

Course on agribusiness management for producers' associations

Module 1 – Agrofood systems and chains

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Contents

Acronyms and abbreviations	v
Acknowledgments	vi
Introduction	1
General study guidelines	5
The agrofood system: a comprehensive overview	7
List of topics	7
Setting the context	8
Case study: Defining Policies for the Onion Sector in India	10
Analysing the case study	14
The systems concept applied to the agrofood sector	15
Conclusions on the case study	19
Group exercise	20
Summary	20
Unit assessment	22
The chain: a feature of the agrofood system	23
List of topics	23
Setting the context	24
Case study: Mitra Sukamaju Cooperative, Bandung, Indonesia. See also case study Characterization of the cocoa chain in Colombia	26
Analysing the case study	29
Agrofood chains and competitiveness	29
Concept of the agrofood chain, main components and actors	31
Types of chain	33
Concluding the case study	35
Group exercise	36
Summary	36
Unit assessment	37

Agro-industry: strategic component of the agrofood chain	39
List of topics	39
Setting the context	40
Case study: The Rural Dairies of Kheda District, India. See also case study: The Rural Cheese Dairies of Salinas de Bolivar in Ecuador	42
Analysing the case study	44
Types of rural agro-industry	44
Agribusiness concentrations	47
Conclusions on the case study	47
Group exercise	48
Summary	48
Unit assessment	50
Glossary	51
Bibliography	55

Acronyms and abbreviations

AMUL	Anand Milk Union Limited
APEDA	Agricultural Produce Export Development Authority-India
CDP	Cooperative Development Programme
FTA	Free Trade Agreement
GMP	Good Manufacturing Practices
GDP	Gross Domestic Product
ICA	International Cooperative Alliance
ICAR	Indian Council of Agricultural Research
ISO	International Standards Organization
MEP	Minimum Export Price
NGO	Non-Governmental Organization
NDDB	National Dairy Development Board-India
NAFED	National Agricultural Cooperative Marketing Federation Limited-India
NHRDF	National Horticulture Research and Development Foundation-India
PSS	Price Support Scheme
RAI	Rural Agro-Industry
SAFAL	Fruits, Vegetables & Milk Outlets sponsored by Mother Dairy-India
SME	Small and Medium Enterprises
SUBHIKSHA	India's largest Supermarket Chain
UN/ESCAP	UN Social & Economic Commission for Asia-Pacific
UNCTAD	UN Conference on Trade and Development

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Introduction

The **purpose** of this module, entitled *Agrofood systems and chains*, is to provide leaders of producers' associations with an overview of the agricultural and agro-industrial sectors as part of a system within which production and service components are linked, recognizing that a system's sustainability* relies on striking a balance between its economic, social and environmental aspects, as well as designing and implementing policy instruments conducive to sustainability. We have set out to achieve the following **objectives**:

- To understand how the agricultural and agro-industrial sectors operate, as part of an integrated system in which they are linked and interact with other actors within a political, institutional and environmental context that influences their development.
- To discover the roles played by the various actors associated with a chain, in order to ensure that a product reaches the consumer under competitive conditions.
- To stress the economic and social importance of rural agro-industry* within the agrofood chain, as a factor for boosting local development.

The **course content** has been organized into three units:

- **Unit 1 – *The agrofood system: a comprehensive overview*** basically defines the system concept as it applies to the agrofood sector, as well as examining the components comprising the agrofood system from a wider perspective than that of producers' associations alone.
- **Unit 2 – *The chain: a feature of the agrofood system*** explores the chain concept, components and typology as a standard approach for organizing and linking activities, to enable firms to develop competitive advantage, exploit market opportunities and reduce business risk.
- **Unit 3 – *Agro-industry: strategic components of the agrofood chain*** discusses the concept of rural agro-industry as a means for increasing the added value of products in rural economies, and keeping this added value in rural areas. It focuses in particular on the importance of local linkages arising from agribusiness concentrations where a number of production units and services cluster together in a specific area.

In terms of **methodology**, these units have been organized in such a way as to give you the opportunity to discover each unit's specific course content and the skills you will attain. The units will also help you to identify in advance what

you already know and enable you to combine your existing knowledge with the proposed course content to optimum effect. The aim is to build capacity by accumulating new knowledge in a pro-active and participative way.

In terms of **assessment**, we start from the principle that an assessment is of most value when it is used to take decisions for improving the teaching/learning process. With this in mind, we have included three phases:

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

Furthermore, the assessment instruments in this manual can be supplemented with any others that facilitators may consider appropriate. The assessment can also take the form of a group exercise where participants offer a constructive critical assessment of the relevance of the course material and teaching methods.

This manual contains the following sections:

Section	Aim
➤ General guidelines	To promote the learning-to-learn process
➤ List of topics	To present the specific content of each unit
➤ Points to remember	To memorize what you have learned. Initial assessment
➤ Key competencies	To detail the key competencies you will learn
➤ Setting the context	To put into context the subject to be discussed, and update thinking on it
➤ Case study	To illustrate the key issues on the basis of real cases
➤ Explaining key issues	To present the priority course content and analyse it in detail
➤ Boxes	To provide reference material to help with decision-making
➤ Concluding the case study	To provoke thought on the real issues. Formative assessment
➤ Practice exercises	To put into practice the proposed course content
➤ Summary	To help to link, integrate and memorize the key ideas
➤ Unit assessment	To provide an opportunity for self-assessment of the material learnt
➤ Glossary	To clarify ideas on the meaning of selected terms and acronyms
➤ Bibliography	To provide information for personal research

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

General study guidelines

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

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

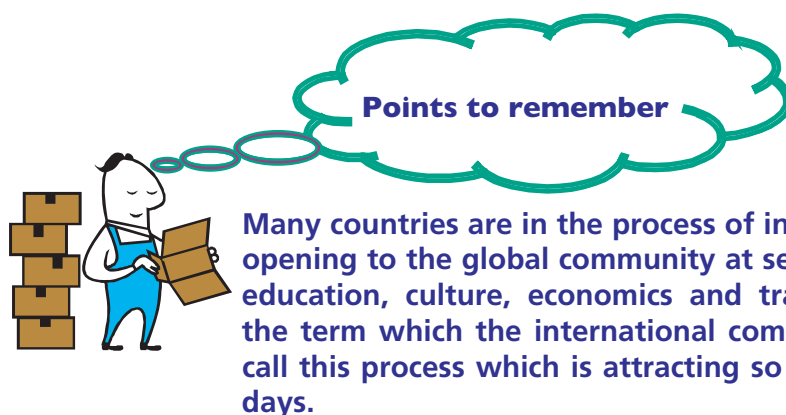
*You can do anything you set your mind to.
Get started now, and have fun.*

The agrofood system: a comprehensive overview

UNIT ONE

LIST OF TOPICS

1. Setting the context
2. Case study: Defining Policies for the Onion Sector in India
3. Analysing the case study
4. The systems concept applied to the agrofood sector
5. Conclusions on the case study
6. Group exercise
7. Summary
8. Unit assessment



What do you know about globalization*? Who does it benefit or affect? Can your association develop independently from this process? Are there factors in your environment which determine your business performance?

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

- Identify from your own experience elements that will help you to see your association as part of a system.

- ✎ Recognize that development trends are creating greater interdependence between global and local production, marketing and consumption systems.
- ✎ Appreciate the importance of a public policy framework that fosters the development of associative rural enterprises.
- ✎ Define what an agrofood system is and differentiate its various components, recognizing the opportunity it offers to analyse and develop policy proposals.
- ✎ Recognize the close relationship between agricultural and agro-industrial production and natural resources management, and understand their impact on the sustainability of production systems.



Setting the context

Globalization is characterized by the opening of domestic markets, together with an accompanying increase in international trade, financial services, spatial reorganization of production and a constant quest for comparative advantage and competitiveness*, which makes technological innovation of great strategic importance.

What is more, market liberalization makes it necessary to bring existing national regulations into line with certain international regulations, standards and measures; such as sanitary, phyto-sanitary and food safety measures. These are discussed and agreed principally in the World Trade Organization* (WTO) and the Codex Alimentarius* Commission.

Agricultural and agro-industrial sectors must be seen as part of a system within which they interact closely with other production and service sectors. This broadens the vision of agriculture and recognizes the importance of economic and production activities that take place outside the primary production process, as well as highlighting the impact of the political, environmental and social environment on these activities.

There are a number of advantages and drawbacks to a system-based approach. Among the advantages, it:

- provides a broader vision of the environment in which a producers' association operates;
- highlights the linkages between the actors involved in the system;

- helps to identify gaps, coherence and contradictions between policy instruments;
- helps to characterize constraints in the system's various components and reveal their influence on the remaining components;
- makes it easier to pinpoint strategic actors capable of becoming dynamic hubs within the system.

