

Alternatives to improve negotiation and market access capabilities of small-scale rural entrepreneurs in Latin America



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AGSF AG AGSF**

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Contents

TABLES	X
ACKNOWLEDGMENTS	xii
PREFACE	xi
ACRONOMYS	xvii
INTRODUCTION	xx
OVERVIEW	22
FARM-AGRIBUSINESS LINKAGES AND AGRIBUSINESS DEVELOPMENT	22
IDENTIFYING CAPACITY BUILDING NEEDS FOR ENHANCING SMALL RURAL ENTREPRENEURS NEGOTIATION AND COMPLIANCE CAPABILITIES	22
CAPACITY BUILDING IN NEGOTIATION AND COMPLIANCE SKILLS	23
ARGENTINA	32
NATIONAL TRENDS IN THE AGRO-INDUSTRIAL AND AGRIBUSINESS SECTOR	32
MACROECONOMIC CONTEXT: POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS	33
PRODUCTION AND COMMERCIALIZATION OF THE SAN JUAN FEDERATION OF AGRICULTURAL COOPERATIVES	33
CHILE	38
NATIONAL TRENDS IN THE AGRO-INDUSTRIAL AND AGRIBUSINESS SECTOR	38
MACROECONOMIC CONTEXT: POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS	39
EXPORTS OF AVOCADO AND CITRUS FRUIT FROM COOPEUMO LTD.	40
ASPARAGUS AND BERRIES FROM CHACAY COOPERATIVE FOR THE FROZEN FOOD INDUSTRY	42
COLOMBIA	46
NATIONAL TRENDS IN THE AGRO-INDUSTRIAL AND AGRIBUSINESS SECTOR	46
MACROECONOMIC CONTEXT: POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS	47
CAPE GOOSEBERRIES IN THE MUNICIPALITIES OF SILVANIA AND GRANADA (DEPARTMENT OF CUNDINAMARCA)	47
MULBERRIES (MORAS DE ORIENTE) IN THE DEPARTMENT OF ANTIOQUIA	51
COSTA RICA	54
NATIONAL TRENDS IN THE AGRO-INDUSTRIAL AND AGRIBUSINESS SECTOR	54
MACROECONOMIC CONTEXT: POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS	54
DAIRY PRODUCTION AND INDUSTRIALIZATION ASSOCIATION (APILAC)	56

ECUADOR	57
NATIONAL TRENDS IN THE AGRO-INDUSTRIAL AND AGRIBUSINESS SECTOR	57
MACROECONOMIC CONTEXT: POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS	58
CASSAVA PROCESSING FACTORIES OF CHONE AND PORTOVIEJO CANTONS OF MANABÍ PROVINCE	60
COMMUNITY CHEESE MANUFACTURERS OF SALINAS, ECUADOR	62
EL SALVADOR	66
NATIONAL TRENDS IN THE AGRO-INDUSTRIAL AND AGRIBUSINESS SECTOR	66
MACROECONOMIC CONTEXT: POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS	66
ASSOCIATION OF INDIGO PRODUCERS OF EL SALVADOR (AZULES)	67
SOCOAGRO AGRO-INDUSTRIAL COOPERATIVE SOCIETY	70
GUATEMALA	
NATIONAL TRENDS IN THE AGRO-INDUSTRIAL AND AGRIBUSINESS SECTOR	74
MACROECONOMIC CONTEXT: POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS	74
SMALL PRODUCERS OF THE UNIÓN CUATRO PINOS COOPERATIVE	76
SMALL-SCALE PRODUCERS OF THE EL LIMÓN COOPERATIVE	77
ANNEX – LIST OF WORKSHOP PARTICIPANTS	82

Tables

1	ACCESSING MARKETS	4
2	COMPETING IN MARKETS	5
3	PLANNING AND MANAGEMENT OF AGRO-ENTERPRISES	8
4	QUALITY MANAGEMENT OF AGRO-ENTERPRISES	8

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Preface

The workshop on “Alternatives to Improve Negotiation and Market Access Capabilities of Small-Scale Rural Entrepreneurs in Latin America” was held in Lima, Peru, 2001 as part of the "farm-agribusiness linkages" initiative of FAO, which concentrates on how to develop and reinforce equitable and efficient interactions between farmers and the agribusiness sector. Agribusiness can be defined as all market- and private business oriented entities involved in the production, storage, distribution, and processing of agro-based products, in the supply of production inputs, extension, administration and research. Strengthening farm-agribusiness linkages refers to improving farmers' ability to add value by switching from subsistence crops to marketable crops, by entering into processing activities, or by establishing raw material supply contracts with local or international processors and distributors. It is also about improving agribusiness firms' access to timely and reliable supplies of the agricultural products they need, meeting the desired quality specifications.

The increased integration of world markets has far reaching implications for agricultural development efforts in developing countries. There are serious concerns about the ability of small farms and other agribusiness companies to survive in the medium term. Marginalization and exclusion from high value markets on both national and international level are and may become a reality.

Stronger linkages between producers and processors and between producers and buyers of crops and livestock can be promoted by agricultural support organizations like FAO. Strong, trusting relationships are the basis for producing significant benefits for both parties, leading to ‘win-win’ situations through risk reduction for both processors and farmers, or cost savings by better production planning and cash flow management. A better understanding by farmers of quality requirements of processors and consumers, as well as increased and more stable incomes from guaranteed market outlets for their products are some of the direct results of improved linkages. Long term benefits of efficient linkages can materialize through making agriculture and food processing more efficient, effective, responsive and sustainable sectors. Raw material import substitution and savings in foreign exchange, improved competitiveness in regional and international markets and improved employment and sustainable rural development could be achieved.

Strengthening farm-agribusiness linkages in Latin America builds on and complements work by FAO in South East Asia and Africa. Several country case studies and two expert consultations were developed in these areas of the world. The lessons learned reinforced the commitment to the fundamental purpose behind this FAO initiative, which is to promote and support agribusiness development so as to help transform the agricultural sector in order to accelerate productivity growth, increase income and employment generation, improve food security, and increase competitiveness in regional and international trade.

FAO's interest and commitment in promoting and supporting agribusiness development originates from a few rather simple observations. It has become clear that worldwide the most rapid growth in agriculture has for quite some time been occurring in post-production activities. This is in large part being driven by the growing number of middle income consumers even in lower income countries and their demands for better quality value-added products. Second, agri-food systems world-wide are increasingly being dominated by vertically coordinated, if not vertically integrated, organizations. High concentration and vertical co-ordination of agri-food systems is already a reality in high-income countries. The same patterns are emerging rapidly in parts of the developing world, particularly in South America and Southeast Asia.

Third, the near absence of agro-industry and agribusiness resulting in low value added in agricultural transformation has been one of the main causes for stagnation in rural incomes. Conversely, when looked at across countries and regions, substantial agribusiness sector generating high value addition to the outflow of goods, correlate with a higher level of agricultural GDP and rural incomes. Thus, agribusiness development is inevitable. The real issues relate to accelerate growth, and ensure that maximum benefits are realized, and how to address equity and ensure fairness in the changes that will be taking place.

The Agricultural Support Systems Division of FAO launched its work on agribusiness development and linkages in 2000, following earlier closely related work on support to commercial farming in both Asia and Central Europe. A technical project was created to provide support for agribusiness development with a focus on small and medium enterprises, focused on four key areas of technical support:

- improvement of managerial capacity;
- introduction of appropriate technologies;
- strengthening farm-agribusiness linkages;
- policies for post-production systems development.

This workshop touches on all of these main areas but the main focus is the third one, strengthening of farm-agribusiness linkages, with a particular reference to strategies for improving negotiation and compliance capabilities of small scale farmers and other rural entrepreneurs. A synthesis of the main results and recommendations are presented in this document. The case studies that substantiated the findings are also summarized.

In conducting this multi-year, cross-regional appraisal, FAO has been seeking to appraise trends, opportunities, and capacity building needs, based in specific real world cases and in the expert views of people who are actively involved in agribusiness development and linkages in one manner or another. In regional consultations or workshops, FAO tries to initiate discussion and debate, involving diverse stakeholders to the extent possible, in order to create awareness of the issues, options, constraints and potentials; and develop consensus on strategies and actions.

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ACRONYMS

AEC	External Trade Tariff
AGEXPRONT	Non-traditional Products Exporters Association of Guatemala
AGRITERRA	Chile: International Cooperation Organization of Rural Grassroots Associations
ALCA	FTAA - Free Trade Area of the Americas
APILAC	Costa Rica: Dairy Production and Processing Association
BID	IDB - Inter-American Development Bank
BMI	El Salvador: Multisectoral Investment Bank
BOLPRO SA	Costa Rica: Agricultural Commodity Board of Trade
CECADE	Costa Rica: Centre for Development Training
CEGA	Colombia: Centre for Economic Studies
CHF	Canadian Hunger Foundation / Partners for Development
CONAMYPE	National Commission for Small and Micro Enterprises
CORECA	Costa Rica: National Council for Agricultural Cooperation
CORFO	Chile: Production Support Corporation
CORPOICA	Colombian Corporation for Agricultural Research
FAA	Argentinean Agricultural Federation
FAO	Food and Agriculture Organization of the United Nations
FECOAGRO	Argentina: Federation of the Agricultural Cooperatives of San Juan
FIA	Chile: Agrarian Innovation Foundation
FINAGRO	Colombia: Agri-food Financing Unit
FIS	Guatemala: Fund for Social Investments
FOB	Value of goods at the port of origin (Free On Board)
FODEC	El Salvador-Canada Development Centre
FUNORSAL	Ecuador: Peasant Organizations Foundation of Salinas
GTZ	German Technical Cooperation Agency
HACCP	Hazard Analysis and Critical Control Points
IICA	Inter-American Institute for Agricultural Cooperation
IMFC	Argentina: Cooperative Funds Mobilization Institute
INACOP	Guatemala: National Institute of Cooperatives
INASE	Argentina: National Institute of Seeds
INDAP	Chile: Institute of Agricultural Development
INTA	Argentina: National Institute of Agricultural Technology
IQF	Individual Quick Frozen
MAGA	Guatemala: Ministry of Agriculture, Livestock and Food
MERCOSUR	Common Market of South America (Uruguay, Paraguay, Brazil and Argentina)
OMC	WTO – World Trade Organization
PEA	Economic Active Population
PIB	GDP- Gross Domestic Product
PNB	GNP – Gross national Product
PROAGRO	Agricultural Supply Program

PROCHILE	Chile - Office of Export Promotion
PRODAR	Rural Agro-industries Development Program for Latin America and the Caribbean
PYMES	Argentina: Small and medium sized businesses
READR	Rural Agro-Industries network
SENA	Colombia – National Learning Service
SOCOAGRO	El Salvador – Agricultural Trade Society
SSOP	Sanitation Standard Operating Procedures
UMATA	Colombia: Municipal Unit for Technical Assistance in Agriculture

Introduction

As part of its initiative to promote the strengthening of farm-agribusiness linkages, the Agricultural Support Systems Division of FAO has held a series of expert consultations in Asia, Africa and Latin America. These had among their objectives the sharing of experiences on the development of agribusiness in the respective regions, with a particular emphasis on the identification and analysis of strategies and experiences adopted to link farmers with agribusiness firms. By ascertaining the strengths and weaknesses of the present arrangements and by gaining an improved understanding of their role in agribusiness development, it was expected that lessons could be learnt to allow recommendations for policy support, capacity building and other related linkages enhancement efforts.

The expert consultations in the three regions built on the presentation and discussion of cases studies of selected experiences of linkage development. In the case of Latin America - the subject of the present document - twelve cases were prepared, covering experiences in Argentina, Chile, Colombia, Costa Rica, Ecuador, El Salvador and Guatemala. The studies focused on linkages of small-scale producers with agribusinesses that either process or market agricultural products, and were carried out in collaboration with other partners in the region.

A workshop to consolidate the results of the Latin American consultation was held in Lima, Peru, during November 2002, bringing together leaders of small-scale farmers' organizations, non-governmental organizations (NGOs), other stakeholders and government trainers. Small-scale entrepreneur's requirements and constraints were identified and assessed in relation to successful linkages with the markets. After assessing training needs, workshop participants identified topics, strategies and mechanisms necessary for developing training programmes for improved negotiation and compliance in agribusiness linkages.

This document is based on the studies and the workshop discussions. The conclusions of the workshop appear in Chapter 1. Chapters 2-8 summarize the twelve case studies

Overview

FARM-AGRI BUSINESS LINKAGES AND AGRI BUSINESS DEVELOPMENT

There are no unique definitions for “linkages”. The term derives from the concept of linking - that is, bringing together, bridging, working together or connecting. It is related to communication, exchanges and interdependencies. As such, the may be used in different contexts. The concept of "farm-agribusiness linkages" implies the coordination of transactions of agricultural and rural businesses along the production chains through the establishment of relationships based on contractual arrangements, alliances or partnerships. These long-term arrangements are mostly private sector oriented and involve farmers' associations and various actors or agro-industrial firms. They may - or may not have - benefits from policy support.

The main types of farm-agribusiness linkages include associative relationships which may involve producers, governments, international cooperation agencies and private organizations. The principal areas which these linkages typically support are technical development (technology transfer, training, technical assistance), quality control, commercial development, marketing and business administration.

Linkages supported by the government are focused on meeting the relevant technical requirements for production and for other economic activities, while those supported by international agencies are oriented toward promoting both production and family welfare. Linkages with participation of private for-profit organizations tend to focus on commercial development and marketing, as well as on quality control, while linkages with a role for non-profit institutions are mostly directed toward supporting development, business administration and information management.

Three broad types of farm-agribusiness linkages can be identified. *Informal linkages* refer to arrangements between farmers and businesses without a contractual bond. There are numerous examples of such linkages. Farmers can organize their production and sell to various markets such as wholesale/retail markets or institutions (army, hotels, school, Government) or to organized buyers. Middlemen can be involved in marketing arrangements that link informal growers to buyers. Informal linkages are more common in less developed markets, where standardization and quality requirements are of less importance.

Formal Linkages between farmers and agribusiness firms are characterized by the existence of a contract. Formal contracts gain in importance when timeliness of delivery, quality standards, regular supplies etc, are required by agribusiness companies. Contract farming is a widespread mode of linking agribusiness companies with growers. Contracts

can also vary from equity to non-equity based with or without risk sharing elements or incentives etc, and can take several forms.¹

Institutional Linkages are those formed between farmers and agribusiness and which are assisted by NGO's or government institutions such as ministries, trade associations, banks, etc.

