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FAO
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FOR SMALL AND MEDIUM AGRO-INDUSTRIAL ENTERPRISES

Module 4: Planning as a tool for improving quality and safety management

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Module 4: Planning as a tool for improving quality and safety management

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Foreword

The Rural Infrastructure and Agro-Industries Division (AGS) of FAO works to improve and strengthen the capacities of small and medium agro-industries, the enterprises that provide them with services and materials and the relevant support organizations in order to ensure food quality and safety. It carries out these activities using an approach that integrates the different factors affecting the capacity of a business to produce foods to meet the demands of the market according to recognized standards, while maintaining and increasing the profitability and viability of the business. Management and technical aspects must be integrated within a practical and cost-effective approach. This ensures that higher incomes, sources of jobs and the food security of the rural population are also promoted.

The training manual entitled *Cost-effective management tools for ensuring food quality and safety – for small and medium agro-industrial enterprises* focuses on these objectives.

This manual is the result of a collaborative effort by technical staff of the Rural Infrastructure and Agro-Industries Division of FAO. It is based on case studies carried out in Bolivia and El Salvador on opportunities for the improvement of capacity of small- and medium-scale food processing enterprises, through training to meet the demands of the market.

These case studies, which were carried out as part of the FAO programme 'Agribusiness Development: Small and Medium Post-production Enterprises', identified the training needs of small and medium fruit and vegetable agro-industries. This sector had been chosen as representative of the food industries operating in Latin America.

In Bolivia, a range of agro-industries was evaluated. These produced: (i) processed dried fruits, jams and/or fruit pulps, particularly pineapple and peaches; (ii) processed vegetables such as faba beans and garlic; (iii) various processed products such as pickles.

In El Salvador, the study focused on the development of products such as tomato-based foods, fruit juices and nectars (including peaches, apples, grapes and tropical fruits), as well as other fruit and vegetable products. This made it possible to identify problems common to the different enterprises, such as low-quality raw materials, inefficient processing operations, lack of knowledge of the relevant quality and safety standards and their implementation and lack of entrepreneurial vision. There was a consensus among small-scale entrepreneurs that these problems could be overcome by implementing innovative training strategies. This consensus led to the idea of preparing this manual.

The manual is divided into four modules, each subdivided into themes. Module 1 discusses the use of market information as a tool for business decision-making. Module 2 covers systems and tools for improving the management of food quality and safety in agro-industry. Module 3 focuses on the principles of quality management in small and medium agro-industrial enterprises. Module 4 discusses planning as a tool for the management of food quality and safety.

This manual includes case studies, exercises and bibliographic references, as well as a trainer's guide, PowerPoint presentations, appendices, further reading and links of interest.

The purpose of this manual is to assist trainers and entrepreneurs wishing to use the material for self-learning. With this manual, FAO can now provide the small and medium agro-industry sector in developing countries with an important tool for improving its competitiveness and its capacity to deliver high-quality products to consumers.

The English version has been revised to include references, recommended reading and links suitable for English readers. In Module 2, information on standards and regulations relating to quality and safety has been included in order to provide norms that are relevant worldwide.

Geoffrey C. Mrema
Director
Rural Infrastructure and Agro-Industries Division

Acronyms and abbreviations

FDA	Food and Drug Administration (United States)
GAP	good agricultural practices
GMP	good manufacturing practices
HACCP	hazard analysis and critical control points
ISO 22000	ISO standard on food safety management systems
ISO 9000	family of ISO standards on good quality management practices
SENA	Colombia's National Training Service
SWOT	strengths, weaknesses, opportunities and threats
US$	US dollars

Study guide for the module

PLANNING AS A TOOL FOR IMPROVING QUALITY AND SAFETY MANAGEMENT

Objectives	• Describe the nature, purpose, advantages and constraints of planning in small and medium agro-industrial enterprises • Present guidelines for applying planning principles as a tool for improving quality and safety management
Content	**Theme 1: Planning as a tool for improving quality and safety management** • Planning principles for small and medium agro-industrial enterprises • Planning in agro-industrial enterprises • The planning process in small and medium enterprises
Activities	**Case study: Planning in agro-industrial enterprises** • Exercise on Theme 1
Assessment	On completion of Theme 1 an exercise is carried out to check the participants' general understanding of the theme

Theme 1: Planning as a tool for improving quality and safety management

INTRODUCTION

The importance of planning and developing action plans has been emphasized repeatedly in previous modules. We defined action plans for agro-industrial companies as documents that specify initiatives for improving and assuring the quality and safety of agro-industrial products and, in general, as useful tools for guiding the company's activities.

Module 1 explored the market for an enterprise's outputs and the relationship between the enterprise and the market. Module 2 discussed the concepts of quality and safety, together with the need to incorporate quality and safety management systems into agro-industrial enterprises. Module 3 described and defined the processes involved in quality management, including their interactions, in a process flow chart. Theme 2 of Module 3 introduced planning concepts, together with the importance of defining a company's mission, vision, policies and objectives.

Although it is impossible to predict the future with any accuracy, planning is a tool that helps to outline the company's future while defining an orientation and focus for its resources in order to achieve its objectives. The planning process entails a careful analysis of the external and internal factors that can affect the achievement of objectives; plans are the result of a process in which clear objectives are defined and activities are identified. The company must carry out the activities successfully in order to achieve these objectives.

Planning is an iterative process in which the same process feeds back into itself (McGillivray, 1998). During the planning process, new factors are discovered that must be taken into account. It is an integrated process that makes it is possible to consider information on the market, on technical and financial topics and on the human resources needed to implement or develop the plan. It demands effort and time, which is not always available in small and medium companies. Planning should not be seen as something special or extraordinary to be used only when change is needed in the company. It should always be viewed as a systematic, ongoing process. For this reason the process should be simplified as much as possible.

There are a number of reasons why it is important to plan:

i. A plan indicates whether the company can expect to obtain profits in the future, and whether these will be greater or less than current levels.

ii. It also shows which part of the company or business can be improved.
iii. It provides information on how much money can enter or leave the company in a specific time period.
iv. It facilitates efficient communication between partners and employees.
v. It allows the progress of the company as a whole or of a specific area within it to be measured.

Chapter 5 of standard ISO 9000 refers to planning when it states that company management *should ensure that quality objectives are established in the relevant functions and levels inside the organization. The quality objectives should be measurable and coherent with policy.* It also states that senior managers should ensure that *the quality management system is implemented in accordance with the objectives* and that *the integrity of the management system must be maintained when changes to the system are planned and implemented.*

The introduction of any quality and safety management system, good agricultural practices (GAP), good manufacturing practices (GMP), hazard analysis and critical control point (HACCP), ISO 9000 or ISO 22000 requires the utilization of planning tools. These tools allow management to plan, systematize and organize changes and also to measure, control and improve the system over time. It is very important for small and medium agro-industrial companies to introduce these principles in a simple and consistent manner. If necessary, external consultants can be used to facilitate this task.

