Course on agribusiness management for producers' associations

Module 3 – Planning for producers' associations

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Acronyms and abbreviations

ACFSMC All-China Federation of Supply and Marketing Cooperatives

ADB Asian Development Bank

APEDA Agricultural Products Export Development Authority-India

EAP Economically Active Population

GDP Gross Domestic Product

ICA International Cooperative Alliance

ITC-India Indian Tobacco CompanyITC International Trade Centre

IFFCO Indian Farmers Fertiliser Cooperative Limited

IFFDC Indian Farm Forestry Development Cooperative Limited

JA Stands for Japanese Agricultural Cooperatives

JA-Zenchu Central Union of Agricultural Cooperatives of Japan

JA-Zen-Noh Federation of Agricultural Cooperatives of Japan

JFRI Jinan Fruit Research Institute of ACFSMC

JIT 'Just-in-Time' Production

NEDAC Network for the Development of Agricultural Cooperatives/

FAO

NHRDF National Horticulture Research & Development Foundation-

India

RAPP Regional Agricultural Promotion Plan (ref. Japan)

SME Small and Medium Enterprise

WB World Bank

WTO World Trade Organization

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Introduction

This module, entitled *Planning for producers' associations* is the third of the four which go to make up the course entitled *Agribusiness management for producers' associations*. Its **purpose** is to provide leaders of producers' associations with elements to supplement the course facilitator's work in order to ensure that by the end of the course they understand: i) the importance of planning as an means for reducing the risk inherent in producing and marketing an agricultural commodity, and ii) the need to adopt business principles such as order, consistency and commitment.

The module has the following objectives:

- ➤ To learn about market research* as a first step in business planning.
- >To understand different types of planning and how they are applied to producers' associations.

The conceptual content of this module has been organized into two units:

- ➤ Unit 1 Market knowledge as a basis for planning where the importance of researching target markets prior to production decisions is explained.
- ➤ Unit 2 *Planning: a key factor for competitiveness* contains information, ideas and guidelines for using planning as an essential tool for market requirements.

In terms of **methodology**, the units have been organized in order to give you the opportunity to discover each unit's specific course content. Each unit has been structured to help you to identify in advance what you already know and to enable you to combine your existing knowledge with the proposed course content to optimum effect. The aim is together to build your capacities by accumulating new knowledge in a pro-active and participative way.

In terms of **assessment**, we start from the principle that assessment is of most value when it is used to take decisions for improving the teaching/learning process. This involves three phases:

- > Initial assessment: this will enable facilitators or tutors to analyse and predict your real capacity for learning. At the same time, it will give you an idea of what each unit is about and what it aims to achieve in terms of increasing your self-motivation, updating your existing knowledge and preconceptions, and planning your own learning process fully.
- Formative assessment: this will enable facilitators to take decisions to improve the teaching/learning process (regulation) and will enable you to take decisions to improve your own learning process (self-regulation).
- Summative assessment: this will enable you to link together the key ideas, to find out what progress you have achieved and to see where you stand as regards a new learning process.







Furthermore, the assessment instruments in this manual can be supplemented with any others that facilitators may consider appropriate to ensure that assessment also becomes a group process and allows you to offer your constructive critical assessment of the validity of the course material and the way in which it is taught.

Accordingly, the manual contains the following sections:

Section	Aim
➤ General guidelines	Promote the learning-to-learn process
➤ List of topics	Present the specific content of each unit
➤ Points to remember	Memorize what you have learned. Initial assessment
➤ Key competencies	Detail the key competencies you will learn
➤ Setting the context	Put into context the subject to be discussed, and update thinking on it
➤ Case study	Remember prior knowledge. Initial and formative assessment
➤ Explaining key issues	Present the priority course content and analyse it in detail
> Conclusions on the case study	Provoke thought on the real issues. Formative assessment
> Practice exercises	Put into practice the proposed course content
➤ Summary	Help to link, integrate and memorize the key ideas
➤ Unit assessment	Provide an opportunity for self-assessment of the material learnt
➢ Glossary	Clarify ideas on the meaning of selected terms and acronyms
➤ Bibliography	Provide information for personal research

Particular attention is drawn to the glossary, which helps to clarify certain concepts not explained in the text. The terms included in the glossary are marked with an asterisk (*) the first time they appear in the text.







General study guidelines

To help you make optimum use of this material, a few hints and suggestions for planning and managing your own learning process are presented below:

- > Organize your time to allow you to complete the proposed assignments. You are advised to study for at least two hours every day to optimize the learning process.
- Before starting work on a unit, try to recall what you already know about the subject, as this will help you to link new knowledge with your existing knowledge and will allow you to recognize the value added of new information.
- Complete the self-assessments, as well as the topics and proposed case studies, as they will help you to understand the course material.
- You may underline, construct graphic organizers, write summaries or use any other method to help you to understand the course material fully.
- You will get a chance to ask questions and clarifications to enable you to exchange views with your fellow students and with the facilitator. An opportunity will be provided for airing different points of view. The aim is not for us all to think in exactly the same way.
- Do your own research. The proposed bibliography is only a guide. Do not forget that you can also find instant, up-to-date information on the Internet.
- > Use the objectives and content of each unit to develop your own assessment instruments. Taking control of your own learning process will allow you to make decisions to improve it.
- Although studying is challenging and you will come across obstacles, in the end all the effort, sacrifice and time will be rewarded with greater knowledge and enhanced skills, aptitudes and abilities.
- As you are the key player in the teaching/learning process, you will need sound arguments and in-depth thinking to carry out the proposed activities, coupled with strong motivation and critical and analytical abilities.
- > You will find definitions for the words marked with an asterisk (*) in the glossary.

You can do anything you set your mind to. Get started now, and have fun.

Market knowledge as a basis for planning

UNIT ONE

LIST OF TOPICS

- 1. Setting the context
- 2. Case study: Penetrating and Remaining in the International Markets. Minami-Satsuma Agricultural Cooperative in Kagoshima, Japan. See also case study: Precooked and Frozen Vegetables for the International Market: La Huerta, Mexico
- 3. Case study analysis
- 4. Defining the market
- 5. How can rural enterprises be made market-oriented?
- 6. Basic steps in planning the marketing process
- 7. Market knowledge methodologies and instruments
- 8. Identifying and targeting markets
- 9. Market niches
- 10. Product differentiation
- 11. Conclusions on the case study
- 12. Group exercise
- 13. Summary
- 14. Unit assessment



Market knowledge is of primary importance for making any production plans or sales and marketing decisions, and obtaining market-based information is necessary for all producers' associations. Historically, agricultural producers have first planted, then reaped and sold or carried out post-harvest operations prior to marketing the products. This has led to numerous cases of producers' associations that have ended in failure or bankruptcy.

It is possible to create market opportunities for new products, or to develop new consumer needs and requirements, but the shift in paradigm calls for promotion

and penetration strategies and mechanisms. Such strategies and mechanisms have to be seen as part of an investment programme and should always be explored before a final decision is taken on production.

Are you sufficiently informed about the market for your association's products? What type of market research have you done or contracted out? Is your product aimed at a special type of consumer? Do you know the size of your share in the market segment for these products; and what are the prospects of increasing market shares – or what is the risk of losing this share?

By the time you complete this unit you will be able to:

- Identify strategies and instruments that could be used to enhance knowledge of the market targeted by your association's products.
- Appreciate how increased trade has led to higher levels of competition in most markets.
- Recognise that the quality of a firm's human capital is its most important resource.
- Define the term 'market' and identify the basic steps for market planning and research.
- Differentiate between the concepts of 'potential market', 'target market' and 'penetrated market'.
- Go Identify the characteristics and potentials of certain market niches.
- Design and implement product differentiation strategies.

Setting the context

As an entrepreneur, every time you enter a supermarket and look at the variety of products on the shelves, you will almost certainly discover some products that are very similar to those in your own product range. They are often attractively packaged and sold at prices comparable to, or lower than, the ones your enterprise can offer.



In the same supermarket you may also notice a high product turnover rate and see that an increasing amount of space on the shelves, or in display stands, is taken up by just a few products such as:

- i) washed, graded and packed vegetables, fruit, root crops and tubers;
- ii) food products advertised and certified as organic;
- iii) food products with modern packaging, accompanied by information on health and nutritional content, and
- iv) food products that used to be associated only with old-fashioned recipes, or native and country traditions and knowledge.

In some sectors there is marked diversification, with an increasing number and variety of presentations. One such sector may be milk and dairy products; with items such as sterilized milk, lactose-free milk for consumers* with lactose intolerance, low-fat milk for consumers worried about cholesterol and staying slim, and milk enriched with trace elements or ingredients that make the products suitable for special population groups (children, pre-menopausal women, or the elderly).

A typical dairy product range also may contain yogurts, in different flavours and with different mixtures of fruit, produced in various sizes and types of packaging – the range may also include various types of acidophilus milk. Butter with different types of fat content and an immense variety of cheeses, ranging from fresh to mature and fermented cheeses, may also be included in the product range. Side by side, in the same refrigerator cabinet, you can see local cheeses competing with imports from the largest and most prestigious companies in the world. The situation is much the same with meat products, milled and bakery products, fats and oils, and many other food types.

Freer trade regimes have resulted in new opportunities for producers' associations in international markets. Large-scale migration has created new markets, such as ethnic or nostalgia markets. "Exotic" niche markets have arisen through increased travel, with more people who want to enjoy new flavours, and savour different aromas or colours.

Another important new market is the health food market. This caters for those consumers with health problems, as well as consumers who are simply very health conscious. A wide range of products have been developed; such as:

- i) sugar-, fat- and gluten-free products;
- ii) vitamin or mineral supplements;
- iii) products rich in "good" cholesterol and low in "bad" cholesterol, or
- iv) those containing micronutrients*.

