on the assumption that most farmers are interested in getting a bit more (of something) out of the limited resources they have to work with. When the goal of production is to get more out of available resources, then modern economic principles about making better use of resources are of some relevance.

Resources will be allocated differently, and wealth, power and profits shared in various ways, depending

on who owns the means of production; and on different social values and forms of social organisation. However, agriculture is important in the growth of an economy, regardless of which growth theory and ways of applying it you subscribe to. Sound and useful farm production decisions are crucial at the farm level. They may be taken despite, because of, or in complete isolation from, national economic and political considerations and policies. If farmers can get a bit more by using their limited resources and opportunities in a better way, then perhaps others in their society will also benefit.

Target audience

We do not know the details of each local environment in the tropics but we have directed much of our book to local people who know the technical details of particular tropical environments. For example, the extension worker is one target, and the technical side of agricultural production in his local area is just what he knows, and does, best. An extension worker is a person who advises farmers and (often) their wives on farming and family matters. Typically, but certainly not invariably, the person is a male. He is the ‘middleman’ between rural research groups and farm families. This is his specialisation, his field of expertise, and when we refer to the ‘farm adviser’, or ‘the farmer’s adviser’, or the ‘extension worker’, we are saying to him: ‘these are some of the important farm management economic aspects of the technical side of your job’.

The extension worker or farm adviser has a pivotal role to play in communicating innovations to farmers, and especially to farm women, who usually do most of the work. The extension worker also acts as a ‘trouble-shooter’ when problems of, say, disease or poor growth of crops, occur. It is likely that he will be numerate and literate, and has had some elementary formal training in general agriculture. It would be silly to expect that most semi-subsistence farmers will be able to work out cash flow budgets, farm financial analyses and loan applications. They will need the help of a trained adviser when dealing with all the problems involving financial analysis, budgeting and planning.

The extension worker has the potential to contribute in a major way to helping farmers in tropical countries to get a bit more from their efforts. Whilst we

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refer throughout the text to the extension worker helping the farmer, we know that, in most areas, this cannot be done on a one-to-one basis. The extension service is a limited resource, typically spread thinly over a large population of farmers. It is much more likely that the extension officer will be working with groups of farmers, not individuals.

Often extension workers are the ‘poor relations’ in the bureaucracies administering, and attempting to improve, agricultural development. In the usual situation, the extension worker is relatively underpaid, lacks the elementary facilities for his job (transport such as a bicycle or motorcycle), has to work in isolated areas, often lacks suitable housing, and has poor promotion prospects compared to other public servants and research workers. He also needs to have a special vocation for his job, ‘to love his work’. These difficulties are compounded if, as happens frequently in all countries, life in the ‘bush’ is seen to lack the stimulus and fulfilment of a more urban existence.

So, let us be realistic idealists. We know it will take a long time before policy makers and bureaucrats, with ‘empires’ to protect, make changes to improve the effectiveness and status of the extension service in many tropical countries. This is partly why students and teachers of agriculture, in both formal and informal learning situations, are important target audiences for our volume. Their potential contribution to their country’s agriculture will be realised over the longer term. The other members of our target audience – rural bankers, private farmers, traders and merchants, managers and planners of state farms, executive staff of farm cooperatives, and local and regional government planners – are directly involved and have potential to make immediate and direct impact on the local agriculture. Compared with extension workers, these people’s decisions and actions can bring about changes today and tomorrow, rather than next year.

Consequently we hope that bosses in government bureaucracies and private organisations will see merit in sending their staff to relevant short courses based on parts of this volume, to learn about and debate the techniques we have tried to explain.

Tropical farming is complex in terms of biological, social and economic processes. We have tried hard to see the world of the small farmer in the tropics from the viewpoint of small farmers and their advisers. However, since neither of us has ever been small semi-subsistence farmers in the tropics, we acknowledge that we will never be fully plausible. As the saying goes: ‘To be a good bullfighter, you must first learn to be a bull’.

Questions

- 1 Are there any technological developments in crop and animal production in ‘the pipeline’ which will drastically increase food production in the tropics over the next 25 years? What are they? How will they reach the semi-subsistence farmer?
- 2 Do programmes aimed at reducing rates of population growth really ‘work’? What are the main problems with getting people to accept such programmes? If you can, quote an example of both a successful and an unsuccessful programme.
- 3 On page 2 we list some human ‘wants/needs’. What important ones have we left out?
- 4 We have placed great emphasis on the potentially key role which competent, ‘devoted’ extension workers can play in helping farm families in tropical countries to get a ‘bit more’. Do you agree with our emphasis? How would you improve the effectiveness of a rural extension service for farmers and their families in the tropics?