Some of the socio-economic and competitive environment related variables relevant to promote the development of linkages are:

- a) technical improvement of processes, be they industrial, artisanal or combined;
- b) organizational developments that allow the combination of an entrepreneurial perspective with the practical know-how of producers;
- c) improved levels of education, which have a direct influence on management and negotiating capabilities;
- d) solid and expanding domestic markets, in which compensating prices permit the development of innovations and of new skills; and
- e) explicit public and private cooperation policies.

The major constraints to establish farm-agribusiness linkages are:

- a) The lack of direct liaisons between producer associations and the sources of technological, organizational and institutional innovations. Small producers frequently do not benefit from research in these different areas, or from innovative pilot schemes oriented towards improving competitiveness in relation to larger producers. In the cases studied, the examples of Chile, Argentina and Guatemala underline the importance of policies to circumvent this shortcoming.
- b) The low levels of education and training among the rural population, as well as the absence of an explicit education and qualification policy for the new generations of families which participate in farm-agribusiness linkages.
- c) The state of poverty that affects sizable portions of the rural populations and that limits the ability to save and invest. It also compels producer associations to shift part of their linkage efforts towards solving deficiencies in health, housing, nutrition and infrastructure.
- d) The lack of active interactions between the public and private sectors that could generate synergies for the benefit of small farmers.
- e) The informality that prevails and benefits most of the private agents, at the expense of the associative organizations.
- f) The crises and the vulnerability caused by the instability of international markets and the macroeconomic policies that lead to exchange rate re-evaluations and to high unemployment rates.
- g) Uneven bargaining power in the agri-food chains. Associative organizations have limited negotiating skills in relation to actors having greater capacity and economic

¹ See Contract Farming - Partnerships for Growth. FAO Agricultural Services Bulletin 145, Rome, 2001

power, such as supermarket chains, bulk processors or international marketing companies.

- h) The lack of clear criteria (such as the costs that would be incurred by the involved parties) which could allow the associative organizations to establish the form and content of the linkages with agribusinesses. The majority of them act in the same way as the individual producers, that is, by trial and error. A systemization of similar experiences in the farm-agribusiness linkages could help them to evaluate different intervention possibilities: public or private; endogenous or exogenous to the organization; funded by government, the associative organization, producers, etc.

An explicit policy for the promotion and development of farm-agribusiness linkages is recommended. This policy should be oriented towards promoting the linkage formats that have the greatest potential for innovation and for bolstering the competitive abilities of the relevant organizations and producers. Such formats would include those that enhance technical performance, business administration and organizational management, services for production chains and the development of intermediate and end markets. It is also recommended that the associations and the participating producers be given support for the development of entrepreneurial, management and negotiation skills.

IDENTIFYING CAPACITY BUILDING NEEDS FOR ENHANCING SMALL RURAL ENTREPRENEURS NEGOTIATION AND COMPLIANCE CAPABILITIES

Accessing the markets: opportunities and challenges

The new context of globalization and liberation of trade offers new opportunities and global challenges to agricultural producers, calling for more competition and efficiency. In order to benefit from the new market opportunities, quality, consistency and stringent security standards are required. Comparative advantages arising from sources such as natural resource endowment need to be complemented by others, stemming from business development and strengthened linkages along the agri-food chains. To participate equitably in farm-agribusiness linkages, small rural entrepreneurs need to enhance their negotiation skills and compliance capabilities. The workshop participants, reflecting upon these issues, singled out the following elements of concern.

Table 1: Accessing markets

<i>Key factors required to access markets</i>	<i>Main difficulties encountered in complying with market requirements</i>	<i>Main weaknesses to be overcome in order to access markets</i>
<ul style="list-style-type: none"> • Provide high quality product with an identified market destination • Respond to volume demand and be able to expand to match increased demand • Assign production quotas to farmers • Plan production according to seasonal criteria • Train staff in commercialization, commitment and compliance with formal and informal agreement • Search for creative marketing strategies (for example; promotion of alliances with fair trade chains, participation in expositions, creation of own stores) 	<ul style="list-style-type: none"> • Quality (product uniformity, consistency and stability, Product presentation awareness) • Volume (production planning, supply stability, forecasting demand, expanding to match demand) • Farm management (production planning according to seasonal criteria, flexibility to diversify according to human and financial capabilities, production costs and prices) • Farmers' organization management (lack of management criteria applicable to small agro-industries, raw material availability vs processing capacity, lack of a monitoring and evaluation systems, alliances to develop new products) • Marketing (lack of competence, innovative process and consumer preferences, high commercialization costs, attention to client strategies, low market prices, strategies to highlight special attributes, knowledge of regulations, standards and norms, product differentiation to create niche markets) 	<ul style="list-style-type: none"> • Lack of development of information system on markets, prices and technology supply • Lack of productive planning and entrepreneur management along the food chain • Lack of quality management including bookkeeping, standards and certification • Lack of development and implementation of marketing strategies including feasibility analysis and enlargement of commercialization channel • Lack of business and product development, strategic alliances and product R&D

Priority criteria to compete in the markets

Internal and external market conditions directly influence the viability and sustainability of developing farm-agribusiness linkages. Exposure to the external market environment, in particular, can increase vulnerability both for producers and for the other organizations involved in the linkages. Since it is impossible to eliminate risks, one recommendation to

reduce them could be the design of novel linkage formats whereby external market risks could be absorbed by appropriate organizational structures (e.g., market stabilization funds). Such mechanisms could be developed through the diversification of products and markets, contingency and compensation funds.

On the other hand, the most dynamic areas in internal and external markets, such as dairy products, fruits and vegetables, processed or semi processed commodities or those in special niche markets, like organic produce, create favorable conditions for the development of farm-agribusiness links which include small and medium sized producers. An explicit policy is recommended to foment market development, involving some of the elements elected by workshop participants as key aspects to increase competitiveness. These are listed in the table below.

Table 2: Competing in markets

<i>Item</i>	<i>Quality</i>	<i>Planning</i>	<i>Establishing Alliances with other Sectors</i>
Criteria to be taken into account in agribusiness	<ul style="list-style-type: none"> • Hygiene (micro-biological) • Size and color • Chemical (residues) • Special attributes (nutritional, organic) • Environmentally friendly produce, • Respect for social norms • Traceability 	<ul style="list-style-type: none"> • Production capability • Raw material availability • Financial capability • Sowing and producing according to assigned quotas • Seasonal planning, • Flexibility to diversify 	Not applicable
Constraints in applying criteria	Lack of : <ul style="list-style-type: none"> • control and management procedures for small agro-enterprises • management systems to measure environmental impacts • scientific support to assess special attributes • information and advertising 	Lack of : <ul style="list-style-type: none"> • access to credit/risk or capital/ capital accumulation • suitable human resources program and training • appropriate technology • compromise between partners • mechanism to 	<ul style="list-style-type: none"> • Low negotiation capability of farmers' organizations • Calculation of production costs and prices • Lack of long-term consistency and uniformity in quality and quantity • Lack of information about other actors in the chain • Lack of economic incentives to establish alliances

<i>Item</i>	<i>Quality</i>	<i>Planning</i>	<i>Establishing Alliances with other Sectors</i>
	<ul style="list-style-type: none"> • financial support • agroenterprises management training in application of quality criteria 	enforce compliance with contracts <ul style="list-style-type: none"> • specific market information 	<ul style="list-style-type: none"> • Lack of written contracts, no clear definition of property rights Lack of knowledge on norms and standards • Institutional rivalry

Competitiveness in the food chain

Competition, for its part, forces groups of businesses to undertake a permanent review of the ways they organize their activities, including the profile of the suppliers (producers) they are linked to. If not, they might lose competitiveness and perish in the agribusiness world. In this way, competition promotes new processes of organizational coordination, in which the free market transactions are replaced or complemented by contracts, alliances or complete vertical integration. All of these coordination mechanisms are in essence farmer-agribusiness linkage formats that can favour the attainment of greater operational efficiency and of reduced transaction costs, all leading to improved competitive conditions.

In the modern competitive environment, the probability of successful continuance in the market place is extremely low for individuals and organizations that act outside a streamlined coordination structure. This structure must have the capacity to forestall the immediate and longer run threats of competitors, through the continual adoption of innovations, conduciveness to adjustments and openness to negotiations.

At the rural levels, the associative organizations might be characterized by various types of structures. Organizations with high levels of vertical integration, as is the case of many cooperatives, are one of such structures. In principle, cooperatives are better enabled to spatially differentiate processes and make larger-scale investments in rural industrialization. But there are also organizational structures that consist of less formal producer clusters, grouped not only by common primary products, but also by artisanal and semi-labour intensive processing activities. Thus, the organizational structures include a multitude of formats, affecting the ways in which groups of businesses interact with the competitive environment, subject to the intervention of either the public or private sector. The continual renewal of the organizational set-up requires the development of business skills, such as the ability to arrange, to negotiate and to resort to a system of incentives or sanctions according to the current needs.

At the same time, the type of institutional arrangement between businesses and the private or public sector influences the reach of agribusiness interventions, which can incorporate aspects that were previously in the domain of the state (for example, the provision of services such as technical assistance, training, credit or risk insurance). In addition, direct state intervention or enactment of trade agreements between economic

blocs could contribute to moderating or intensifying competitive pressures and by these means shape the profile of the agribusinesses which are more likely to survive or perish.

It may also be argued that the rise of new kinds of coordination, different and yet complementary to the free markets, favours the agribusiness environment in the way in which it permits the creation of new, more complex activities and services. On the other hand, de-institutionalization of agro-related businesses, or the marginalization of part of the producers from the rules which regulate and are followed by the majority, could have a negative influence.

Institutional environment associated factors that enable farmers to compete in the food chain would include, *inter alia*: favourable and stable macroeconomic policies (credit/monetary/labour), favorable sectorial policies, available productive infrastructure, norms and regulations on allegiance, certification services, export incentives, innovation incentives and social security. To develop an appropriate institutional environment, there is a role for alliances among the different actors in the food chain. Of special concern in that regard are matters such as research and innovation, training of human resources, development of training and technical assistance market services as well as in financing programmes.

One important aspect of these alliances would be the establishment of sustainable, long-term and equitable public-private partnerships. In order to achieve this, specific issues need to be addressed, including information systems and promotion strategies, technical support (laboratories) for quality control in production and processing, market guarantee systems, access to credit/risk capital, appropriate technologies and training programme for practical experience of trainers, mechanisms to enforce contracts, information about specific market demands, interventions to regulate market services development and finally, regulations to avoid market disloyalties.

To promote competitiveness and to develop farmers' skills and knowledge in order to overcome the aforementioned difficulties, some key issues will need to be addressed, both at the farmers' and at their organization's level. At the farmer's level, there are needs for production planning according to market demand, systematic training on quality and quality standards with regard to organization and market requirements, and finally, to tune their training programme to current market conditions. At the farmers' organization level, the needs include improved knowledge of production and commercialization costs and prices, orientation and information on international markets, evaluation of market risks, development of new products, and finally, marketing techniques for improved access to international and national markets.

CAPACITY BUILDING IN NEGOTIATION AND COMPLIANCE SKILLS

Another important area is the identification of topics, strategies and mechanisms necessary for training programmes on negotiation and compliance in agribusiness linkages.

The identification of topics was based on the enumeration and classification of key factors, weaknesses, constraints and opportunities in developing and maintaining farm-

agribusiness linkages. Then, it is possible to identify subject matters that could strengthen small-scale farmers' capabilities and skills through training taking into account any gaps and deficiencies in the supply of training services. The identified priorities can be grouped in topics for a potential training programme, as elaborated in the table below.

Topics for a potential training programme module

Table 3: Planning and Management of Agro-enterprises (farm and farmers' organizations)

<i>Business Management Component</i>	<i>Price-cost Component</i>	<i>Market Information Component</i>	<i>Management Organization Component</i>
<ul style="list-style-type: none"> • Farm business planning • Cost-benefit analysis • Packing, transport and logistics • Competitiveness • Bookkeeping and accounting 	<ul style="list-style-type: none"> • Calculation and optimization of production costs • Calculation of prices 	<ul style="list-style-type: none"> • Management of new information technologies • Analysis of market information • Market differentiation, requirements for international as well as niche markets 	<ul style="list-style-type: none"> • Leadership formation • Participative methodologies • Normative and legal practices in organizations

Table 4: Quality Management of Agro-enterprises (Farm & Farmers' Organizations)

<i>General Component</i>	<i>Production level Component</i>	<i>Processing level Component</i>	<i>Commercialization level Component</i>
<ul style="list-style-type: none"> • Traceability concepts • Labour norms • Environmental norms 	<ul style="list-style-type: none"> • Principles, concepts and application of good agriculture practices • Bookkeeping • Quality principles and concepts for specific commodities 	<ul style="list-style-type: none"> • Principles, concept and application of good manufacturing practices • Principles, concept and application of standard sanitation operation procedures • Principles, concept and application of hazard analysis and critical control point • Normative on ingredients and additives 	<ul style="list-style-type: none"> • Packing • Product homogeneity • Storage • Transportation • Delivery • Quality labels, certification and quality audit • Customer relations

In addition to the four components outlined above for the issue of quality management, training in marketing development is recommended for the farmers' organizations. This could cover market feasibility studies, provision of market information suitable for small-scale farmers' organizations, market differentiation and market promotion (publicity). Finally, concepts and mechanisms, as well as case studies of productive alliances for farmers' organizations, should be a part of the quality management training.

Mechanisms and strategies for a potential training programme module

There is a common understanding that in order to develop and implement a training programme, all of the subjects in the proposed content should be presented in a production chain perspective. Experience shows that often training and technical assistance services are limited and of little relevance to the actual needs of small-scale farmers and their organizations. Where these services exist, they usually lack practical orientation and are not specific to the small-scale farmer's needs and products.

For capacity building, certainly the following mechanisms and strategies for a training programme need to be taken into account: Training programme should be based on shared experiences of successful cases of farmers' organizations. These experiences could constitute the core of the so-called "*agribusiness schools*", where theoretical and practical

courses would be held. Each agribusiness school would have specialized curricula according to the strengths and experiences of particular cases. Three pilot agribusiness schools are required, one for each sub-region (South Cone, Andean and Central America). These schools can be established through alliances with local universities and NGOs, for technical and pedagogic support. Their collaboration would greatly help in systematizing the farmers' experiences and know-how. Initially, train national leaders as well as trainers who can then apply their experiences in their own countries. Such a training package would require: a) The initiative will be made up of three parts: a) preparation and use of printed materials, b) a theoretical training phase; and c) a practical phase at the "agribusiness school". The training programme should have a monitoring and evaluation system with appropriate indicators (e.g. to measure impact rather than the number of trained farmers). As a complementary tool for training, it is advisable to have a "fellowship data bank", which offers updated information regarding offers, sponsors, costs and characteristics.