Case study: Penetrating and Remaining in the International Markets.

Minami-Satsuma Agricultural Cooperative in Kagoshima,
Japan

INTRODUCTION

The Minami-Satsuma Agricultural Cooperative¹ operates in two cities and five towns. Within this region, green tea products are very popular and well-ripened pumpkins and sweet potatoes designated under the Kagoshima brand are under large-scale production. Rice, radishes, carrots, pulses, citrus fruits, lettuces and melons are other speciality products of the area. Japanese black pigs, Japanese black cattle, and laying hens are also raised locally. The total share capital of the cooperative in 2006 was US\$35.3 million, out of total owned capital of US\$53.1 million and fixed assets were US\$59.3 million. There are 103 different interest groups in this cooperative. Membership details of these groups are given in Table 1.

The Minami-Satsuma Agricultural Cooperative supplies safe and reliable agricultural products. Its main objectives are to provide farm advisory services to its members, to engage in input supply and output marketing* services, and to produce tea. Other services include:

- Farm advisory services: basic objectives are regional agriculture promotion and strengthening of agricultural production system; promotion of a "system of safe and reliable foods"; promotion of environmentally friendly production practices, and improving and strengthening farm support;
- ➤ Input supply and output marketing: strengthening marketing and improving responses to market changes by reforming the distribution system and reducing costs;
- ➤ Promotion of tea by making use of regional characteristics and historic data;

TABLE 1
Cooperative membership details

Groups	No. of groups	No. of members
Agricultural production-related groups	56	3 551
Tea production-related groups	8	1 179
Livestock production-related groups	14	222
Better-living-related groups	11	2 494
Credit business-related groups	7	11 570
Mutual insurance business-related groups	7	1 966
TOTAL	103	20 982

¹ Minami-Satsuma Agricultural Cooperative, annual report, 2005-06

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- Reform of business management through the implementation of strict and thorough financial management practices and strengthening of audit systems;
- ➤ Improvement of personnel and labour management systems for supplying information to members of the association; improvement of communication flows to members, and strengthening lobbying activities in order to implement better agricultural policies.

All efforts are aimed at enhancing agricultural production with a view to penetrating deeper into the domestic and external markets. Another important target is to enhance and stabilize income of farmers.

The quality of human capital is a key factor in maintaining an association's growth.

Case study analysis

Based on your personal experience, consider the following questions:

- 1. Which do you think are the success factors that have led Minami-Satsuma to enter the international market?
- 2. How did the cooperative gain market knowledge about the United States and some European countries?
- **3.** Once it had identified its market opportunities, the cooperative focused its efforts on entering the markets with competitive products. What were these efforts?
- **4.** Can you identify attitudes and principles in the case study, other than business strategies, that helped to achieve the cooperative's results?

Bear in mind that at the end of the unit you will be asked to answer the same questions in the light of the new knowledge you will have acquired.

Defining the market

Knowledge of the market is the key to competitiveness*. A market can be defined as a physical place where buyers and sellers meet to exchange goods and services. Development of communication technologies in recent decades, however, have led to a situation where a physical meeting between buyers and sellers has become obsolete. A more modern definition of a market is, "the exchange of goods and services between buyers and sellers".

Markets are heterogeneous. To analyse differences between markets and consider how to develop strategies for market accession, markets can be categorized according to criteria such as:

- roduct sector: for example, markets for coffee, wool or organic products;
- > end buyer or intermediary buyers: wholesale or retail markets;

- market function within the production/consumption chain: origin markets, destination markets, target markets, etc.;
- regional or international markets.

Markets exist not only for agricultural and agro-industrial commodities, but also for farm and industrial inputs such as machinery and equipment, land, technical services, capital, labour etc.

How can rural enterprises be made market-oriented?

Market orientation can be defined as, "the production of goods and services which have been carefully researched and designed to attract a specific group of customers". A market-oriented company has the following characteristics:

- it produces what it can sell, rather than trying to sell what it produces;
- it endeavours to satisfy the requirements of its target market;
- it uses market intelligence and market research to forecast changes in demand;
- it takes into account the actions of competitors;
- it has some sort of risk capacity.

It is not easy to implement a market-oriented philosophy. Some of the key actions for making an enterprise market-oriented are to:

- ➤ analyse the decision-making processes of the enterprise's current or potential customers;
- identify a market's different behaviour patterns and quantify opportunities;
- riangleright association's competitive advantage and competitors' positions in that market;
- > use market intelligence information for product development.

These actions define strategic production planning, which is essential for all enterprises regardless of the size or stage of development. Planning* is a systematic way of ordering and establishing priorities for goals and activities, to help an enterprise take control of its future. A plan is a statement of what an enterprise wishes to achieve; how and where, with whom and what resources, and when.

Basic steps in planning the marketing process

- 1. **Situation analysis.** Before developing any sort of action plan, decision-makers should acquire information on the problems and opportunities posed by input suppliers, other producers and its costumers. The business environment should be explored, including such areas as: i) technologies used; ii) cost structures within the industry; iii) regulations and standards affecting the business; as well as, iv) strengths and weaknesses of the enterprise itself.
- 2. Setting objectives. Based on the situation analysis specific targets need to be established with respect to anticipated future performance of the enterprise.
- 3. **Developing strategies and action plans.** To achieve the stated objectives enterprises should formulate and develop short- and long-term strategies.
- 4. **Set up coordination and control mechanisms.** These must be designed and implemented to guarantee effective implementation of the strategies and action plans.

Enterprises usually operate in complex and dynamic environments and managers need to anticipate future changes affecting their enterprise. A successful firm can adapt to changes in the environment effectively, and has the ability to foresee any probable changes and to take appropriate action.

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Market knowledge methodologies and instruments

Producers' associations need market knowledge in order to compete at national and international levels. Regardless of their size or location, enterprises need tools and methods to gather and analyse information.

MARKET INTELLIGENCE

Market intelligence is the permanent collection, analysis, monitoring, evaluation, storage and distribution of information on markets. It is a continuous process, which focuses on what happens outside the enterprise and provides on-going information about the market.

Information needs to be wide-ranging and diverse. It may include:

- i. price information concerning raw materials and inputs;
- ii. development of new processes and related inputs;
- iii. investments;
- iv. launch of new products;
- v. information on competitors;
- vi. policies affecting enterprise' competitiveness; and
- vii. promotional events.

There are a number of information sources, which are used by market intelligence agents:

- Internal company information: sales records, production costs, technical efficiency ratios, customer records, etc.
- Suppliers, intermediaries and customers. These are excellent sources of information which should not to be left untapped.
- Secondary information such as the press reviews, radio, television, trade fairs, advertising, official gazettes, newsletters from professional associations and chambers of business and industry.
- ➤ Information on competitors, on prices, product qualities and promotion strategies.
- National licensing or patent offices, and research and development institutions.

Engaging outside consultants specialized in monitoring the behaviour of market sectors and company performance is very expensive and surpasses the budget of many producers' associations.

Cost of market intelligence services

Market intelligence services are expensive for the average rural agribusiness. It is important for a firm to develop its own market intelligence system, based on internal and secondary sources.

The advantages of market intelligence are that it:

- is a practical, flexible and inexpensive way of compiling information;
- > gives warning of market changes;
- rovides elements of reference for preparing responses and actions;
- makes it easier to identify competitors and potential customers.

What is the purpose of market intelligence?

In practical terms, market research* is used to identify the most promising markets, explore the potential for selling into these markets and work-out how to market products that satisfy market requirements.

MARKET RESEARCH

Market research is a valuable tool for assessing a product's potential for penetrating a particular market. Many companies have failed through using a "trial and error" principle; launching a product onto the market and assessing its acceptance subsequently. This can prove to be very risky as the market may not accept the product. One common misconception is that market research is the sole preserve of large enterprises, some of which grew to their present size by investing in research when they were still small or medium enterprises.

For example, producers' associations producing "natural" foodstuffs have found that there is growing demand from consumers who are health and fitness conscious. Market research is then needed to tap this unmet demand source and to develop a product that is attractive; not only in appearance, taste and associated health benefits, but also in terms of price.

Larger enterprises may have their own market research department with a budget of one or two percent of their sales. Small and medium enterprises (SMEs) can hire the services of a specialized firm or else carry out creative and economic research themselves, such as:

- > consulting the internet;
- requesting help from university students on marketing-related degree courses who are interested in acquiring work experience;
- >using the services of the chamber of trade and industry, or marketing-related organizations;
- > closely observing competitors.

Undertaking market research need not be solely confined to a business startup, or the launch of a new product, but should be an ongoing activity. Generally speaking, market research involves the following five steps:

- defining the problem and the research objectives;
- > developing a research plan;
- > collecting information;
- > analysing the information;
- results.

Small and medium enterprises in India

Small and medium enterprises in India constitute about 90 percent of the private sector. There are around 12 million small and medium businesses (SMEs) in the country across various sectors. They contribute 40 percent of total industrial production and 45 percent of total exports. They produced manufactured goods worth US\$10 435 million in 2005–06 compared to US\$5 696 million in 2000–01. Exports leaped to US\$2 717 million in 2004–05 from US\$1 304 million in the year 2000–01.

Employment numbers increased from 24 million in 2000–01 to 25 million in 2005–06. SMEs in India are the second largest creators of employment; second only to agriculture. The special thrust to this sector has been in the areas of:

- i. employment generation;
- ii. regional dispersal of industries, and
- iii. as a seedbed for entrepreneurship. Almost 38 percent of SMEs are engaged in agriculture-related and food-processing activities.