The main drawback of the system-based approach is that, being a macro concept, it is more complex to analyse. This situation calls for new types of linkages to be developed between institutions capable of integrating and coordinating the:

- i) public/public;
- ii) public/private, and
- iii) private/private, activities and alliances that can be found throughout a system.

Case study: Defining Policies for the Indian Onion Sector**INTRODUCTION**

Onion-growing has been one of the activities hardest hit by the process of trade opening and globalization in India. It is now undergoing a crisis that jeopardizes the income and welfare of many farm families. This is why men and women onion producers have called on the Indian Government – and in particular the Ministry of Agriculture – to introduce a special policy to help them increase their competitiveness and market share in order to guarantee a better standard of living.

To meet this demand, quantified data on onion production was compiled by the Ministry of Agriculture to serve as a useful instrument for introducing a coherent and well-founded policy for exporting onions.

DISCUSSION

The methodological approach used to identify existing problems was a wide-ranging one, encompassing the entire agrofood system, from the time inputs are received to the moment the product reaches the consumer. In addition, this methodology allows the impact of the agrofood system on the economy to be measured, as well as highlighting the economy's impact on the production system; thus making it useful not only for policy-makers and policy implementers but also for production agents.

Agriculture contributes nearly 25 percent of the Indian Gross Domestic Product (GDP) and provides employment to around two-thirds of the nation's population. About 91 percent of total holdings comprise marginal, small or semi-medium holdings which together account for almost 56 percent of the operated area. The decreasing size of the operated area is leading to reduced production efficiency, as well as diminishing the bargaining power of individual farmers in the market. Exports of agricultural commodities account for nearly 20 percent of national export earnings. Among fresh vegetables, production of onions, tomatoes and mushrooms is reported to be highly export competitive.¹

India ranks first in the world in onion production, with over 480 thousand ha. accounting for around 21 percent of global area planted to onions. Productivity is poor – around 11.4 tonnes/ha – which is sharply lower than the world average of 17.3 tonnes/ha. Onions are grown throughout much of the country, and India produces all three varieties of onion – red, yellow and white.¹ Besides India and

¹ Kumar, Praduman 1996

China, the other major onion-producing countries in Asia are Turkey, Pakistan, Iran and Japan.

The National Horticultural Research Development Foundation – sponsored by an apex level cooperative called the National Agricultural Cooperative Marketing Federation of India – and the National Research Centre for Onion and Garlic of the Indian Council for Agricultural Research, are each engaged in improving the onion sector. In addition to these two organizations, several other crop research institutes of the Council, together with state agricultural universities, are also involved in research on onions. In 1995, a national network was initiated at fifteen centres for the promotion of research to develop F1 hybrids for nine important vegetables including onions.

Onion-growing is profitable, but profit could be increased by improving market organization and removing a number of distortions. These include: lack of transparency in supply management and, at wholesaler level: imports of poor-quality onions; under-invoicing of imports and high profit margins* for agrochemicals. India's onion exports go mainly to neighbouring South-East Asian countries and some Middle-East nations. Malaysia, UAE, Sri Lanka, Bangladesh, Singapore and Saudi Arabia account for the major share of exports from India.² In 2003–04, India exported onions to 42 countries (Table 1).

Price Support Programmes: NAFED-India is responsible for providing marketing support to producers and ensuring that they receive a remunerative price for their products. It also undertakes support price purchases of various commodities for the government. For onions, NAFED intervenes in the domestic

TABLE 1
List of major importers

No	Importing Country	Quantity (tonnes)		Value ('000 US\$)	
		1997–98	2003–04	1997–98	2003–04
01	Malaysia	78 376	92 420	11 078	17 859
02	UAE	85 532	98 680	10 138	14 749
03	Singapore	32 441	42 008	6 566	9 376
04	Sri Lanka	57 208	68.980	6 277	8 323
05	Bangladesh	50 035	60 340	5 647	9 095
06	Saudi Arabia	13 114	18 220	2 006	2 224
07	Mauritius	5 096	8 310	636	834
08	Kuwait	5 067	8 418	586	856
09	Bahrain	1 633	2 810	280	363
10	Maldives	807	1 300	95	182
11	Other Countries	3 691	6 700	704	1 276

Source: Export Statistics for Agro and Food Products, India, 2003–04. Agricultural and Processed Food Products Export Development Authority (APEDA), 2005.

¹ Singh, Narendra and Netra Pal 1996

² APEDA. 2005. <http://www.indiancommodity.com/statistics/onion>

market whenever there is a glut and prices reach extremely high levels. Prices prevailing in major markets all over the country are, therefore, reviewed daily. Procurement prices for onions are decided by NAFED-India on the basis of cost of production, and procurement is initiated in the markets and from the farmers directly. This system benefits the producers, particularly the small producers who have low carrying capacity and are forced to sell immediately after harvest on account of financial constraints.

In the case of external trade, the Price Fixation Committee of NAFED-India is responsible for setting the minimum export price (MEP) of onions on a monthly basis. Factors such as market trends, world prices and domestic prices, as well as margins, are considered in arriving at a minimum export price for onions.

An inter-ministerial group comprising representatives of the Ministries of Commerce, Consumer Affairs, and Agriculture and NAFED-India, decide the export quotas to be allocated to each canalizing agency. These quotas are fixed for varying periods – generally fifteen days to a month.

NAFED-India has constructed modern state-of-the-art storage facilities near its major procurement centres in the states of Maharashtra, Gujarat and Tamil Nadu. Onions require storage facilities with a sufficient inflow of fresh air, so consignments are packed in hessian bags which allow air to pass through. Export consignments are transported by NAFED's associated shippers in specially equipped sea vessels.

Some of the study's conclusions were that:

- in spite of existing distortions, onion-growing is profitable in all three areas analysed. The most profitable production areas are situated in the states of Maharashtra, Gujarat and Tamil Nadu;
- a large proportion of onion production is lost post-harvest owing to such problems as rotting, sprouting and weight loss. This is a result of the poor genetic material used and failure to invest in suitable drying technology;
- India has the capacity to increase its competitiveness by reducing costs using through improved agricultural practices, including integrated pest and disease management;
- there is plenty of scope for producers to increase their profits if measures are taken to correct these distortions.

CONCLUSION

The study concluded that the main priority for Indian domestic onion policy is to resolve the problem of post-harvest losses by investing in research to identify

more appropriate varieties, producing quality seed and constructing improved drying and storage infrastructure.

Another priority for domestic onion policy should be to exercise tighter controls on imported onions in order to address quality, disease and under-invoicing problems. Policy changes should also help build the technical and financial capacity of producer organizations, to enable them to become more involved in marketing.

In short, using an agrofood system-based approach to analyse the problems of the onion sector has led to the definition of a clearer domestic policy. This now encompasses such components as post-harvest operations, input supplies and marketing – in addition to pure production aspects.

Case study analysis

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

1. What do you think was the precondition for onion producers to be able to lobby the Indian Government to define a policy for their sector?
2. The shared vision of Indian onion producers was to increase their competitiveness and at the same time remain in the market, so guaranteeing a better standard of living. Do you share this vision? Or do you think there is some other factor which has been left out? Why?
3. In this particular case, how did the study of the Indian onion sector contribute to the definition of an appropriate policy? Why?
4. In your view, what should a similar study of your agribusiness sector comprise? What would the topics, approach and methodology be?

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

THE NATIONAL AGRICULTURAL COOPERATIVE MARKETING FEDERATION OF INDIA LTD. (NAFED-INDIA)

NAFED-India was established in October 1958 as an apex cooperative marketing body playing a key role in the Cooperative Movement. It enjoys a unique place in the agriculture sector of India being a 'farmer friendly' organization dealing with a wide range of agricultural commodities including: food grains, pulses, oilseeds, spices, horticultural produce, cotton, tea, jute, poultry products, and fertilisers.

NAFED functions through its Headquarters in New Delhi and four Regional Offices located in New Delhi, Chennai, Calcutta and Mumbai. These are supported by 24 Branch Offices, 8 Sub-Offices and 18 Industrial Units/Agro-Service Centres/Godowns/Shops that are spread all over India. Its membership comprises of state-level marketing federations, apex-level marketing federations, state-level tribal and commodity federations, primary marketing/processing societies, national-level cooperative organizations and the Government of India.

It achieved a turnover of US\$307 million in 2003–04 when exports reached a value of US\$122 million. Rice, wheat, groundnuts and maize were the major commodities exported, in addition to smaller quantities of onions, garlic, sugar and rubber and minor crops. The Government of India provides support to farmers through the mechanism of Price Support Scheme (PSS) to sustain and improve the production of food grain, oilseeds and pulses. Bumper production of perishable crops sometimes leads to sudden price crashes. At such times, the Government of India, at the request of the concerned state government, allows NAFED to purchase such commodities (not covered under the Price Support Scheme). NAFED also procures jute and poultry products.