This module brings together some of the ideas that have been presented in previous modules and examines the elements to consider when putting planning principles into practice.

EXPECTED RESULTS

By the end of this theme, participants are expected to have a better understanding of:

- the usefulness of the planning process as a tool to help organize a company's efforts and resources efficiently to achieve its objectives;
- the methodology for analysing a company and its environment on the basis of its strengths, weaknesses, opportunities and threats (SWOT analysis);
- the importance of planning based on objectives, goals and action plans, which allows the performance of the company's processes to be assessed;
- the sequence of steps to follow in the application of planning principles in an agro-industrial company.

ESTIMATED TIME

Six hours, including the time required for the classroom sessions, practical exercises, review of materials and other activities.

SUPPORT MATERIALS

Case study: Planning in agro-industrial enterprises.

Reading for the theme: Planning principles for small and medium agro-industrial companies.
PowerPoint presentation: Module 4.
Exercise for Theme 1.

Case study

Planning in agro-industrial enterprises

Plan for exporting canned *piquillo* pepper to the United States market

The idea

An agro-exporting company in Peru decided to explore diversification opportunities by entering the export market for *piquillo* pepper to the United States of America. Peru is the leading exporter of *piquillo* pepper to Spain, which, in turn, is the leading supplier to the North American market, mainly by re-exporting the Peruvian product. The company's objective is to export the Peruvian product to the United States market directly.

The external environment

Productivity of *piquillo* pepper is high in the coastal valleys of Peru and the product is of high quality. The technology necessary for processing is available and there is a strong trend towards economic and trade integration with the United States of America. Under these circumstances, the company is planning to take advantage of the opportunity to consolidate itself as the leading exporter of *piquillo* pepper to this market.

The company is preparing to implement measures to obtain a final product of export quality. This would differentiate it from current offerings because the product would be delivered direct to United States ports as required by the importing customer.

Even though Spain is the largest consumer of *piquillo* pepper, the United States of America has been selected as the target market for the following reasons:

i. higher prices are paid for imported canned Peruvian *piquillo* pepper in relation to other markets;
ii. it is located close to Peru;
iii. it has a large capacity to expand consumption;
iv. the existence of current and potential trade agreements between the two countries.

Piquillo pepper is consumed mainly in Spain, France, Greece and Italy. It is served as a starter in restaurants and bars. In the United States, the product is consumed mainly by ethnic groups from European and Latin American countries, but its consumption has gradually been adopted by the general population. Demand has also been expanding through the adoption of European food habits by returning American tourists.

How is the target market reached?

The company's strategy for penetrating the target market is to develop commercial relations with key importing companies. The product would be sent to them with the corresponding labels. This strategy promotes the establishment of long-term relationships in order to ensure the success of the plan. Accordingly, the company would adjust its activities to provide a standardized product of extra-grade quality *piquillo* pepper with specific characteristics: weight, size, colour, quantity of seeds and integrity of the surface, as well as complying with international demands relating to GAP, GMP and HACCP.

The operational strategy involves the acquisition of a processing plant to give the company total control of the operation. The company is also beginning to grow the raw product on rented land to increase its control over production and ensure a more uniform and higher quality product. As cash is being generated in the medium term (over the first four years), the company plans to purchase agricultural land to ensure permanent production of canned *piquillo* pepper in the future.

Is the project profitable?

The project financial assessment reflects a net present value of US$1 007 064 with a payback period of approximately three years, considering an assessment period of 10 years with quarterly terms. The initial investment required for the project is US$752 183. A sensitivity analysis has shown that the most sensitive variables, in order of importance, are: price, the cost per container and the volume of exports by container. The break-even point is 224.75 tonnes of *piquillo* pepper (canned net weight). It is estimated that, at the start of the project, the company would export approximately 214 tonnes of the extra-grade quality canned products at a cost, insurance and freight (CIF) price of US$2 716 per tonne. This amount would increase by 6 percent annually, supported by expansion of the production area from 40 hectares to 60 hectares by year 8 of the project.

Where will resources come from to implement the plan?

In view of the results of the planning exercise, the company has decided to spread its risk by entering into an alliance with a strategic partner that will provide the financial resources necessary to support the plan. The financing required to cover the working capital is US$225 655, which represents almost 43 percent of the total capital investment of US$526 528 required to start the project.

Source: *Plan para la exportación de pimiento piquillo en conserva al mercado de Estados Unidos de Norteamérica* by Rodríguez *et al.* ESAN Graduate School of Business *(Escuela de Administración de Negocios para Graduados)*, Peru, 2005

MODULE 4

CRITERIA FOR ANALYSING THE CASE

After reading this case carefully, carry out an analysis by attempting to identify:

- the key aspects taken into account by the team that prepared the export diversification plan;
- the opportunities and strengths that the plan aims to exploit;
- in what way the proposed plan could be improved, for example, by obtaining further information to help the company to reduce uncertainty and minimize the risk of making poor decisions;
- the lessons learned that your company could apply or consider.

The same tasks are listed at the end of Module 4 so that they can be completed based on the newly acquired knowledge.

Reading for Theme 1

Planning principles for small and medium agro-industrial enterprises

THE IMPORTANCE OF PLANNING IN AGRO-INDUSTRIAL ENTERPRISES

Planning is the process of organizing available resources to carry out the actions required to achieve defined objectives and goals, as well as monitoring the expected results. Planning is a tool that helps to focus the efforts of a company's different departments on achieving specific objectives. Lack of planning, or poor execution because of lack of sufficient and reliable information, has negative consequences for the company, as Table 1 below shows. One of the principal objectives of any commercial activity is to attain consistent profitability. Lack of planning results mainly in higher costs and inefficiencies at all levels, resulting in lost opportunities for improving profitability and harm to the company's competitive position in the market, as Figure 1 shows.

ADVANTAGES OF PLANNING

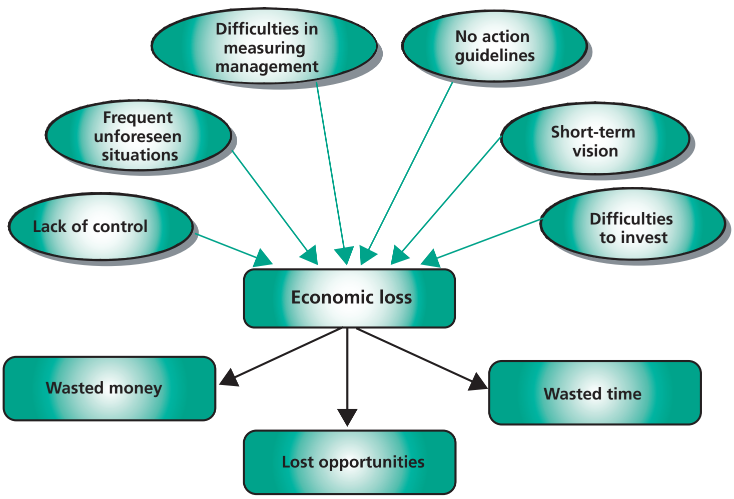
The advantages of planning include:

- Improved communication inside the company. Plans – strategic or operational – are communication instruments because they define the company's orientation,

TABLE 1
Problems derived from poor planning or lack of planning

Immediate problems (occur in the short term)	Consequences (occur in the medium to long term)
Lack of control	• No clarity on the scale of the problems • Lack of clear objectives means that the company must yield to pressures from suppliers and customers
Frequent unforeseen situations	• Constantly changing the company's operations • No concrete objectives; management keeps 'putting out fires'
Difficulties in measuring performance	• Lack of indicators to measure company performance • Lack of indicators to assess how well resources have been used
Lack of a consistent action guide	• Lack of leadership in the management of the company • Reacting to changes rather than anticipating them
Short-term vision	• Problems are resolved on a day-to-day basis; there is no vision of the future • The company is not prepared for changes that may occur in its environment
Lack of judgement when deciding on investments	• Investments produce poor yields • Imbalance and inconsistency between investment costs and benefits

FIGURE 1
Consequences of the lack of planning or poor planning



togther with the goals for the company as a whole and for each of its departments.

- Building entrepreneurial capacity because, in order to prepare plans, company employees need to know, analyse and reflect on internal aspects of the company, its departments and its functions, as well as the external environment.
- Improved external relations because planning facilitates communication between the company and external agents, such as:
  - **financial entities** (well-prepared plans create credibility with credit institutions);
  - **suppliers** (plans make it easier to communicate the company's objectives to its suppliers, who are strategic partners in achieving these objectives);
  - **customers** (plans create credibility and confidence among the product's buyers).
- Planning allows results to be checked as they are received and adjustments to be made to the original plans. For example, if the objective is to improve quality, it is necessary to focus on defining the improvement and to quantify the desired results.

PLANNING IN AGRO-INDUSTRIAL ENTERPRISES

As mentioned in Theme 2 of Module 3, planning is a management tool that allows a company to decide in advance what it should be doing, who should be doing it and how it should be done to meet specific objectives. In an agro-industrial enterprise, planning can take place at two levels: strategic and operational.

The result of any planning process is a written document called 'the plan'. Strategic plans are prepared with the aim of achieving the company's general objectives and operational plans indicate how the strategic plans are to be implemented in order to achieve the strategic business objectives. For example, the business plan is a strategic planning document aimed at carrying out business ideas. It contains, in a comprehensive and detailed form, the vision and mission of what an entrepreneur wants to achieve and the products and markets to be dealt with. In contrast an operational plan (such as the HACCP) implements the quality and safety assurance strategy identified in the company's strategic plans.

The planning process involves the following steps:

- identifying objectives;
- analysing the current situation;
- identifying strategies to achieve the desired situation;
- setting goals (indicators for achieving the strategy);
- defining activities.

A company bases its strategy on continual improvement, an iterative process, by adding the following steps:

- implementing the plan;
- checking its effects;
- analysing results and planning the appropriate actions.

The planning process starts with a clear statement of objectives. The statement of objectives must begin with a clear definition of the overall mission and vision of the enterprise. This is the starting point for formulating strategic plans. The company's mission, vision and policies are defined for the medium term and are reviewed annually, even when there are no changes. However, the objectives should be reviewed more frequently, depending on the products and on the production and marketing cycle. In any case, the objectives should be reviewed at least once a year to identify new goals and action plans for the company to implement.

THE PLANNING PROCESS IN SMALL AND MEDIUM ENTERPRISES

Step 1: Establish general objectives

Define or revise: mission, vision and policy

The **mission** statement is the company general's objective is the foundation on which its purpose, values and scope of action are built. The **vision** defines the business objective, which answers the question: How do we see the company in the future? The **policy** objectives are what the company must do to achieve its mission.

The mission statement contains three important items:

- information on what the company does;
- the company's position, or the market it wishes to serve;
- the particular characteristics that differentiate its product.

In addition it describes how these characteristics benefit its customers. The following questions are asked when drawing up the mission statement:

i. What purpose does the product serve?

ii. What are the product's distinctive characteristics?
iii. How do these characteristics benefit customers?
iv. Where are our customers?

Table 2 includes questions that can help in drafting the company's mission statement. Answers are grouped according to their contribution to the company's goals, markets and potential for growth and development. Table 3 shows an example of a mission statement for an agro-industrial company. The vision and the company's policy can be defined and reviewed in the same way.

Establishing objectives

Defining a company's mission and policy is equivalent to drawing up a map of a zone within which the company determines the places it wishes to reach. The objectives are equivalent to specific points on the map on which the company focuses its efforts. The company should translate the mission and policy

TABLE 2
Questions to help in drafting the company's mission statement

Products	Customers	Product differentiation	Company environment
What is the company's line of business?	Who are the final consumers?	What differentiates the company from its competitors?	Which other sectors affect the development of the company's business area?
Which products does the company offer?	What are the characteristics of the company's main customers?	What does the company do best?	What technological advances have been made in the company's business area?
What benefits do the products provide to customers?	To which segment do they belong?	For which product does the company experience the least competition?	What trends are apparent in the company's business area?
What needs do the products really satisfy?	In which other segments could they be incorporated?	Who are the main competitors?	Which events will positively affect the company's business area?
Why do the products do this?	Why have they stopped buying?	In what areas are competitors superior?	Which events will negatively affect the company's business area?
When do the products do this?	What is the customer demanding that the company cannot provide?		
How do the products do this?	Which are the main markets?		
Which products does the company not offer?			
Why does the company not produce them?			
What are the company's main products?			
Which products offer the greatest benefits?			

TABLE 3
Example of the mission statement for a company and its business area

Mission
To be an agro-export company that supplies mangoes and asparagus to the national and international market. Processes are to be based on the HACCP system, which assures the quality and safety of its products. The company promotes a culture of teamwork with its suppliers, workers and customers and constant respect for the environment.
Business area
Quality fresh fruit and vegetables
Real need that is satisfied
Meeting the need for fresh products in the target market, with optimal quality standards that exceed consumer demands.

statements into concrete objectives. As mentioned in Theme 2 of Module 3, the objectives should be:

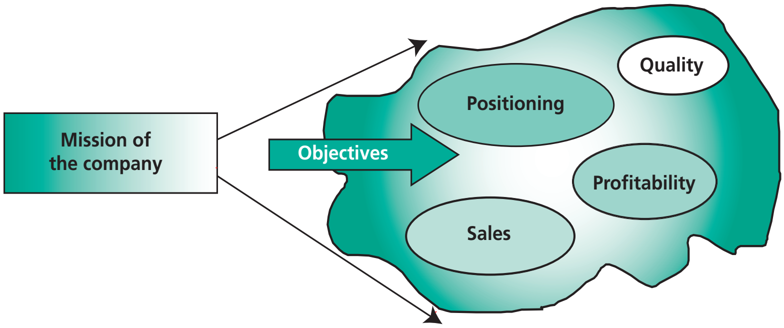
- **realistic and** achievable;
- **clear and precise** with no margin for questionable interpretations;
- **flexible** to allow for modifications, particularly changes of scale to adjust the company's operations to unforeseen changes in the environment;
- **communicated and generally accepted in all of the company's departments** so that the efforts and responsibilities are kept in balance with the planned activities;
- **controllable, so that** the objectives can be achieved within a specified timeframe, during which operations should be supervised in order to check if everything is under control or if corrective actions should be taken;
- **coherent, with** objectives that are interrelated so that they form part of one global objective;
- **significant and correlated with the resources allocated to achieving them to ensure** a viable relationship between the magnitude of the expected results and the resources that the company plans to invest.