This initiative would not be possible without accompanying and strong policy support in the following areas: Research on technological innovation along the chain; Alliances with research institutions to support quality and planning production; Development of training and technical assistance for market services; Alliances with universities and other research and technological centers; Support in providing production and social services; technical assistance (partially subsidized); finance services (flexible and adaptable); as well as finance for acquiring and implementing post-harvest technologies, storage, transport and packing technologies.

ARGENTINA SAN JUAN FEDERATION OF AGRICULTURAL COOPERATIVES

NATIONAL TRENDS IN THE AGRO-INDUSTRIAL AND AGRIBUSINESS SECTOR

Over the past decade, the Republic of Argentina has made major advances in the productive capacity of its agricultural sector. The cultivated land area increased by 29 percent between 1993 and 2000 and productivity grew by 50 percent. The country produced 57 million tones of grains, cereals and oilseeds in the five provinces of the humid plains (Buenos Aires, Córdoba, Santa Fe, La Pampa and Entre Ríos) during the 2000/2001 campaign, covering more than 22 million hectares.

This increase occurred thanks to improved technology and inputs in the country's major agro-industrial chains, especially in the sector of medium- and large-scale producers. Moreover, a new figure was introduced in this rural sector - the contractor.

In global terms the value of exports increased, making the agricultural sector of the humid plains increasingly competitive. By contrast, gaps continue to widen in the small-scale production of regional economies, despite government efforts to diminish them.

One of the most visible phenomena of the structural reforms is the decrease in public spending and the consequent reduction in state programmes and interventions in rural areas.

In Argentina, over 30 horticultural species are planted in more than 400 000 hectares of land. These include the following crops, in order of economic importance: tomato, lettuce, onion, garlic, celery, pimento pepper, carrot, squash and sweet corn. Ninety percent of production is consumed in the local market and 10 percent is exported to Southern Common Market (MERCOSUR) member countries and Europe. In 2001, exports increased by 30 percent over the previous year.

In the past decade, the cultivated land area decreased by 2 percent; nevertheless, production increased by 28 percent, mainly because of the application of innovative technologies.

The extensive area and diversity of climates in the country enable farmers to plant many crops throughout the year. There are several major production zones. In addition, there are numerous small production centers, which are generally located on the outskirts of cities that supply the urban areas.

MACROECONOMIC CONTEXT: POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS

Argentina is “closed” to the world. Its isolation has deepened with the recent peso devaluation. In 2001, the country exported only 8 percent of its gross domestic product (GDP), while Chile and Mexico exported 46 and 35 percent of their GDP, respectively. Imports represented only 6 percent of Argentina's GDP.

In this context, many of the country’s productive sectors have developed under the umbrella of the import substitution model, in a marked protectionist tradition that became stronger in 1930. This policy generated powerful local industry interest groups, which currently exercise considerable influence over trade policy.

In the early 1990s, the crisis of hyperinflation led to a limited unilateral opening of the economy. Government decisions were more concerned with stabilizing prices in light of the crisis (5 000 percent annual inflation in 1989) than with responding to pressure from local producers. In this context, the average tariff dropped from 35 to 11 percent and several non-tariff restrictions impeding exchange were eliminated.

This trend was reversed in January 1995, after Argentina and its trade partners (Brazil, Paraguay and Uruguay) signed the MERCOSUR Common External Tariff agreement in March 1991. This agreement implied a marked increase in import duties on products from other countries resulting from the domination of Brazil's protectionist position. As a result, 71 of Argentina’s 97 tariff sectors increased import duties.

Moreover, membership in MERCOSUR impeded Argentina from negotiating trade agreements individually. It could only do so as a bloc. The results were clear: few agreements were signed and these kept the country from the mega captive markets of countries with greater relative productivity, such as the United States, those of the European Union and some Asian countries.

Finally, the devaluation of the peso in early 2002 locked in the already closed economy. In a context of recession and a 70 percent devaluation of the peso against the dollar (to July 2002), imports fell by 70 percent as compared with the previous year.

In the current context, international trade cannot leverage the country’s economic growth – such as in the case of Chile and Mexico – nor can it play an active role in opening up the economy (Atlas Foundation, 2002).

PRODUCTION AND COMMERCIALIZATION OF THE SAN JUAN FEDERATION OF AGRICULTURAL COOPERATIVES

PRODUCT CHARACTERISTICS

The products under study include a varied quantity of annual seeds of horticultural, floral and forage crops. These seeds are sold on the local and external markets, including the emerging markets of Southeast Asia.

The seeds produced in the greatest quantities include: carrot, lettuce, cauliflower, cumin, tomato, French bean, squash, broad bean, spinach, cilantro, onion, pimento pepper, cucumber, aji pepper, melon, watermelon, chard, anise, pea, chicory, alfalfa, endive, radish, beet, corn, eggplant and “flor copete”. These crops, with the exception of onion and alfalfa, represent 45 percent of the total production of San Juan Province.

In addition, fresh onion is produced for the Brazilian market, as are aromatic herbs, small-scale agro-industrial products, dried fruits, garlic and sheep cheese.

PRODUCTION CHAIN CHARACTERISTICS ANALYSED

The San Juan Federation of Agricultural Cooperatives (FECOAGRO) administrative council develops a cultivation plan for each crop. Using this plan, each member cooperative allots the areas to be cultivated among its members. Each cooperative plants crops and/or transplants crops, and works with a technician.

Some farmers harvest manually while others use threshing machines belonging to the federation. They deliver their produce to the cooperative, which in turn sends it to FECOAGRO, which issues a provisional receipt as proof of the quantity received.

The harvested seed is transported to the FECOAGRO plant, where it is processed using different machinery, such as sieves, pneumatic seed cleaners, vibratory screeners, etc. All processes carried out are recorded on a form, which is then sent to the cooperative of origin.

Samples of processed seeds of each lot are sent to a laboratory authorized by INASE (National Seed Institute), which determines its germinative power, level of impurity and presence of foreign seeds, among other indicators.

Once the results of the analysis confirm that the sample seeds are within the legal limits, the definitive receipt is issued for the lot, which is used to collect payment. The lot is then labeled, all testing results are recorded, and the seed is marketed.

For the past five years, the following seeds have been produced for export to Japan and Korea: hybrid and open-pollination onion, bunching onion, hybrids and open-pollination of carrot, “nira”, broad bean and seed flowers such as “cubanitas”, zinnias and cosmos.

FECOAGRO member cooperatives began producing species and varieties with a guaranteed demand on the local market. Over time, as demand for certain products grew and profit margins differed, it became necessary to plan production. The real possibilities of each cooperative are taken into account in terms of availability of resources and manual labour, potential demand, operating costs, revenue-cost ratios, availability of land and ecological niche (requirements for cold, altitude, and thermal gradient).

ORGANIZATION OF PRODUCERS AND MARKET LINKAGES

FECOAGRO participates in activities organized by the *Argentine Agrarian Federation (FAA)*, such as national encounters of representatives of small- and medium-scale producers' organizations and maintains close linkages with the *National Institute of Agricultural Technology (INTA)*, Credicoop Bank (for credit, inter-cooperative encounters, meetings with small- and medium-sized businesses and mobilization of cooperative funds).

The Federation cooperates with both *Rural Agricultural Network (REDAR)* and the Cooperative Program for the Development of Rural Agroindustry (PRODAR) in Latin America and the Caribbean whose close linkages enable it to participate in different international trade fairs in Albania, Ecuador and Guatemala.

As for its capacity building, FECOAGRO participates in training courses organized by the San Juan National University's School of Social Sciences and maintains close links with the provincial cooperatives office for logistic, legal and institutional support.

IMPACT OF FARM-AGRI BUSINESS LINKAGES

The level of development achieved by FECOAGRO in recent years is measured by the 310 hectares it has in production as well as by the human development attained at the individual, family and organizational levels.

The process to produce "seed collections" generates considerable manual labour for the farm families in their place of residence. This production creates an estimated 300 jobs for approximately five months of the year. Moreover, this process permits family members, including adolescents, to work alongside each other and their neighbours.

Several years ago, FECOAGRO members decided to create a special fund for health emergencies. To this end, they save 3 percent of all income from sales and harvesting work, as well as 5 percent of annual surpluses.

SUCCESS FACTORS

The purchase of land in recent years and the 100 percent commercialization of the production through the second-tier organization have been decisive in making

FECOAGRO the only beneficiary of the Law of Industrial and Agricultural Promotion, which targets small-scale farmers.

Because it is a cooperative, FECOAGRO does not pay taxes on earnings. The federation redistributes surpluses among members, who pay taxes if their income exceeds the established maximum. Through this tax deferral, the Federation has been able to purchase additional rural properties. The cooperatives administer this land, which currently totals 430 hectares.

LIMITATIONS

A major limitation was Argentina's profound economic crisis. FECOAGRO's production is sold in pesos on the depressed local market, which has little purchasing power, whereas it must buy inputs in dollars. This has begun to affect current production levels.

New owners rejected the "national" seeds that required so much effort and so many resources to develop. As a result, production of these seeds will not increase.

CHILE EXPORTS OF AVOCADO, CITRUS, ASPARAGUS AND BERRIES

NATIONAL TENDENCIES IN THE AGRICULTURAL INDUSTRY AND AGRICULTURAL BUSINESS SECTOR

The agricultural industry of Chile provides more than 90 000 jobs and is responsible for around US\$5 000 million in exports – hence it is considered a strategic development sector. However, in spite of the progress made in recent years, there has been a decrease in frozen products, canned foods, juice, and dehydrated products.

The consumption of agricultural products has not increased in Chile because of its small size, as well as because of economic and cultural reasons. Added to the international crisis, this has delayed the sustained growth which was taking place in the domestic agricultural industry.

This development has been achieved due to a favourable export policy. These include loans from CORFO, exportation benefits from PROCHILE, co-financing for large- and medium-sized irrigation projects, programmes for the promotion of exports, the modernization of port facilities, and streamlining customs and banking procedures, among others. During the last 20 years, the country has transformed its status from an importer of agricultural goods to that of a front runner in exporting fruits.

Negatively, however, this process also provoked increasing technological and management gaps with the small-scale rural farmers, who had only developed the capacity to produce traditional crops for their own consumption and for the domestic market.

Starting from 1990, an attempt has been made to overcome the underdevelopment of family-based rural agriculture. As a result, rural organizations with diverse legal formats came up, most of which were characterized by poor management, which accentuated the confusion regarding strategies to be adopted.

During the past decade, some linkages between small-scale farmers and the agricultural industrial sector were developed, as in the case described here, given the rapid positioning in markets such as North America, Europe and Japan. Some of these experiences had a great impact on the small-scale producers. However, successive international crises have also affected the growth and projection of the agricultural industry in Chile, and therefore the development of these linkages. The resulting severe economic crisis in this sector grew steadily until 1998.

Some present signs point to a projection of more and better opportunities, especially for the more than 275 000 Chilean rural families, based on developing a better structured

industry that fits the reality and particular needs of this important sector of the national economy. This is confirmed by the creation of an *Agricultural Dialogue* with the participation of ministries and the representation of producers, the transfer of greater resources to the rural sector and the implementation of 65 specific measures for the development and modernization of this sector.

MACROECONOMIC POLICIES AND INSTITUTIONS RELATED TO THE DEVELOPMENT OF AGRICULTURAL BUSINESS

During the last 20 years, exportation of food products in Chile has developed considerably, with 30 percent of total exports occupying top positions in world production. Joint public and private efforts, and growing commercial openness, together with a set of measures and instruments has allowed unprecedented business development in the sub-sectors of lumber, fruit, agricultural industry and, more recently, wine.

In October 2001, the President of the Republic of Chile signed an agreement with the rural organizations of the country, whose purpose was to implement 65 specific support measures for modernization and commercial development. It was expected to create a great opportunity for agricultural business in order to be used as a model for other sectors. Moreover, the opening of mega markets such as Korea and Taiwan, the rising dollar, the half-point decrease in the interest rate, and the signing of a free trade agreement between the United States and the European Union are variables that could change the situation.

Economic growth in 2001 is explained by exports that grew by 6 percent volume during the second semester. A larger increment of around 5.5 percent of the GNP is predicted for the second half, which could be reflected in the reactivation of the most depressed sectors.

During the period of greater growth of the agricultural industry in Chile (with rising rates of 20 percent annually between 1988 and 1996), an agricultural system of contracts and networks of organized small-scale farmers emerged in various forms to supply raw materials for the agricultural industry sector.

The products by the farmers (raspberries and asparagus) are produced in a favourable economic atmosphere under a system of crop contracts with agricultural industries which are located near urban centres where the producers live. This had been the situation of most business organizations of small-scale producers until 1999 when the *Agrochile* initiative by a group of rural organizations was founded. They proposed a solution to a set of financial, commercial, technical and organizational development issues that hampered their insertion as small-scale producers in dynamic trade chains for domestic and export markets.

This initiative has helped develop support linkages between the sector as a whole and other organizations – both national (PROCHILE, INDAP and CORFO) as well as international (FAO, Agriterra of the Netherlands, and PRODAR under IICA). Consequently, a strategy for rural product differentiation by quality in the domestic and international markets is being developed.

The objective is to support the agricultural industry within each organization, such as the “*Chacay Coopeumo*” cooperative, while simultaneously creating a market niche. The idea is to create a complementary mechanism to help small Chilean farmers through difficult times.

EXPORTS OF AVOCADO AND CITRUS FRUIT FROM COOPEUMO LTD.

PRODUCT CHARACTERISTICS

The products included in this study are export quality citrus fruits, such as oranges and lemons in mesh bags, cleaned and calibrated, and avocados packed in cardboard boxes containing 11.2 kg, calibrated and labeled as “Hass avocados” internal market type, in 18 kg boxes, special I, II, and III.

The Coopeumo rural cooperative has been forced to change management during the last three years because of the growing loss of competitiveness in the areas of corn and wheat, on which a large part of their commercial activity is based. They had to opt for a thorough process to foster product transformation and technical development, stimulating the incorporation of new alternatives for fruit processing and building a commercial strategy conducive to progressive integration in the agricultural export chain.