To improve the socio-economic condition of the farmers in the North-East Region, NAFED has been continuously extending its marketing support to NE States by handling products like tea and arjun flower. Similarly, NAFED is providing support to tribal areas, particularly Niger seed growers in the states of Orissa, Madhya Pradesh, Karnataka and Bihar. NAFED is also involved in fertiliser distribution in the states of Bihar, Uttar Pradesh, Assam, Punjab, Uttaranchal and Tamilnadu. As part of diversification, it has also entered the seed business. Consumer marketing has been identified as one of the focal areas of expansion. Voluminous supplies of the NAFED brand of edible oil, basmati rice, tea, spices etc. have been made available in various states through its retail outlets.

NAFED has created additional infrastructure for the warehousing, grading and packing of important agricultural commodities. It has also established various industrial units for production of agricultural inputs. Production of bio-fertilizers has been undertaken at its Indore (Madhya Pradesh) and Bharatpur (Rajasthan) plants. Processing and cold storage facilities have also been provided by the organization. In addition, NAFED has launched a scheme to provide advances to farmers against stock stored in NAFED/Societies godowns. The underlying idea of the scheme is to provide funds to meet their immediate needs and, at the same time, give them an option to arrange the sale of their produce at the most opportune time instead of selling it immediately at whatever price is available.

Web site: www.nafed-india.com

The systems concept applied to the agrofood sector

In the past 30 years, there have been unprecedented changes in various components of world agriculture as a result of globalization; including changes in consumer demand, the advent of new technologies and the need to preserve land, water and biodiversity. Consequently, agriculture in the late twentieth century came to be

viewed as a complete system, going beyond the traditional production-centred concept.

There are a number of different definitions for an agrofood system. For example, an agrofood system can be defined as a set of activities which combine to make and distribute agrifood products, and consequently act to meet human nutrition needs in a particular society.

Another concept developed in the late 1950s, closely linked with the above concept, is that of “agribusinesses”. These are defined as: “the sum total of all operations involved in the manufacture and distribution of farm supplies. These consist of production operations on the farm, and the storage, processing and distribution of farm commodities and items made from them.”

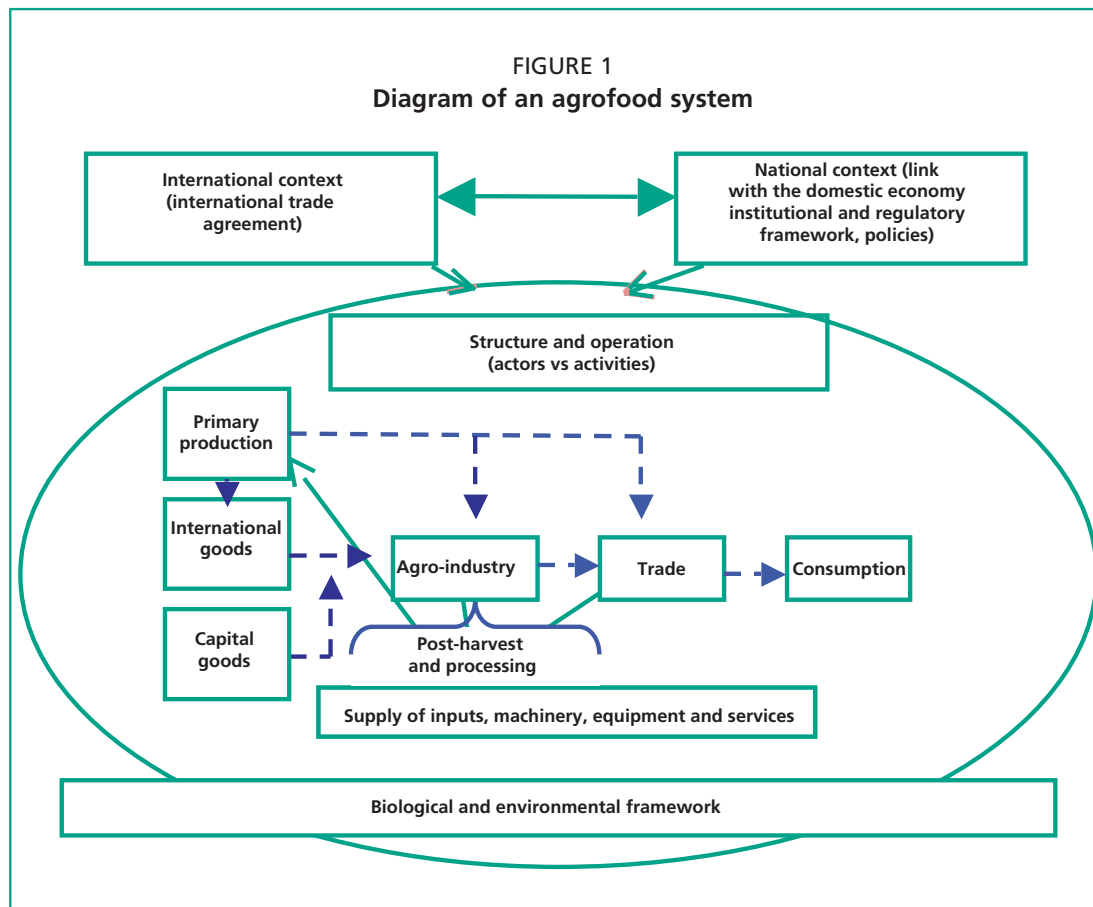
An agrofood system is considered to exist where the following conditions apply:

- ✓ There is a set of components (input-supplier, agricultural, commercial, agro-industrial, distribution and consumption components).
- ✓ There are linkages between these components and their environment (support, technical and financial services: production services, policy instruments and their impact; the environment).
- ✓ There is a common objective (to supply products that meet the needs of different consumers, taking into consideration economic, social and environmental factors).
- ✓ Where changes occur in one component (prices, supply, quality, regulations, etc.) they impact on all the others.

Producers' associations can be positioned within different links in the chain, depending on the activity they carry out: i.e. primary production, the manufacture of intermediate products, or agro-industry*.

A producers' association has a series of linkages with suppliers of inputs, machinery and equipment, and with technical and financial service providers. In turn, underpinning these linkages is a macro-environment defined by an international context. Nowadays, this tends to take the form of trade agreements concluded between various countries. There is also a national context determined by sectoral or macroeconomic policies (including policies for tax, tariffs, credit, investment incentives, and science and technology).

Significantly, the environmental component is part of any agrofood system because of its importance for the agricultural and agro-industrial sectors, which both have close ties with the management of natural resources. As a result



of concerns over this issue in recent years, a growing number of rules and requirements have been introduced, some of which have been imposed by markets themselves. This has led to the development and implementation of approaches and methodologies such as “clean technologies”*, “good manufacturing practices”* and “good agricultural practices”*, amongst others.

The diagram of the agrofood system (Figure 1), shows the interactions between its various levels.

International context

International trade agreements establish conditions of market access for products. Nowadays, virtually all Asian countries are engaged in negotiating or implementing free trade agreements (FTA) among different members of regional integration blocks, or with countries outside the region. The main points of such agreements concern: tariff schedules, import quotas, production incentives and intellectual property. A few key elements for international competitiveness, such as subsidies and sanitary and food safety agreements, are discussed and agreed within the World Trade Organization (WTO).

Domestic context

This context depends upon each country's specific social, political and institutional system. In addition to the above elements of macro-economic policy, there are other factors which define the domestic context. These include: i) institutional constraints and opportunities such as fragile public and private organizations and the narrow-minded visions of ministries and other support institutions; ii) income levels, and iii) the level of education. The quality of – and access to – communications and basic services also impacts on the type and quantity of food demanded by consumers.

Structure of the agrofood system itself

This corresponds to the production component and to the flows of goods and services within the system. The relevant actors and linkages are later described as a chain and are discussed in detail in the following units of this module.

Environmental component

This component highlights the link between production aspects and their impact on natural resources and the environment. Environmental degradation affects producers through reduced crop and livestock yields, pests and diseases, the need to develop and apply environmentally-friendly technologies, and the need to meet an ever-increasing number of market requirements in response to consumer concerns over environmental issues.

Conclusions on the case study

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

1. What do you think was the precondition for onion producers to be able to lobby the Indian Government to define a policy for their sector?

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2. The shared vision of Indian onion producers was to increase their competitiveness and at the same time remain in the market. Do you share this vision? Or do you think there is some other factor which has been left out? Why?

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3. In this particular case, how did the study of India's onion sector contribute to the definition of an appropriate policy? Why?

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4. In your view, what should a similar study of your agribusiness sector comprise? What would the topics, approach and methodology be?

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Group exercise

1. Imagine that your producers' association has identified an opportunity for placing a non-traditional export product on the United States market. As leader of your agribusiness you wish to assess the viability of this opportunity, for which you basically need to:
 - a) survey the size and commercial conditions of the market;
 - b) find out which quality standards this market demands;
 - c) improve the product's presentation.
 - ✓ In your environment, do you know of a policy or programme that could help you to develop this initiative?
 - ✓ Which entities in your environment would you approach for support to enable you to achieve your aim?
 - ✓ Which factors in your environment stand in the way of exploiting this opportunity?

