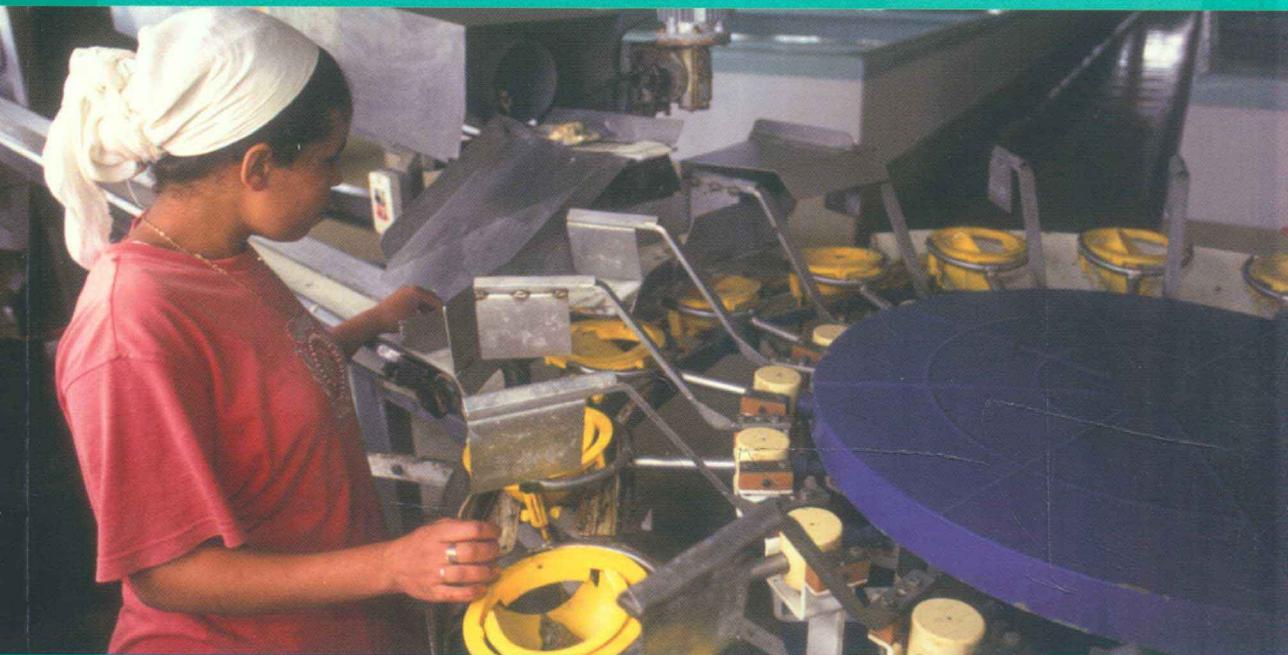


Cost-effective management tools for ensuring food quality and safety

FOR SMALL AND MEDIUM AGRO-INDUSTRIAL ENTERPRISES



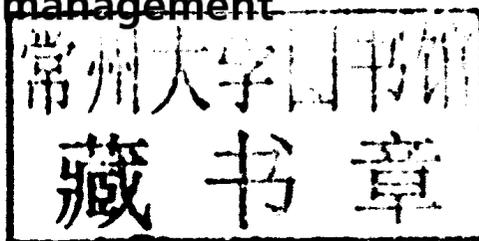
Module 4: Planning as a tool for improving quality and safety management



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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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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 |

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Study guide for the module

PLANNING AS A TOOL FOR IMPROVING QUALITY AND SAFETY MANAGEMENT

| | |
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| Objectives | <ul style="list-style-type: none">• 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 | <p>Theme 1: Planning as a tool for improving quality and safety management</p> <ul style="list-style-type: none">• Planning principles for small and medium agro-industrial enterprises• Planning in agro-industrial enterprises• The planning process in small and medium enterprises |
| Activities | <p>Case study: Planning in agro-industrial enterprises</p> <ul style="list-style-type: none">• Exercise on Theme 1 |
| Assessment | <p>On completion of Theme 1 an exercise is carried out to check the participants' general understanding of the theme</p> |

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 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