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Farm management

Farm management is about managing farms. Farmers manage farms. Many other people are also interested in how well farms in any country are managed. Governments, extension workers, planners, consumers, bankers, conservationists and politicians are just a few of those who are keenly interested in food and fibre being produced plentifully, efficiently, and consistently.

In most developing countries, farmers get concessions from government in terms of interest below the market rates, subsidised fertiliser, low taxes, and free advice. With existing ratios of prices received and costs paid for farm products and inputs, and rising demand for food due to increasing populations, the combination of (i) concessions and (ii) favourable ratios of prices received to costs paid, means that farming can often be quite a 'profitable' enterprise, using 'profit' in its widest sense (see Chapter 8). (We recognise that governments in many tropical countries keep food prices artificially low; even so, we stand by our claim.)

The size and type of farm may range from a small subsistence plot of less than 1 ha to a state farm comprising all the land of several villages. Farms may be operated by a tenant or an owner, by a manager employed by a cooperative (or state farm), or by an absentee owner. The commonest is the owner-operator, semi-subsistence farm. The same principles of management apply to each type, but of course, with different degrees of emphasis.

We like John L. Dillon's definition of farm management: 'the process by which resources and situations are manipulated by the farm family in trying, with less than full information, to achieve its goals'.

The place of farm management

Two major tasks facing today's farmer in pursuing his and his family's goals are:

- (i) how best to incorporate new technology into the farming enterprise
- (ii) how to be sufficiently flexible, mentally and financially, to adjust the management of his resources to meet changing costs, prices and varying climatic conditions.

Some schools of farm management thought place a lot of emphasis on record-keeping and accountancy procedures. We do not. We prefer to emphasise the principles of production economics and the technology of farming. In our view, farm management combines the technical and economic aspects of a farm – not forgetting, of course, the human factor (the farm family).

Often, there can be advantages in making use of farm management and economic principles along with new technical methods and capital. There can be a large contrast in profit per hectare between those farms where such ideas are used and those where they are not. The 'management' or 'systems' approach to raising profits has been shown to work in practice in many different farm circumstances.

We recognise that farm management economics is only one of a number of disciplines (e.g. agronomy, animal husbandry, genetics, soil science, engineering, water management) each of which has an important effect on the success of a farm operation. When the reasons for the poor financial performance of a farm are analysed, it is frequently found that:

activities (e.g. crop and animal production) are not being carried out in the best way;

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different activities do not go together very well;
more suited or more productive activities are not
being tried;

the full potential of the farm resources (human,
physical and financial) is not being achieved.

What makes a good farm manager?

We have listed here the knowledge and skills which the operator/manager of a medium-sized, market-oriented farm should have. With modification, these also apply to the semi-subsistence farmer. After all, a farm is a farm, anywhere in the world. So, regardless of farm size, and where they are farming, farmers share many common problems and prospects for increasing 'profits'.

An extension worker needs to be good at communicating with farmers and passing on new knowledge and skills. If his concern is with the 'whole farm' or 'farm management' approach, then he has to have a wide range of knowledge about, and 'feel' for, farming and farmers. The main areas of knowledge which our example farmer should have, or have relatively easy access to, are:

- crop production and protection;
- animal production;
- economic aspects of farm management;
- machinery selection and maintenance;
- credit and finance;
- marketing;
- managing labour and communications;
- information gathering.

Equally important, he needs the skills to put this knowledge into effective use. To expand on each of the eight 'knowledge' items above, below are listed the skills which farmers should possess with various levels of competence, depending on the relevance of those skills to their situation.

Be able to prepare land; plant, fertilise, weed, water (in some situations) and protect the crop; then harvest, store and market the crop to get the best price, with little waste.

Feed animals properly; prevent disease outbreaks and recognise disease symptoms; achieve high reproduction and survival rates; obtain or produce nutritionally correct feed at lowest cost; provide the right housing for effective production, protection, hygiene and harvesting of the animal product.

Use specialist advisers to help analyse the important physical and financial aspects of the farm. Through appropriate records, and other relevant information, be able to work with advisers to produce an annual farm plan, together with budgets, aimed at producing as much food and money as he needs, or as he is able to. Prepare plans of actions in case of abnormal seasons and/or prices. Plan well in advance so that all inputs are available when they are needed, in the correct quantities.

