

Cost-effective management tools for ensuring food quality and safety

FOR SMALL AND MEDIUM AGRO-INDUSTRIAL ENTERPRISES



Facilitators' manual



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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

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The support of Doyle Baker and Gavin Wall (Rural Infrastructure and Agro-Industries Division, FAO) was also invaluable. Our thanks also go to Cadmo Rosell for the Spanish editing and style review, to Lynette Chalk for formatting the text and to Claudia Bastar and Donna Kilcawley for their administrative assistance.

For the English version, special thanks to William Edwardson for the translation, Malcom Hall, Joan Venanzi and Andrea Broom for editing, Lynette Chalk for formatting, Maaïke Loogman for the added material, Claudia Bastar for her administrative assistance and Larissa D'Aquilio for the production coordination.

General information on the manual

GENERAL OBJECTIVE

Training courses based on this manual are designed to build the capacity of small and medium enterprises in the agro-industrial sector in order to improve quality and safety management and to achieve greater competitiveness and sustainability over the long term.

SPECIFIC OBJECTIVES

The specific objectives of the manual are to:

- Identify the characteristics and usefulness of some basic tools for collecting, processing and analysing market information.
- Present the sequence of steps to be followed for market research and preparing plans.
- Emphasize the importance of a proactive approach to quality and safety within the agro-industrial enterprise.
- Review the tools and systems available for improved food quality and safety assurance throughout the agrifood chain.
- Illustrate the principles of product traceability and its importance as a support tool in quality and safety improvement programmes.
- Underline the importance of quality management for implementing initiatives to improve product quality and safety.
- Outline the use of planning principles as a tool for improving quality and safety.

EXPECTED RESULTS

We hope that those who develop courses based on this manual will:

- adapt its content using examples and exercises based on the local, regional and national business and institutional context;
- direct and advise on the development of practical exercises and activities so that the themes covered in the manual reflect and promote direct improvements in quality and safety management in small and medium enterprises in the agro-industrial sector;
- promote exchanges of experience among small and medium entrepreneurs as a valuable resource for generating new knowledge and facilitating learning.

TARGET AUDIENCE

This manual is aimed at public- and private-sector institutions with responsibilities for the promotion of training, technical assistance and consultancy initiatives, as well as for efforts to improve quality and safety management. This should create opportunities for small and medium enterprises in the agro-industrial sector in local, regional and/or international markets. The users of this manual are likely to include:

- business associations;
- individual small and medium enterprises;
- technical and financial assistance centres;
- consultants;
- educational institutions;
- government institutions responsible for defining policy and programmes to support small and medium enterprises.

Even though the manual has been designed to support formal training courses, the material has been prepared in such a way that it can be used by individual learners under the supervision of a tutor who can provide clarification where necessary.

DESCRIPTION OF THE MANUAL

The manual is divided into four modules, which take at least 40 hours to cover and include classroom sessions and practical exercises using the material discussed in each module.

Each of the modules develops a number of different themes, which contribute to achieving the general and specific objectives of the manual. The modules, together with their respective themes, provide an integrated approach to quality and safety management in small and medium enterprises in the agro-industrial sector.

Figure 1 shows the content and sequence of the learning process used throughout the manual.

FIGURE 1
Sequence of the manual's content



Guidelines for facilitators

INTRODUCTION

The aim of the training process is to boost the technical and operational management skills of producers, entrepreneurs and other actors in the agrifood chain. Training is based on certain premises that guide the application of these skills and achievement of the learning objectives, including:

- development of technical capacity, starting with the personal experience of participants;
- learning from the best practices of others, without losing one's own identity;
- the importance of teamwork, which requires entrepreneurial qualities to be effective.

The practice of learning through experience common to entrepreneurs, as well as their interests, motivations and acquired knowledge, should all be taken into account. This is key to designing effective training processes that stimulate the development of individual and group potential.

These premises underpin this manual. The content is intended to reflect business realities. Case studies, which facilitate the exchange of experiences, and practical activities, which take into account individual and group experiences, are included to initiate a learning process that supports practical managerial improvements.

This section provides facilitators with a set of guidelines for using the manual and for preparing and implementing training courses. These courses are aimed at building the capacity of people involved in small and medium agro-industries for efficient quality and safety management.

WHAT DOES IT MEAN TO BE A FACILITATOR?

Facilitators are not a fountain of knowledge – they are people who undergo a process where they themselves learn, carry out research and produce knowledge. Their main task is to conduct, guide and facilitate the learning process. Facilitators should ideally possess the following characteristics, which are vital to the success of the training process.