The objectives are established within the sphere of action defined by the mission statement and the business area (Figure 2).

The objectives can be **general or specific**. For example, strategic plans are drawn up on the basis of more general business objectives that are achievable only in the long term. On the other hand, operational plans achieve specific objectives that contribute to the general objectives and are achievable over the short to medium term. In small and medium companies, it is sufficient to begin by defining the mission, vision and policy and then determining simpler general and specific objectives.

Table 4 shows an example of the defined objectives for an agro-industrial company.

FIGURE 2
Company's mission objectives



Step 2: Analysis of the current situation

Planning is based on knowledge of a company's strengths, weaknesses, opportunities and threats. A SWOT analysis is a strategic tool used to understand a company's current situation. The basic purpose of a SWOT analysis is to assess strengths and determine weaknesses in order to correct them, exploit opportunities and mitigate threats.

External analysis identifies the opportunities and threats that exist in the company's environment that may affect the achievement of its objectives.

Opportunities	These are situations found in the environment of the company that can positively influence the achievement of its objectives
Threats	These are situations found in the environment of the company that can negatively influence the achievement of its objectives
Strengths	The characteristics of the company that facilitate the achievement of its objectives
Weaknesses	The characteristics of the company that limit the achievement of its objectives

Internal analysis focuses on identifying the company's strengths and weaknesses that may affect its capacity to achieve its objectives. Table 5 provides examples of strengths, weaknesses, opportunities and threats defining a company's current situation.

TABLE 4
Example of defined objetives

Export of fruits
General objective
To enter the United States market In 2006 with "fourth range[1] foods" in the fruit and vegetable category – mangoes and asparagus.
Quality objectives
To meet the quality standards of the United States Food and Drug Administration (FDA) and other regulatory bodies.
To satisfy food needs with fresh, safe products that comply with optimal nutritive and sensory quality standards.

[1] The term 'fourth range' refers to fruits and vegetables that have been minimally processed. They are washed, chopped and packaged ready for consumption. The product retains its natural freshness for 7–10 days.

TABLE 5
Examples of strengths, weaknesses, opportunities and threats

Opportunities	**Threats**
• Agreements with suppliers to apply and maintain quality criteria	• Declining sales trends
• New uses for the product	• Market in decline
• Changes in consumption patterns	• Loss of market share
• Acceptability of the products	• Economic recession
• New niche markets	• Scarcity of raw materials or inputs
• Introduction of new technologies	• Increasing competition
• Increase in buying power	• Competitive products
• Rising sales trends	• New taxes
• Tax benefits to stimulate exports	• New technology not accessible to the company
• Bilateral or regional trade agreements	• Reduction in buying power
• Reduction in raw material prices	• Inadequate machinery
Strengths	**Weaknesses**
• Low production costs	• Obsolete technology
• Leadership	• Poor quality products
• Planning system implemented	• Lack of planning
• Good reputation (quality image)	• Inadequate methods for setting prices
• Differentiated products	• Limited production capacity
• Consumer-oriented policies	• Inefficient organization
• Good distribution systems	• Inadequate marketing efforts
• Capacity for obtaining external financing	• Lack of financial capacity
• Good level of liquidity	• Poorly trained staff
• Availability of raw material	
• Use of technology	
• Qualified staff	
• Good quality control	
• Company well located	
• Low labour costs	

Step 3: Consider whether it is necessary to modify the objective to make it more realistic in the current situation

In this step, any of the following alternatives may occur:

- The objective is **retained** if the analysis of positive and negative factors indicates that the objective can be achieved.

- The objective is **revised** if the analysis indicates that it should be improved or reduced owing to positive or negative factors.
- The objective is **removed** if a negative factor that has not previously been considered would prevent its achievement.

Step 4: Establish strategies

What is a strategy?

Strategies define the actions required to meet the objectives. The task for the entrepreneur is to identify the most appropriate and realistic strategies on the basis

TABLE 6

Example of a SWOT analysis

Weaknesses	Ways to overcome them
• No experience in the United States market • No knowledge of the practical application of market regulations in the United States of America • No knowledge of consumer trends and specific preferences in the United States of America • Unavoidable seasonal rotation of operators • Operators need to improve their skills	• A commercial and legal consultancy would help to bridge the gap in knowledge of market regulations in the United States of America and the demands and preferences of consumers in this market • Training for operators to improve their skills and behaviour, especially with regard to quality and safety aspects
Threats	**Ways to overcome them**
• Top-quality Brazilian mangoes at highly competitive prices • Cheap Asian asparagus • Limited availability of credit for farmers • High cost of credit • Suppliers are generally deficient on, or fail to apply, GAP	• Implement selective strategies for building customer loyalty in target market segments • Differentiation by quality • Strategic alliances with farmers; training and consultancy for implementation and sustained application of GAP to guarantee product safety
Strengths	**Ways to exploit/them**
• Appropriate infrastructure • Sufficient equipment in optimal operating condition • Highly qualified senior and middle management • HACCP system implemented • Experience in international markets • Financially solvent	• Optimize the use of physical, human and technical resources • Apply the company's technological resources to guarantee product safety; suppliers apply GAP • Consider the possibility of financing or supporting credit for farmers aimed at GAP implementation and sustained application
Opportunities	**Ways to exploit/them**
• Unsatisfied demand for mangoes and asparagus • Organoleptic characteristics of the asparagus variety supplied by the company are highly appreciated by consumers • Non-seasonal, permanent supply of asparagus • Mangoes are supplied in seasons when other countries are not able to supply them • Possible strategic alliances with farmer suppliers to raise standards and assure safety • Covered by the free trade agreement with the United States of America	• Positioning according to quality and opportunity • Strategic alliances with farmer suppliers to raise their standards and ensure product safety • Take advantage of new customs duties under the free trade agreement

of the company's capacities and resources. A SWOT analysis is recommended for this (Table 6). Each viable strategy should link to the following**:**

- **Strengths** – analyse and identify to what extent they favour implementation of the strategy.
- **Weaknesses –** identify to what extent they would impede implementation of the strategy.
- **Opportunities** – identify market and environmental conditions that favour implementation of the strategy, and to what extent.
- **Threats** – identify which market and environmental conditions would significantly hinder implementation of the strategy, and to what extent.