CHARACTERISTICS OF THE PRODUCTIVE CHAIN

The chain under review is that of citrus fruit (oranges and lemons) and avocados for the domestic and export markets. The producers are small-scale farmers with between one and three hectares of fruit trees from one to 30 years old. The fruit, which is sold mostly to intermediaries, is packaged in boxes or mesh bags.

The harvesting point and the calibration for market destination are decided on the farm. Cleaning, waxing, calibration and packing are done in the packing area at Coopeumo. The acid content and the soluble solids are checked. Crating is done in 17 kg boxes, 18 kg mesh bags and 400 kg bins. The processing capacity is 12 000 kg per day. Exporters handle their own packaging. Refrigeration service is contracted out.

The shipper, Punta Arenas, sells 50 percent of the merchandise to supermarkets and 50 percent to naval bases while Arica sells 100 percent to Feria Arica. The exporter sells to wholesalers who distribute the merchandise to supermarket chains in Japan.

In the domestic market, the consumer would look for fruit with bright colours, medium size, firmness, good level of sugar in oranges and sour juice in lemons and that helps to maintain good health. For the Japanese consumer, the fruit must be perfect or almost perfect, with more importance placed on the decorative aspect than on nutrition. The consumer examines the pieces of fruit one by one.

ORGANIZATION OF PRODUCERS AND COMMERCIAL LINKAGES

The degree of commitment between the cooperative and the international trader is limited because contacts are made prior to the harvest of the produce. There are no exclusive agreements or sales contracts related to the produce that the cooperative sells to the international traders.

The business relationship between the cooperative and the domestic trader is informal. It is, however, supported by documents such as sales invoices and delivery documents to ensure payment. One of the most important aspects to be noted is the high degree of price sensitivity on both sides. Between the producer and the supplier of raw materials, there is a contractual relationship by means of sales documents and commercial documents to ensure payment.

The commitment between the cooperative and Frupeumo is very high owing to the fact that the cooperative is a founding partner of Frupeumo, which provides trading service to the cooperative and its associates. The relationship is backed by legal documents.

With the support of the Institute for Agricultural Development, INDAP, the cooperative was able to finance a strategic study for the organization and marketing in which diverse commercialization channels for rural production were analysed. In addition, plantings and technical assistance were financed by INDAP. Through technology transfer programmes, and as a result of the marketing study, a direct sales point was installed in a wholesale market.

Also, through INDAP's agreement with the Cooperative and Foundation for Agricultural Innovation (FIA), partial financing was obtained for packing materials for fruit and vegetables, and CORFO for the approval of a fund dedicated to the commercialization of fruit for internal and external markets. There is now a manager and financing for carrying out activities that allow business consolidation.

Technological irrigation projects, which include a state subsidy for the producers who are members of the cooperative, are being prepared with the National Irrigation Commission. High technology irrigation has been installed in the avocado and citrus fruit production centres.

In 1999 - thanks to linkages with PROCHILE - Coopeumo sent a mission to the United States to evaluate prospects for exporting. This goal materialized with the first shipment of avocados. In December of 2001, the cooperative sent a second mission to Costa Rica and Miami to evaluate prospects.

IMPACT OF FARM-AGRI BUSINESS LINKAGES

The improvement in the financial aspect of the associates is also because of the higher production yields achieved and the better prices obtained for the products, thanks to commercialization channels and more appropriate sales systems.

Employment has been increasing since labour intensive crops, such as fruits, were introduced. Also, new sources of specialized employment in the areas of domestic and international business have been created resulting from the involvement of the cooperative in exportation through Frupeumo.

Management ability is being developed, as seen in improved negotiating techniques and in the optimization of resources. The negotiating strength of the producers has improved since they stand united when dealing with buyers. Decision-making on the part of the producer is based on marketing information.

Improvement in the quality of life of the associates has also been achieved through credit for building and repairing homes, financing small businesses without land, the establishment of an emergency loan fund, school-loans for members' children, a fund to be used in case of death, and collective life insurance for the members.

SUCCESS FACTORS

Coopeumo operates in a privileged area in terms of the quality of natural resources (soil, weather, water), near the principal consumption centres and the main ports, with excellent access roads and diverse production opportunities. They have a technical team capable of preparing viable project proposals for uplifting the plight of rural people and that can attract funding resources from abroad. Coopeumo works in cooperation with the State and international aid agencies.

As Chile enters into a process of opening markets and its comparative advantages decrease, the producers are faced with domestic markets that are more and more competitive, and therefore the profit margins are going lower.

ASPARAGUS AND BERRIES FROM CHACAY COOPERATIVE FOR THE FROZEN FOOD INDUSTRY

PRODUCT CHARACTERISTICS

In this case, two types of products are analysed: export quality asparagus to be frozen, extra-large, large and standard sizes, packed in 11-pound boxes, and export quality berries (raspberries and strawberries) sold by the kilogram, frozen with the IQF (individually quick frozen) system.

The parties who develop an agricultural industrial relationship agree on specifications for quality, delivery, size and payment.

CHARACTERISTICS OF THE PRODUCTIVE CHAIN

Agricultural production is carried out by small-scale rural producers in the province of Ñuble, Eighth Region of Bío-Bío, Chile, associated with the Chacay San Vicente Ltd. Rural Cooperative.

The productive capacity of each party to the agreement is 14 ha on average, of which 3 to 5 ha are designated for the agricultural industry and the rest for traditional crops such as wheat, beans and beets, as well as livestock. Family labour is used in production, although some functions are performed by third parties at harvest time.

The type of technology used for the programmed crops was transferred from the agricultural industry to the Chacay cooperative, which in turn passed it on to the producers.

The Chacay San Vicente Ltd. Rural Cooperative has a pilot agricultural industrial plant with a capacity of 2 000 kg/day. While it has the basic infrastructure for developing processes, it has achieved the objective of integrating production and commercialization by adding value to the products.

The cooperative takes care of basic processing, which involves selection, washing, packing and freezing. The produce is then sold to large agricultural industrial companies who handle the final presentation, labeling and packaging.

The commercialization process is handled by the producers and the Chacay San Vicente Ltd. Cooperative, which works with the agriculture industrial companies. The produce is sold on the domestic (represented by supermarkets, smaller grocery stores, restaurants and hotels), and export markets (made up of countries and distribution chains for mass consumption in North America and Europe). The final product is defined according to characteristics by product in each market, improving the quality, size, variety and processing of fresh and frozen products.

PRODUCER ORGANIZATION AND COMMERCIAL LINKAGES

There is a high degree of formal and contractual commitment between the producer and the cooperative. The producer must comply with the standards established for quality, selection, size, and purity. The inputs are delivered to the cooperative and the value is deducted from the amounts paid to producers. In the end, the price depends on the quality and size of the product.

The relationship between the cooperative and the different domestic agricultural industrial companies with which it works is based on compliance with the standards of quality, and the payment for this service. This relationship is formal and contractual.

The degree of commitment between the agricultural industrial company and the international intermediary is high. Prices are set according to the commodities market. Transportation of fresh produce is by sea whereas frozen foods are transported by air.

Cooperative and Foundation for Agricultural Innovation (FIA) provides refrigerators and freezers for the cooperative, whereas PROCHILE provides information.

The relationship with INDAP came about because of the raspberry and asparagus crops, for which an investment had to be made in plants for established farms, which implied a higher cost than any traditional crop. INDAP extended credit to the cooperative for these crops.

IMPACT OF FARM-BUSINESS LINKAGES

Due to the relationship developed with agricultural businesses, producer incomes have increased. Employment was raised as well, thus improving the quality of life of the rural producers involved.

Success in the first seasons increased the cooperative's negotiating strength within the chain and resulted in benefits such as advance payments and the acceptance of excess production. Also, the cooperative obtained higher market prices, technical assistance during the season and professional training.

The organization developed significant leadership within the rural agriculture sector by including the model of agricultural industrial chains and joint efforts with diverse institutions and the state. Internal technical assistance has also been developed as well as the transfer of technology to the rural producers.

SUCCESS FACTORS

One of the principal success factors of the Chacay Cooperative has been the development of administrative, productive, technical and commercial capabilities. The cooperative has managed to establish an innovative relationship between the small-scale rural producers and the agricultural industry based on quality.

Other success factors are: an assured demand for the products; profitability because of high crop yields; a decrease in the cost of commercialization (transportation, sales commissions, expenses, losses due to overstock) and labour, since family labour has been incorporated.

The development of the chain has made improvements in the efficiency of business management possibly owing to the coordination of information generated regarding the production achieved.

Another factor for success has to do with the fact that the Chacay Cooperative has been able to form an adequate staff of professionals by departments. In addition, good planning with respect to some investments has made other services possible, generating new revenues that contribute to the financial health of the organization.

LIMITATIONS

A decline in the agricultural industrial sector began in Chile in 1997. Since then export volumes fell by about 5 percent annually while returns dropped a cumulative 20 percent since 2000. Continuing international financial crises (Mexico 1997, Asia 1997-1998, Turkey and Russia 1999-2000 and Argentina (2001) have not spared the Chilean economy either.

Subsidies in large producing countries, entrance in Europe of low-cost producer countries and tariff-exempt producer countries such as Serbia (for raspberries), overproduction by competing countries, (asparagus: Perú and China) have also been major constraints.

COLOMBIA CAPE GOOSEBERRIES AND MULBERRIES

NATIONAL TENDENCIES IN AGRICULTURAL INDUSTRY AND AGRICULTURAL BUSINESS

Although the policy of the agricultural sector has been to promote greater participation in the decision-making and execution of plans and programmes, the atmosphere in Colombia is far from ideal for investment in the agriculture industry. However, some areas have had favorable performance, as is the case with beef and dairy products, sugar cane and palm oil. Some specific activities related to fruits and vegetables have also enjoyed demand from the processing industry. Otherwise, performance for the last five years has been poor for the agriculture and livestock sector.

Agricultural sector policies, such as the *Program for Agricultural and Livestock Supply* (PROAGRO), alleviated the deep financial crisis Colombia was experiencing. This policy aims to promote agreements for the purpose of increasing production and improving competitiveness, through higher yields and lower costs of agriculture and livestock industry goods with production chains that have potential for success in new foreign markets or to substitute imports.

Production chains for poultry, cooking oil and shortening, textiles, dairy products, fruit and vegetables are among the most important that participate in PROAGRO. Agreements are at different stages of progress. However, one of the most representative chains, the dairy industry, has become involved in the development of refrigeration infrastructure, the adoption of incentives and sanctions related to the quality of milk and regulated intervention in commercialization.

This chain perspective has also been adopted for granting credit through FINAGRO. A growing percentage of development loans has been oriented toward financing commercialization programmes that form part of these production chains. Nonetheless, resources allocated to the primary sector have continued to decrease in pesos in the last five years.

The policy of increasing vegetable farming and livestock production, which was achieved in a short time, had its most significant impact on biannual crops, which fell from 2.5 million hectares planted at the beginning of 1990 to 1.6 million hectares at the end of the decade. As a result, rural unemployment and poverty increased.

MACROECONOMIC CONTEXT, POLICIES AND INSTITUTIONS IN THE DEVELOPMENT OF AGRICULTURAL BUSINESS

For the last four years the economic growth rate has remained lower than the population growth rate. The economic recession, which is the worst of the century, has resulted in rapid impoverishment of the population and an unemployment rate of around 20 percent for the last two years.

The crisis has been clearly noted in the performance and activity of the financial sector, which has noticeably limited its granting of credit. The productive sector has had to deal with this financial crisis, which is evident in restrictions and delays in investment and expansion.

The economic growth rates of the last five years are the lowest of all periods considered. The negative impact of the economic crisis of the 1980s and the period of openness on the dynamics of agriculture, the food industry, and manufacturing in general is clear. Other negative factors are the persistent devaluation of the national currency during most of the 1990s and the international crisis of recent years.

CAPE GOOSEBERRIES IN THE MUNICIPALITIES OF SILVANIA AND GRANADA (DEPARTMENT OF CUNDINAMARCA)

PRODUCT CHARACTERISTICS

Cape gooseberries are originally from South America and are found from Venezuela to Chile, up and down the Andes mountain chain. They are a commercial crop in Colombia and Ecuador. The Cape gooseberry plant crop came about spontaneously, as it was a wild plant, until some European countries took an interest in this exotic fruit. In 1985, two companies were formed, Frutierrez Ltd., which is family-run and Ocatí, which is part of the Tiba group, which are exporters of exotic tropical fruit.

The Cape gooseberry plant has an average life of 13 months from the time it is planted until it yields its last fruit, with the first fruit growing six months after it is planted. Its peak production is at eight months. The gooseberry plant does well in regions between 1 800 and 2 800 meters above sea level, where the average temperature is between 13 and 18°C, annual precipitation between 1 000 and 2 000 mm, and relative humidity from 70 to 80 percent. It is susceptible to droughts and low temperatures.

At first, the technology was rudimentary and the use of technical material was limited owing to the low-income level of the producers and their lack of knowledge about commercial-scale production. Before 1990 there were no more than 10 producers in the area; however, between 1990 and 1998 there were at least 10 new exporters and domestic traders. In 1998, exports amounted to a little more than US\$5 million.

The Cape gooseberry has always had a very small domestic market, which is the reason that its cultivation developed slowly. From 1985 to 1990, the produce was taken to

the *Corabastos* wholesale market, some other markets and the storehouses of Bogotá exporters. The *Frutierrez* export company started 16 years ago with a storage site near the *El Dorado* Airport of Bogotá where farmers and traders took their produce for sale.

Other aspects which influenced the development of this crop were the spread of information regarding the properties of the fruit and the production potential and the interest shown by countries such as Germany, the United States, Israel, Japan and Canada. This activity came about almost exclusively as a result of the exportation of exotic fruit and international consumption. As the demand in Europe became steadier and the exporters increased their markets, the linkages with producers in the region also increased.

At present there are about 300 producers of Cape gooseberries in Colombia, two large exporters, 10 small-scale exporters, about 10 intermediaries who buy for the domestic market, and at least 30 small-scale retail traders (some are producers) who take the fruit to markets.

In the area covered by the study, there are 250 producers, of which 10 percent cultivate more than 10 000 plants, 20 percent cultivate between 5 000 and 10 000 plants, and 70 percent less than 5 000 plants. Seventy percent of the producers are relatively permanent suppliers of the exporters, and 30 percent are independent.

It is estimated that at least 1 000 families, including some retail intermediaries and labourers, make a living from gooseberries.

Commercialization

The traders handle about 15 percent of the production in the area. The share of each trader is variable and depends on whether it is high or low season for the external demand.