Summary

- The agrofood system-based approach makes it possible to study a complex reality and to position a producers' association within the context in which it does business.
- The sustainability* of current production systems relies on how the balance is struck between the exploitation and preservation of natural resources, such as water, land and biodiversity. A system-based approach makes it possible to visualize this link, as well as to predict and assess the impact of production systems on the environment.
- Developmental trends highlight the importance of using a system-based approach to the analysis of the activities of producers' associations, given the impact of factors such as trade liberalization*, climate change and environmental concerns have on their performance.
- The system-based approach to agrofood facilitates the definition of sectoral and intersectoral support policies for economic and productive

activity. It also stimulates dialogue between the various public and private stakeholders involved, when drawing-up and discussing proposals and seeking consensus.

- There are a number of different definitions for an agrofood system. According to Malassis, an agrofood system is a set of activities which combine to make and distribute agrifood products, and consequently, to meet human nutrition needs in a particular society.

An agrofood system is considered to exist where the following conditions apply:

- ✓ there is a set of components (input-supplier, agricultural, commercial, agro-industrial, distribution and consumption components);
- ✓ there are linkages between these components and their environment (support, technical and financial services: production services, policy instruments and their impact; the environment);
- ✓ there is a common objective (to supply products that meet the needs of different consumers, taking into consideration economic, social and environmental factors);
- ✓ where changes occur in one component (prices, supply, quality, regulations, etc.) they impact on all the others.

Unit assessment

Answer the following questions on additional sheets of paper:

1. Which environmental factors have the greatest influence on the development of the agrifood system to which your business activity belongs? How is this influence exerted and how can it be addressed?

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2. Consider whether your country has policies that meet the needs of actors of the agrofood system. If no policies exist, why do you think this is? Do you have any suggestions?

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3. Define the agrofood system in your own words, as you see it in relation to your own agribusiness.

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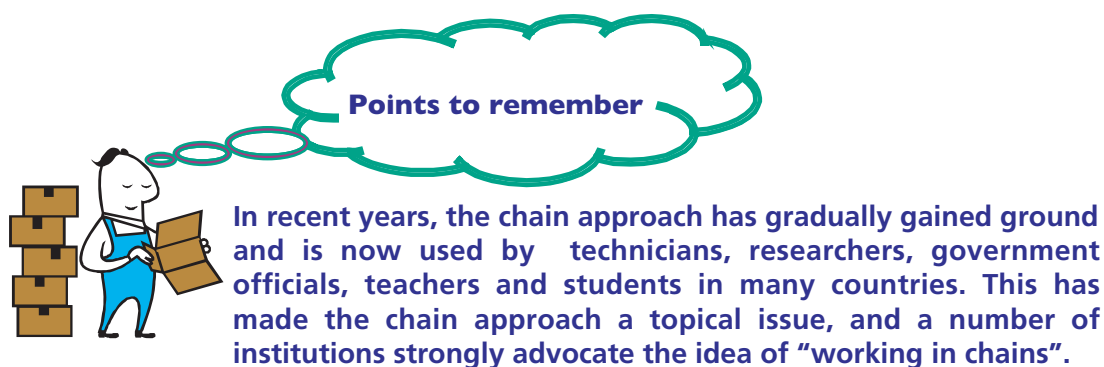
While attempting to answer these questions if you have any doubts or feel that you do not have sufficient information for the analysis, take another look at the manual, consult the students' handbook or contact the facilitator.

The chain: a feature of the agrofood system

UNIT TWO

LIST OF TOPICS

1. Setting the context
2. Case study: Mitra Sukamaju Cooperative, Bandung. Indonesia. See also case study Characterization of the cocoa chain in Colombia
3. Analysing the case study
4. Agrofood chains and competitiveness
5. Concept of the agrofood chain, main components and actors
6. Types of chain
7. Concluding the case study
8. Group exercise
9. Summary
10. Unit assessment



But do we know exactly what a chain is? Who makes up the chain? Are all chains the same, or do they differ? Do chains exist naturally? Meaning that it is only necessary to organize the linkages between the actors in a chain. Is outside intervention needed to promote the creation of chains? In short, why is it useful for the leader of a producers’ association to recognize and understand these concepts?

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

- 🌀 Identify factors from your own experience that allow you to visualize your rural enterprise as part of an agrofood chain.
- 🌀 Recognize the growing appropriation of the chain approach by Governments, development and cooperation agencies and the private sector itself, as an opportunity for developing and improving the competitiveness of rural enterprises.
- 🌀 Define what an agrofood chain is and identify its main components and actors, differentiating between the various types.
- 🌀 Recognise that attitudes, such as transparency and tolerance in consensus-seeking dialogue, are needed in order to forge closer relations between actors in the same chain who in the past have tended to keep themselves at a distance and adopt opposing positions.



Setting the context

The chain concept is broad in scope. Although it is a reality, it can also be seen as an academic concept to be interpreted, at the same time it is a methodological tool for analysing and organizing the flow of phases and linkages leading to an agricultural product reaching a consumer.

Using the chain concept it is possible to:

- analyse the characteristics of the different actors and the linkages between them, allowing an agricultural product to reach consumers in competitive, secure, accessible and sustainable conditions;
- plan the implementation of activities so as to meet strategic objectives established as part of the shared vision and mission of the main stakeholders in the chain;
- promote competitiveness, together with the principles of equity* (win-win), food security* (guaranteed access to safe products) and sustainability (responsible use of natural resources);
- promote the organization of small- and medium-sized producers who understand that cooperation is crucial for linking-up with dynamic actors in competitive agrofood chains;
- foster dialogue and consultation between different economic operators who have traditionally been at loggerheads over matters such as prices, quality, means of payment, or breach of agreement; but who are now starting to see and acknowledge themselves as partners and allies. To achieve this, it

is fundamental to build trust, via processes of rapprochement governed by transparency, tolerance and respect;

- encourage consultation between different institutions in the public sector, as well as between the public and private sectors, which promotes the formulation, presentation and adoption of policy instruments.

The chain concept has been promoted using these elements of reference. The process is usually instigated by agriculture ministries, together with other public institutions such as ministries of trade and industry, as well as export promotion agencies. In some countries, national competitiveness councils have been set up to improve the intersectoral coordination needed to implement the chain concept.

The process of implementing these initiatives for awareness-raising, promotion, designing policy instruments and supporting the organization of agrofood chains has also revealed constraints on the chain approach which are more obvious at local level. Considerations that are of little consequence when chains are analysed at the macro level – such as water management, land use and the application of farm production systems – become crucially important at the micro level. This makes it necessary to constantly rethink and improve chain approaches and, above all, their implementation strategies.

Beijing Daxing District Association for Farm and Sideline Products Distribution

The Beijing Association was sponsored by Daxing District Supply and Marketing Cooperative in early 2004 with a membership of over 300 enterprises engaged in production, purchase, storage, processing and marketing of farm and sideline products. It handles 6,000 tons of processed vegetables supplied by over 700 farm households. The Association, with its eleven branch offices, has developed a 'trinity' operation comprising of leading enterprises, distribution website, and a contingent of brokers. The Beijing Lvtian Farm and Sideline Products Purchasing and Marketing Company, a close associate of the Association, has a chain of cold stores and processing units, plus ancillary facilities such as exhibition halls and offices. The processed vegetables are distributed to five large supermarkets run by Makro, Wumark, Bon Jour, Walmart and Dia. Eighty chain stores and thirty convenience stores have also been opened to sell the products.

Through the Association's organization and coordination, product distribution has been integrated to share resources, develop horizontal integration, promote close cooperation and common development, and assist industrialised agricultural operations, in order to increase production and give higher economic returns to farmers.

The Association lays special emphasis on maintaining the highest sanitation and hygiene standards and helps to improve the performance capacity of its employees. It has also been negotiating with exporters, targeting the Japanese market where the cost of production of fruits and vegetables is high.

Source: International Cooperative Alliance Asia-Pacific, New Delhi. Course 20. 2006

Case study: Mitra Sukamaju Cooperative, Bandung, Indonesia**INTRODUCTION**

In several Asian countries hot food is the food of choice. Among these countries, Chinese, Indians, Indonesians and Sri Lankans particularly enjoy hot food laced with red dried chillies (whole, fried or in powder form) and small green chillies. Green peppers cut into small bits and dipped in soy sauce are common in many restaurants and homes.