Motivation

Facilitators must be willing to share their knowledge and experience with others.

Knowledge of the topic

Although nobody can provide what they do not have, a facilitator's mastery of the subject should extend beyond the material to be taught.

Communication skills

Facilitators should stimulate and motivate the audience, while transmitting the message effectively.

Listening and facilitating participation to generate a two-way learning process

This requires the use of methodologies that facilitate participation and exchanges of ideas among participants.

Flexibility

Facilitators should plan each session, while remaining open to making adjustments to their plans. Presentations should be geared to the level of the group and discuss the group's real interests on any specific theme. The facilitator should be consistent and flexible when making adjustments and always be attuned to the group's needs and requirements.

PREPARATION OF TRAINING COURSES BASED ON THE MANUAL

To be effective, the training process should be based on the training needs of the target audience to ensure that themes and activities strengthen the areas required for knowledge and skill development and to help to change attitudes towards specific tasks.

Prior to implementing the course, facilitators should conduct a general review of the training needs of the audience or target group. There are various ways of achieving this, depending on how the course is delivered. Useful tools for designing the course content to meet the needs of the audience include:

- i. meetings with potential participants;
- ii. registration forms asking participants to describe their interests;
- iii. a discussion with participants during an introductory session.

Prior to the course, facilitators should familiarize themselves with the content of the manual, its components and the proposed training methodologies, as well as the objectives of each module, the themes and the planned activities illustrated in Figure 1.

These aspects are described below.

DETAILED DESCRIPTION OF THE MANUAL CONTENT

The manual is divided into four modules.

MODULE 1: USE OF MARKET INFORMATION FOR IMPROVING QUALITY MANAGEMENT

Objectives

- To recognize the value of market information for improving the competitiveness of agro-industrial enterprises.
- To identify the characteristics and value of some basic tools for the collection, processing and analysis of market information.

- To understand the steps to follow for researching markets and preparing a marketing plan.

Theme 1: Market information needed by the company

- The enterprise and its relationship with the market.
- The importance of market information.
- The market information that needs to be collected.

Theme 2: How is market information collected?

- Research, collecting and processing information.
- Steps to follow for market research.

Theme 3: How is market information used?

- The marketing plan.
- The information flow within the enterprise.

MODULE 2: SYSTEMS AND TOOLS FOR IMPROVING QUALITY AND SAFETY MANAGEMENT IN AGRO-INDUSTRY

Objectives

- To recognize the importance of a proactive approach to quality and safety in an agro-industrial enterprise.
- To review the tools and systems available for ensuring food quality and safety throughout the agrifood chain.
- To illustrate the principles of product traceability and their importance as a support mechanism in food quality and safety programmes.

Theme 1: Management of food quality and safety in agro-industry

- Quality and safety assurance and maintenance are the responsibility of every actor in the chain.
- How to ensure food quality and safety.
- General review of programmes and standards for improving quality and safety management.
- Voluntary and mandatory initiatives in food safety and quality standards.

Theme 2: The importance of product traceability in quality and safety management

- The advantages of applying product traceability principles in agro-industrial enterprises.
- Steps in the implementation of product-tracking tools.
- Application of product traceability tools according to voluntary and mandatory standards.
- Considerations when adopting product traceability tools.
- Product traceability approaches.

MODULE 3: APPLICATION OF QUALITY MANAGEMENT PRINCIPLES IN SMALL AND MEDIUM AGRO-INDUSTRIAL ENTERPRISES

Objectives

- To illustrate the importance of the quality management principles for improving product quality and safety.
- To provide guidelines for the application of quality principles in small and medium agro-industrial enterprises.

Theme 1: Principles of quality management in small and medium agro-industrial enterprises

- General principles of quality management.

Theme 2: Leadership: the key to improving food quality and safety

- Entrepreneurial leadership.
- Leadership and planning in the agro-industrial enterprise.
- Leadership in communication of the enterprise's objectives.

Theme 3: The process approach and continual improvement: effective tools for food quality and safety management

- Management by process.
- The process approach to food quality and safety management.
- Continual improvement.
- The pathway to improvement.

Theme 4: Quality and safety management starting with suppliers

- Cooperation between actors as a precondition for quality and safety assurance throughout the supply chain.
- Fundamental factors for the development of sustainable cooperative relationships.
- Strengthening the client/supplier relationship.