Simple, low cost market research may consist of visits to supermarkets to look for competing products and to observe product characteristics such as size, packaging, brand and price.

More sophisticated market research can include surveys of potential buyers, expert consultations, visiting specialist fairs and reviewing all primary and secondary information sources.

Jinan Fruit Research Institute of the All-China Federation of Supply and Marketing Cooperatives

The Institute, established in 1980, specialises in technology research on post-harvest operations for fruits and vegetables. The Institute has a modern vegetable processing plant, a controlled atmosphere storage laboratory and a quality inspection system.

The Institute has the Government's permission to import and export processed agricultural products. The main exports are dry and fresh fruits and vegetables, concentrated juices, and quick-frozen, fresh and dehydrated fruits and vegetables.

The results of market research depend on the quality, quantity and timeliness of the information obtained. As for market intelligence, information sources include:

➤ the International Trade Centre (ITC), the World Trade Organization (WTO), the World Bank (WB), the Asian Development Bank (ADB), Food and Agriculture Organization of the United Nations (FAO), Network for the Development of Agricultural Cooperatives in Asia, International Cooperative Alliance (ICA), National Horticulture Research & Development Foundation-India (NHRDF), government bodies (agriculture, industry, foreign trade and other ministries), embassies, associations and trade bodies (chambers of agriculture, commerce, etc.).

Example of secondary sources for agrifood market research

The Agricultural Products Export Development Authority of India has a market research section providing information on various agricultural products. Reports can be downloaded free of charge and include:

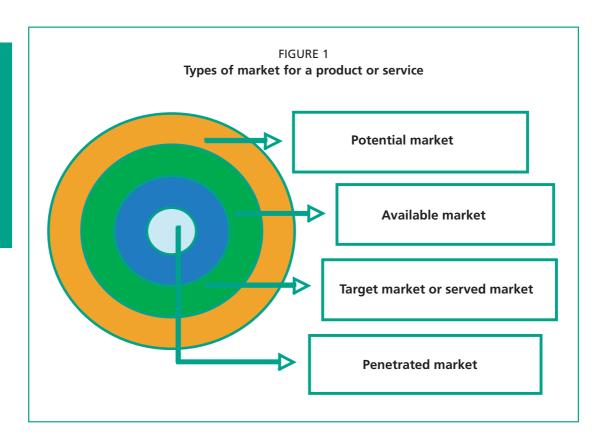
- position of the product in the international context;
- > trends in world production;
- > leading producer countries;
- international trade and trends;
- > leading importing and exporting countries;
- trends in world consumption and per capita consumption for each country;
- > market prioritisation;
- primary information such as sales records, customers and supplier surveys, plus competition analysis.

Cost of market surveys

Information obtained from primary sources has been collected for a specific purpose and is likely to be more expensive than information from secondary sources. Obtaining primary information can be fairly costly for producers' associations. For example, the cost of a market survey in the United States based on secondary information is estimated between US\$200 and US\$2 000. It costs around US\$550 per day to hire a consultant.

Identifying and targeting markets

In areas of little competition, it may be sufficient to have a rough idea of the number of inhabitants living in a certain city or area. As markets become more competitive, macro data such as "100 000 people or 500 businesses in a certain city or area", are no longer sufficient for estimating the size of a target market. Mass marketing may no longer be cost-effective and targeting of specific consumer segments is needed. Potential markets, available markets, target markets (or served



markets) and penetrated markets, as illustrated in Figure 1, need to be identified. Recognizing the scope of each type of market and differentiating between them helps an association to define its goals and target its marketing efforts.

The potential market describes consumers with a potential interest in a product, and sufficient income and ability to access the product. The available market refers to those consumers with the interest, income and access to a given product.

An association can aim its marketing at the entire available market or concentrate on certain segments of the available market – referred to as the **target** market or served market, i.e. the enterprise's target market. When an enterprise succeeds in selling its product into its target market, this is referred to as market penetration.

Market segmentation is necessary to identify potential markets and to define target markets. It consists of identifying groups of buyers with similar preferences.

Consumer markets can be segmented according to the following criteria:

right geographic: the place where potential consumers live, work and tend to shop;

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- demographic: age, sex and family size;
- > socio-cultural: aspects such as group culture, education, nationality, race and religion;
- > psychographic: membership of a social class and/or lifestyle;
- > economic: occupation, income and expenditure patterns

These criteria can be used individually or in combination. The most commonly-used criteria for segmenting consumer markets are economic and socio-demographic criteria since they include easy-to-measure variables. However, it is becoming increasingly necessary to apply socio-cultural and psychographic criteria as well, as they provide information on attitudes and behaviour that are not necessarily related to income, gender or age.

Examples of market segmentation for defining target markets

A sauce manufacturing firm exports its hot sauces to countries familiar with spicy food (geographic segmentation).

A number of bottling firms have created low-calorie drinks to satisfy the needs of diet-conscious consumers (psychographic segmentation).

A firm making frozen fruit pulp has defined its target market as hotels and restaurants in a particular tourist region of the country (geographic and demographic segmentation).

A cheese-making firm has developed several different product lines for distribution to supermarkets; segmented into low-, average- and high-income products (economic segmentation).

Segmentation is used to analyse fresh products market in the United States, using mainly geographic and demographic criteria. Demographic segmentation is used to identify consumer groups. Segmentation tends to be more specific for processed products.

Market niches

Markets can be analysed and explored not only on the basis of segments, but also on the basis of niches. Niches are small market segments, which are not covered by the mainstream market, because most market participants are not interested in them.

A niche has the following characteristics:

- ➤ niche customers have a specialized set of needs and expectations with demanding quality requirements;
- > customers prefer, or to pay more for, a product with the attributes that satisfy their needs.

Niches represent interesting market opportunities for producers' associations, although they need to bear in mind that niches are small markets. Most popular market niches are the organic, fair trade, natural and nostalgia markets. Niche market products often pay better prices for producers, or they are associated with providing advisory services, training and certification to upstream producers.

Organic product markets are one of the fastest-growing, as demand from many consumers is rising. The United States is the world's leading market for organic products, followed by Germany, the United Kingdom, France and Italy; together accounting for sales worth US\$23 billion in 2002. However, in the same year, Asia's organic market was negligible. Most of Asia's organic production is for export, with an extensive offering in many products. Some examples include: tea from India and Sri Lanka; rambutan and durian fruits from Indonesia and Malaysia; pineapples from Malaysia and the Philippines; bananas from the Philippines; mangoes from India, Pakistan and Philippines; litchis from China; and coffee from India, Indonesia and Sri Lanka.

The European Union is the leading fair-trade niche, with a market worth an estimated US\$300 million, followed by the United States with US\$100 million. In this fair trade niche, the fastest-growing markets are Austria, France and Norway, with a growth rate of 100 percent between 2001 and 2002. Foodstuffs represent approximately 69 percent of the fair trade market, where the main products are coffee and bananas. In addition, small volumes of many new products have been introduced in recent years; including tea, scented rice, fresh fruits, juices, cocoa, sugar, honey and wine.

The ethnic market in the United States of America is another example. For instance, market surveys reveal that many of the 28 million Asians living in the

country (11 percent of the total population) prefer ethnic products. Some of the main products exported to the United States are traditional bakery products, processed rice and wheat products, noodles, pulses, beetle nuts, jams and jellies, cheese, fruit and vegetables, spices, root crops and tubers.

Haldiram's¹, an Indian company specializing in producing sweets and snacks, is a successful example of positioning in market niches. This agribusiness implements an informal market intelligence system by means of personal business contacts with buyers in Europe, which has facilitated the identification of demand for different types of organic and nostalgia products in the United States' market.

Product differentiation

After exploring and selecting the target market, suppliers need to think about how to differentiate products. Four key factors need to be considered:

- > Products: quality, durability, safety, design, functionality, price.
- > Services: delivery, training, consulting, after-sales service.
- > Human resources: credibility, competence, courtesy, communication.
- ➤ Image: identity, symbols, media.

In the fresh food sector products are often poorly differentiated, as they are often sold in bulk without a brand and via intermediaries. However, a combination of quality, price and efficient logistics has differentiated and positioned certain products. Indian basmati rice and mangoes; Philippine bananas and pineapples; Indian and Sri Lankan tea, and Indonesian coffee are examples of effective product differentiation.

Producers' associations can differentiate products by:

- raea: through using local raw materials specific to the location;
- ➤ local know-how: products made using local know-how have been passed down from generation to generation among the local population.

Products increasingly need to be certified in order to provide a guarantee to consumers that a product complies with set regulations, such as organic, fair trade or destination of origin².

¹ http://www.haldirams.org.

² Marketing success through differentiation of anything. Harvard Business Review No. 80107

Conclusions on the case study

Answer the following questions making optimum use of your new knowledge.

1.	Which do you think are the success factors that led the Minami-Satsuma Agricultural Cooperative to win an increasing share of the international market?
2.	How did the cooperative acquire market knowledge about the United States and Japan, as well as about some European countries?
3.	Once it had identified the market opportunity, the cooperative focused its efforts on two factors in order to enter the markets with competitive products. What were these factors?
4.	Can you identify attitudes and principles in the case study, other than business strategies, that helped to achieve the results described?