Other agents in the production chain include farmers associations or companies financing business, traders who finance the producers and are temporary or permanent suppliers of the exporters and producers who harvest and commercialize the produce, and are suppliers of the exporters.

Commercialization activities are handled by supermarket chains that are generally steady buyers of export quality fruit from the exporters, farmers who commercialize their fruit themselves, sell it at the *Corabastos* wholesale market, other markets, or neighbourhood stores. Generally the farmers produce other fruit or vegetables, handling small quantities.

There are also intermediaries of wholesale traders who buy from the farmers and sell to retailers who have stands in markets or to other retailers, as well as to street sellers, whose numbers increase when there is fruit left over from exportation. They buy from small-scale intermediaries when the fruit is cheap.

There are additionally intermediaries who work occasionally with small quantities and obtain slim profit margins. They manage to obtain low-cost transportation to take the fruit to different cities.

PRODUCER ORGANIZATION AND COMMERCIAL LINKAGES

Among large exporters, *Frutierrez* handles about 40 percent of the production in the area; *Ocatí* about 40 percent; and *El Tesoro* about 15 percent. The other exporters cover about 5 percent of the demand, which increases a little in high season.

The exporters of Cape gooseberries tried to produce their own fruit crops when they first got into the business. However, they realized that this activity required unique technology and experience, which the farmers had accumulated over several years. Therefore the exporters developed informal mechanisms that allowed them to link the farmers to their businesses in order to ensure a permanent supply of fruit according to market requirements.

The mechanisms for establishing linkages between the parties involved in the business have evolved into what they are today. At first, the export companies formed societies with the land-owning producers which were similar to those now formed between farmers or between traders and farmers (companies or individuals) with land owners. However, this didn't work because for an exporter it is safer to be the buyer of a product that has a sure market than it is to participate directly in a business that is subject to weather and other typical risks, such as pests and diseases.

Finally the procedure of buying from suppliers with established agreements was set up. These agreements are not written. However, everyone understands and accepts them and the parties clearly assume their commitments.

Between producers and exporters there is generally a commitment of sincerity and loyalty. For a farmer to be considered a supplier of a company such as *Frutierrez*, he must sell them all of his production during the year. To become a supplier of an exporter, one must start in the high season. No permanent exporter within the area accepts new suppliers during the low season.

Quality is an important aspect in the purchasing process. The exporters emphasize quality and recommend that their suppliers plant less, so that they will have enough money to take care of all crop requirements and obtain a greater percentage of export-quality fruit.

The exporters are committed to pay in cash or by check 15 days after delivery, even though the exporters are always careful about giving out information regarding the commitment.

Additionally, the exporter buys the entire yearly production according to the pre-established parameters of quality and quantity. *Frutierrez* buys from suppliers even if they aren't property owners. *Ocatí* only buys from the owners of the crop. (Owner of the crop implies partner, lessee of the land, or sharecropper.)

In the last six years, a type of link between small and medium-scale producers has become very common. A partnership is formed in which the partner with the capital provides inputs and the other contributes his work. The cost of rent is shared, and the production is divided equally. The investing partners are usually landowners, *Corabastos*

traders, suppliers of *Frutierrez* or simply farmers who want to share the responsibility of the business with a working partner.

IMPACT OF FARM-AGRI BUSINESS LINKAGES

Currently, the production of Cape gooseberries in the chain under review generates 250 direct jobs in the production area and numerous direct and indirect positions in commercialization.

The dynamics around this chain has given the producers a good bargaining position. As a consequence of the increase in agricultural and commercial activity, rural workers, who are attracted by the good prices obtained for the fruit in high season, form societies with other farmers in order to participate in the business.

Additionally, the producers in the area have had to develop the ability to select proper land, since the gooseberry requires a specific soil quality.

SUCCESS FACTORS

The success of the gooseberry chain is mainly linked to the export activity and a process of selection by the most resourceful farmers, who have managed to overcome difficult periods, understand the market and adapt to it.

Another determining factor in the development of this agricultural business has been the location, which is near Bogotá and therefore near the airport and the *Corabastos* wholesale market. Also, since the crops are grown along the Pan-American Highway, transportation of the fruit to cities such as Cali, Neiva, Ibagué, Espinal and Girardot is easy.

In the low export season, the gooseberries are sold on the domestic market. The producers, especially those who are not suppliers of the exporters, are able to sell their fruit even at low prices.

LIMITATIONS

The gooseberry needs a specific type of soil and it is estimated that 20 percent of the farmers have been unsuccessful because they planted the crop in inadequate soil. Secondly, Cape gooseberry production depends entirely on the international market. The emergence of the domestic market was a consequence of excess stock after export sales.

Local traders have their regular suppliers, and in the high season they leave out those who are not their usual suppliers. Their purchases are limited to market demand.

Lastly, an important limitation for this crop as well as other crops is the pervasive atmosphere of insecurity in Colombia.

MULBERRIES (MORAS DE ORIENTE) IN THE DEPARTMENT OF ANTIOQUIA

PRODUCT CHARACTERISTICS

Mulberries are a permanent crop. The mulberry tree is of medium size, with a useful life of approximately nine years. For a fairly good crop, yield per hectare is approximately 700 kg per week, 52 weeks a year.

An investment of 18 805 456 pesos is required to plant a hectare of mulberry trees (2 000 trees). This investment is calculated based on technical cultivation with sufficient infrastructure (machines and equipment) needed throughout the useful life of the trees. The cost of maintaining a hectare of mulberry trees, including the cost of materials, supplies and labour, as well as transportation of these materials and supplies is approximately 12 000 000 pesos.

Currently, efforts are directed at clean production that can be successful in international markets and contribute to sustainable growth in the region by reducing the level of contamination and optimizing the rational use of natural resources.

CHARACTERISTICS OF THE PRODUCTION CHAIN ANALYSED

The mulberry production chain under review covers 70 percent of the 500 small-scale producers who plant between 100 and 300 trees, and 30 percent of the medium-scale producers who have from 300 to 500 trees. Only 10 producers have more than 500 trees, and are thus classified as large-scale producers and have been growing mulberry trees for the longest period (more than 20 years).

The *Moras de Oriente* company has a 10-tonne capacity storage place at its collection centre where the produce is received and stored when it arrives from the farms or is collected from the farms by company trucks, in addition to another 20-tonne capacity fruit warehouse at Sabaneta.

Fresh fruit accounts for 92 percent of the sales of *Moras de Oriente*. The other 8 percent is made up of other products such as jam and canned fruit. Chain stores buy 41 percent of the fruit produced by *Moras de Oriente*, while 38 percent is sold to the processing industry, 20 percent for other distributors and only 1 percent for the retail market.

Of the share of the fruit production bought by industry, 72 percent goes to the soft drink company *Postobón*, 7 percent to *Sicolsa*, and the remaining 21 percent is sold to diverse companies that make ice cream, cakes and soft drinks, such as *TuttiFrutti*, *Helados Mimos*, *Bocadillos Don Julio*, and *Agrofrut*. The other distributors that buy 20 percent of the fresh fruit are located in cities such as Barranquilla, Cartagena and Armenia.

The institutional market (e.g. Nescafé) buys 7 percent of the produce that goes to the market for sweets and canned foods. The other 83 percent of the fresh fruit is sold IQF (individually quick frozen) to the chain stores.

The relationship between *Moras de Oriente* and other farmers is based on trust – the company has been in the market long enough to have a reputation which results in 85 percent of the producers in the region delivering their product without restrictions. *Moras de Oriente* makes loans for investment in infrastructure as well as to pay suppliers.

Moras de Oriente is concerned about the quality of its prime materials and final products. It has connections with entities such as: IICA, CORPOICA, and UMATA for technical assistance and with industries such as *Noel* and *Postobón* for help with the quality aspect. *Postobón*, a company that makes juices, is the main processed foods client for *Moras de Oriente*. Their relationship is not just commercial. When there are problems with the quality of its product, *Postobón* assists the company by sending engineers or trained personnel.

LINKAGES WITH SUPPLIERS OF RAW MATERIALS AND PROVIDERS OF SERVICES

Moras de Oriente has many suppliers of goods and providers of services, most of which are located in the city of Medellín. These suppliers render services for prompt payment. Only Alico and Sellopack (packing sellers) offer technical assistance for technological development.

Linkages with universities are sporadic and have to do with the transfer of technology. The relationship with the National University consists of investigations about growing mulberries. With the *Universidad Católica de Oriente*, there is a programme regarding research and improvement of mulberry seeds and with the Universidad Bolivariana has to do with training personnel in the areas of costs and administration.

Moras de Oriente is currently dealing with SENA (national learning service) through a technology transfer project in post-harvest operations and another one called “*Development of innovative products using mulberries, "lulo", and gooseberries in eastern Antioquia according to international standards*”.

IMPACT OF FARM-AGRIBUSINESS LINKAGES

Moras de Oriente is a company that contributes to the economy of an entire region. Currently, people from seven nearby municipalities and several others farther away produce for this company. About 500 families supply this company, representing 2 500 direct or indirect workers.

SUCCESS FACTORS

The principal factors for *Moras de Oriente*'s success are guaranteed markets and good prices because of the quality of the fruit. Another factor for success has been getting the support of regional organizations that cooperate with the productive projects, such as local universities and community action councils.

LIMITATIONS

One of the biggest problems facing the production is management. Because of its rapid growth, the company still lacks solid organization.

Moras de Oriente shows interest in improving its agricultural business linkages through unconventional types of transactions such as renting permanent crops, the creation of a savings fund, and loans from the producers to the commercial organization. However, this is an individual and isolated effort, which lacks backing at the policy-making level.

The company has subsidized the production of mulberries in the region for many years, which has resulted in profits of less than 1 percent of net sales for the year 2001.

COSTA RICA DAIRY PRODUCTION

NATIONAL TRENDS IN THE MILK INDUSTRY

Major changes in industrialization and commercialization have led to increased consumption of dairy products on the local market, as well as increased exports to the Central American and Caribbean markets. This has permitted Costa Rica's milk industry to strengthen its capacity to participate in the globalization process.

The *Dos Pinos Cooperative* is Costa Rica's leading dairy producer. Due to the technology it employed, there has been improved variation, quality and volume of production. The cooperative currently processes 80 percent of the milk industry in the country.

With respect to the legal and regulatory framework, milk companies must follow the guidelines and regulations established by the General Health Law for food industries. In addition, a price control system is in place that fixes prices based on the costs of the production-commercialization chain.

In recent years, the industry has been characterized by mergers, which tend to concentrate the supply in medium- and large-sized units.

MACROECONOMIC CONTEXT, POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS

The change in Costa Rica's development model has generated policies that have affected the development of the agricultural sector. The sector has been affected by the application of policies such as the liberalization of internal markets, the reduced role of the state and the modifications to the system of agricultural production incentives (credit subsidies, real exchange rate, tariffs, price controls and others).

With respect to the milk industry, the application of these policies has meant the following: a decrease in the activities of the programmes for generating and transferring technology and especially in technical assistance; the reduction and/or disappearance of soft and preferential credit; the gradual elimination of price controls and produce margins and a progressive reduction of tariff and non-tariff protection.

Costa Rica's trade and tariff policy must comply with the international commitments acquired upon joining the World Trade Organization and originating from the following bilateral agreements.

- a. The Convention on Central American Tariff and Customs Regulations, which calls for lower tariffs on specific products.

- b. The Compensatory Tariff: this is applied to dairy products from Costa Rica, El Salvador and Nicaragua. It is offered to producers who feed their dairy cows yellow corn.
- c. Executive decree of importation within a tariff contingency: this establishes that interested parties, through the BOLPRO S.A. Agricultural Products Exchange, can import products in accordance with established provisions. Limitations occurred mainly at the level of import volume and the application of tariffs until 2002. Tariffs are 34 percent, 39 percent and 19 percent, depending on the product to be imported.
- d. Free Trade Agreement with Mexico.
- e. Free Trade Area of the Americas (FTAA) and the Regional Council for Agricultural Cooperation (CORECA). Negotiations are continuing in the following areas: market access, export subsidies, measures that distort agricultural trade and handling of health and phytosanitary measures.

There is no agreement on whether the tariff protection of dairy products should be applied to all products equally, or whether different criteria should be applied. These criteria would provide maximum protection in the case of products of national interest or lower international prices, such as powdered milk, whey, yoghurt, fresh cheese and ice cream; and minimal protection for evaporated and condensed milks, cheese powder and other whey products.

DAIRY PRODUCTION AND INDUSTRIALIZATION ASSOCIATION (APILAC)

PRODUCT CHARACTERISTICS

APILAC produces a wide range of dairy products. The following products have the highest sales volume: long-life milk, which represents an estimated 41 percent of sales; powdered milk and ice cream, which represent 25 percent of sales; yoghurt and custard, with 20 percent of sales; cheeses and fresh milk.

In Costa Rica, dairy products are homogenized and pasteurized. They are widely consumed and have a large market since many dairy products form part of the local daily diet, regardless of social or economic status. Annual per capita consumption is 152 kg, the highest in Central America.

The internal market for dairy products has grown in Central America and the Caribbean because of improved quality thanks to the application of and compliance with quality standards for raw materials in terms of percentage of fats and bacteria levels.

PRODUCTION CHAIN CHARACTERISTICS ANALYSED

Currently, APILAC buys milk from 136 small- and medium-scale milk producers, of which 79 are APILAC members. The producers are located in the Pérez Zeledón zone and the southern region of the country.

Producers own dairy farms with 8 to 10 cows, and deliver an average of 65 litres of milk daily. Members give 6 percent of their production to the company in order to build capital savings, which is used to fund operations.

APILAC has 17 500 m² of land and a 650-m² industrial plant. It employs the latest technology in its agro-industrial processes and has a processing capacity of 20 000 litres per day. The plant is currently operating at 47 percent capacity; in other words, it is processing 9 400 litres per workday of six to eight hours.

There are six steps in the production process; reception of the raw material, storage in tanks, skimming, pasteurization, homogenization, and sub-processing in accordance with product type.

ORGANIZATION OF PRODUCERS AND MARKET LINKAGES

The APILAC dairy company and the organizational and productive structure that supports it do not have linkages or chains in the region, other than those associated with procurement of milk and manual labour.

Agricultural and veterinary inputs such as refrigeration and milking technology are imported. However, some machinery is purchased in the central valley of San José. Pulp for the production of beverages and some ice creams and concentrates are imported. Improved feed is purchased locally from *Servicios Científicos Agropecuarios*, which imports many of its products.

IMPACT OF FARM-AGRI BUSINESS LINKAGES

There has been a clear impact on local development, as demonstrated by the following.