The West Java area of Indonesia is famous for producing paprika chilli. The two main locations in West Java which are developing this plant are Bogor and Bandung. Individual farmers, and some restaurants and food processors, have dominated its cultivation, but in 1994 some farmers organized themselves into a farmers' group. With the success of this experiment, in April 1999 this group of farmers formalized themselves into a cooperative called the Mitra Sukamaju Cooperative. In the initial stages, the Cooperative procured seed from the Netherlands, but now use seed produced within the country and distributed by an agro-firm. The Cooperative now produces 8–16 tonnes of green paprika per month. It also links farmers with the market, obtains technical assistance from the nearby Bogor Institute of Agriculture, and negotiates with private seed suppliers. Some of the more progressive farmers from the Cooperative also offer technical guidance to other farmers free of charge.

Fresh paprika is supplied to restaurants, supermarkets and hotels in the Jakarta and Bandung area, in addition to the local markets for home consumption. The Cooperative also supplies the product to Singapore. Encouraged by the success of paprika production in West Java, a number of farmers and farmers' groups have also initiated production. The product is now used in a number of food processing enterprises; e.g. fast food and ready-to-eat noodles. The production and marketing of the product is still based on individual initiatives, as there is no centralized marketing agency. The marketing channel is generally through the wholesale market and individual vegetable traders. A centralized marketing agency could have created a stronger bargaining power and also ensure efficient marketing of the produce. There is great potential for the Cooperative to initiate some processing activities, i.e., production of chilli paste, chilli powder, chilli pickles, etc. There is currently no special effort to add value, except for washing and packing (in smaller and larger packs as per the requirements of restaurants and hotels).

DISCUSSION

Three main types of private economic operators are involved in the chain: farmers, cooperatives and consumption centres. Support institutions and service providers are also linked to the chilli chain (producers' cooperative, research, extension and human resource training institutions). The Cooperative seems to be in a favourable situation because the demand for this special variety of paprika is high and its production is still limited. There is a need for the Cooperative to provide a higher level of extension, good quality seed, agro-processing and market negotiations.

CONCLUSION

Among the support agencies engaged in the production and marketing of paprika in West Java, the Cooperative provides support to paprika farmers by making seeds available. It also contacts the Bogor Institute of Agriculture for technical support to the farmers. Production has been increasing steadily and the economic returns to the farmers have been significant. The Cooperative now needs to play a more active role in providing stronger bargaining power to the farmers, and also to initiate some value-adding activities.

Analysing the case study

Based on your personal experience, consider the following questions:

1. Do you think that paprika producers play a major role in setting prices for buying and selling paprika? Why?
2. What do you consider to be the main advantages in Indonesia's paprika-chain stakeholders getting organized and coordinating their activities?
3. Why do you think it was possible for a Competitiveness Agreement to be concluded between actors who may be at loggerheads and among whom there may be a complete imbalance?
4. Which similarities and differences do you find between the situation in the case study and what is happening in the chain to which your associative rural enterprise belongs?

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

Agrofood chains and competitiveness

Agrofood chains are operating in increasingly competitive markets where there are efficient actors willing to cut their costs to a minimum without sacrificing quality.

By organizing agribusinesses in line with the agrofood chain model, it often becomes possible to reduce transaction costs* and increase profit margins of agribusinesses by rationalizing operations, achieving economies of scale and reducing the steps between production and consumption. In addition, organizing the agrofood chain leads to better planning of primary and industrial production and guarantees stable product volume and quality.

The organization of chains therefore makes it possible to improve competitiveness, defined as, “a comparative concept based on the dynamic capacity of a local agrifood chain, to steadily maintain, expand and improve its domestic and foreign market share by producing, distributing and selling goods and services in the time, place and form required, with the ultimate aim of serving society.”

In other words, to be competitive it is necessary to produce quality goods and services for the market which can be sustained over time. It is also important to adapt to change where required, in order to maintain or increase market share.

Concept of the agrofood chain, main components and actors

Chains can be considered as a part of the agrifood system. They can be seen as an economic and social reality involving a set of actors and activities that interact and work together to satisfy the needs of specific markets.

An agrofood chain is made up of several components including: production, harvest and post-harvest; marketing, transport and storage operations; manufacturing, preserving and processing activities; and final distribution and consumption.

Actors involved in each of the different components of the chain vary widely. This tends to be reflected in the sort of relationship between them and the type of chains they create.

- The primary component of the chain includes small-, medium- and large-scale producers who differ in terms of level of education, technology used, productivity, and level of organization, rather than simply in terms of farm size. Producers with little access to production factors; such as land, capital, education or technology, often link with traders in the informal sector. In turn, traders in the informal sector associate with retailers or processors in the same sector.
- The intermediate marketing link in the chain includes transport and storage service providers in chains associated with international markets. It also includes exporters and providers of logistical services. There are differences between these actors, usually related to how informal they are in terms of business capital, the technologies used, and service quality and security.
- The post-harvest component of the chain is highly diverse, not only in terms of classification such as large-, medium-, small- and micro enterprises, but also in terms of location and the level of involvement with rural producers and consumers.
- The distribution element of the chain includes wholesalers, importers and exporters, as well as an increasing number of supermarkets. Competing with them is an endless number of small- and medium-sized retail outlets.
- The consumer element of the chain includes various types of consumers with different income levels and purchasing power. Product differentiation has become very important and market shares for special niches have emerged, such as:
 - i) organic products;
 - ii) low-calorie and low-fat products;

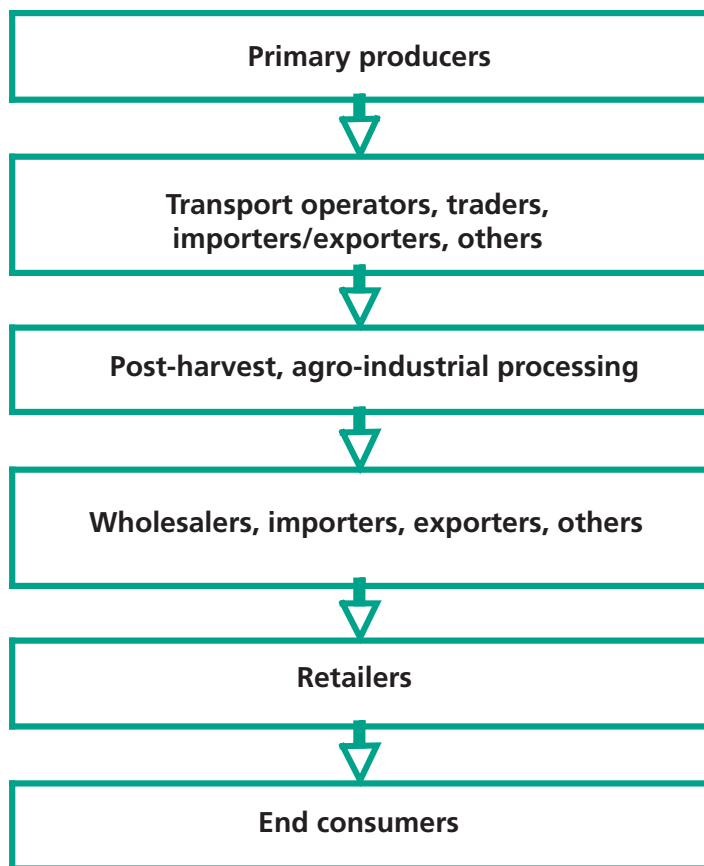
- iii) products for athletes;
- iv) products for different ages, and
- v) nostalgia products.

Consumers can also be classified according to: family size; time available for shopping, preparing and eating food; age; residency, or education (Figure 2).

Other actors involved in the agrofood chains include:

- producers and providers of farm inputs such as seeds, fertilizers, herbicides, pesticides, artificial insemination services, vaccines and drugs;
- suppliers of agricultural, fishery and industrial machinery for sale or hire;
- producers and suppliers of inputs and ingredients for manufacturing (packaging, flavourings, colourings and other elements required for processing);
- providers of technical support services (training, technical assistance, research, information) and finance.

FIGURE 2
Diagram of the agrofood chain



Lastly, there are indirect stakeholders, usually represented by national or decentralized public institutions including agriculture, industry, trade and health ministries; decentralized bodies responsible for health and safety or tax aspects; and legislative bodies such as public policymakers.

Types of chain

Different criteria can be used to characterize agrofood chains depending on the purpose of the classification. Some of the criteria for categorizing chains and the differences within the categories are:

➤ *Classification based on area of activity*

Chains can be classified as local, regional, national or international/global. In most cases, local or regional chains – also called links – are associated with national or international chains, normally via the manufacturing or final distribution link in the chain, to cater to national or international markets.

➤ *Classification based on scope*

There are business chains (nuclear chains) that link together small producers, which are chains developed and structured around a large purchaser like an agro-industry, supermarket chain or exporter.