Group exercise

- 1. Imagine that you are the manager of the National Horticulture Research and Development Foundation and that the Board of Directors has put you in charge of developing a market survey to identify potential buyers in the domestic and international market.
 - i. List the information you need in order to identify potential broccoli buyers in the domestic and international market.
 - ii. Next you must identify possible sources of this information; such as competitors, input suppliers, the Internet and others. List possible information sources that will help you to identify potential broccoli buyers in the domestic and international market.
 - iii. To follow-up the contacts made and the information compiled, design a format that will enable you to record, consult and update this data.
- 2. As a manager of the Foundation, you decide to start laying the basis for a simple on-going system of market intelligence on broccoli, given the importance of broccoli for your organisation and as a way of gradually learning to manage market intelligence tools. For this you need to start by compiling information containing data on competitors such as prices, revenues and other data and to compare this data with that of your own associative enterprise.
 - i. List the basic information you need in order to compare your situation with that of your competitors.
 - ii. List possible information sources that will help you to compare some of your enterprise's production and commercial indicators with those of your competitors.
 - iii. Design a format that will enable you to record, consult and update this data.
- 3. To complement the above exercise, do some Internet research on the broccoli market. Use search engines to search for descriptors such as; broccoli market, broccoli demand, broccoli importers, broccoli consumption, USA Broccoli market, Europe broccoli market. Prepare a report on your research results for submission to the Foundation.

(Continued...)

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- 4. Assess your association's ability to access a niche market by answering the following questions:
 - i. Is your association physically in a position to serve the niche in which it wishes to specialise?
 - ii. Does it need to develop distribution channels, or will it find it easy to penetrate the market using its existing channels?
 - iii. Can you establish a direct channel with your potential customers by telephone, fax or computer?
 - iv. Is your enterprise capable of refocusing its marketing strategy or redesigning its products when circumstances dictate? What is the likelihood of this niche disappearing?

Summary

- The quality of human capital in any organization is one of the most important factor for success.
- Market opening and consumer trends have defined a new scenario for trade in foodstuffs. Market growth as been significant for products "promoting" health foods, functional, exotic or nostalgic food. Virtually all of these products have a range of different presentations and compete for consumer preferences, with local products placed side by side with foreign ones. These trends present producers' associations with domestic and international market opportunities.
- ➤ Market information needs to be collected and analysed before taking production and processing decisions.
- Market intelligence enables enterprises to deduce or identify changes in market trends and in their competitors' behaviour, and allows them to prepare a flexible and timely response. The information in question can be wide-ranging and diverse. It is necessary to identify and consult a wide variety of information sources.
- Market research is used to identify the most promising markets, to explore the potential for selling in them and to decide how to market products to satisfy market requirements. The results obtained rely on the quality, quantity and timeliness of the information analysed.

3

- There are four basic steps for planning the market for an association's products: i) situation analysis:
 - ii) objectives setting;
 - iii) development of strategies and action plans; and
 - iv) design and operation of coordination, monitoring and control mechanisms.
- Market research involves the following five steps: defining the problem and the research objectives, developing the research plan, collecting information, analysing the information, and presenting the results.
- An enterprise's target market is that group of potential consumers with the required physical and financial buying capacity, which the enterprise has decided to try to attract in order to buy its products. The segment that actually decides to buy the product is called the penetrated market.
- ➤ Producers' associations should consider participation in market niches as an opportunity for reaching groups of consumers who are sensitive to certain issues and are interested in products with special attributes valued by them. Niches of interest for producers' associations include the organic, fair trade, ethnic and nostalgia markets, as well as the health food, exotic and gourmet markets.
- It is important for enterprises to successfully differentiate their products in terms of: quality, price, timeliness or other factors valued and appreciated by consumers. Increasingly, this differentiation needs to be certified by a third party that guarantees to the customer that these special attributes will actually be provided by the product(s) being bought.

Unit assessment

Answer the following questions on additional sheets of paper: 1. Define what you understand by the terms market, potential market and target market. 2. Has your producers' association implemented any market intelligence or market research strategies or instruments? a) If you answered yes: What is your assessment of the results achieved? Were they valuable? Were any decisions taken based on them? b) If you answered no: Do you think you could implement them? What actions need to be planned and carried out to achieve this? 3. Do you think it is a good idea to target your associations' products in specific market niches? What opportunities can you see for doing this? What are the risks? 4. What are the main characteristics of your enterprise's products or production processes which are, or could be, used to differentiate your product offering in markets?

While attempting to answer these questions if you have any doubts or feel that you do not have sufficient information for the analysis, take another look at the manual, consult the student's handbook or contact the facilitator.

Planning: a key factor for competitiveness

UNIT TWO

LIST OF TOPICS

- 1. Setting the context
- 2. Case study: The Chiang Mai Agribusiness. See also case study: the agribusiness Agrohortalizas
- 3. Case study analysis
- 4. General planning aspects
- 5. Planning and its application
- 6. Inventory management
- 7. Conclusions on the case study
- 8. Group exercise
- 9. Summary
- 10. Unit assessment



market opportunities, or from a need to overcome the constraints and weaknesses of the enterprise. The skill of enterprise managers lies in their ability to identify, assess and manage risks and then to decide whether they are worth taking.

Failing to deliver an agreed quantity and quality of a product seriously harms an enterprise and undermines not only its own image, but may also have repercussions on the country's image. Business planning* is needed to assess production and marketing risks, to make sure contracts are met, and to forecast the human capital, raw material and financial needs of any enterprise.

Does your producers' association have to manage unnecessary risks – risks that can be avoided? Does it fail to adhere to delivery contracts due to a lack of planning? Are resources being used without assessing ways for reducing their

use or of using them more rationally? Can your producers' association foresee unavoidable risks? What are the costs of risk management? Are there production and sales plans in order to avoid breaching contracts? Is the workforce trained to foresee and to manage production and sales risk? Is there a satisfactory level of inventory management?

By the time you complete this unit you will be able to:

- Identify cases of business failure and problems caused by lack of foresight in planning a producers' association.
- Recognise that planning facilitates access to markets, and it allows an organisation to make optimal use of its scarce financial, human, physical and technical resources.



- 60 Know the consequences of lack of planning foresight.
- Define planning and know the implication of good business planning.
- Identify the various levels of production planning and the different approaches used to design operational plans within an enterprise.

Setting the context

Planning has become more important in recent decades as international trade has become more complex and retail systems have become more sophisticated. Agricultural value chains in general have improved and this calls for better coordination among the members of the chain.

Supermarkets have become the biggest food distribution channels in many cities. One of their most important requirements is a commitment from suppliers to continuous, large-volume orders under high quality standards. The timing of deliveries has become increasingly important as shelf space is more and more expensive and turnover rates of products tend to be higher.

These above factors have all contributed to the fact that business planning systems have become more important in order to enter and to remain in competitive markets.

Production planning has become a fundamental instrument for achieving competitiveness, since some of its advantages are to:

- increase production in order to meet increasing demand by markets;
- reduce costs by collective bargaining on inputs;
- > take advantage of international markets;
- > enter into beneficial sales contracts;
- ➤ facilitate financial management.

Planning in a Producers' Association

The Indian Farm Forestry Development Cooperative (IFFDC)

The IFFDC was promoted by the Indian Farmers Fertiliser Cooperative in 1993 with the following objective: 'to enhance the socio-economic status of the people through collective action by Sustainable Natural Resource Development'. More than 26 000 ha of wastelands have been converted into green forests by promoting 145 village-level primary farm forestry cooperatives in three states. They have a total membership of 28 500 individuals, out of which 38 percent are landless, and 51 percent marginal and small farmers. Special emphasis has been laid on women's participation and they make-up 30 percent of total membership. IFFDC presently maintains 1.6 million trees through various activities including; weeding, pruning, irrigation and plant protection measures. It also undertakes: i) the establishment of new plantations; ii) capacity building activities among various stakeholders; iii) micro-enterprise development, and iv) income-generating activities for strengthening primary forestry cooperatives. IFFDC also improves socio-economic conditions within the rural community by promoting a participatory, integrated rural development model in various States.

IFFDC markets fuel wood, timber, fodder grass, charcoal, seedlings*, and minor forest products within its forestry projects. Primary cooperatives also undertake other crafts and make handicraft products.

Source: Indian Farm Forestry Development Cooperative Limited, Annual Report 2005-06.

Case study: The Chiang Mai Agribusiness

Chiang Mai Agribusiness in the mountains of northern Thailand agreed to deliver two metric tonnes of broccoli and cauliflower per week to one of the country's most important retail chains. Delivery in the initial months of the rainy season went well. However, although weekly plantings had been planned in different regions in order to cover the required demand from the supermarkets, the firm had overlooked two critical details in its planning process:

- > 25 percent of the cultivated land had no irrigation system;
- ➤ 15 percent of the cultivated land was in areas prone to frost.

Problems began after six months when, in the second week of June, production shortfalls on non-irrigated land led to problems in meeting agreed output targets. The enterprise then decided to buy-in from local suppliers. One month later, however, it was still not possible to harvest the required volume. Local prices for broccoli then started to rise, and with it the cost of buying-in broccoli from local growers. However, the firm continued to struggle as it wanted, at any cost, to avoid losing such a good customer.

By the third week in August, the enterprise was in debt and had received complaints from the supermarket because the product it had delivered were failing to meet the specifications stated in the contract. Most importantly, the produce varied in size and degree of maturity. By the end of October, the situation was no longer sustainable; the production deficit was around 30 percent, and a frost had killed-off 10 percent of the developing crop. The firm was now heavily in debt and found it impossible to continue delivering produce to the customer, who then filed a complaint. At the beginning of December the firm closed-down and more than 200 producers found themselves without a market outlet. The problem might appear to have been caused by climatic conditions or lack of irrigation. However, poor production planning was the real cause of business failure.