Have harmonious relationships with farm workers by giving them a 'reasonable' amount of responsibility. Be interested in the welfare of people working with him. Know how to establish a clear chain of command so that each person knows to whom he is responsible and so does not have ten bosses telling him what to do. Set up a system of supervision to ensure that the work which is done is of the proper standard. Create a system of communication and involvement, so that all know what progress is being made in achieving the plans and objectives of the farming operation.

Prepare physical and financial reports at regular intervals which are timely, accurate, relevant, brief and clear for the persons who control the farm(s). Where machinery is involved, be able to choose the most appropriate types for the job. Know the maintenance requirements, and make sure that they are met. Know how to adjust field machines for proper operations and to diagnose and fix *common* faults. Find a good repair centre or mechanic for more complex problems and make arrangements for help in emergencies.

Determine the most favourable forms of credit which can be obtained for different activities. Develop a good, honest working relationship with banker, financier or other credit manager. Be able to prepare a realistic application and finance budget for obtaining credit. Have the ability to know when borrow-

ings are too great to be repaid from the farm income. This involves having, or having access to, budgeting skills.

Assess the different ways of preparing and selling the products. Work out the best way, or combination of ways, of marketing (assembling, preparing, transporting, selling) to give greatest long term benefit.

Be able to obtain relevant information on any problem quickly. Sources of information could be the experience of good farmers, the extension service, private companies, research workers, up-to-date reference books, libraries, friends, college teachers, and agents for machinery, fertiliser and chemical products. An important skill is the ability to assess the value and relevance of bits of information in solving the particular problem in the local situation. Thinking, reasoning skills, combined with common sense and even mini trial-and-error 'experiments' have to be practised and developed.

Most people who are responsible for running farms see farm management as the day-to-day problems of organising and of making decisions about practical and technical matters. Jobs must be done well and on time. It is vital that the mechanical, husbandry and labour operations, which are fundamental to the production of any farm output, be carried out efficiently. A successful farmer should be able to perform the numerous, varied and testing practical tasks, and be able to organise and motivate his labour force. Yet he must be flexible enough to react effectively to changes in expected seasonal conditions, prices and costs.

It is not, however, the purpose of this book to give details on how to grow crops, maintain pastures, manage labour and care for livestock. These can be found in specialised agricultural books, and in leaflets issued by agricultural extension services and farm input suppliers.

Some people regard farming primarily as a way of life, some see it as a way to make a living. Others, and this includes the vast majority of farmers in developing countries, are obliged to consume most of what they grow simply to feed and clothe themselves and their children. Nevertheless, we think that the principles and techniques discussed in this volume can help both

those farmers who run a mostly subsistence operation, and those whose farms are mainly commercial, to run them more efficiently, even though the idea of money 'profit' may mean little to some of them.

Resource management

Farmers, in an economic sense, are resource managers who manipulate labour, land, capital and other resources to achieve certain ends. These ends or goals vary with each farmer's responsibilities and sometimes also with his ambitions for himself and his family. Common goals are likely to include: growing enough food of the quality and diversity needed to provide the family with a 'balanced' and interesting diet; security; reducing risk; producing some surplus which can be traded in the market for goods or services which cannot be produced on the farm (e.g. radio, bicycle); avoiding heavy debt; reaching a personal living standard which is on a par with that of peers in the community; acquiring extra land for themselves and for their children; seeing an increase in the value of the assets which they own; reducing drudgery; educating their children; acquiring some savings; improving the appearance of their home and farm; avoiding loss of their farm through (i) bankruptcy or (ii) arbitrary government or private action (e.g. compulsorily acquiring land for, say, a dam and not giving proper compensation).

Generally, farmers are not concerned with pushing production to the extent that they squeeze the last bit of money or kilogram of crop from their land, but most are moderately 'profit' oriented. It is also apparent that most 'traditional' farmers accept relevant new agricultural technology, in whatever form it might take, simply because they become 'better off' somehow, and maybe make more 'profit', by adopting it.

Resources involved in farming

In many tropical countries the land does not belong to an individual farmer but to the tribe, the community, a cooperative or government department or corporation. In these cases, the major resources which a farmer owns are money, his labour, livestock, implements and

other farm equipment, and perhaps a house. Where there is a land market, the value of the land owned by the farmer is an additional resource. Often this is a very valuable asset.