- a. The generation of direct and indirect employment and increased income of approximately 2 200 people, and especially the stability of income of the member families and those collecting milk in low-income communities of southern Costa Rica.
- b. The diversification of dairy farm income as an alternative to coffee.
- c. The education and training of human resources, in the areas of dairy farm and pasture management, milk collection and business management.
- d. The creation of linkages with private businesses, public institutions, academia, non-governmental organizations and community-based organizations, in accordance with the different areas of company development.
- e. A gradual consolidation of a business plan combined with social and organizational development policies and strategies.
- f. The implementation of processes to consolidate local networks.
- g. The promotion of modern processes and the development of production units of small- and medium-sized producers through guaranteed demand, fair prices, friendly service, provision of complementary services and access to mechanisms of participation and decision-making.

SUCCESS FACTORS

The company has a solid track record and market position. It has supplier-members who work near the large capacity plant and who mostly identify with the company.

It has grown in terms of sales volume and is now the third-largest company in the regional market and has comparative advantages in terms of distance and transport costs with respect to its closest market competitor, making it easier to supply the market with fresh products at lower prices than its closest market competitor.

It has a basic organizational structure that can be strengthened and improved to expand and consolidate trade operations based on the experienced gained. Personnel (especially those associated with the company) participate in company planning, are familiar with APILAC goals and are motivated to achieve them.

It currently has a good financial situation and does not face major problems with respect to operations and commitments. A developing market niche exists, which has presented an interesting growth trend in recent years. Loans are available for production under favourable conditions for the producer owing to the company's agreements with Banco Popular and the Counterpart Fund.

APILAC offers its members a guaranteed market. Although this market is not currently growing, it does generate stable family income at a time when coffee production (the second leading source of income) is encountering losses.

LIMITATIONS

The company lacks strategic planning (to develop a vision and a mission as a competitive firm), implementation of modern practices of business administration, training in technical areas (such as product handling, cold network management and quality control management), and variable product quality.

ECUADOR CASSAVA PROCESSING, PORTOVIEJO CANTONS AND COMMUNITY CHEESE

NATIONAL TRENDS IN AGRO-INDUSTRIAL AND AGRIBUSINESS SECTORS

During the period between 1996 and 2002, the economy in Ecuador grew at an average annual rate of 1.4 percent, while the agricultural sector grew at an annual average rate of 1 percent. This reversed the 1980s trend in which the agricultural sector grew more than the rest of the economy. Nevertheless, both the agricultural sector and the economy as a whole experienced slower growth owing to the armed conflict, the El Niño weather phenomenon and the financial crisis.

While there was a tendency for rates to rise in the agricultural sector and in the gross domestic product (GDP) as a whole during this period, there was a high correlation between these two variables. In other words, the positive or negative movement of the agricultural sector directly influenced, positively or negatively, the economy as a whole.

Moreover, the agricultural sector has a high capacity for responding to a crisis. As a result, although the national GDP decreased by 7.3 percent in 1998, the sector maintained higher levels than the other economic sectors.

The economic weight of the agricultural sector can be more clearly visualized by considering the weight and contribution of the sector to the economy, its importance in the generation of foreign currency, the production links it has with other economic sectors and its importance in the creation of jobs.

Thus, at the primary level, in real terms agriculture contributed 17.4 percent of the national economy during the period between 1996 and 2002. This percentage was higher than the contribution of the other sectors, making agriculture the most important sector of the economy, above the petroleum and mining, manufacturing, commerce and hotel industries.

According to the most recent National Agricultural Census (2002), the crops with the highest production nationwide, which therefore made an important contribution to the agricultural GDP, were as follows: banana, sugar cane, rice, African palm, dried corn, plantain, potato, orange, soy, palm heart, cassava and mango.

According to the results of the VI Population and Housing Census presented by the Ecuadorian Institute of Statistics and Censuses (INEC) in November 2001, the population

of Ecuador was 12 156 608, of which 61 percent was urban and 39 percent rural. This percentage signifies a structural change in the composition of the population since there has been an ongoing trend of migration to urban areas for the past 10 years.

Of the total rural population, approximately 4 130 121 work in agriculture, the equivalent of 87 percent of the total rural population.

The traditional export crop sector continues to employ the most workers. Nevertheless, there has been more employment, particularly of women, because of the increase in migration and salaries in non-agricultural activities in urban and rural areas.

Agricultural loans granted by the *Banco Nacional de Fomento* (National Development Bank) have decreased in recent years: from US\$47 million disbursed in 1998 to US\$23 million in 1999 and US\$16 million in 2000, which equals a reduction of 49 percent and 31 percent, respectively. Credit to the agricultural sector from the *Corporación Financiera Nacional* (National Finance Corporation) has also decreased in recent years.

In addition, market interest rates are high, and there is a large gap between active (20 percent) and passive (3 percent) rates, which discourages savings and investment, and consequently has a negative impact on the development of private initiatives. In 2002, the *Banco Nacional de Fomento* lowered its interest rate to 15 percent in dollars (the lowest on the market) in an effort to promote investment.

MACROECONOMIC CONTEXT, POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS

In recent years, the economic situation in Ecuador has been affected by climatic factors, such as El Niño phenomenon, as well as political and economic instability. These factors have had a negative impact on the country's main macroeconomic indicators, affecting agricultural production and substantially reducing export income.

In 1999, in real terms the GDP decreased by 7.3 percent as compared with 1998. During 2000 and 2001, the GDP grew by 2.3 and 4.6 percent, respectively. Unlike the country's other economic sectors, agriculture grew in 1999 at an annual rate of 2.7 percent.

In the past three years, inflation has stood at 60.7, 96.8 and 24.6 percent, respectively. Inflation has led to a generalized, sustained and substantial increase in prices, not only at the consumer level, but also in terms of raw materials for industry, agriculture and livestock. The increased prices have led to pressures to increase workers' wages. Governments have adopted measures to control the continued advance of inflation, especially through the restriction of public spending, which on several occasions has delayed the implementation of important projects such as community roads, hydroelectric plants, irrigation canals and other works essential for promoting agribusiness.

In the short term, the stabilization of macroeconomic policies will lead to a return of confidence in the country. It will help attract national and foreign investment in the

different productive sectors and will also generate employment and reduce poverty and social problems, which are now particularly severe in rural areas and the major cities.

CASSAVA PROCESSING FACTORIES OF CHONE AND PORTOVIEJO CANTONS OF MANABÍ PROVINCE

PRODUCT CHARACTERISTICS

The study examined the production of the following types of cassava starches: dry sweet starch, moist sweet starch, dry bitter starch and moist bitter starch.

Dry sweet cassava starch is made in approximately 230 starch factories in Manabí Province; of which 30 are located in Calderón Parish and 200 in Canuto Parish. Most of these factories use a semi-mechanized or traditional processing system. The other types of starch (dry bitter, moist bitter and moist sweet) are mainly produced in factories in Canuto Parish of Chone Canton.

Several sub-products are obtained from the starch extraction process: the peel, which serves as animal fodder; meal (called *mancha* in Colombia), which consists mainly of cellulose and proteins and is sold to prepare animal feed; and pulp, which is the residue of the filtering and is also used to prepare animal feed.

To obtain starch, the cassava root is processed as follows: First, the roots are washed with water only. Mechanized factories use mechanical washers. Then the roots are peeled manually with knives or in peeling machines in the mechanized factories. Next, comes the rasping, a process that takes place in a mechanical rasper powered by a gasoline engine or electric motor.

The rasped root mass is then filtered through cloths suspended above a tile-lined flour table for screening. Finally, the product filtered with water is left to settle in the tables.

The starch milk is left to decant until the starch separates from the meal (residue). To obtain dry sweet starch, the mixture is dried in the sun for one day in plastic-lined drying boxes. The sub-products (pulp and meal) are dried in drying boxes and packaged in bags for sale. Bitter starch is prepared by leaving the starch to ferment in water for approximately 30 days, changing the water periodically.

PRODUCTION CHAIN CHARACTERISTICS ANALYSED

Cassava is always sown in marginal areas, where other crops do not grow, due to its heartiness and adaptability to extreme conditions. Most cassava producers are small-scale farmers who plant on the hillsides without an irrigation system. These farmers make verbal agreements with the processor (starch factory) to whom they deliver their production *in situ*.

There is no post-harvest management of cassava in the region. Once harvested, it is loaded onto trucks and taken to the starch factory for immediate processing in the 230

starch factories of the parishes of Canuto and Calderón in Manabí Province. The process is semi-traditional and mechanized.

Commercialization

Intermediaries are wholesalers on the national market who buy starch from Canuto and Calderón and sell it wholesale to the agro-industrial warehouses (sausage factories, bakeries, textile manufacturing plants and cardboard factories) in Quito, Guayaquil and Cuenca.

Many starch factories in the region under study sell part of their production directly to other rural agro-industries (bakeries and confectioner's shops) and warehouses of agricultural inputs in neighbouring zones, mainly in the cities of Portoviejo, Chone and Rocafuerte. The starch factories have had long-standing agreements with these businesses.

At the international level, the cassava starch is mainly sold on the Colombian market. An estimated 80 percent of the total starch production of Calderón and Canuto goes to that country. This is an informal transaction: Colombian intermediaries go to the area with their own transport, contact agents familiar with the zone and negotiate with the different starch factories. Verbal agreements are made and in many cases the intermediary pays an advance either in money or raw materials before the cassava is processed to ensure compliance with the agreement. The export process is not formal; rather, it crosses the border as contraband.

The verbal agreement between these two agents of the chain is based on trust. The cassava producer delivers the product at his farm and the processor arranges for its transport. Sometimes farmers are paid in cash at the moment of sale and other times the producer must wait until the processor sells the starch. The intermediary buys all or part (depending on the agreement) of the cassava starch production from the processor in exchange for the processor's commitment to deliver a quality product, i.e. one with 12 percent humidity and free of sand and other residues. This agreement is made before the starch is processed, which enables the processor to plan his production.

Sometimes the Colombian intermediary hires a local agent familiar with the zone. The arrangement is as follows: the intermediary buys the production at a price agreed upon by the parties and pays an advance (before production) either in raw materials or cash. In exchange, the cassava processor delivers the volume and quality agreed upon.

Lastly, the owners of other rural agro-industries buy exclusively from certain processors. They pay the best price in exchange for timely delivery of quality starch. Payment is made in cash or credit.

It is estimated that the starch factories of Canuto and Calderón provide permanent employment to 1 380 individuals. Starch processors have acquired negotiation skills and are capable of negotiating prices owing to the linkages they maintain with the different actors of the chain and as a result of the competition.

The processors' earnings have increased, leading to improvement of some households and in the acquisition of electrical appliances, particularly refrigerators. In addition, a large number of starch factories of Calderón have improved their infrastructure for starch

rasping and filtering. Intermediaries have also increased their income. This is reflected in a greater availability of working capital to pay for the starch produced in cash or within a maximum of 15 days.

SUCCESS FACTORS

Progress has been made in the agribusiness linkages between cassava processors and Colombian intermediaries, who directly influence the cultivation of cassava by paying them advances so that they will deliver the cassava to the factory where the starch is produced, thereby assuring the supply to the agro-production chain.

Undoubtedly, a factor of success in the business linkages between the cassava processors and intermediaries, local or foreign, is the generation of mutual trust that is achieved through the fulfillment of the verbal agreements established.

LIMITATIONS

Since aid institutions abandoned the zones where cassava is produced and processed, no public or private institution has supported or promoted this activity. The dynamics of this production have developed spontaneously due to the market demand, particularly in Colombia.

Another constraint for the development of this and other agro-industries is the absence of a normative framework (the agro-industry law was revoked), extremely high interest rates and limited presence or absence of the *Banco de Fomento* in rural areas.

COMMUNITY CHEESE MANUFACTURERS OF SALINAS, ECUADOR

Product characteristics

Twenty-two cheese manufacturers have been established in Andean and sub-tropical regions of Salinas Parish. Each has specialized in the manufacture of a specific type of cheese, depending on local environmental conditions (temperature, relative humidity and altitude). In the subtropical area of the parish, fresh and pasta filata cheeses (mozzarella and provolone) are manufactured and immediately marketed. In the high Andean zone, where temperatures are low and humidity is relatively high, mature cheeses are manufactured.

Depending on the production planning, which is directly related to the requirements of the sales centres, mature cheeses are also manufactured in subtropical zones. These cheeses are then taken to the collection centre in the main parish of Salinas for the necessary maturation period.

PRODUCTION CHAIN CHARACTERISTICS ANALYSED

The producers are peasants who own cows for milk production. They deliver milk to the cheese manufacturing plants and usually belong to a formal organization (cooperative, association, work group).

The transformation into dairy products takes place in small-scale cheese manufacturing plants that use simple technology. These plants implement a quality control process of raw materials and manufactured products.

The dairy products manufactured in the different plants are distributed to stores of the *Queseras de Bolívar* system in the cities of Quito, Ambato, Guaranda and Guayaquil.

From the *Queseras de Bolívar* store in Quito, the products are delivered to all clients and consumers, including distributors and supermarkets. A quality control process is carried out and the product is finally packaged (vacuum-packed). Contacts are made with international markets and legal and sanitary export procedures are carried out.

PRODUCER ORGANIZATION AND MARKET LINKAGES

Before the establishment of the different producers associations in Salinas Parish, a second-level organization was formed to bring all producers together. In 1988, the *Fundación de Organizaciones Campesinas de Salinas* (FUNORSAL) was established, which initially brought together 18 grass-roots organizations. The objectives of this institution are to coordinate producers' efforts, provide technical assistance and training to the cooperatives and, more importantly, to improve the capacity for negotiation with financial entities to obtain outside aid.

Initially, the agribusiness plan was quite simple. FUNORSAL bought cheeses from the plants and distributed them through a single store. Over time, it became apparent that there was a need to enter new markets because of the increasing number of cheese manufacturing plants producing a growing supply. The organization began to place products in supermarkets through an established sales contract, fixing volumes of weekly supplies, which forced the cheese manufacturing plants to plan and standardize their production.

For this reason, FUNORSAL saw the need to seek outside markets. Initially, it made two formal export shipments to Colombia and Perú. However, because of the complexity of the export procedures, the organization decided against further direct exports and now goes through local intermediaries.