These strategies can be combined as follows:

- **SO strategies** use strengths to take advantage of opportunities;
- **ST strategies** use strengths to minimize threats;
- **WO strategies** overcome weaknesses by exploiting opportunities;
- **WT strategies** reduce weaknesses and avoid threats.

Once feasible strategies have been analysed, those with the best chance of success are chosen as reflecting the company's real capacity. An example is given in Table 7.

Step 5: Set goals

What are goals?

Goals are the results required to achieve the proposed objectives. Goals should be progressive, specific and quantifiable. In order to establish or define goals, it is necessary to have:

- a proposed objective;
- a strategy to achieve the proposed objective.

Table 8 shows an example of setting goals.

TABLE 7
Possible company strategies

Weaknesses/opportunities (WO) strategies	**Strengths/opportunities (SO) strategies**
• Stimulate and support the planning process for mango cultivation, for expanding markets and for reducing staff turnover • Legal and commercial consultancies	• Establish strategic alliances with farmer suppliers to improve their standards and guarantee product safety by means of training and technical assistance with GAP implementation and by supervising their activities
Strengths/threats (ST) strategies	**Weaknesses/threats (WT) strategies**
• The company's middle management trains, advises and supervises the suppliers on GAP implementation • Financing arranged or guaranteed to support suppliers in implementing GAP	• Participate in specialized trade fairs in the United States of America to demonstrate products • Trade mission to the United States of America to establish contacts and identify specific market requirements • Legal and commercial consultancies • Guarantee financing for suppliers for implementing and applying GAP • Training to improve the operational skills of plant personnel

MODULE 4

TABLE 8
Example of setting goals

Fruit exporting
Goals set
General objective
• To enter the United States market in 2006 with 'fourth range' horticultural products – mangoes and asparagus – that meet United States Federal Drug Administration standards.
Selected strategies
• The company's strategy to penetrate the target market includes:
• Setting up cooperation mechanisms with mango and asparagus suppliers through a partnership with two of the best-qualified suppliers in terms of their product volume and quality, their ability to meet service standards and their reliability
• A strategic alliance with a leading supplier of mangoes and a leading supplier of asparagus in the United States market
• Product quality and safety assurance
Goals for the general objective
• Export 28 tonnes of mangoes to the United States market in 2006 and 2007
• Export 40 tonnes of asparagus to the United States market in 2006 and 2007, thereby increasing total sales from 120 tonnes to160 tonnes as a result of entering that market
Quality objective
• To modify quality standards to ensure that they meet the demands of the FDA and other regulatory authorities
Selected strategies
• Establish a strategic alliance with the two selected suppliers in order to improve their standards and guarantee the safety of the product arriving at the plant, through training and technical assistance in GAP implementation and application
• Maintain the company's commitment to quality and safety in product processing through HACCP and GMP certification
Goals for the quality objective
• Ninety percent of the company's procurement is through contracts with selected suppliers
• Ninety percent of the company's suppliers are GAP certified
• The company maintains its HACCP certification with a prestigious certification company operating in the United States of America

Step 6: Preparing action plans

Once the goals are known, the planning process defines the actions required to achieve these goals. After strategic planning, in which objectives and general goals are defined, the next step is operational planning, which identifies what has to be done to achieve the goals defined in the strategic plan. In all cases, the objectives and goals must be well defined and expressed clearly and precisely. Appendix 2 provides specific tools for drawing up an action plan.

Step 7: Is the plan financially viable?

The final step in the planning process is to estimate the costs and benefits for the company if it carries out the proposed plan. Ascertaining the financial magnitude of the plan makes it possible to:

- determine the total costs, including the administration costs and the staff time required to execute the plan;

- determine the investments needed;
- determine whether it is necessary to use external financing, search for new partners, or seek credit;
- assess the plan's profitability.

Estimating the costs and benefits of the plan is useful in determining:

i. how the proposed plan would contribute to the company's profitability and competitiveness;
ii. how it would impact the structure;
iii. in which ways the proposed plan would facilitate the selection of objectives.

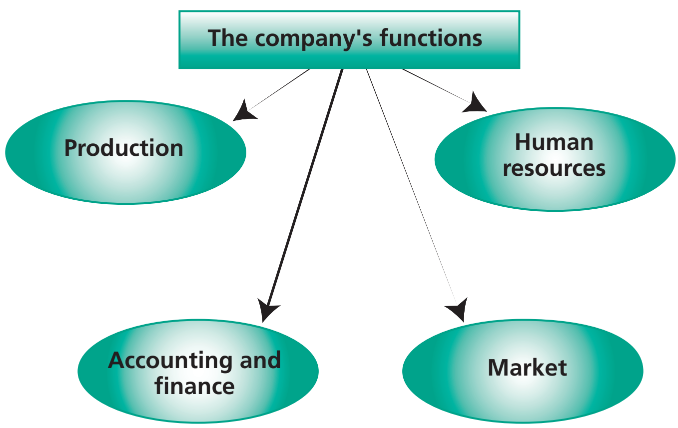
Small and medium enterprises are often very ambitious in establishing their objectives and goals but later find that they do not have the economic resources to implement them. It is therefore very important for an action plan to include a budget.

BUDGET PREPARATION

As discussed in previous modules, a company should be organized according to processes or functions, and it should have an integrating or chain approach, from farm production to delivery to the consumer (from farm to fork). It is also very important for the company to be fully aware of its costs and profitability.

A company's principal functions are production, human resource management, marketing and accounting/finance. In any action plan resulting from a planning process (whether a strategic, operational, marketing or business plan), any correction to a company process must be preceded by a cost estimation (Figure 3). The budget contains a forecast of the revenues and costs for a specific activity, usually on an annual basis. It is the basic tool for studying a potential investment

FIGURE 3
Principle functions of the company



or a change in the company. Appendix 2 presents a methodology for preparing a budget, calculating costs and profits and determining the break-even point.

COMPLETING THE CASE STUDY

Exercise

After reviewing the content of this theme and comparing it with your own experience, review your responses to the tasks listed initially and try to correct or supplement them. Link your replies to the topics that have been covered in this section.

APPLYING THE EXERCISE

Within a continual improvement approach, agro-industrial entrepreneurs should make planning an essential tool for developing the business and for incorporating new ideas or improvements. Conduct the following exercise for applying planning principles in your company.

Step 1

List five changes that you wish to implement in your company. These may vary from very important changes to very simple changes, such as changes in the company's:

- relations with its external environment (markets, suppliers, customers, bank);
- organization, or in the way it carries out a process, incorporates a training plan, etc.

Step 2

Try to prioritize the list of changes, from the most important to the least important, according to your own criteria.

Step 3

Choose the most important change and determine whether the proposed change is related to (or found in) the company's mission statement, objectives, goals or policy.

Step 4

Analyse the internal and external factors that would affect implementation of the desired change either positively or negatively, i.e. carry out a SWOT analysis.