The saleable resources which are owned, minus the total of his debts, have a value which is known as the farmer's capital. The farmer who takes a commercial view of the resources he controls will seek to obtain:

- a good annual 'profit' from his resources;
- increase in the value of his resources, i.e. to make 'capital gains'.

For a subsistence farmer, whose major resource is the family labour force, the first interest is to produce enough food to feed his family with the minimum risk. Second, he would like some cash income. Third, he needs savings which are easily convertible into cash or food in times of adversity. Capital gains are hardly relevant to this situation.

Decision making

Farm management, as a 'formal' discipline, is concerned with helping the farmer to make sound decisions. Decision-making usually involves choosing a course (or courses) of action, from a number of alternatives, which will go towards attaining some of the farmer's goals. The decision-making process has six generally recognised steps:

- (i) having ideas and recognising problems;
- (ii) making observations;
- (iii) analysing observations and testing alternative solutions to the problem;
- (iv) choosing (deciding on) the best course of action;
- (v) acting on the decision;
- (vi) taking the responsibility for the decision.

We aim to help the farmer, through his adviser, to make better decisions based on these steps in perceiving problems, collecting information and analysing possible solutions. What should I produce? What method of production should I use? What working capital do I need? Should I borrow? Answering these questions requires an understanding of economic principles, management techniques, finance, and tech-

nology, by the farm adviser. Decisions often have to be made under conditions of change, and uncertainty about the actual outcome (Dillon's 'less than full information').*

Applications to various types of farms

Different types of farmers – the cash-crop farmer, cattle farmer, fruit grower, dairy farmer, or chicken producer – each have their own particular problems. Many farmers combine several different types of production but four basic farm types may be distinguished:

- (i) those where crops are produced by annual cultivation, the produce may be eaten during growth (fodder sorghum), or harvested and sold (sorghum and cotton), or harvested and kept as food (maize) – this includes the shifting cultivator who moves to new land when existing plots lose fertility under continuous cropping;
- (ii) those where animals and animal products are produced;
- (iii) those concerned with perennial plants (tree fruits such as citrus and bananas, coffee or rubber plantations, perennial seed and hay crops) where there is a flow of income over a long period, and frequently a long time between initial investment and first pay-off, but a need to replant only at relatively long intervals;
- (iv) farms with a mixture of several of these activities.

Although the diversity of farm types is wide, the principles and techniques of farm management economics apply, with different degrees of emphasis, to all of them.

Subsistence and semi-subsistence farms

Over large parts of many tropical countries the agricultural activities noted above are carried out on small subsistence and semi-subsistence farms. Many of the principles of management and planning apply, with appropriate modification, to semi-subsistence farms where there is an element of cash income. A few

*Dillon, J.L. (1980). The definition of farm management. *J. Agric. Econ.*, 31, 257–8.

of these principles apply also to subsistence farms. Below are listed the main features of semi-subsistence farms.

- They are generally of small size (area, output).
- They do not rely very much on purchased inputs, such as mechanical power or fertilisers.
- The farmers need to select crop and animal activities (including hunting and collecting the products of native plants) to supply the basic nutrient needs of the farm household and, where possible, a surplus for barter or sale. Traditional methods of achieving these two ends have been formed by a long process of trial and error and are often quite ingenious. However, increased population pressure has forced many tropical farmers to modify their traditional forms of land use, e.g. by reducing the period of bush fallow or increasing the proportion of starchy crops at the expense of high protein foods.
- There is understandable reluctance to try new practices which involve more risk although they may offer prospects of more and/or better food and a higher cash income. For the subsistence farmer, the failure of one of the activities upon which he depends for a significant share of his household's diet can be calamitous. The small- or medium-sized commercial farmer can often afford to take more risks and so be more innovative.
- Because traditional activities also carry risks, the semi-subsistence farmer tends not to put his savings into long-term, fixed-capital investments such as buildings and land improvement (even so, he is often prepared to invest in plantation crops which also are long term). He cannot turn many long-term investments into cash in the event of bad seasons and/or prices. He prefers to keep his savings in 'liquid' assets such as cattle, precious metals, rugs and jewellery. These can be converted readily into cash.
- There is a relatively low proportion of cash sales to total 'income' of the farm household. The total or gross 'income' has four components: cash sales; cash income from off-farm employment; the market value of farm products consumed by the household; and payment in kind, e.g. food received for services performed. An example of the breakdown of 'income' for a semi-subsistence tropical farm household is as follows:

	Income (\$)	
Cash sales	180	260
Cash income from off-farm work	80	
Value of home-consumed product	410	440
Payments in kind	30	
Total 'income' for household	700	

The main category of direct farm inputs is labour. Cash expenditure on direct farm inputs is small. In addition to payment for inputs such as fertilisers, pesticides, tools, contract services, and interest on loans, cash is also used for overhead and personal expenses. These will include schooling, rent, taxes, and possibly savings and investment. For example, from \$260 cash income, \$100 may be spent on farm inputs, leaving \$160 for meeting overheads, personal expenses, investments and savings.