➤ *Classification based on organization*

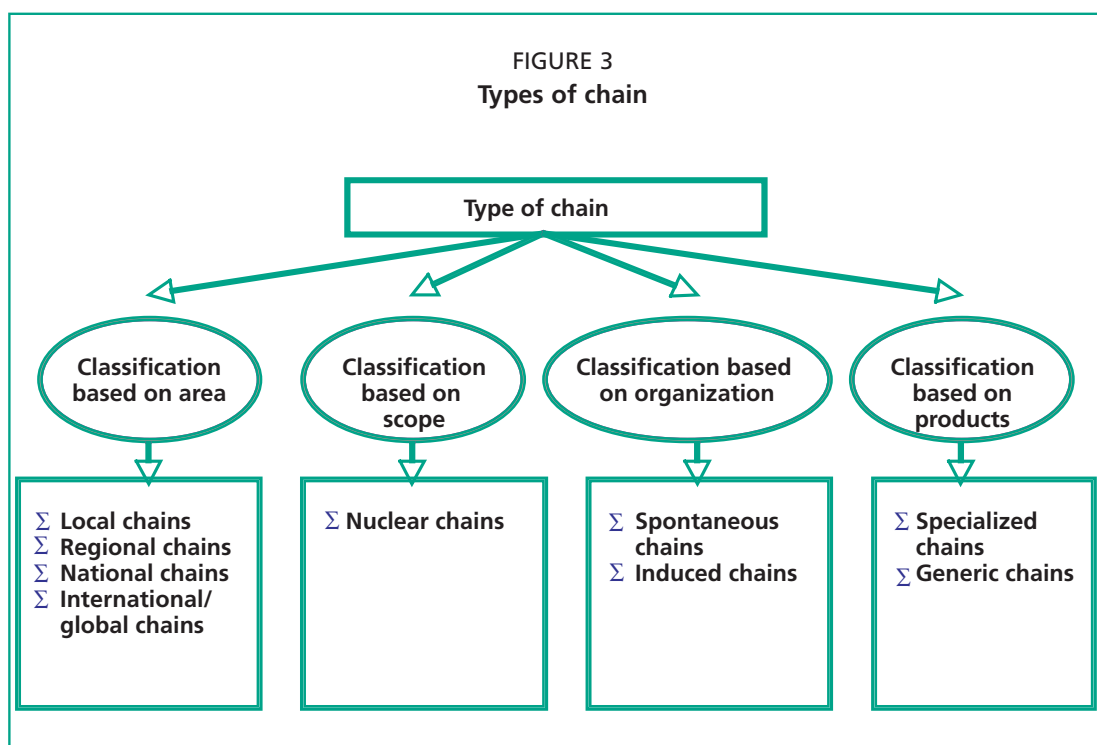
These can be classified as spontaneous chains (chains that have come into being with no outside influence) and induced chains (chains which have come into being through the intervention of agents such as non-governmental organizations (NGOs), government agencies, and development cooperation or similar programmes).

➤ *Classification based on products*

Chains are divided into specialized chains (the end product has special characteristics to cater for requirements of market segments or niches where differentiation is a key factor of competitiveness) and generic chains (the end product is not differentiated and volume and price are the main factors of competitiveness).

A new concept for organized chains has been developed and positioned in recent years, with strong linkages between its actors, to cater to demanding markets that value special product attributes. Chains with these characteristics are starting to be known as value chains.

Figure 3 summarizes the various types of chain mentioned above.



Concluding the case study

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

1. Do you think that paprika producers play a major role in setting prices for buying and selling paprika? Why?

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2. What do you consider to be the main advantages of Indonesia's paprika-chain stakeholders getting organized and coordinating their activities?

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3. Why do you think it was possible for a Competitiveness Agreement to be concluded between actors who may be at loggerheads and among whom there may be a complete imbalance?

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4. What similarities and differences do you find between the situation in the case study and what is happening in the chain to which your associative rural enterprise belongs?

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Group exercise

1. In the chain your association is located within, identify the actors involved in the following links:
 - a) suppliers of inputs;
 - b) suppliers of machinery and equipment;
 - c) purchasers of your products;
 - d) providers of technical services;
 - e) providers of financial services.
2. How would you describe the relations between your association and the actors you identified above? Could these relations be improved? What would need to be done to improve them?
3. In your view, is the agrofood chain of your association organized in any way, and are there active links between the actors in the chain? Which measures could you, as leader of your organization, propose and implement to improve the chain's organization?

Summary

- A chain-based approach can be used to analyse an economic and social reality involving a set of actors and activities that interact as part of a system and work together to satisfy the needs of specific markets.
- Many countries have promoted the organization, development and strengthening of agrofood chains as a public policy to support competitiveness; as well as a business strategy to optimize costs, improve product quality, and enhance opportunities for accessing and remaining in dynamic markets.
- An agrofood chain comprises the following main components or links: production, harvest and post-harvest; marketing, including transport and storage operations; manufacturing, including processing activities; and final distribution and consumption. There is a wide variety of actors in each of these links in the chain.
- Agrofood chains can be characterized on the basis of their area of activity, scope, organization and type of products made.

Unit assessment

Answer the following questions on additional sheets of paper:

1. In the agrofood chain with which your associative rural enterprise is associated, which link in the chain do you feel has the greatest weaknesses?

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2. In your view, could these weaknesses be overcome by improving the level of organization of the agrofood chain with which your associative rural enterprise is associated? Which measures would need to be implemented in order to achieve this? Which actors would need to be involved, and what role should each actor play?

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3. Which are the attitudes you feel should be adopted and consolidated in order to forge closer relations and achieve consensus between actors in the chain who have traditionally viewed one another with suspicion and mistrust?

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4. In your own words, define what you consider an agrofood chain to be, as it relates to your own association.

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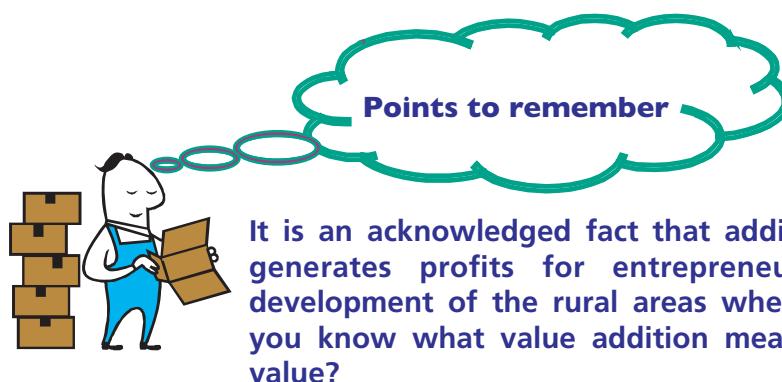
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Agro-industry: strategic component of the agrofood chain

UNIT THREE

LIST OF TOPICS

1. Setting the context
2. Case study: The Rural Dairies of Kheda District, India. See also case study: The Rural Cheese Dairies of Salinas de Bolivar in Ecuador
3. Analysing the case study
4. Types of rural agro-industry
5. Agribusiness concentrations
6. Conclusions on the case study
7. Group exercise
8. Summary
9. Unit assessment



A sustainable agro-industry adds value by transforming primary products into intermediary or end products. Which agro-industrial activities can you identify? Do you consider it important and feasible for small agricultural producers to establish their own rural agro-industries?

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

- ☞ Identify from your own experience some elements that allow you to acknowledge the role of rural agro-industry.
- ☞ Assess the role of rural agro-industry in generating and retaining added value in rural areas and in driving its economic and social growth.
- ☞ Define the following: agro-industry, rural agro-industry, rural agribusiness concentration and local agrifood systems.
- ☞ Differentiate between the chain and cluster concepts.
- ☞ Recognise the advantages of the local linkages that arise naturally when rural agribusiness concentrations develop in a particular rural area.



Setting the context

In many developing countries agro-industry is the most important industrial sector, accounting for up to 20 percent of manufacturing output. Agro-industry has tended to remain concentrated in basic branches of activity with relatively low added value, such as milling, sugar, milk, bakery products, livestock slaughter and meat preparation.