IMPACTS OF FARM-AGRIBUSINESS LINKAGES

After three decades of multiple joint efforts, Salinas can now demonstrate the impact of this process on the depressed area. Socio-economic development in this area is perceived

not only in terms of structural changes (cinder block and brick houses with tile roofs), but also in the capacity for organization and management of local development. Currently, its 10 000 inhabitants are directly or indirectly involved in numerous development initiatives that have improved their quality of life (agribusinesses, cooperatives, foundations, consortia, youth groups, women's groups, pre-cooperatives and others).

While in other areas of Ecuador the common denominator is the growing migration of rural inhabitants to the major cities, in Salinas the opposite is the case. Jobs have been created in the different agro-industries and residents of other communities with fewer employment opportunities even migrate to Salinas.

SUCCESS FACTORS

There has been a strong growth in the societal social fabric, increased savings (those who do not save cannot receive loans from the cooperatives) and distributing the earnings of the community projects (they are reinvested in the community in an effort to satisfy basic needs). The excellent quality of the products enables producers to place them on the national market and compete in national and foreign markets.

In addition, a key strategy was to fight the competition by entering the national supermarket chains so that the agribusiness tie could be established through a formal sales contract and a permanent commitment to supply cheese in established volumes. Had the products of the Salinas cheese manufacturing plants not been placed in the supermarkets, it would have been difficult to compete with other national and foreign products. In addition, there's the prestige of being on the shelves of these marketing outlets.

LIMITATIONS

Salinas has not been without limitations and handicaps. The main constraint has been the quality of the fresh products. The lack of implementation of good manufacturing practices and systems of analysis to control critical points in some cheese plants has frequently led to some produce being rejected and thus cannot be exported to countries with higher quality standards.

Another factor limiting the expansion of this agribusiness is the poor organization of the administrative and accounting sections of the manufacturing plants. Socio-organizational training is needed, particularly for young people who assume executive positions. Training should also be given in food safety. In addition, these plants depend largely on foreign donations.

EL SALVADOR INDIGO AND PEPPERS

NATIONAL TRENDS IN AGRO-INDUSTRIAL AND AGRIBUSINESS SECTORS

The traditional agro-industrial sector, which includes coffee (78 percent), shrimp (14 percent) and sugar (6 percent), has been affected by low international prices. In response, the government prioritized the diversification of the agro-industrial sector.

In 2001, CONAMPE (the National Commission of Small and Microenterprises) identified 4 443 small businesses and 468 720 microenterprises nationwide, of which 88 percent are subsistence-level operations. A limited access to land, working capital and knowledge, as well as a low level of business management and technological development characterize these agribusinesses.

The earthquakes of January and February 2001 ravaged the agricultural sector and rural areas, resulting in reduced productive capacity and damage to rural homes and public buildings that provided services to the agricultural sector. The earthquakes directly caused an estimated US\$152.2 million in damages.

The Ministry of Agriculture and Livestock is promoting the *Agricultural Rebuilding and Re-conversion Program*, which supports the production of indigo and the concentrates and pastes of this colorant, among other agro-industrial products.

The tariff structure continues to favour the manufacturing sector to the detriment of agricultural activities. Exporters have difficulty obtaining the 6 percent return of the free-on-board (FOB) value of their foreign sales operations because of the complex bureaucratic processes required by several institutions.

Tariff reductions for products imported from Central America and other countries have led to the entry of similar products of a lesser, or better, quality at the same or lower prices, which are not necessarily associated with efficiency and effectiveness factors.

Given the heavy flow of dollars sent by families living abroad, as well as donations, the real exchange rate is overvalued, which keeps prices on imports artificially low and makes exports more expensive.

There are high investment opportunity costs in rural areas, associated mainly with the high level of insecurity. The financial system has rated the agricultural sector as high-risk, for which reason it demands physical collateral (generally mortgages) to support a new project. The economic profitability of a project is rarely taken into account.

The inputs for agricultural and agro-industrial production (fertilizers, pesticides, glass and plastic containers and cardboard boxes) are mostly imported and are more expensive than in other Central American countries. The input market is monopolistic. Most producers purchase inputs retail from local agro-service companies or from the few (plastic) container factories of San Salvador.

The country's credit services charge high interest rates. Accessing these services involves complex requirements and procedures. Between 1980 and 1993, formal agricultural credit decreased by 50 percent in real terms while high interest rates increased production costs. Many producers defaulted on their loans, and were forced to leave their land fallow or not to invest in renewing their crops because they could not obtain additional credit.

MACROECONOMIC CONTEXT, POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS

The public sector, through the Ministry of Economics and the National Commission for Micro and Small Enterprises (CONAMYPE), has been promoting a series of actions to support small- and medium-sized enterprises since 2000. These activities include training, technical assistance, export promotion and access to credit, in collaboration with unions.

In this context, the Multisectoral Investment Bank is promoting a financial advisory programme for investment projects for small- and medium-sized businesses. The program helps to develop and evaluate investment projects for non-traditional sectors of the economy, particularly in rural areas.

ASSOCIATION OF INDIGO PRODUCERS OF EL SALVADOR (AZULES)

PRODUCT CHARACTERISTICS

Indigo or jiquilite (*Indigofera* sp.) is an annual or biannual plant native to tropical and subtropical zones. In its wild state, it can grow to between 1.50 and 1.80 meters high, which is inconvenient for commercial harvesting and processing.

Crops are reproduced through seeds, which must be preserved in their pod until sowing. The plant grows in sunny, humid areas, developing rapidly during the rainy season.

The jiquilite stalk is somewhat woody. The plant's branches have 10 to 12 light green leaves arranged in regular pairs, in a feather-like pattern. The pink-red flowers are small and appear in clustered spikes, with short receptacles. The calyx is gamopetalous, consisting of almost equal ovals, the lower ones being slightly smaller. The crown is papilionaceous, with sessile petals attached to the androecium; it is upright, obtuse and tapered, with a protruding skin. The fruit is a cylindrical, tetrahedral, slightly flattened pod. The pod may curl when dried.

Until the end of the last century, indigo exploitation was a dynamic economic activity. Nevertheless, its importance in the dye market decreased drastically when synthetic substitutes were introduced on the market. The artificial dyes have lower prices and good industrial properties such as greater fixation. These characteristics gave them a better market position than that of natural colorants.

In recent years, this situation has changed since several markets have prioritized the preservation of the environment and human health.

The main agents in the production chain have clearly defined roles. Primary producers are responsible for agricultural production exclusively while producers/processors are responsible for producing and processing the raw material to obtain the final product. These individuals are in contact at the commercialization unit, where some members have marketing experience.

The unit is charged with finding national and international markets; making contacts with potential clients; sending information and samples; participating in fairs and events; collecting and homogenizing production; identifying optimal packaging; and implementing export procedures.

AZULES producers plant approximately 22.4 hectares of indigo. Some members plan to increase their production in due course to double the current production.

The crop has a three-year lifecycle. Automated and manual practices are used in production, depending on the size of the plot and the slope of the land. Producers plant between 0.5 and 2.0 hectares each.

There have been no major changes or technological developments in indigo processing during the past 300 years, with the exception of water oxygenation, which is currently performed using a pump or a compressor to inject oxygen.

Indigo is processed and the dye extracted from the raw material in processing plants called *obrajes*. These facilities must be built near sources of fresh water, such as rivers, gorges or headwaters, since a constant water supply is needed during the process.

The processing plant has three stone or brick containers – a soaking or fermentation vat, an oxygenation vat and a basin to deposit water residue. Additionally, the plant has a pump, a filter press to strain or filter the dye, wood, a stove, pans for boiling, wooden casks for drying, a pulverizer and bags for packaging.

After harvest, the material is transported to the plant and layered in bundles in the fermentation vat, where the leaves release the colorant. The oxygenation process is carried out using paddle wheels, a pump and an outboard motor, which speeds up the release of carbon dioxide produced during fermentation.

The sediment is deposited at the bottom of the vat, collected in bins and placed on drying beds, which are wooden and cotton cloth structures. The drying process takes from

anywhere between 12 and 24 hours. The excess water is stored in basins or treated separately with lime.

After filtering, the product is placed in pots and boiled for 45 to 60 minutes on stoves. Once boiled, the product is transferred to wooden casks and placed in the sun until it hardens completely. The final product is then pulverized and packaged for sale.

Commercialization and market linkages

Currently, indigo is not marketed locally because the domestic market has not yet developed, with the exception of a few handicraft workshops that require small amounts of dye.

The indigo produced by the *Association of Indigo Producers* is commercialized on the international market, mainly in Germany. The product is placed on consignment at the commercialization unit. Once an order is made, the indigo is packaged and packed for subsequent transport to the loading dock.

Some producers are also processors although most work exclusively in primary production. These two agents come into contact through the *Association of Indigo Producers*, to which both parties belong.

The rapport between producers and the commercialization unit is by a formal agreement. The commercialization unit does not pay cash for the product but instead receives it on consignment for commercialization. Producers receive payment when clients have paid in accordance with the forms of payment agreed upon. This situation could vary if working capital were made available. In addition, the producer gives the commercialization unit a percentage of his production as samples of the quality and standard of his indigo.

As for the international clients, the two agents have formal linkages. The international client places an order for indigo powder with eight days' anticipation to the commercialization unit, who in turn is responsible for collecting, homogenizing, packaging and transporting the product to the loading dock.

IMPACTS OF FARM-AGRI BUSINESS LINKAGES

Indigo production requires manual labour. Using one hectare as the productive unit, this activity generates 185 workdays (eight man-hours) during the useful life of the crop (three years).

The value of indigo exports was US\$4 025.88 in 2001 and US\$18 039.60 in 2002. A small percentage of production, which the association has not calculated, is sold at different prices on the domestic market.

Thanks to the linkages with the GTZ agro-industrial project, an agreement was made with a laboratory to develop a method to determine indican content, the substance that becomes indigotin when the raw material is processed. With this technological advance,

some steps of the process will be saved in an effort to shorten the fermentation and oxygenation periods.

SUCCESS FACTORS

The homogenization of the product has reduced the differences in quality of the indigo of different producers with support of the IICA, PRODAR and GTZ, in legal, organizational, training and marketing terms.

LIMITATIONS

One of the limitations is related to the way in which decisions are made. The board of directors analyses and makes decisions in a process that often leads to delays. There have also been delays in the process to legalize the organization, due to lack of consensus regarding key aspects such as representation of members and specific functions of the different parties involved.

The Association lacks a liaison leader with support organizations and institutions at the national and international levels. As a result, opportunities to establish funding agreements have been lost, leading to a continued dependency on GTZ and IICA, since the association still does not have the economic resources to cover its needs.

SOCOAGRO AGRO-INDUSTRIAL COOPERATIVE SOCIETY

PRODUCT CHARACTERISTICS

The SOCOAGRO Agroindustrial Cooperative Society promotes the cultivation of Tabasco peppers and their collection and processing to prepare chili paste (intermediate product).

The chili pepper (*Capsicum frutescens* L.) is native to tropical and subtropical regions of Central and South America. This species was first grown in Mexico and Guatemala. It is now cultivated in other parts of the world, including China, Japan, South Korea, North Korea, Indonesia, Pakistan, Hungary, Sri Lanka, India, the United States, Spain, Uganda and Nigeria.

The hotness of some varieties of chili peppers is due to a volatile phenolic compound known as capsaicin (C₉ H₁₄ O₂), found in the veins and the placental tissue of the pod.

Red chilies are a bitter, hot species obtained from the collection and drying of mature fruits of many species of the *Capsicum* genus, including the cultivars of the varieties *C. annuum*, *C. frutescens*, *C. baccatum* and *C. chinense*.

Between 21 and 38 hectares are planted per year, 90 percent of which is Tabasco pepper; jalapeño pepper accounts for the remaining 10 percent. This activity generates between 20 000 and 25 000 workdays per year.

The average production plot measures 30 m². Of the total area planted, 28 percent is exploited using automated irrigated systems while the rest is cultivated in terraces in the traditional manner.

The SOCOAGRO Cooperative Society is responsible for Tabasco and jalapeño pepper processing. The cooperative receives the raw material at the plant, where quality is verified (cleanliness, maturity, freshness and lack of fermentation). A stone-disc Morehouse 220 Mill is used to grind the peppers.

After grinding, peppers are stored in plastic barrels covered with plastic bags. Each barrel has a capacity of 400 pounds of chili paste. Sixty pounds of industrial salt is added to each barrel. The product is then left to ferment and is stirred constantly for six hours. A new layer of salt is then added and the barrel is covered.

More industrial salt is added every 10 days until a product is obtained that ranges from 16 to 20 percent salt. Finally, the chili paste, an intermediate product, is packaged at room temperature.

The barrels of the most aged paste are used to produce the final product, hot chili sauce. The paste is reground and water is added to obtain the desired texture. The sauce is then poured into a barrel. Propionic acid is added as a preservative, along with gum as a thickener, flavourings, sodium benzoate and colorants. The solution is then homogenized, cooked and bottled.

Commercialization and market linkages

SOCOAGRO is also responsible for marketing the product. Hot chili paste is sold wholesale on the domestic market to large companies such as McCormick of Central America. Retail marketing takes place through negotiations with coffee shops, restaurants and other businesses.

With regard to the international market, SOCOAGRO is participating in the Export Platform Program, which will culminate in attendance at the agro food trade fair in Vancouver, Canada. Product samples have also been sent to Japan, Nicaragua, Germany and the United States.

The linkage between producers in the chain can be formal or informal. Producers can sign purchase-sale agreements, specifying the quality required; alternatively, they can sign letters of intent of purchase. The SOCOAGRO Cooperative purchases 100 percent of the production agreed upon from primary producers that meet quality requirements. Prior agreements are made on the area to be planted. Payment is made 15 days after the product is received.

Linkages between SOCOAGRO and international cooperation agencies such as the Canadian Government, the El Salvador Canada Fund and the Canadian Hunger Foundation have translated into the donation of capital investment funds, working capital and credit for producers. The El Salvador-Canada Development Fund has supported

SOCOAGRO activities through commercial contacts, many of which have resulted in new clients.

IMPACTS OF FARM-AGRIBUSINESS LINKAGES

Thanks to the linkages, it has been possible to generate among 20 to 25 thousand work-day jobs per year. On the other hand, phytosanitary management has improved through the proper use of pesticides, while irrigation systems have been automated and distribution companies for equipment have begun to train producers in the management of irrigation equipment and efficient water usage.

Due to existing linkages, SOCOAGRO has managed to register the trademarks of its Techan and San Andrés hot sauce brands and to obtain the corresponding health certificates.

SUCCESS FACTORS

SOCOAGRO is part of the agro-industrial cluster that has received support since its inception from the Department of Agribusiness of the Ministry of Agriculture and Livestock.