Step 5

Examine the measures or strategies that you could implement to reduce the negative aspects and to exploit the positive aspects.

Step 6

Set a goal resulting from the selected change.

Step 7

Consider what is required to implement the goal.

- Identify the activities that need to be carried out to implement the strategy and to achieve the defined objective:
  a. Is staff training required?
  b. Is investment required?
  c. Is external consultancy required?
  d. How can staff be motivated to become involved in the change?
- Type of resources required:
  e. What type of human resources will be required?
  f. Who should participate in implementing the change?
  g. How long will it take to carry out the change?
  h. How much will it cost to carry out the change?
- Which benefits would be obtained from implementing the change?
  i. What would happen if the change were not carried out?
  j. How will the change affect the company's revenues?
  k. Which other benefits will result?

Step 8

Present an action plan in the format indicated in Appendix 2 and discuss it with colleagues in your company.

MODULE 4

Assessment of the theme

Additional pages may be used to reply to these questions and directions.

1. Describe briefly the importance of planning in an agro-industrial enterprise.
   ....
   ....
   ....
   ....

2. What is the importance of defining the company's mission?
   ....
   ....
   ....
   ....

3. The objectives are very important to any plan; describe briefly the aspects to consider when formulating objectives.
   ....
   ....
   ....
   ....

4. Describe two business objectives and their respective strategies.
   ....
   ....
   ....
   ....

5. What information is included in a budget? Indicate how you would use this tool for carrying out your action plan.
   ....
   ....
   ....
   ....

Summary

- Planning is a tool for focusing the efforts of different company departments to achieve specific objectives. The lack of planning, or planning without reliable and sufficient information, has negative consequences for a company.
- Advantages of planning:
  - improves communication within the company;
  - helps to build business capacity;
  - improves external communications;
  - acts as a control instrument.
- Planning at any level is based on a process involving the following steps:
  - identifying objectives;
  - analysing the external and internal situation;
  - identifying strategies to achieve the desired situation;
  - establishing goals (indicators for achieving the strategy);
  - identifying activities.
- For the company, a mission statement is equivalent to having a map of the zone within which the company can determine the places it wishes to reach. Having clear objectives is equivalent to deciding on which specific points on the map the company should focus its efforts.
- The objectives can be general or specific. For example, strategic plans are developed on the basis of more general business objectives that are achievable only in the long term. On the other hand, operational plans are developed on the basis of specific objectives that contribute to the general objectives and are achievable over the short to medium term.
- Planning is based on knowledge of a company's strengths, weaknesses, opportunities and threats. An analysis of these aspects is known as a SWOT analysis. This is a strategic tool for understanding a company's current situation.
- Strategies provide a general guide to the actions required to achieve the proposed objectives and they define the lines of action, or 'how to get there'.
- Goals are the specific, quantifiable and progressive results that must be obtained in order for the proposed objectives to be achieved.
- Action plans are a set of activities that need to be carried out in order to achieve the established goals for a particular objective.
- The final step in the planning process is to estimate the costs and benefits for the company if it carries out the proposed plan. Ascertaining the financial magnitude of the plan makes it possible to:
  - determine the total costs, including the administration costs and the staff time required to execute the plan;

  - determine the investments needed;
  - determine whether it is necessary to have external financing, search for new partners or seek credit;
  - assess the plan's profitability.
- A budget is an instrument for forecasting the economic impact of the set of activities required to achieve the objectives. The budget is very valuable for the company's overall management. It contains precise information on future revenues and expenses over a specified period arising from the company's operations.

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Appendix 1
Recommended further reading on the themes of Module 4

READING 1: A GUIDE TO MARKETING COSTS AND HOW TO CALCULATE THEM

Author: Shepherd, Andrew W.
Published by: FAO, 1995.
Document:
http://www.fao.org/docrep/U8770S/U8770S00.htm

Description

The goal of this guide is to explain the concepts and fundamentals of the costs, margins and profits of agricultural marketing. The principal types of costs are specified, concise advice on how to calculate them is given and the interpretation of marketing margins is analysed.

LINK OF INTEREST

Tool: Agriventure
Author: FAO
Published by: FAO, 2004.
Programme: can be downloaded from:
http://www.fao.org/inpho/isma?i=INPhO&m=decision&p=Download&lang=en

Description

FAO has developed *Agriventure* as a programme tool for preparing and evaluating an agro-industrial project. This programme guides users through the process of entering data and the required analyses for the formulation of an agro-industry investment project. *Agriventure* follows all the steps in the calculation of needs in terms of raw materials and inputs, estimation of costs for products, utilities, requirements for working capital and fixed capital financing schemes, as well as all the details necessary for a comprehensive assessment of the financial feasibility of the project.

Appendix 2

Preparing an action plan

Small and medium companies can draw up a simple version of the action plan and the timetable of activities, as well as the plan monitoring and assessment. Below is a methodology to help to clarify the process of preparing action plans and timetables to supplement those provided in the reference reading above.

Table A2.1 presents some examples of activities, their duration and the staff responsible for two of the quality goals set for the company. This information can be used to prepare the timetable of activities.

Table A2.2 presents an example of a detailed timetable of activities.

TABLE A2.1
Identification of activities in the action plan

Quality objective		
To modify quality standards to ensure that they meet the demands of the United States Federal Drug Administration and other regulatory authorities		
Chosen strategies		
• Through training and technical assistance in GAP implementation and application, establish strategic alliances with suppliers in order to improve their standards and guarantee the safety of products arriving at the plant • Maintain the commitment to quality and safety in all processing carried out within the company		
Goals for the quality objective		
• Ninety percent of the company's procurement is done through producers' contracts		
Activities		
Description	**Duration (days)**	**Responsibility for execution**
• Preparing model contracts • Raising supplier awareness of the importance of contract work, and modification of the established model contracts (if necessary) • Establishment of contracts • Selection of suppliers • Training activities • Technical assistance with cultivation		
Goals for the quality objective		
• Ninety percent of the company's suppliers have GAP certification		
Activities		
Description	**Duration (days)**	**Responsibility for execution**
• Raising supplier awareness of the importance and principles of GAP • Use of checklists • Preparing GAP application plans for each supplier • Monitoring GAP application • Control of raw materials		

TABLE A2.2
Complete timetable of activities

Plan activities	1	2	3	4	5	6	7	8	9	10	11	12
• Preparation model contracts	x											
• Raising supplier awareness of the importance of contract work, and modification of the established model contracts (if necessary)	x											
• Establishment of contracts		x	x									
• Selection of suppliers			x									
• Training			x	x	x	x	x	x				
• Technical assistance with cultivation								x				
• Raising supplier awareness of the importance and principles of GAP						x	x	x	x	x		
• Use of checklists						x	x	x	x	x	x	
• Preparing GAP application plans for each supplier									x	x	x	
• Monitoring GAP application										x		
• Control of raw materials												

More subject-specific plans can be based on the identified activities, such as a GAP training plan for suppliers. Even if the goals identified are realistic, the team in charge of preparing the plan should consider carefully the potential administrative, technical and financial implications of the activities planned for each goal. The goals should therefore take into account support from other areas of the company responsible for specific activities. After conducting the activities identified in the plan the next step is to assess the costs and benefits for the company.