Case study analysis

Based on your personal experience, consider the following questions concerning the case study:

- 1. In your view, what were the factors preventing Chiang Mai Agribusiness from providing continuous supplies to the supermarket?
- 2. Could some of these factors have been prevented? What action would have been needed to achieve this?
- 3. What was the impact of the unforeseen events?
- **4.** Has anything like this happened in your enterprise? What lessons were learnt from it?
- 5. Suggest some principles, values, attitudes and systems which you think should be adopted by the actors involved in an organization like the one described in the case study, in order to ensure its success.

Bear in mind that at the end of the unit you will be asked to answer the same questions in the light of the new knowledge you will have acquired.

General planning aspects

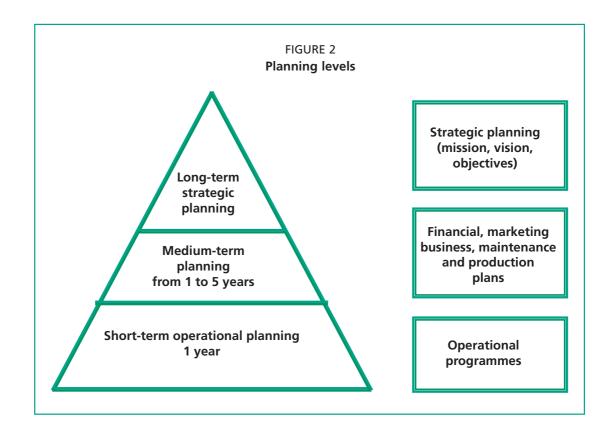
Planning can be defined as the art and technique of selecting the best available alternatives for decisions that affect the future environment. Over the past century, planning has changed from a discipline within the purview of experts to a discipline which involves most employees in an organization. Planning calls for active management involvement and focuses on establishing and maintaining a creative and continuous process of improvement in order to achieve long-term objectives and short-term results. Values play a key role, as they are the basis for organizational alignment.

Values play a key role in planning. It is essential to consider and respect values in order to achieve motivation and participation in planning, and appropriation and compliance in implementation.

The two main types of planning are strategic planning and operational planning. Strategic planning is designed to meet an organization's general goals, while operational planning is for implementing strategic plans on a day-to-day basis. Although strategic plans and operational plans can both be defined as part of an organization's mission, strategic plans differ from operational plans in terms of their time span, scope and degree of detail. Three basic planning levels (Figure 2) can be defined:

- ➤ long-term or strategic planning;
- > medium-term planning, also known as programme planning or aggregate planning;
- > short-term or operational planning.

Long-term strategic planning is a powerful tool for diagnosis, analysis, discussion and collective decision-making within an organisation. Strategic planning identifies expectations and potentials and integrates the visions of an



enterprise – or of the whole food chain – as management jointly designs and plans concrete actions for the future. Strategic planning starts with the questions: Who are we? Why? and for What are we operating?

Strategic planning helps to clarify the issues and provide basic answers to questions concerning the behaviour of humans such as: Who are we? Why? for What are we operating? The answers are used to develop mission statements and visions which guide individual and collective action.

Planning and its application

Strategic planning should be seen as a participative process that will not resolve every uncertainty, but will enable a producers' association to map-out a policy identifying its long-term goals, as well as to define its vision, mission and strategic objectives. Appendix 1 of this unit contains a methodological guide to facilitate this process.

Agribusinesses and enterprise management can be divided into three phases: planning, implementation and control. The objective of the process is to define tasks, which need to be carried out, to execute these tasks and to check that tasks have been carried out.

Based on each firm's specific characteristics and resources, planning allows the firm to determine which activities need to be carried out and to assess the sequence, timing and any costs of implementing specific activities.

Once an enterprise has established what it wants to do, it must optimize the use of its scarce human and financial resources. The next stage is to define objectives and to draw-up schedules which determine the sequence and timing of production and processing activities.

Production and marketing by the Gunma Prefectural Union of Agricultural Cooperatives in Japan

The Gunma Prefectural Union of Agricultural Cooperatives in Japan: guides cooperatives; performs audit functions for agricultural cooperatives; provides training and education; and also drafts business and other plans for its members. In addition, the cooperative plays a significant role in the promotion of business. It works on the following principal activities:

- 1. Establishing the 'grape plan': the main objective is to enhance agricultural production and productivity as well as the income of farmers. The plan stands for Gunma rural district agriculture and people;
- 2. Fostering of farm management; and
- 3. Promotion of production/distribution of value-added* unique agricultural products.

(Continued...)

Production and marketing by the Gunma Prefectural Union of Agricultural Cooperatives in Japan (continued)

The cooperative produces vegetables, fruits, flowers, dairy and beef cattle, pigs, poultry, rice and meat. The Prefecture is also known for its quality rice 'Goropikari' – the brand name of the rice produced in the area. The 'grape plan' also focuses on development of a comfortable and affluent rural community, development of a new distribution marketing strategy which ensures: maximum economic returns to the farmers; promotion and dissemination of an upgraded technology, and the implementation of the Regional Agricultural Promotion Plan.

For associations that are involved in farm-level activities, planning facilitates decisions regarding the timing of agricultural operations. For example, production quotas may be assigned to every member of the association in line with the member's production and human resources. An example of setting a strategic objective for a producers' association is to increase the production area and yields in order to meet anticipated buying volumes. Targets then need to be developed in order to guide the timing and management of any necessary production increases.

Medium-term planning includes the following steps:

- design of a market-oriented sales plan which indicates periodical sales targets;
- > combining individual production forecasts by association members into total production estimates;
- > using the estimated total production volume to calculate labour, raw material, machinery and finance requirements;
- > developing strategies to meet production shortfalls where sales contracts have been committed;
- > selecting the best alternative to optimize the use of scarce resources in accordance with the association's objectives and operational capacity.

Once the medium-term or aggregate plan has been defined, the next planning phase is operational or short-term planning. Operational or short-term planning must correlate with medium-term plans. Most operational plans in agribusiness are concerned with how to schedule production in order to meet agreed contract volumes and qualities. Operational planning should comply with the firm's policies, strategies and general approaches.

For business start-ups or expansions, it is essential to prepare a **business plan**. This is a written document clearly defining a firm's business objectives, the methods it will use to achieve these objectives and associated targets, and an administrative and financial plan for its business operation.

PRODUCTION PLANNING AT INDIVIDUAL FARM AND AGRO-INDUSTRY LEVEL

A producer's association may need to also plan production and processing activities at farm level. Below is a description of the main steps to follow:

Farm production planning for individual members:

1. Taking stock of existing resources

It is important to classify and quantify:

- i) existing natural resources (water, land);
- ii) capital resources (tools, farm machinery, inputs, planting material);
- iii) human resources, and
- iv) financial resources (equity, credit). This information needs to be systematized (see Appendix 2).

2. Acquisition of knowledge of production activities

An annual production plan should be drawn-up listing all farm activities in chronological order (see Appendix 2).

3. Listing essential resources not currently available

It is necessary to measure the natural, capital, human and financial resources necessary to fulfil production commitments and to determine which extra resources are required.

4. Preparing activity schedules

An "activity-time-resources" matrix specifies dates on which production activities need to be carried-out and also indicates which resources are used. The matrix will become the core of the planning process. One matrix needs to be developed for every production unit.

5. Drawing up an integrated production plan

This plan considers individual schedules of activities and its aim is to assign a production start date for each product. The plan takes into account available production resources for each production unit, and correlates sales commitments and agreed delivery schedules. It also makes provision for unforeseeable negative climatic conditions such as frost, rain, flooding or drought and its effects on production and harvesting activities.

Planning for agro-processing activities:

1. Description of existing resources

Available production resources have to be classified and quantified. It is important to detail existing capital equipment such as machinery, energy and water resources, as well as raw materials, human and financial resources. An inventory helps to systemize existing resources.

2. Mapping agro-processing activities

Flow diagrams for each process need to be prepared including material balances and production time commitments.

3. Assessing required resources which are not available.

Raw material, human, capital and financial resource needs must be specified for each proposed production activity, in order to determine which resources are required and how to secure them.

4. Setting-up an integrated production plan.

The sales plan indicates delivery schedules and product specifications. An integrated production plan defines manufacturing and delivery dates, endeavouring as far as possible to minimize inventories of raw materials, as well as materials in process and finished products.

5. Drawing-up activity schedules

A detailed schedule of activities needs to be drawn-up incorporating information from the production plans. An activity-time-input volume-cost matrix is also necessary (see Appendix 3).

Inventory management

One of the key principles of operational planning for agro-processing is inventory management. Inventory includes inputs such as unprocessed goods, packaging materials and chemicals, as well as work in progress and finished goods. There are various strategies for inventory management:

>Just-in-case system

This system aims at maintaining inventories to assure production for a certain number of days, depending on the type of firm. This system does not require the collection of a lot of information, although it should take account of every link in the agrofood chain .

➤ Push system

This is supply-driven rather than being a demand-driven system. Inventory levels of finished goods determine order levels for inputs. Input orders and

the timing of replacement orders depend on historical information about customers, suppliers and production levels. Under this system raw materials and other inputs should arrive when they are needed for planned production activities.

➤ Push production system (just-in-time system)

This system aims at having exactly the right amount of inventory. The basic idea is to start manufacturing a product only just before it is needed in the next processing step of needed for product delivery. Just-in-time aims at eliminating or reducing inventories to the minimum. The system requires an extremely flexible production process.

Conclusions on the case study

Having compared your prior knowledge with the subject content of the unit, answer the following questions making optimum use of the new knowledge you have acquired.