MODULE 4: PLANNING AS A TOOL FOR IMPROVING QUALITY AND SAFETY MANAGEMENT

Objectives

- To describe the nature, purpose, advantages and constraints of planning in the context of small and medium agro-industrial enterprises.
- To provide guidelines for applying planning principles as a tool for improving quality and safety management.

Principal themes

- The importance of planning in the agro-industrial enterprise.
- How to analyse a company by evaluating its strengths, weaknesses, opportunities and threats.

- Planning in an agro-industrial enterprise.
- How to carry out the planning process in small and medium enterprises.

THE FORMAT OF THE MANUAL

All of the modules in this manual use the following format:

- Objectives of the module.
- Themes to be covered.
- Estimated time for development of the module.
- Expected results for each theme.
- List of support materials for the development of each theme.
- Case study.
- Reference reading for development of the theme.
- Exercise.
- Assessment.
- Summary of the module.

TRAINING METHODOLOGIES PROPOSED IN THE MANUAL

Guidelines are presented below on the proposed methodology for developing courses based on the content of this manual.

INTRODUCTORY SECTION

Facilitators should produce an introductory section to the course in which they present the objectives of the course and the course content, including:

- i. the modules and the themes to be developed;
- ii. the time required; and
- iii. the methodology to be used for covering the course material.

Prior to this, facilitators should carry out an initial exercise to evaluate participants' expectations and/or to create an environment in which participants feel motivated to take an active part in the course.

For this exercise, facilitators may be guided by Figure 2. For more details on group dynamics and tools for working in groups, please refer to the material in Module 3, Appendices 1, 4 and 5.

DEVELOPMENT OF THE CONTENT OF EACH MODULE

Figure 3 shows a general scheme of the suggested methodology for developing each module, which involves the following three steps:

Step 1: Introduction to the module

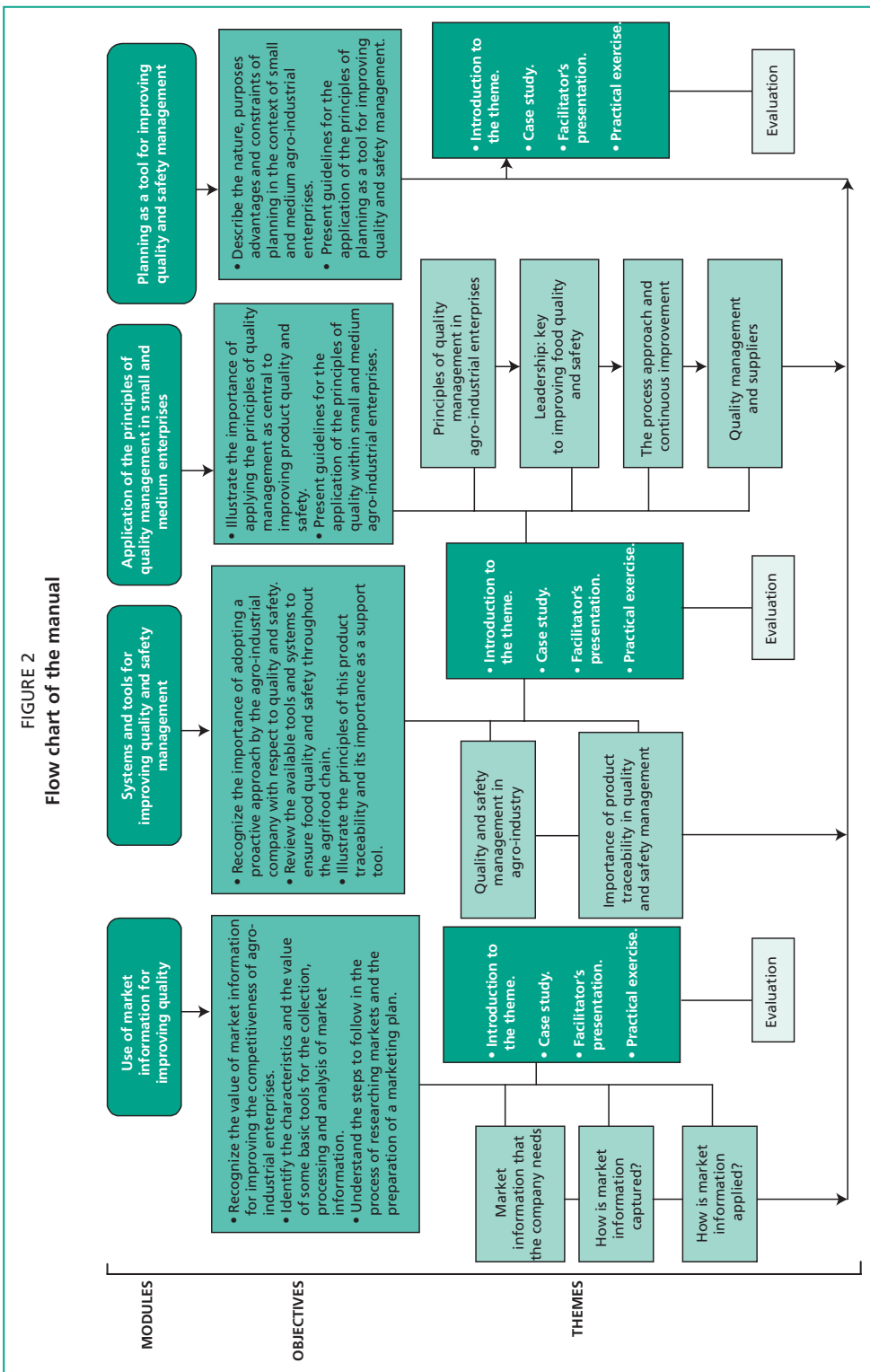
Step 2: Development of each theme

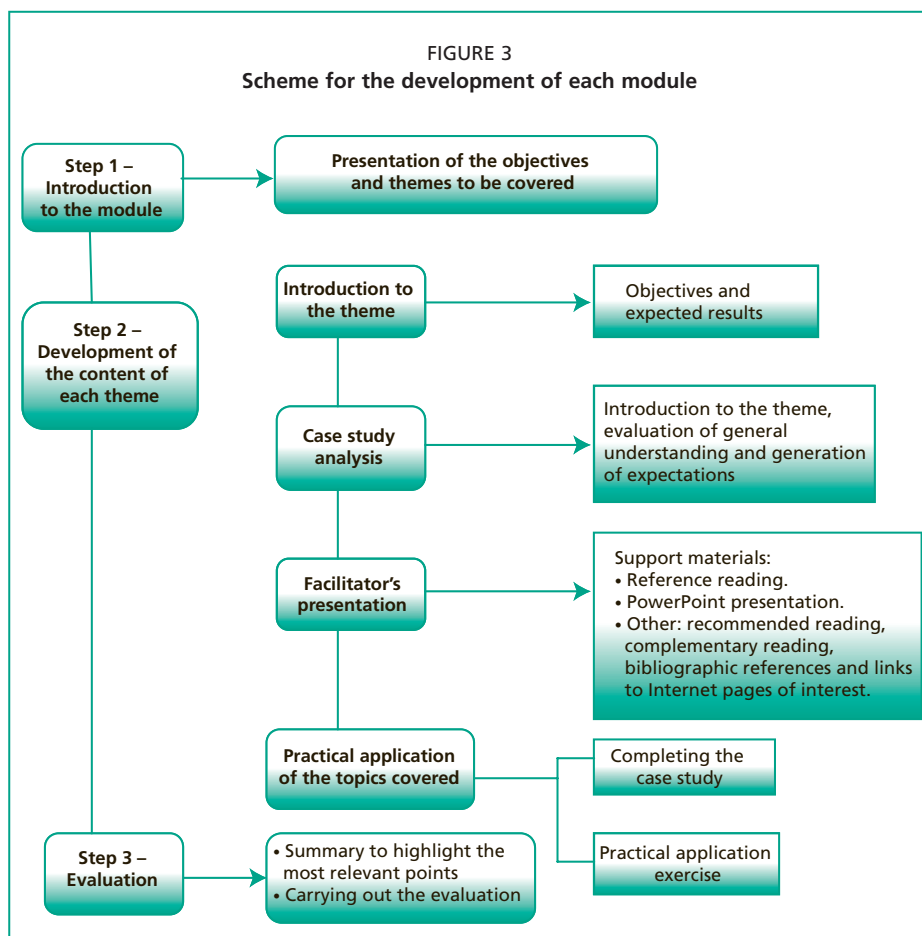
Step 3: Assessment

Each of the three steps is described below.

Step 1: Introduction to the module

The facilitator begins this session by explaining the objectives and themes to be covered in the module concerned.





Step 2: Development of each theme

The content of each theme is divided into four parts:

- introduction to the theme;
- case study (or studies);
- presentation and development of each theme by the facilitator;
- practical application of the topics reviewed.

Introduction to the theme

The facilitator introduces the theme explaining the expected results and describing the content.