The current structure of the assembly and board of directors allows for more streamlined decision-making.

LIMITATIONS

Two limitations have befallen the Association. SOCOAGRO has been unsuccessful in marketing all of its Tabasco chili paste, though it has continued processing this product, thus raising administrative costs. During 1999 and 2000, it faced difficulties because of falling sales. The high financial and administrative burdens of that time have caused deficits which continue to be carried over.

GUATEMALA

HORTICULTURAL EXPORTS

NATIONAL TRENDS IN AGROINDUSTRIAL AND AGRIBUSINESS SECTORS

Agricultural production is the most important economic activity in Guatemala, generating 25 percent of the gross domestic product (GDP). Fifty-two percent of the economically active population (EAP) works in agriculture. The sector generates 60 percent of foreign currency through exports.

Of the total population, 67.3 percent reside in rural areas that have the highest rates of poverty and extreme poverty (75 percent and 70 percent, respectively) in the country. The poorest Guatemalans work in agricultural and livestock activities.

The rural areas also suffer from lack of improved non-agricultural activities to generate new sources of employment and income and to permit greater collaboration and interaction among the different actors in the links of the production chain.

MACROECONOMIC CONTEXT, POLICIES AND INSTITUTIONS ASSOCIATED WITH THE DEVELOPMENT OF AGRIBUSINESS

Historically, the public policy of the agricultural sector has aimed at developing a few products for export with little emphasis on industrialization. This tendency has become even more pronounced because of the absence of coherent strategies, instruments that are easily implemented and a rural development policy. In addition, the rural population does not have non-agricultural alternatives.

For the period between 2000 and 2004, agricultural policy has aimed at contributing to improved living conditions of the rural population through the development of productive systems compatible with environmental conservation, sustainable use of renewable natural resources and equitable participation of all actors in the development of the agricultural sector.

The actions of the Ministry of Agriculture, Livestock and Food (MAGA) target mainly small- and medium-sized producers living in poor areas. The activities also include facilitating processes and norms for the export of products in compliance with international commercial agreements.

The agricultural policies promoted by the different governments in recent years have contributed positively to the business environment at both local and international levels. This has been especially evident in the case of the Cuatro Pinos Cooperative. MAGA has

supported the production of this cooperative through the implementation of community mini-irrigation projects. Currently, it provides the cooperative with an estimated US\$ 625 000 in financial support through the Social Investment Fund.

Government policies have also contributed to the establishment of the cooperatives mentioned in this study, through the National Cooperatives Institute (INACOP), which has supported the marketing and export processes of these cooperatives.

Over the past 50 years the economy has undergone major changes, which have helped to create new development opportunities and at the same time have led to changes in social practices, particularly in rural areas.

These changes were based largely on new forms of trade relations. In the early 1950s these relations were based on coffee and banana exports, followed by the implementation of new export and import structures and robust capital flows in the 1970s. During the 1990s, globalization opened the country to the world market.

In effect, between 1950 and 1980 Guatemala enjoyed a long period of economic prosperity and modernization driven by the expansion of agricultural exports, in a context of growing world demand for raw materials.

In 1980, a severe international financial crisis interrupted the cycle of prosperity. The demand for raw materials decreased on the international market. Prices of the main export crops dropped, protectionism increased in developed countries, the oil market experienced drastic adjustments, and the foreign debt crisis in developing countries shattered possibilities for the sustainable expansion of agricultural exports. In Guatemala the application of expansionist macroeconomic policies (1978-1982) precipitated the crisis and exacerbated the consequences of a drop in agricultural production and employment.

An economic recovery began after six difficult years, with GDP increases between 3 and 4 percent annually, which is upheld more by the service industry than productive sectors. However, the rate increase is not sufficient to recover the opportunities that were available to the population before the crisis.

The dynamics of recovery has been conditioned not only by external factors, but also by internal issues, including the absence of a favourable investment climate. If recovery is perceived as returning to the levels of investment coefficients, exports and the formalization of the labour market similar to the late 1970s, for example, the process is far from being complete. The coefficient of private investment (8.7 percent in 1998) has increased over the past 17 years but is still closer to that of the period between 1955 and 1956 (9 percent) than that of 1978 (11.5 percent). Similarly, public investment (3.5 percent) is better than it has been in the past 13 or 14 years, but is not much better than the level 40 years ago (3.1 percent in period from 1950 to 1954).

SMALL PRODUCERS OF THE UNIÓN CUATRO PINOS COOPERATIVE

PRODUCT CHARACTERISTICS

The Cuatro Pinos Cooperative exports fresh vegetables to the markets of the United States and the United Kingdom. The main export products are French green beans, zucchini squash, artichokes, pimento peppers, tree tomatoes and snow peas.

Snow peas (*Pisum sativum* var. Macrocarpon) are the star product of the cooperative. The quality is determined by the colour and condition of the pod, which should be bright green, firm, with a velvety texture and an appearance of freshness.

Indications of poor product quality include unripe or too large peas inside the pod, a pod that is too flat, has black spots, or is pale green or yellowish in colour. Snow peas with these characteristics are rejected or fetch low prices. Generally, the pods of the sugar snap pea variety are a darker green than those of the snow pea.

Pod width and size requirements differ for each variety. In general, market requirements range from 76 to 89 mm long and approximately 19 mm wide.

The agricultural produce that is processed and marketed by the Cuatro Pinos Cooperative comes from member producers and intermediaries. The cooperative buys from 80 to 90 percent of its marketed produce from members and from 10 to 20 percent from intermediaries.

Members are small-scale farmers who deliver their pre-selected produce to the cooperative. They plant vegetables on land, which averages one *manzana* in size, ranging from a minimum of three *cuerdas* to a maximum of 16 to 20 *cuerdas* (1 *cuerda* = 0.1118 ha; 1 *manzana* = 6.25 *cuerdas* = 0.6987 ha). Cooperative members must be producers who reside in the area and have land for cultivation. They must register as members and pay a quota of US\$3.10 to the cooperative.

There are eight local collection centres, one in each of the communities that participate in the cooperative. Members pre-select, weigh and store their produce at the respective collection centre and the amounts received are registered. The cooperative hires a manager and two or three assistants to oversee operations at the collection centres.

The manager of the collection centre coordinates activities, such as the transport of products to the processing plant, with the head office of the cooperative. Vegetables are transported three times a week in unrefrigerated vans.

The Cooperative headquarters has a central collection centre and a plant for post-harvest management activities such as the following:

- a. Reception: the crates full of produce brought from the community collection centres are stored in a cool, dry, preferably climate-controlled area. Temperatures ranging from 4 to 8°C are recommended, with a relatively humidity of 80 percent.

- b. Pre-freezing: the produce transported from the collection centres is pre-frozen in a tunnel forced-air cooler.
- c. Selection: trained personnel select pods. They wear protective clothing to avoid contact with the peas.
- d. Cleaning: residues of stalks, leaves, broken pods and other impurities are removed.
- e. Classification: pods are classified by length. Pods with early seed or too much fibre formation are discarded.
- f. Storage: produce is stored at temperatures of at least 4°C, with a relative humidity ranging from 80 to 90 percent.

MARKETING ORGANIZATION, PRODUCERS AND LINKAGES

The Cuatro Pinos Cooperative was the first company to ship snow peas to export markets (United States). The produce is transported from the cooperative to the shipping ports in 40-foot refrigerated vans with a 30 000-pound capacity.

There are no formal contracts not made with the buyers abroad. There are currently four or five buyers in the USA and Europe with whom the cooperative works through verbal agreements or non-legalized letters.

The cooperative establishes a system of production contracts with its members at the moment of planting, together with the distribution of seeds, which it controls. Cuatro Pinos buys imported seeds from a local company and sells them directly to members in the amount and varieties established in the contract.

IMPACTS OF FARM-AGRI BUSINESS LINKAGES

The Cooperative generates more than 250 jobs and contributes a 400 percent increase in income per family annually, leading to improvement in the health and nutrition of the population.

There are a number of non-tangible benefits such as improved relations among community residents, improved security, ability to express opinions more openly, less sense of discrimination, more knowledge, more cultural activities and better clothing.

SUCCESS FACTORS

For the first 14 years, the cooperative received a non-reimbursable seed fund and technical assistance from a Swiss group that organized the cooperative in Santiago Sacatépequez. Cuatro Pinos has benefited from institutional support and soft investment loans.

Other benefits include the commitment of the cooperative members with quality and continuity of the leaders, an assured market and an agricultural contract structure, the combination of economic projects with activities to resolve acute social problems, the

effective insertion into the commercial market and the rise in non-traditional exports in Guatemala.

The homogeneity of the population of the communities has grown, as well as cooperation with national and international organizations. Physical factors such as land, climate and distances, as well as farmers' knowledge of similar crops have also been a contributing factor.

LIMITATIONS

There has been limiting factors, nevertheless. First among these is the lack of documentation regarding the initial objectives of the cooperative project implemented by the Swiss Group as well as the means employed. Only major decisions are known, but without information on whether or not these correspond to the objectives established at the beginning of the project.

Because of the cooperative's financial difficulties, many of the schools they supported have closed. As a result, the educational level of the first members has not been maintained.

SMALL-SCALE PRODUCERS OF THE EL LIMÓN COOPERATIVE

PRODUCT CHARACTERISTICS

El Limón R.L. Cooperative currently works mainly with dehydrated Creole lemon. The lemons are sun-dried in a process that removes 80-90 percent of their moisture.

The dehydration is a small-scale process that lasts from four to six months, depending on buyers' preferences. The United States market prefers lemons of an orange-brown colour, while the Asian, European and Middle East markets prefer dark brown or black dehydrated lemons.

This product has a variety of uses. It is used in teas and jams because of its high pectin and citric acid content.

Members of the Cooperative, located in Marajuma village, Moragán, are small-scale producers. Each member possesses a cultivated area ranging from 14 000 m² to 35 000 m², which total approximately 350 000 m². The total collection area of the cooperative is approximately 350 000 000 m², which includes the cultivated area of approximately 115 producers who are not members.

Initially, most of the production was not mechanized. Presently, the cooperative provides technical assistance to producers, both members and non-members, in the establishment and management of plantations.

Once the lemons reach the processing plant, they are taken to the dehydration yards, where they are left in the sun for four to six months (depending on the desired

characteristics of the final product). The sun is the only energy source for the dehydration process. To take maximum advantage of this source, black plastic sheeting is placed beneath the lemons, which are constantly moved to ensure uniform dehydration. During this process, 80 to 90 percent of the lemon's humidity is removed (the fresh/dehydrated lemon ratio is 10/1).

When the dehydration process is complete, the product is classified by size. Lemons are weighed and packed in boxes of 45.45 kg (100 lbs). Jumbo lemons are sold on international markets.

Lemons are stored in the cooperative's storage cellars until the volume requested by the client is obtained. Once the volume is reached, the lemons are loaded directly from the storage cellars to vans, which transport them to the port selected by the buyer for export.

MARKETING ORGANIZATION, PRODUCERS AND LINKAGES

The cooperative sells dehydrated lemons to local buyers without formal agreements. Buyers are generally large exporters who prefer the cooperative's product because of its quality.

As a market expansion strategy, the cooperative has recently participated in commercial missions in different countries of the region and in world fairs. In addition, it has joined the *Association of Non-traditional Exporters of Guatemala* (AGEXPRONT) in an effort to increase its marketing capacity and to obtain the necessary experience to export directly.

Member producers are required to deliver their harvest to the cooperative. They maintain a legal tie that gives them the benefit of profits derived from the operation of the cooperative as well as the opportunity to market their produce.

Producers who are not members of the cooperative do not have any type of legal or verbal agreement. These producers can benefit from the technical assistance offered by the cooperative if they agree to sell their produce to the cooperative.

The cooperative does not have any type of agreement with non-members, only with its own members, who have the obligation to deliver their entire harvest. The other producers sell their produce to the cooperative because it offers advantageous conditions, such as payment on delivery, good prices and honesty in determining the weight of the produce when it is received.

Most producers, whether or not they are members of the cooperative, also offer their products to processing plants that sell on the international market. The region has approximately five companies that dehydrate Creole lemon. However, due to the payment conditions, among other things, producers prefer to sell their harvest to the cooperative.

To date, the Cooperative has had only one unsuccessful experience with direct export. It did not receive payment for the product until two months after delivery. In addition, it was forced to hire an individual familiar with the export process to oversee procedures. It

is necessary to strengthen relationships in an effort to make this a regular process and thereby obtain maximum benefits.

IMPACT OF FARM-AGRI BUSINESS LINKAGES

The cooperative has had a major impact on the local market price of lemons. When it began its activities, the price was approximately US\$0.066/kg, which eventually rose to US\$0.275/kg, for an increase of approximately 300 percent, thus creating jobs for approximately 60 workers.

SUCCESS FACTORS

Part of the Cooperative's success is because of the stability of lemon prices in the region. This was made possible because members deliver their produce on consignment in exchange for a better buying price.

Moreover, from the beginning, the cooperative has expanded its infrastructure and built cellars for storing lemons in two localities of the region (Marajuma and Palo Amontonado villages).

LIMITATIONS

Among the limiting factors is the lack of experience in and knowledge of direct export of the produce. In addition, the cooperative has been unable to market the new products it has developed (iced tea ready for consumption and tea bags) because it still lacks a business or marketing strategy.

Annex

List of workshop participants

Name	Responsibility	Institution
Fabio Rivera	Leader-manager	Co-op APILAC-Costa Rica
Ruth Suarez	Consultant	CEGA-Colombia
Luis Gonzalez	Leader	Fundación Familia Sales- Ecuador
Raul Pineda	Leader	Co-op-Azules-El Salvador
Leonardo de Leon	Training technician	INCAP-Guatemala
Tulio Garcia	Leader-manager	Co-operativa Cuatro Pinos- Guatemala
Christian Pavez	Manager	Agrochile
Jose Catalano	Leader	REDAR Argentina
Gisella Igreda	Small-scale farmer	La Cabrita-Peru
César de la Cruz	Training technician	Eco-lógica-NGO Peru
William Cifuentes	Training technician	Corpotunia-NGO Colombia
Berlamina Reyes	Small-scale farmer	Guatemala
Nery Gonzalo Arriaza	Leader	Co-operativa El Limon Guatemala
Daniel Rodriguez	Training technician	ITDG-Peru
Florence Tartanac	FAO officer	FAO-Chile
Pilar Santacoloma	FAO officer	FAO-Roma
Hernando Riveros	IICA officer	PRODAR-IICA Peru