1.	In your view, what were the factors preventing Chiang Mai Agribusiness from complying with its commitment to provide steady supplies to the supermarket?
2.	Could some of these factors of failure have been prevented or minimized? What actions would have been needed to achieve this?
3.	What was the impact of the unforeseen events?
4.	Has anything like this happened in your associative enterprise? What lessons were learnt from it?
5.	Suggest some values, principles and attitudes which you think should be adopted by the actors involved in an organization like the one described in the case study, to ensure its success?

Group exercise

1. We return to the example of the Chiang Mai Agribusiness.

As a result of the preliminary market survey by the management, contact was made with a local supermarket chain which showed interest in buying twenty 20-ton containers of broccoli per week for one year. Twelve cooperative members are interested in supplying broccoli to this market, and have the land availability detailed in the following table.

Producer	Hectares/producer	Producer	Hectares/producer
1	14	7	14
2	21	8	21
3	21	9	28
4	28	10	14
5	28	11	21
6	14	12	14

- a) Your association has made you responsible for the weekly and monthly planning of broccoli production in order to meet this order.
 - √ Calculate the total surface area (hectares) required per week to meet the order.
 - √ Calculate the total number of seedlings required per week and per month.
 - √ Assign each member with the number of hectares he/she would have to cultivate, and the date and the number of seedlings required each week. Make all these calculations for a full growing cycle (12 weeks), bearing in mind that the planning process is repeated every 12 weeks throughout the year.
 - To complete this exercise, revise the general information that introduced the Chiang Mai Agribusiness. Present the results using the format suggested in Appendix 2.
- b) The supermarket's agent also exports frozen broccoli to Europe. The firm requests a weekly delivery of ten 20-ton containers of fresh, size 30-50 broccoli (flower heads* of between 30 and 50 mm in diameter) throughout the year.

Twenty-four cooperative members, with the land availability shown in the table below, have stated their interest in supplying this new customer.

Producer	Available surface area (hectares)	Producer	Available surface area (hectares)	Producer	Available surface area (hectares)
1	21	9	14	17	14
2	28	10	21	18	21
3	35	11	21	19	21
4	14	12	14	20	35
5	28	13	28	21	14
6	35	14	35	22	21
7	21	15	21	23	14
8	14	16	14	24	35

Imagine that you are the manager of Chiang Mai Agribusiness and need to present the exporting firm with a planning and harvesting timetable for guaranteed supplies:

- √ Calculate the quantity of raw material (fresh broccoli) required per month and per week to meet customer requirements.
- $\sqrt{}$ Calculate the total number of hectares that need to be planted per week and the number of seedlings required for that surface area.
- √ Draw-up a planning and harvesting timetable and assign a planting area (number of hectares) to each of the 24 producers who have shown an interest in supplying this customer, for the first growing cycle (12 weeks), bearing in mind that the planning process is repeated every 12 weeks throughout the year. All producers need to be assigned an area and it does not matter if two producers start planting in the same week.
- √ Present the results using the format you designed for the previous exercise, or a similar one.

Summary

The key ideas of this unit are:

- ➤ Planning can reduce costs, optimize the use of scarce resources, improve food safety and enable a business to fulfil contracts. It helps producers' associations to become competitive, as it enables them to define when and how much, and to whom, to supply.
- Failure to use planning mechanisms increases to the chance of breach of contract regarding delivery schedules. This can have detrimental effects on the association and its members and may lead to losses of important delivery contracts.
- ➤ Planning can be classified into: i) short-term planning; ii) medium-term planning, and (iii) long-term planning. Short-term plans are largely operational schedules; while medium-term tools comprise sales, finance, maintenance, business and production plans. Long-term plans include participative strategic planning.
- Short-term planning has to be consistent with both medium-term planning and strategic planning, and should reflect the enterprise's policies for: i) inventory management; ii) its existing financial structure; and iii) its ability to secure supplies of inputs and raw materials. The most commonly-used inventory management systems are just-in-case, and just-in-time systems.
- Medium-term plans are used to develop production plans. These include production targets related to labour inputs, machinery, stock levels and capital. If resources are limited within an enterprise it is necessary to identify other businesses that can make-up for any production shortfalls.
- ➤ Planning needs to be implemented at farm-level and at every stage of processing.

Unit assessment

Answer the following questions on additional sheets of paper:

In the market in which your associative rural enterprise competes, do you find that the number of firms in the market is increasing all the time? Is real or potential demand concentrated at certain times or days in the year? Are supermarkets a major player in distributing the type of products your organization makes?
Do you consider your associative enterprise's planning strategies and mechanisms to be appropriate to meeting these market characteristics? Could
they be improved?
In your own words, define what you understand by the following terms: (a) planning; (b) strategic planning and (c) master production schedule or operational plan.
Within your associative rural enterprise's sphere of activities, which production planning strategies and instruments have been, or are usually, implemented?
Has your associative enterprise defined long-term development goals? Do you think this is a worthwhile planning exercise?
Is inventory management important to your associative enterprise? What is the enterprise's inventory management strategy? Do you think it could be improved? If so, what suggestions would you make?

If when attempting to answer these questions you have any doubts or feel that you do not have sufficient information for the analysis, take another look at the manual, consult the student's handbook or contact the facilitator.

Glossary

Added value

Increase in value or worth of a product through transformation such as cleaning, sorting, grading, processing, packaging, etc.

Business planning

Defining the quantity and time involved when products are made and distributed, striking a balance between the enterprise's production and resources.

Competitiveness

The ability to supply products to a market at a cheaper price, of better quality and under better general conditions than other suppliers.

Consumer

A person who buys a product and uses it to satisfy his or her needs and wants.

Heads

Flowering part of broccoli or other similar brassica plants such as cauliflower.

Marketing

All activities, which are carried out between production or processing and the end consumer. This includes selling, advertising, logistics etc.

Market research

Analytical tool for assessing the potential of a product or service to enter a specific market or to increase its share of that market.

Micronutrients

Vitamins, minerals and trace elements in foodstuffs.

Planning

Choosing the future course of action most likely to produce the desired results. It is a methodology for selecting alternatives.

Seedling

Product from germinating a seed, usually still bearing the cotyledons or first leaves of the embryo.

Bibliography

REFERENCE LITERATURE

- **Daman Prakash.** 1999. *Japanese Agricultural Cooperatives Then and Now.* International Cooperative Alliance, New Delhi.
- Daman Prakash. 2006. Methods and Techniques of Developing Cooperative Business for Higher Economic Results. Rural Development and Management Centre, New Delhi.
- Daman Prakash. 2005. Strategic Alliances The Key Factor to Cooperative Competitiveness.
 Rural Development and Management Centre, New Delhi.
- FAO. Studies in Marketing of Agro-Industrial Products. http://www.fao.org/documents
- Guo Jing. 2002. Project Report. Course 17. International Cooperative Alliance, New Delhi.
- Harvard Business Review. Marketing Success with Differentiation of anything.
- Indian Farm Forestry Development Cooperative Limited (IFFDC). Annual Report 2005-06, New Delhi.
- **International Cooperative Alliance**. 2006. Regional Office for Asia-Pacific, New Delhi. Report of 20th ICA-JTC Agricultural Cooperatives Management Training Course.
- Kotler, P. 1996. Marketing. Prentice Hall 8th edition.
- National Horticulture Research and Development Foundation (NHRDF). Annual Report 2004-05. Nasik, India
- Perspective and Project Planning for Agricultural Cooperatives Sector for Asia. 1991. Report of the ICA Study Mission. International Cooperative Alliance, New Delhi.
- OECD. 1998. The Future of Food. Long Term Prospects for the Agrofood Sector.
- **Shepherd, A.** 2003. *Market Research for Agroprocessors.* Marketing Extension Guide. FAO. Rome.

WEB SITES RELATING TO MODULE 3

http://www.adb.org

http://www.agritech@glide.net.in

http://www.apeda.org

http://www.chinacoop.com

http://www.fao.org

http://www.haldirams.org

http:///www.hindustantimes.com

http://www.hindustantimes.org

http://www.ica.coop

http://www.iffdc.org

http://www.inkud.org.id

http://www.inforresources.org

http://www.nhrdf.org

http://www.nafed-India.com

http://www.nead.org

http://www.tecnituber.com

http://www.tecnituberindia.com

http://www.zenchu-ja.or.jp

http://www.zennoh.org.jp

http://www.zuari-chambal.com

Exchange rates: local currency to 1 US dollar. December 2006						
China		RMB Yuan	7.8			
India		Rupees	46.00			
Indonesia		Rupiah	11 000			
Malaysia		Malaysia Ringgit	3.5			
Japan		JapYen	121.1			
Philippines		Pesos	48.5			
Thailand		Baht	40			

Appendix 1

Strategic planning manual

INTRODUCTION

Entrepreneurs need to orientate their strategies towards the market in order to expand and consolidate their business. Market orientation is based on the principle of satisfying the needs of consumers. It involves three main factors:

- ➤ adding value (the plus factor which the enterprise assumes that customers expect from it);
- > meeting expectations;
- > achieving and maintaining a competitive advantage.

The planning process therefore requires a document analysing objectives and strategies. This is known as a "planning manual". The manual contains nine chapters. The secret to ensuring that the planning process is actually carried-out successfully is to produce a good planning manual.