Case study

The facilitator presents the theme and starts an open discussion on the topic in order to evaluate the participants' initial level of understanding. To this end, the facilitator presents a case study or situation on each theme. The facilitator

distributes a copy of the case study to the participants, either individually or in groups, and asks them to read the material and to prepare an analysis based on a set of criteria, which are specified in each case. Afterwards the participants present the results of this analysis in a plenary session. The facilitator should also carry out a review of the responses at the end of the theme sessions, modifying them in line with the topics discussed and the knowledge acquired during the sessions.

As a complement to reading and analysing the case studies, at some point during the sessions the facilitator should identify participants interested in sharing their experiences. This should help to develop the themes through the exchange of direct, practical knowledge.

Facilitator's presentation

The facilitator makes a short presentation on the theme, using the PowerPoint slides provided in each case. The facilitator has a range of support materials, including:

- **A reference text that the facilitator can use for developing each of the themes.** This text represents the main technical component of the theme to be covered.
- **Recommended reading.** For each theme a list of reading material has been selected to clarify doubts and enrich knowledge of the technical content. Depending on the themes in each module, the facilitator can extend coverage of topics that require more attention according to the defined training needs of each audience.
- **Bibliographic references.** At the end of each module there are bibliographic references, in which the technical content of each theme is developed.
- **Complementary texts.** For some of the themes, appendices to the manual are included. These are complementary texts that describe methodologies, team activities, etc.
- **Links to web pages of interest.** These links allow facilitators to explore the topic in more detail, clarify issues and enrich their understanding. Similarly, the facilitator can use this information for developing additional activities for participants, such as internet searches and further reading.

Practical exercises

These activities give the participants an opportunity to check their understanding of the topics covered and put their newly acquired knowledge into practice. Each theme includes two activities:

- **Completing the case study.** After developing the theme, the answers to the questions posed at the initial stage of the case study should be reviewed, corrected and enhanced by linking the answers to the topics covered under each theme. The facilitator should therefore organize a plenary session to review the participants' results.
- **Practical application exercise.** For each theme the participants should carry out a practical exercise, either individually or in groups, to improve their

understanding of the topic and apply the new knowledge in the context of their own company. If there is insufficient time during the course, some of the exercises could be carried out by participants outside the classroom sessions. *A short session could be organized for exchanges of experience on the results of the practical exercise, either at the end of the theme or as a preamble to the next theme to be covered.*

Step 3: Assessment

At the end of the theme, the facilitator should arrange a brief assessment to check the level of understanding and assimilation of the topics and elements covered. Each session includes a short summary, which the facilitator may use to highlight the most important topics covered under each theme as a preamble to the assessment.

FLEXIBILITY FOR DESIGNING COURSES AND TRAINING ACTIVITIES BASED ON THE COMPONENTS OF THE MANUAL

The modules may be expanded or reduced according to the type of audience and expectations to enable the facilitator to select the most appropriate topics or make the necessary adjustments.

The order of the modules should be respected. However, if any modifications are necessary, the facilitator should take care not to compromise the general understanding of the modules and themes in their logical sequence and should respect the learning methodology of this manual. Participation in all modules is essential in order to achieve the general objective of the course.

FINAL CONSIDERATIONS

To achieve the best results from the learning process, it is very important for facilitators to prepare ahead by studying the content of the modules and the way in which they are integrated in order to offer viable alternatives to all participants depending on their role in the agro-industrial chain. The following steps should therefore be followed.

1. Preparation

- Review in detail the proposed content for each module: the PowerPoint presentations, the reference reading for the facilitator, the case study and complementary texts for each theme and the associated appendixes.
- Review the recommended reading list and select texts that provide a deeper understanding of themes of special interest, depending on the objectives set for the course. If more study is required, the references at the end of each module may also be read.
- Review the web page links of interest included in the modules.
- Where facilitators with different specializations are used, each of them should have an overview of all the modules and themes that are to be developed during the course.

2. Planning

- Decide how to begin and end each work session.
- Devote the first 5–10 minutes of each session to: (i) describing the objectives of the session; (ii) ensuring that the participants understand and (iii) listening to their concerns.
- Agree a schedule for the group sessions, not only for group work but also for presentations in plenary sessions, and ensure that it is respected.
- Take into account the practical organizational aspects and the materials needed for each of the planned activities.
- Include the office supplies and equipment necessary for group activities: a projector for the PowerPoint presentations, flip charts and markers for flip charts.
- Prepare photocopies of the case studies.
- Copy the initial assessments by module.

3. Assessment

- Achievement of the objectives of each module and theme.
- Scheduled duration.

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.

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