Both strategic plans and operational plans should include planning for implementation over time, indicating:

i. those responsible;
ii. the areas of the company involved;
iii. the budget required to carry out the plan.

Appendix 3
Is the plan financially feasible?

PREPARING A BUDGET

This section provides additional information to enable entrepreneurs to: (i) prepare a budget and cost all the activities of a company and (ii) obtain tools for analysing benefits, cash flows, margins and break-even points.

THE BUDGET

The budget contains a forecast (usually annual) of the revenues and costs for a specific activity. It also provides a basis for studying any potential investments or changes in the company. If the plan (or investment) proposes to establish a new production line, or if it changes radically the manner of producing a specific product, a full budget must be prepared. However, if the proposal is to modify an existing system or process, only the changes that would occur if the plan were implemented need to be examined. A partial budget takes into account only the investment itself and the aspects affected by it, such as additional costs and revenues, as well as any anticipated cost or revenue reductions, as illustrated below (McGillivray, 1998).

Partial budget

Gains	**Losses**
Additional revenues	Reduction in revenues
Cost reductions	Additional costs

Net benefit = gains – losses

The task of preparing a budget for an action plan is facilitated when the activities are clearly defined. Therefore the following steps are required.

Assessment of the resources needed to implement the proposal

Costs

The resources required to carry out the plan must be identified by making a cost estimate for each of the activities in the plan, taking into account activities that are simultaneous and those that are sequential. The required human, physical and financial resources are assessed for each activity (Table A3.1 and Table A3.2).

Once the estimates have been made for each category, they are grouped into coherent financial units, such as: staff costs, administration costs, operational costs (A3.3).

Costs can be classified generally as follows:

Operational costs are direct costs resulting from carrying out the work, some examples of which are:

- raw material and inputs;
- maintenance of production infrastructure;

TABLE A3.1
Calculation of costs

	Activity		
Item	**Unit cost**	**Quantity**	**Total cost**
• Inputs and materials • Equipment • Services • Transport • Quality control activities	The unit cost is the cost of a single article or unit, e.g. cost per day, per kilometre, per person	The number of units required for the activity (how many), e.g. five days of training, 100 km travelled per week	Multiply the total number of units by the unit cost
Total cost for the activity			The sum of all the individual costs

TABLE A3.2
Calculation of costs

Plan activities	Description	Unit	Quantity	Unit value	Total
• Create supplier awareness of the importance and principles of GAP • Visits to companies to prepare contracts	Time of company agronomists and financial staff	Number of days *(a)*	Number of persons *(b)*	Cost per day worked *(c)*	$a \times b \times c$

TABLE A3.3
Example – Training plan for creating supplier awareness on the topic of GAP

Budget heading	Units	Unit value	Number of units	Total
Training materials				
Paper and photocopies				
Transport costs				
Transport of farmers				
Staff transport				
Food and refreshments				
Staff costs				
Speakers' fees				
Company agronomists' time				
Administrative costs				
Secretarial support				
Mail/telephone				
Total				

- laboratory analysis;
- transport costs;
- costs of training suppliers.

Administrative costs are associated with organizational efforts requiring administration and support to achieve the plan's objectives, such as:

- administrative staff costs (wages, salaries and social benefits);
- rents;
- basic services (water, electricity and waste collection and disposal);
- communications (telephone, internet and other communications);
- office materials;
- vehicles;
- tickets and travel expenses;
- freight;
- maintenance and upkeep of offices, furniture and equipment, except production infrastructure;
- depreciation;
- consulting and advice;
- insurance;
- subscriptions.

Staff costs are associated with product processing staff or with staff involved directly in quality control, supply, sales, distribution and maintenance, as well as administrative and organizational support staff. These costs include salaries and any benefits such as medical services or pension funds.

After calculating the costs, the next step in the budget is to estimate the benefits.

BENEFITS

In most cases, the way to evaluate the benefits of implementing a plan is to assess its impact on the company's revenues. For example, an entrepreneur who decides to invest in purchasing a refrigerated storage room should assess the benefits generated by this investment in terms of:

- the potential extra revenue generated by reduced post-harvest losses;
- the potential extra revenue generated by access to new, more remunerative markets because higher quality products could be offered.

The benefits of a plan may include:

- reducing the time needed to carry out an operation;
- improving the quality of a product or service, generally reflected in higher prices;
- increasing the number of units produced;
- reducing the physical effort required;
- reducing production costs;
- increasing the product's final price.

Therefore, the plan's effects are not always reflected only in the sale price, but also in cost reductions that are considered as a benefit or gain produced by the

MODULE 4

TABLE A3.4
Example of benefits

Quality objective
To modify quality standards to ensure that they meet the demands of the United States Federal Drug Administration and other regulatory authorities
Benefits generated
• Revenues generated by reducing the number of product returns
• Revenues generated by accessing more remunerative markets
• Revenues generated by lower transaction costs because there is no need to look for suppliers
• Reduction in costs for resolving unforeseen problems (less time wasted on 'putting out fires')

plan. It is important for the entrepreneur to capture all the benefits generated (Table A3.4).

The benefits generated by quality and safety assurance programmes or systems may include:

- access to more remunerative markets;
- efficiency over time by investing fewer resources in resolving avoidable problems;
- meeting requirements, enabling the company to maintain its presence in the target market.

In each of the first two cases the company reaps a direct benefit that will be reflected in revenues, while in the third case the benefit does not translate directly into increases in revenues but ensures the company's sustainability in the market. In these cases, one way of evaluating the plan's benefit would be to estimate the costs of making no changes to quality, that is to say, to assess the implications to the company of not implementing the plan.

CASH FLOW

Another useful planning tool is cash flow management. This is a type of budget that projects all the revenues and expenses according to the periods in which they occur. The results of a cash flow analysis can be of two kinds:

- **Surplus,** which occurs when the expected revenues exceed the expenses, in which case the company will have real cash availability.
- **Deficit,** which occurs when the expenses exceed the expected revenues, in which case the company will need to find cash through one of the following:
  – support from the company's owners;
  – debt;
  – credit from suppliers.