The nine chapters in the manual are as follows:

1. Introduction

Reasons for producing the planning manual

Scope

Timetable of meetings

Timetable for submitting executive summaries

2. Information flow

Setting-up strategy committees

Setting-up operational committees

Appointment of the planning coordinator

3. Who are we?

Diagnosis of the current situation

Revision of the current culture, mission and vision

Description of the organization's orientation

Characteristics that set the organization apart

Profiles (historical data)

Prevailing economic environment

Competition

Subjective factors

Strengths, weaknesses, threats and problems

Opportunities

4. Where do we want to get to?

Corporate assumptions

Objectives

5. How do we plan to get there?

Corporate strategies

Marketing

Sales

Human resources

Production

Finances

Tactics

Policies

Procedures

6. When do we plan to get there?

Programmes

Timetables

7. Who is in charge?

Designing the organisational chart

Assignment of areas/posts/staff

8. Cost analysis

Budget

Securing financing

9. Conclusions

Commitments undertaken by organization members

Anticipated results after starting to implement the strategic plan

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OUTLINE OF THE PLANNING MANUAL CONTENT

Chapter 1. Introduction

This chapter should explain the grounds and scope for the decision to initiate a planning process.

It should state the dates for planning committee meetings and the committee report which assigns the tasks detailed in the manual, as well as indicating who will participate in the said committee.

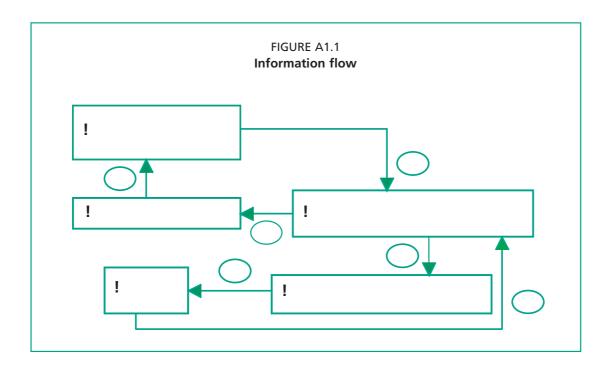
Chapter 2. Information flow

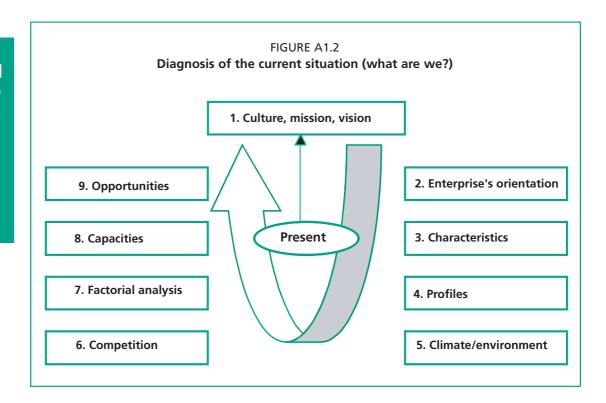
A successful planning manual should define good information flow. Figure A1.1 shows the steps to be followed.

Chapter 3. Diagnosis of the current situation (what are we?)

Before starting to define any strategic objective, it is important to ascertain the enterprise's current situation. The objectives will be established on the basis of this diagnosis (Figure A1.2). The diagnostic technique consists of analysing nine variables providing comprehensive information on the organisation's situation.

a. Culture, mission, vision. This part of the diagnosis analyses the enterprise's values on the analysis date, how its sees its mission and the vision it has on that date.





- b. Enterprise's orientation. This part enables us to identify "what the enterprise does" and generates ideas for redefining the organization's strategic mission at a later date.
- c. Specific characteristics. Every organization has a number of characteristics that set it apart, and this part of the diagnosis is aimed at making an in-depth analysis of all these characteristics.
- d. **Profiles**. These are the most important numerical data, spanning the past four or five years, to ascertain the enterprise's past behaviour (e.g. revenues, costs, workforce, cash flow surpluses).
- e. Climate or environment. This part describes all macro- and microeconomic variables which affect the enterprise's satisfactory performance in any way (e.g. political situation, location of the facilities, communication routes, input availability, employees' socio-cultural level).
- f. Competition. This part analyses who the competitors are, with the term 'competitors' understood to mean those enterprises which participate in the same market as one's own enterprise, with the same or similar products or substitute products. Competition is analysed by identifying rivals' strengths and weaknesses.
- g. Factorial analysis. This is an analysis of subjective factors that cannot be posted in the accounts, but nevertheless affect the organization's financial results.

- h. Capacities. This is the total of the strengths, weaknesses, threats and problems affecting the organization on the analysis date. These capacities can be defined as follows:
 - > Strengths: Distinctive features that the enterprise possesses on the analysis date which allow it to continue its growth and consolidation but which, unless given special emphasis, could turn into weaknesses.
 - ➤ Weaknesses: Circumstances which could exert a negative effect on the satisfactory growth and consolidation of the enterprise on the analysis date.
 - > Threats: Circumstances within the environment that affect, or could affect, the enterprise's growth and consolidation on the analysis date, but which have been fully identified meaning that immediate action must be taken to minimize their impact.
 - ➤ Problems: Circumstances in the environment which constrain the enterprise's growth and consolidation, but about which not much can be done to minimize their impact. "You just have to live with them" (e.g. lack of public services in the place where the enterprise is based, prevailing political system, etc.)
 - > Opportunities: Situations which the management can tap or exploit to aid the enterprise's growth and consolidation.

It is suggested to use the analysis sheet (Table A1.1) for the diagnosis. (expand this sheet to accommodate all of the information you wish to include):

TABLE A1.1

Chapter 3. Diagnostic analysis sheet

	Date: _					
Concept	Description					
Culture						
Mission						
Vision						
Enterprise's orientation/business						
Characteristics						
Profiles	2002	2003	2004	2005	2006	
 Revenues 						
• Costs						
 Staff numbers 						
• Other						
Climate/environment						
Competition						
 Strengths 						
 Weaknesses 						
• Threats						
 Problems 						
Opportunities						

Chapter 4. Setting objectives (where do we want to get to?)

The next step after completing the diagnosis of the organization is to identify the key diagnostic variables. In principle, if we focus on the most important variables, we automatically tackle the least important ones, minimizing the number of variables identified and allowing us to set objectives for the key variables.

Once these key variables have been identified, we have to analyse the economic and operational "assumptions" that could affect or constrain the achievement of our objectives. Such a filter makes it all the more feasible to achieve each objective.

The motto is: "You cannot plan without assumptions".

The list of economic assumptions might be as follows, although it is not exhaustive:

- ➤ Global and sectoral trend in gross domestic product (GDP).
- Expected inflation.
- > Forecast exchange rate.
- > Economic growth.
- The country's political situation (regional and national).
- Expected legislative changes.
- Growth in the Economically Active Population (EAP).
- > Forecast purchasing-power growth.
- Expected tax changes.
- ➤ Other.

Below is a non-exhaustive list of operational assumptions:

- The enterprise's financial capacity during the period in which the planning will be carried out.
- Real potential to break into new markets.
- Employees' ability to rise to new challenges.
- ➤ Other.

The next task is to set strategic objectives for each of the most representative diagnosis variables (Table A1.2). It is suggested that the following format is used:

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TABLE A1.2

Chapter 4. Format for setting strategic objectives

Number	Key diagnostic variable	Strategic objective

Chapter 5. Defining strategies (How do we plan to get there?)

After defining the strategic objectives, the next step is to assign a strategy to each of these objectives. A strategy means how we intend to ensure the objective is achieved. Objectives should be classified by organizational area, assigning objectives and strategies to sales, production, finance or accounting, etc.

Table A1.3 is helpful in defining strategies.

The objectives and the strategy need to be supplemented by three additional elements: tactics, policies and procedures.

- a. Tactics. These can be described as "microstrategies" proposed by the operational departments responsible for achieving the objectives. Tactics are a way of involving all employees and getting them to help to achieve the objectives.
- b. **Policies.** These are a framework of reference within which the objectives can or must be achieved. Without policies, achievement of the objectives could be disorderly and interpreted in different ways by those involved.

TABLE A1.3

Chapter 5. Format for defining strategies

Number	Strategic objective	Strategies

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c. Procedures. These are the steps and activities which must be carried out in order to ensure compliance with the objective, strategy, tactics and policy.

Below is an example of how these concepts interrelate:

- 1. Strategic objective: to focus the enterprise's efforts on customer service.
- 2. Strategy: to instigate a change of mindset in the organization.

3. Tactics:

- ✓ Staff training.
- ✓ Setting service-quality standards.
- ✓ Drawing up concept and prototype tests.
- ✓ Developing proactive practices.
- ✓ Implementing communication programmes.

4. Policies:

- ✓ All employees will receive customer service training.
- ✓ Training will be compulsory.
- ✓ All managers must go out into the market twice a year, for a two-week period to ascertain market requirements.
- ✓ Every year a concept test survey must be carried out with the end consumer.

Procedures

- ✓ Training manual.
- ✓ Training curricula and timetables.
- ✓ Annual schedule for executives to go out into the market.
- ✓ Interview questionnaire and format for concept and prototype tests.
- ✓ Quality standards manual.

Table A1.4 may be helpful in systematizing the above-mentioned concepts:

TABLE A1.4

Chapter 5. Format for defining tactics, policies and procedures

Strategy Number	Operational tactics	Policies	Procedures

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Chapter 6. Defining dates (When do we plan to get there?)

The aim of this chapter is to set the start and end dates for achieving the proposed objectives. There are three dates for strategic planning:

- 1. Start date: when work starts for achieving the objectives.
- 2. Operational end date: when work ends for achieving the objectives, as far as the procedures level.
- 3. Conceptual end date: when the objective is achieved in accordance with the stated objective.

The difference between the operational end date and the conceptual end date is that the operational end date is short-term, whereas the conceptual end date is long-term (Table A1.5).

Chapter 7. Defining responsibilities

Each objective must be entrusted to a group of responsible persons, so it is important to work through committees.