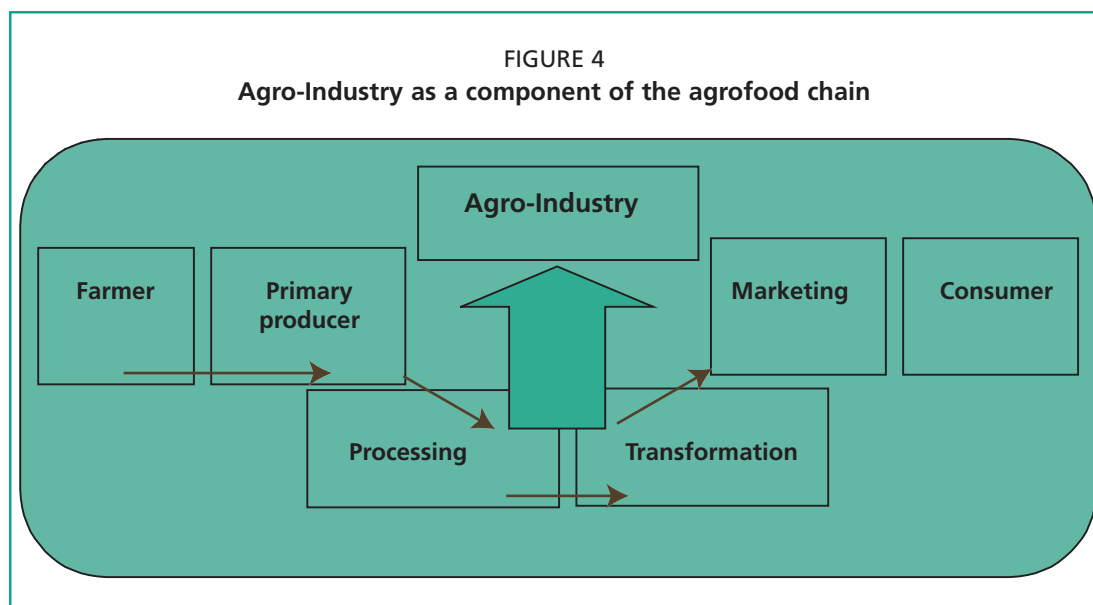
Another characteristic of agro-industries in many countries is their high level of concentration. While micro- and small enterprises represent about 88 percent of the firms registered, they capture less than 3 percent of market share. However, large enterprises represent only 3.5 percent of businesses but take an 85 percent market share.

An interesting type of agro-industry is that found in primary production areas themselves and with which the inhabitants of these rural areas have direct links. Overall, these businesses create nearly 100 million jobs directly and indirectly and have a high percentage of women and youth employment. Such firms are known as rural agro-industries.

Common enterprises include: coffee and cocoa processing plants; sugarcane mills producing jaggery; dairies; cassava starch extraction plants; flour mills; pickles, jams and jellies; processing soya beans; rice and wheat milling; craftwork including batiks, embroidery, jewellery from sea shells, textiles and related products; sawmills and units manufacturing wood products; production of vinegars, jams, confectionery and similar products in which fruits, sugars, milk and other ingredients are combined; honey manufacturing; wine production, and many more.

Rural agro-industries create jobs, exploit the potential of rural production, create value and incomes for improving the welfare of rural communities, and promote the organization of producers. Furthermore, they provide essential products in the basic family shopping basket (especially in rural areas), as well as representing an alternative to rural migration to cities, and exploiting the potential of local know-how and female labour.

Rural agro-industry makes it possible to exploit the potential of female labour and capture local know-how.



Traditionally, agro-industries are defined as the manufacturing activities which preserve and process raw materials from agriculture, forestry and fisheries.¹ This includes a wide variety of processes, ranging from simple preservation (such as sun drying or salting, sorting, grading, packaging), to processing with modern, capital-intensive processing methods.

Rural agro-industry can be defined as a set of activities which add value to rural produce. They include post-harvest operations; such as sorting, washing, grading, storing, preserving, processing, packaging, transporting and marketing.

¹ FAO. 1997. State of Food and Agriculture

Case study: The Rural Dairies of Kheda District, India**INTRODUCTION**

Organizing small-scale milk producers has a long history in India. The Anand Milk Union (AMUL) was formed in 1948 in the State of Gujarat and nowadays collects over 700 000 litres daily from 1 059 village-level cooperative societies. In 1965, a National Dairy Development Board (NDDDB) was organized to promote cooperative milk production in India. In 2005, over 100 000 village dairy Cooperatives had been established with a total membership of 12.9 million farmers. The basic unit in the Anand model is a village milk producers' cooperative – whereby a voluntary association of milk producers market their milk collectively. Primary-level milk producers' cooperatives in the district are members of their district cooperative milk producers' Union. With more district unions getting organized in the State, these Unions were federated into State-level Cooperative Milk Marketing Federations. Primary Milk Producers' Cooperatives undertake regular collection of milk from members. Milk delivered by members is weighed, samples are drawn for quality testing and payments made the following morning/evening, based on the quality and quantity of milk.

There are 208 societies with chilling units and more than 1 000 societies are using automatic milk collection stations. Technologies such as solar energy systems have been adopted in several societies. Amul's affiliated cooperative societies are the first in the world to be certified for ISO-9001 certification in a rural enterprise.

A Cooperative Development Programme (CDP) started in 1992; focussing on scientific training, cooperative law, better management practices and gender awareness programmes

DISCUSSION

The supply of fresh milk in large cities, and even towns and villages, has been problematic for several decades due to the small-scale nature of milk producers. Private milk vendors used to exploit farmers and the greatest sufferers were women and children. A dairy cooperative initiative started in 1948 with a combination of: i) professional inputs from managers; ii) political leadership to generate goodwill and support for the dairy cooperative, and iii) active involvement by women in handling and tending their dairy cows. The AMUL dairy in Kheda has become Asia's largest cooperative. The brand name AMUL is highly respected and very popular. Democratic and professional management has allowed India to become the world's largest producer of fresh milk.

There are, however, still a number of existing problems. The NDDB deals with policy issues and extends financial and technical support to dairy structures and dairy cooperatives but still lacks effective programmes for the welfare of dairy farmers and dairy cattle. There are no specific opportunities for dairy farmers to save and invest their surplus money and shortages of milk for home consumption still occur.

CONCLUSION

Fresh milk production has developed through the involvement of dairy cooperatives together with women's participation. The rapid deterioration of fresh milk in a hot climate, plus prompt payments for delivered milk have facilitated the growth of dairy cooperatives. Dairy cooperatives formed on the 'Anand Pattern' have transformed the national milk industry, converting India from a milk deficit situation to one of milk surplus (India was the world's largest producer of fresh milk in 2004). Professional management of dairies combined with strong political backing, has allowed dairy cooperatives to enhance milk conversion and facilitated the mobilisation of public support. There are now more than twelve million farmers associated with dairy cooperatives.

Dairy cooperatives have generated various rural employment opportunities for women. They have brought many different types of dairy products into the market, while competing effectively with local and international milk processors operating in the market.

Following three decades of multiple joint efforts, Kheda District has progressed from a depressed area to a place where socio-economic development is evident; not only in the altered landscape (cinderblock and brick houses with tile roofs), but also in the residents' capacity for organization and management and in the consolidation of a range of local institutions capable of managing their own growth.

Analysing the case study

Based on your personal experience, consider the following questions:

1. Which factors do you think explain the success achieved in the villages of Kheda?
2. Which lessons have you drawn from the case that could be applied or considered in your associative rural enterprise?
3. What impact do you think successful agro-industry has had on the development of the rural area where the agro-industry was established? Can you see any similarities with your association's local area?
4. In the light of your experience, can you identify initiatives that have not been consolidated or negative results which you have nevertheless found useful for learning, improving and creating new ideas and businesses?

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

Types of rural agro-industry

Rural agro-industries differ according to a number of different factors:

- a) **Origin:** agro-industries can be *traditional* or *induced*. Traditional agro-industries are those which are not the result of intervention by the Government, NGOs, or universities, but stem from private enterprise activities in rural economies. By contrast, "induced" rural agro-industries are the result of projects set up to exploit a market opportunity or local biodiversity. Traditional agro-industry follows three models:
 - primary production and processing are done in tandem, as in the case of coffee, cocoa, rubber, wood or sisal processing plants;
 - there is a direct link between primary production and processing, but products go to an end consumer or to an intermediary;
 - processing is carried out by an enterprise other than the primary producer.

This differentiation is important when it comes to planning and monitoring projects or programmes to support rural enterprises. It is one thing to exploit a rural area's market opportunities, potential or know-how, but quite another to build capacity, improve competitiveness, or enhance the productivity of existing agro-industries.

- b) **Linkage with other components:** in terms of linkages there are two main types of agro-industry: i) those which supply intermediate products and ii) agro-industries linked to local consumer markets, either directly or via intermediaries.
- c) **Ownership and organizational structure:** in terms of organization, rural agro-industries can be divided into family enterprises, associations or individual enterprises.
- d) **Size:** there is no specific size limit for rural agro-industries. They normally tend to be small, but there are also some large-scale rural agro-industries. Size is determined by factors such as type of producer organization, or the type of market with which agro-industries are associated with.
- e) **Type of technology used:** rural agro-industries can be classified as artisanal, semi-industrial or industrial.

Agribusiness concentration

Business concentration occurs when enterprises cluster together geographically. Business concentration is generally understood as a sectoral and/or geographical clustering of enterprises operating in the same area of activity or in closely related activities – upstream (suppliers of inputs and equipment), downstream (processing or user industries), and horizontally (support services and related activities). Concentration is often beneficial to individual players for a number of reasons:

1. Clusters can cater for large-scale customers.
2. Fierce competition through business concentration leads to greater specialization, division of labour and, ultimately, higher productivity.
3. Close links between producers, suppliers and users facilitate learning about production, technology and marketing.
4. The existence of a business concentration, and the linkages arising from it, facilitates collective action* by the group of businesses in pursuit of common goals in such areas as marketing, human resource training, research and technological development.