The other type of expenditure incurred by many such households is 'payment in kind'; where farm products are exchanged for services rendered, or for taxes, or as a tribute to community leaders.

Problems and decisions

Some of the main types of decisions and problems facing semi-subsistence households which can be helped by applying the techniques of farm management economics are how to:

- use limited resources such as family labour, outside labour, borrowed money and cash to best effect;
- plan and budget expected food supply and cash income for the maximum benefit of the household;
- plan in advance alternative courses of action in the event of the budgeted food and cash plan not working out as expected;
- select the best combination of activities, both on and off the farm, to produce the food supply and cash income needed to cover essential household needs;
- choose between risky alternatives;
- plan a crop rotation or intercropping system;
- minimise the chance of being seriously harmed by adverse seasons or prices;

estimate available resources to overcome problems of feeding the family an adequate and varied diet; shortages of labour for clearing, sowing, or harvesting; and lack of feed for animals during the dry season of the year.

Human relations in farm management

In the following chapters, considerable emphasis will be given to analysis, budgeting and planning. Even so, we want to stress how important it is that there be effective communication between the farmer, his family and the workforce. Lack of proper understanding can stop the best of plans from being carried out properly, or to the fullest extent.

When a farmer uses labour, either hired or from the family, the quality of field operations can be greatly reduced if the workers are dissatisfied or lack motivation. Similarly, if a farmer tries to introduce new activities or projects into the farm, the expected increase in 'profits' may not occur because the labour force does not understand the reasons for its introduction, or because they feel that the 'boss' is going to get most of the benefits, whilst they gain little. Sometimes the labour force does not have the necessary skills to cope with new programmes. This problem requires training, linked with appropriate cash and non-cash rewards.

One way of establishing good labour relations is to ensure that members of the labour force are given responsibility for a particular segment of the work and for making many of the detailed decisions about how it is to be done.

Management and labour

Good management of labour involves recognising hired and family workers as being people with emotions, needs and goals, not just as standard inputs into a production process. Achieving a contented productive labour force can be traced to the following features of personnel management.

Leadership Involves decision-making ability, sound technical farming knowledge, being well-organised personally and being more an 'encourager' than a 'demander'.

Delegating authority and responsibility This is a key factor in motivating any worker because it develops

his/her personal interest. It often creates a sense of achievement and it also allows greater job satisfaction.

Being tolerant but not lax It is important to give credit where it is due and to be diplomatic in correcting mistakes and teaching new skills.

Getting good two-way communications This is based on the ability to see the other's point of view. Good labour and family managers discuss work progress and future programmes with everyone involved and encourage them to contribute their ideas.

Ensuring clear chain of command Workers stress strongly that they must be responsible to one boss only, since it avoids conflicting instructions being given.

Trying to match a job with a worker's interests and skills where possible This can make work more rewarding – perhaps more enjoyable.

While the above features are all important, this list is not exhaustive. An employer who wishes to have both good labour relations and high productivity must supply his workers with good equipment (in proper working order), provide satisfactory working conditions and – above all else – offer incentive through rewards.

Questions

- 1 Can you improve on John L. Dillon's definition of farm management, viz., 'the process by which resources and situations are *manipulated* by the farm family in trying, *with less than full information*, to achieve their goals'? If so, what is your definition?
- 2 How many operators/managers of medium-sized commercial farms that you know have the knowledge and skills listed on pp. 6–7? From where can they be obtained if needed?
- 3 Does Dillon's definition of farm management have any relevance for advisers of semi-subsistence and subsistence farmers, whose features are described on pp. 8–9?
- 4 In what situations is having good human relations in farm management important in tropical agriculture?
- 5 With which of the points we have made in this chapter do you disagree? What would you have said?
- 6 What factors about farm management have been overlooked?