Chapter 8. Defining costs

Each objective obviously incurs a cost, so it is important to review costs whilst considering them in terms of investment.

Chapter 9. Conclusions

This is the final chapter of the planning manual. It discusses the commitments made by each of the people responsible for achieving the objectives, the anticipated results and the new vision of the organisation after the plan has been implemented.

TABLE A1.5
Chapter 6. Defining dates

Number	Objective	Start date	Operational end date	Conceptual end date

Appendix 2

Formats for farm planning

TABLE A2.1

Suggested format for taking stock of existing resources

General information	Resources
Name of the producer:	Altitude (metres above sea level)
Location:	Average annual temperature (°C)
Availability of external manpower (wage/hour)	Average annual rainfall (mm)
Financial resources	Access to irrigation water (answer yes or no)
Farm machinery available	Area of land available for farming
Tools available	

TABLE A2.2

Suggested format for a schedule of activities

Activity	S1	S2	S 3	S4	S 5	S 6	S7	S8	S9	S10	S11	S12	Resources

TABLE A2.3

Suggested format for designing an integrated production plan

Planting date	Planting week	Producer's name	No. hectares/ producer	No. hectares assigned/ crop	No. seedlings	Harvest date	Projected harvest weight in kg	Total kg per month

Appendix 3

Formats for agro-industry planning

TABLE A3.1

Timetable and costing of processing lines (Example: Production of mango jam. Two operatives for 480 minutes)

	Times we assisted	0	414		Costs (US\$)				
Activity	Time required (in minutes)		tity of raw al and inputs		t price of inputs	Total raw material and inputs			
Mango reception and selection	15	100 000	kg mangoes	0.20	cents/kg	20 000.00			
Weighing	15								
Washing	15								
Cooking	100	1 000	kg gas	1.00	cents/kg	1 000.00			
Sieving	20								
Weighing the pulp	15								
Addition of sugar	10	42 400	kg	0.50	cents/kg	21 200.00			
Concentration	100	1 500	kg gas	1.00	cents/kg	1 500.00			
Bottling	110	300 000	jars	0.20	cents each	60 000.00			
Draining	20								
Sterilization	30	2 500	kg gas	1.00	cents/kg	2 500.00			
Labelling and storage	20	300 000	labels	0.05	cents each	15 000.00			
Cleaning	10	10	kg detergent	2	cents/kg	0.20			
	480					121 200.20			

Total cost of raw material or inputs = quantity of raw material or inputs x unit cost

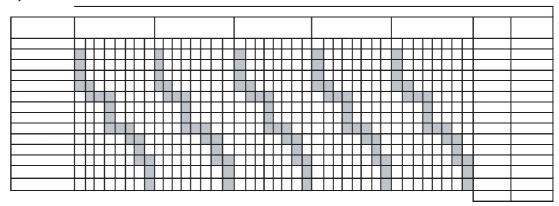
TABLE A3.2

Timetable and costing of daily activities. Example: Production of mango jam. Two operatives for 480 minutes

		Timetable							Costing (US\$)		
Activity	Hours								lanute	Total	
	1	2	3	4	5	6	7	8	Inputs	IOlai	
Selection									20 000.00	20 000.87	
Weighing										0.87	
Washing										0.87	
Cooking									1 000.00	1 005.83	
Sieving										1.17	
Weighing the pulp										0.87	
Adding sugar									21 200.00	21 200.58	
Concentration									1 500.00	1 505.83	
Bottling									60 000.00	60 006.41	
Draining										1.17	
Sterilization									2 500.00	2 501.74	
Labelling									15 000.00	15 001.17	
Cleaning									5.80	6.38	
TOTAL									121 205.80	121 234.76	

TABLE A3.3

Timetable and costing of weekly activities. Example: Production of mango jam. Two operatives for 480 minutes



To calculate the number of man/hours required per week and the cost of raw material and inputs, the daily costs must be multiplied by five.

Appendix 4

Answers to group exercise

DATA:

20 containers per month

Volume per container = 20 tonnes

No. plants per hectare = 55 000

Yield per hectare = 15 000 kg

Percentage yield of raw material in the plant = 50%

Percentage planting safety margin per hectare = 5%

CALCULATIONS

SECTION (A) OF THE EXERCISE

Quantity of raw material required per month (CMPM)

CMPM = No. containers x volume of each container x 2 (50%)

CMPM = 20 x twenty-ton containers x 2 = 800 tonnes of raw material

Quantity of raw material required per week (CMPS)

CMPS = Quantity of raw material required per month CMPM ÷ 4 weeks

CMPS = $800 \text{ tonnes} \div 4 \text{ weeks} = 200 \text{ tonnes per week}$

Number of hectares under production (#ha)

#ha = Quantity of raw material per week ÷ average yield per hectare * Percentage planting safety margin per hectare

#ha = (200 tonnes ÷ 15 tonnes) * 1.05 = 14 hectares per week (56 hectares per month)

Number of seedlings planted per week (#PS)

#PS = Number of hectares of production #ha * #seedlings per hectare

#PS = 14 hectares * 55 000 = 770 000 seedlings per week

Calculated harvest date:

Since the crop cycle for the 'Legacy' broccoli variety is 12 weeks, the harvest date will be 75 days after the planting date.

Producer harvest date (#1) = producer planting date #1 + 75 days

Producer harvest date n = producer planting date n + 75 days

Calculation of the number of seedlings to be planted:

#Seedlings to be planted = #ha assigned to broccoli x transplanting capacity/ hectare (55 000 seedlings)

Calculation of projected harvest weight in kg:

Projected harvest weight in kg = #ha assigned to broccoli x yield/ha (15 000 seedlings).

SECTION (B) OF THE EXERCISE

Planting date	Prod.	No. hectares/ prod.	No. hectares assigned/ prod.	No. seedlings	Harvest date	Projected harvest weight in kg	Total kg per month
01/01/2005	1	14	10	550 000.00	17/03/2005	150 000	
08/01/2005	2	21	15	825 000.00	24/03/2005	225 000	
15/01/2005	3	21	15	825 000.00	31/03/2005	225 000	
22/01/2005	4	28	16	880 000.00	07/04/2005	240 000	840 000
29/01/2005	5	28	18	990 000.00	14/04/2005	270 000	
05/02/2005	6	14	10	550 000.00	21/04/2005	150 000	
12/02/2005	7	14	10	550 000.00	28/04/2005	150 000	
19/02/2005	8	21	18	990 000.00	05/05/2005	270 000	840 000
26/02/2005	9	28	18	990 000.00	12/05/2005	270 000	
05/03/2005	10	14	10	550 000.00	19/05/2005	150 000	
12/03/2005	11	21	18	990 000.00	26/05/2005	270 000	
19/03/2005	12	14	10	550 000.00	02/06/2005	150 000	840 000

DATA

10 containers per month

Volume per container = 20 tonnes

Total monthly volume (10 containers x 20 tonnes) = 200 tonnes

Number of plants per hectare = 55 000

Yield per hectare = 15 000 kg

Percentage planting safety margin = 5%

CALCULATIONS

Quantity of raw material required per week (CMPS)

CMPS = Quantity of raw material required per month \div 4 weeks

CMPS = 200 tonnes \div 4 weeks = 50 tonnes per week

Number of hectares under production (#ha)

#ha = Quantity of raw material per week ÷ average yield per hectare * percentage planting safety margin per hectare

#ha = (200 tonnes \div 15 t/ha) * 1.05 = 14 hectares per month

Number of seedlings per week (#PS)

#PS = number of hectares of production #ha * #seedlings per hectare

#PS = 14 hectares * 55 000 = 770 000 seedlings per month.

Planting date	Prod.	No. hectares /prod.	No. hectares assigned/ prod.	No. seedlings	Harvest date	Projected harvest weight in kg	Total kg per month
01/01/2005	1	21	4	220 000.00	17/03/2005	60 000	
08/01/2005	2	28	4	220 000.00	24/03/2005	60 000	
15/01/2005	3	35	4	220 000.00	31/03/2005	60 000	
22/01/2005	4	14	2	110 000.00	07/04/2005	30 000	210 000
29/01/2005	5	28	4	220 000.00	14/04/2005	60 000	
05/02/2005	6	35	4	220 000.00	21/04/2005	60 000	
12/02/2005	7	21	4	220 000.00	28/04/2005	60 000	
19/02/2005	8	14	2	110 000.00	05/05/2005	30 000	210 000
26/02/2005	9	14	3	165 000.00	12/05/2005	45 000	
05/03/2005	10	21	4	220 000.00	19/05/2005	60 000	
12/03/2005	11	21	4	220 000.00	26/05/2005	60 000	
19/03/2005	12	14	3	165 000.00	02/06/2005	45 000	210 000
26/03/2005	13	28	4	220 000.00	09/06/2005	60 000	
02/04/2005	14	35	4	220 000.00	16/06/2005	60 000	
09/04/2005	15	21	4	220 000.00	23/06/2005	60 000	
16/04/2005	16	14	2	110 000.00	30/06/2005	30 000	210 000
23/04/2005	17	14	2	110 000.00	07/07/2005	30 000	
30/04/2005	18	21	4	220 000.00	14/07/2005	60 000	
07/05/2005	19	21	4	220 000.00	21/07/2005	60 000	
14/05/2005	20	35	4	220 000.00	28/07/2005	60 000	210 000
21/05/2005	21	14	3	165 000.00	04/08/2005	45 000	
28/05/2005	22	21	4	220 000.00	11/08/2005	60 000	
04/06/2005	23	14	3	165 000.00	18/08/2005	45 000	
11/06/2005	24	35	4	220 000 00	25/08/2005	60 000	210 000