CLUSTERS/ZONE/ESTATE

A simple definition of a cluster is the geographical concentration of industries which gain advantages through co-location. A broader definition is given by Porter who defines clusters as “geographic concentrations of inter-connected companies and institutions in a particular field”. Clusters can be an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as: components, machinery and services, and providers of specialized infrastructure. Clusters also often extend downstream to channels and customers, and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies or common inputs. Many clusters include governmental and other institutions, such as:

- i) universities;
- ii) standard-setting agencies;
- iii) think-tanks;
- iv) vocational training providers, and
- v) trade associations that provide specialized training, education, information, research, and technical support.¹

Clusters are an integrating element which consolidate competitive advantage* in sectors with the greatest production potential. Their success depends on their ability to turn comparative advantage*, stemming from their geographical location and from the economic and technological characteristics that exist in that location, into dynamic and sustainable competitive advantage.

¹ M. Porter. 1998.

Conclusions on the case study

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

1. Which factors do you think explain the success achieved in the villages of Kheda district?

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2. Which lessons have you drawn from the case which could be applied or considered in your associative rural enterprise?

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3. What impact do you think successful agro-industry has had on the development of the rural area where the agro-industry was set up? Can you see any similarities with your association’s environment?

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4. In the light of your experience, can you identify initiatives that have not been consolidated or negative results which you have nevertheless found useful for learning, improving and creating new ideas and businesses?

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Group exercise

1. Identify the products that your association currently markets to which more value could be added, and say which processes would be needed to achieve this (sorting and selection, preserving, processing, packaging, trademark, etc.).
2. What would need to be done to incorporate these processes and to develop or improve the products? What risks would such a decision incur?
3. Identify which characteristics of your marketed products are most valued by consumers.
4. Do any of the characteristics you mentioned in answer to Question 3 above relate to the area where your organization is located? For your answer, consider the origin of raw materials, the production, processing and packaging inputs, and the technology used.
5. If you answered yes to Question 4, which measures would you suggest your organization should take to exploit these special characteristics (or any other similar characteristics you may identify) and use them to create market differentiation and as a basis for promotion and marketing? If your association belongs to an agribusiness concentration, consider whether any of these measures could be collective ones.

Summary

- Traditionally, agro-industries are manufacturing activities which preserve and process raw materials from agriculture, forestry and fisheries.
- Rural agro-industry is the activity which adds value to products from rural economies and retains it in rural areas, by carrying out post-harvest processing on forestry, agriculture and fishery products, such as selection, washing, sorting, storage, preservation, processing, packaging, transport and marketing. This contributes to the economic and social development of the areas where activities are carried out; leading to visible improvements for its inhabitants, such as better housing, higher incomes and greater self esteem.

- Rural agro-industry is seen as an important factor in creating jobs; exploiting the potential of rural production, female labour and local know-how; creating value and incomes to improve the welfare of rural communities; guaranteeing food security; and promoting the organization of producers.
- Common rural agro-industries in Asia include: coffee and cocoa processing plants; sugarcane mills and refineries; artisanal cheese dairies; wheat and rice flour mills; craftwork; hats, textiles and related products; fish-gutting, drying and salting plants; sawmills and wood item producers; production of vinegars, jams, confectionery and similar products in which fruits, sugars, milk and other ingredients are combined; honey manufacturing and wine production.
- The phenomenon whereby a large group of interrelated firms cluster together in the same geographical area is referred to as “business concentration” or a “production complex”.
- Clusters, zones or estates are geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related sectors, and associated institutions that compete but also cooperate.
- The linkages stemming from the proximity of business organizations in an area stimulate competition between the units located there, on account of factors such as: i) the specialization which this proximity fosters; ii) greater information and knowledge transfer; iii) gradually increasing trust and reputation; and, iv) the ease with which collective action can be carried out in pursuit of common goals in areas such as marketing, staff training and, research and technological development.

Unit assessment

Answer the following questions on additional sheets of paper:

1. In your association's area of activity, what do you consider to be the impact of adding value to primary products? Could this impact be increased? How?

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2. In your own words, define what you consider to be a rural agro-industry, a business concentration and an industrial estate.

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3. In your view, does your association form part of any local agrifood system or rural agro-industry? Say why.

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4. What do you think are the biggest advantages of an association belonging to an agribusiness concentration? Which actions need to be promoted and implemented in order to exploit these advantages?

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

Glossary

Agro-industry

Set of manufacturing activities which preserve and process raw materials from agriculture, forestry and fisheries.¹

Clean technologies

Clean technologies are an environmentally friendly way of reducing air, soil and water pollution and waste production; in addition to making more efficient use of natural resources such as water and energy. Clean technologies generate economic returns, optimizing costs and improving product competitiveness.

Codex Alimentarius

The Codex Alimentarius Commission is an intergovernmental body with 165 member-countries. Its secretariat is provided jointly by FAO and the World Health Organization (WHO). The objective of the Codex Alimentarius programme is to protect consumer health, ensure fair trade practices and promote coordination of food standards.

Collective action

Initiative of a group motivated by a shared goal to achieve a common or group interest.

Comparative advantage

Comparative agrifood advantage is derived basically from a country's natural assets, characterized mainly by a wide diversity of ecosystems, climates, species and the availability of water resources, as well as by geographical situation, exchange rates, and other factors.

Competitive advantage

A company has competitive advantage when it is in a better position than its rivals to secure customers and defend itself against competitive forces. Some sources of competitive advantage are: making better-quality products; providing better customer service; achieving lower costs than rivals, or designing a product with a better return than rival brands.

Competitiveness

The ability to place the goods one produces on the market, under conditions of fair competition, in such a way as to improve people's welfare.

Equity

An ethical principle whereby a system is fair when all the parties to it receive the same treatment. In business, equity is defined by the “win-win” principle.

Food security

According to FAO¹, food security exists when all people have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs for a healthy life, without running undue risk of losing this access. Achieving food security means ensuring that sufficient food is available, that supplies are relatively stable and that those in need of food can obtain it. Food security depends on the following factors: availability of sufficient food supplies; stable food supplies without seasonal fluctuations or shortages; access to sufficient food or the ability to purchase it, and good quality, safe food.

Globalization

According to the World Bank² “Globalization is the growing international integration of markets for goods, services, and capital. Globalization is altering the world economic landscape in fundamental ways. It is driven by a widespread push toward the liberalization of trade and capital markets, increasing internationalization of corporate production and distribution strategies, and technological change that is rapidly dismantling barriers to the international tradability of goods and services and the mobility of capital”.

Good agricultural practices

A collection of principles to apply for on-farm production and post-production processes, resulting in safe and healthy food and non-food agricultural products, while taking into account economical, social and environmental sustainability.

Good manufacturing practices (GMP)

A set of guidelines established to guarantee a clean and safe working environment which at the same time avoids food contamination during the different phases of food production, manufacturing and marketing. It includes standards of conduct for personnel in the areas of work, water use and disinfectants.

Profit margin

Represents what are usually called pure profits, earned by the company from each dollar or currency unit of sales. Operating profits are pure in the sense that they exclude financial or government charges and include only the profits obtained from operations.

¹ <http://www.fao.org>

² <http://www.worldbank.org>

Sustainability

Principle which guarantees a better quality of life for all people, now and in the future, by integrating three factors: economic development, environmental protection and social responsibility.

Trade liberalization

This concept refers to removing tariff barriers in international trade between a numbers of countries by concluding bilateral or multilateral treaties.

Transaction costs

From the economic standpoint, transaction costs are defined as the costs of specifying what is being exchanged and of enforcing the consequent agreements. Although there are no precise definitions for this concept, it is acknowledged that transaction costs are the costs associated with establishing, supervising and enforcing contracts.

World Trade Organization (WTO)

The international body that sets the standards governing trade among countries. At its core are the WTO Agreements, which have been negotiated and signed by most countries involved in world trade.

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WEB SITES RELATING TO MODULE 1

<http://www.amul.org>

<http://www.ani.org>

<http://www.apeda.org>

<http://www.ica.coop>

<http://www.icar.nic.in,icar-india.org>

<http://www.indiancommodity.com/statistics/onion>

<http://www.nafed-India.com>

<http://www.nddb.org>

<http://www.nhrdf.org>

<http://www.safar.motherdairy.com, motherdairy.org>

<http://www.subhiksha.com, subhiksha.org>

<http://www.worldbank.org>

<http://www.wto.org>

Exchange rates: local currency to 1 US dollar. December 2006

China	...	RMB Yuan	7.8
India	...	Rupees	46.00
Indonesia	...	Rupiah	11 000
Malaysia	...	Malaysia Ringgit	3.5
Japan	...	JapYen	121.1
Philippines	...	Pesos	48.5
Thailand	...	Baht	40