A cash deficit is also known as lack of liquidity. If this situation persists it can lead to the company to financial collapse or bankruptcy. During the planning stages, where cash flow projections indicate future lack of liquidity it may mean that **the plan is not viable**. In contrast, positive balances would indicate that **the plan is viable**. Cash flow is important because it allows the company to:

TABLE A3.5
Cash flow

Activity		Month											
No.	**Description**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
1	Cash in the bank at the start of the period												
2	Petty cash at the start of the period												
3	**Cash available at the start of the month (1 + 2)**												
4	Cash sales												
5	Payments received												
6	Other cash revenues												
7	Total cash received during the month (4 + 5 + 6)												
8	Total available (3 + 7)												
9	**Total cash costs in the month**												
10	Cash available at the end of the period (8 – 9)												

- determine whether the company operations will generate sufficient cash to be self-financing;
- determine the cash surplus and forecast the accumulated balances at the end of the year;
- determine the cash deficit, i.e. the cash requirements (both the amount as well as the date when it will be required), so allowing precautions to be taken;
- plan for debt and establish the repayment timetable;
- present clear and precise information to investors, as well as to credit institutions to aid their decision-making.

Cash flow is prepared on the basis of the budget, taking into account the relevant adjustments made to the operations flow chart. Table A3.5 illustrates a cash flow model.

THE BREAK-EVEN POINT

There are a number of indicators for determining the profitability and feasibility of an envisaged change or investment by the company. However, this manual advocates a particularly useful method for analysing the viability of the investment or plan: the **break-even point.** This defines the moment when the revenues generated by the investment or project are covered exactly by the costs, expressed in the form of values, percentages and/or units. This index also shows how great the company profits or losses would be if revenues exceed or were to fall below this point. It is important to estimate the break-even point for the following reasons:

- **It is an important reference point for assessing the feasibility of a plan or investment.** For example, if the break-even point is estimated at US$100 000 per month, the company will make profits when the real revenues exceed this amount. The more the revenues exceed the break-even point, the greater the company's profits will be. On the other hand, if the revenues fall below the break-even point, the result will be a loss for the company.

- **It is a planning tool.** It can be used to estimate the effect of changes in the composition of the company's costs and whether they rise or fall in relation to the minimum revenue threshold. For example, if the cost of materials increases or if a new marketing campaign, quality improvements, staff training or an HACCP or GMP system are implemented, **how much must the company's revenues increase to offset the higher costs without affecting profitability?** In other words, what is the new level of revenues and the new break-even point?
- **It is used to assess the feasibility of a new plan.** If the break-even point indicates that the minimum revenue levels cannot be achieved in a relatively short time, which will therefore affect the company's overall profitability, it is probably not advisable to invest in the new project.
- **It supports decisions on whether or not to accept orders.** For example, the company management has to decide whether or not to accept an order for less than the normal price but for more than the variable costs. It will probably decide to accept the order because the incremental sales will help to cover the fixed costs and will eventually bring the company profits.

How is the break-even point estimated?

There are a number of ways of estimating the break-even point. One of the simplest, easiest to understand and most direct is to determine the **contribution margin**. This is the measure by which each unit or product sold helps to cover the total fixed costs. The following arithmetic formula is used to calculate the break-even point:

Revenues = total costs,

or alternatively

Revenues = fixed costs + variable costs

The contribution margin is the difference between the unit sales price and the unit variable costs:

Contribution margin = unit sales price – unit of variable cost

Example for calculating the break-even point

Natur is an agro-industrial company that processes *lucuma* fruit pulp concentrate and sells it in the Japanese market in packages of 40 kilogram (kg) as an ingredient for the manufacture of ice cream.

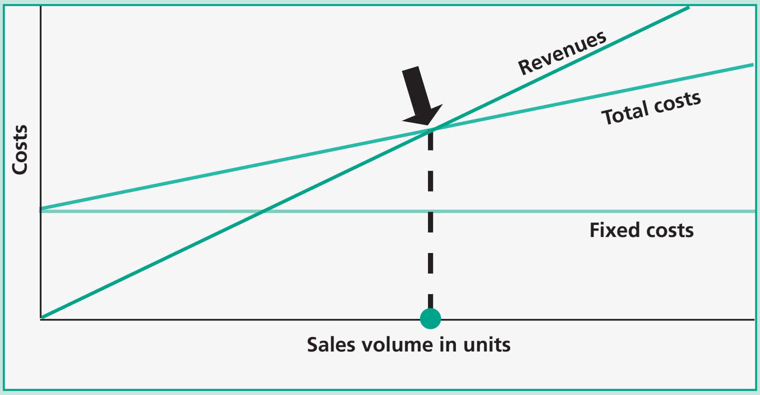
Although the management has confirmed sales of company production, owing to seasonal variation in raw material supplies, it wishes to know the break-even point. It wants to ensure that the company is not operating at a loss, while at the same time maintaining its business deal with foreign customers. A study of the company has produced the following information.

Information collected:	up to 30 June 2005
Study period:	1 month (22 working days)
Product:	40-kg packs of *lucuma* pulp
Fixed costs:	25 000 units
Unit sales price:	100 units
Unit variable costs:	60 units

Procedure

1. The contribution margin is calculated
   Contribution margin = unit sales price – unit variable costs
   Contribution margin = 100 – 60 = 40
2. The total fixed costs are divided by the contribution margin
   Break-even point = total fixed costs / contribution margin
   Break-even point = 25 000 / 40
   Break-even point = 625 units
3. Checking the total costs
   Production at the break-even point = 625 units
   Total variable costs = 625 × 60
   Total variable costs = 37 500
   Total costs = total variable costs + total fixed costs
   Total costs = 37 500 + 25 000
   Total costs = 62 500
4. Checking total sales
   Total revenues = number of units × unit sales price
   Total revenues = 625 × 100
   Total revenues = 62 500
5. Comparison
   At the break-even point, revenues are equal to the total costs

MODULE 4



Source: adapted from *Rural agro-enterprise development project*, Ostertag, C.F., International Center for Tropical Agriculture (CIAT), Colombia, May 2000

FAO
TRAINING
MATERIALS
FOR AGRICULTURAL
MANAGEMENT,
MARKETING
AND FINANCE
11

Cost-effective management tools for ensuring food quality and safety

FOR SMALL AND MEDIUM AGRO-INDUSTRIAL ENTERPRISES

The purpose of this manual is to improve and build the capacities of small and medium agro-industrial enterprises in order to guarantee the quality and safety of food products. The approach integrates the different factors that affect the capacity of a business to produce foods to meet market expectations and recognized standards, while maintaining and increasing the profitability and life of the business. Management and technical aspects are integrated through a practical and cost-effective approach.

The manual includes four modules on the following subjects: the use of market information for improving quality management; systems and tools for improving quality and safety management in agro-industry; the application of quality management principles in small and medium agro-industrial enterprises; planning as a tool for improving quality and safety management.

The manual contains case studies, exercises and bibliographic references, as well as a trainers' guide, PowerPoint presentations (on CD-ROM), appendices with further reading, links of interest and a glossary. The manual aims to assist trainers and entrepreneurs wishing to use the material for self-learning. With this manual, the Food and Agriculture Organization of the United Nations (FAO) provides the small and medium agro-industry sector in developing countries with an important tool for improving competitiveness and the capacity to deliver high-quality products to consumers.

Module 4: Planning as a tool for improving quality and safety management

Cover photo: ©FAO/Giuseppe Bizzarri