Good practices in the management of extension in Central America
Good practices in the management of extension in Central America

Research and Extension Unit
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Foreword

During the last several years the debate concerning extension and advisory services has increased considerably, motivated in part by the renewed interest in strengthening extension systems focused on the small farmer. In the case of Central America, the Central American Agricultural Policy (2008-2017) urgently recommended strengthening the technical capacity of institutions oriented toward small and medium sized farmers and strengthening the links among Central American agriculture innovation systems. Such strengthening was also emphasized during the first intercontinental meeting of the Global Forum for Rural Advisory Services (GFRAS) which took place in Viña del Mar, Chile in November 2010 resulting in recommendations that encouraged a search for guidelines and extension models that could contribute to improved competencies and capacities among the most vulnerable populations in order to achieve food security and nutrition for all. FAO, through its Research and Extension Unit, carries out intensive activities to develop capacities in extension, centered principally on strengthening the capacity of extension leaders, decision-makers and technical personal, as well as other actors involved in the strengthening and implementation of pluralistic extension. This study, carried out in coordination with the FAO Sub-regional Office for Central America, does not pretend to be an exhaustive analysis of every practice that is presented, nor an evaluation of economic costs and long range impacts. This publication aims to provide a practical sense of successful experiences in the region where the role of extension and technical advisory services play a key role. Our intention is to provide inputs, ideas and new ways of thinking to a heterogeneous public made up of all those actors who form part of agriculture innovation systems. As part of FAO’s efforts in promoting associations and networks at all levels, the results of this study will serve as a valuable input to the 2nd GFRAS Meeting for Latin America and the Caribbean concerning rural agricultural extension services that will be held September 2011 in Managua, Nicaragua. Taking into account this analysis, as put forward by this project, will allow the Central American countries to have a clearer idea of the viability of the proposed actions and see evidence of how specific support for this type of initiative can be justified. In addition, we hope that this publication will contribute to a dialogue concerning the new ways to implement global extension services and systems.

Andrea Sonnino
Chief
Research and Extension Unit
Acknowledgements

Thanks are given to all those who contributed to this study, especially the farmers and extension personnel of Central America who were directly involved in each one of the experiences, who each day put forth the effort to bring about a better future. We would also like to thank all the farmer organizations’ representatives and technical entities who participated in the sub-regional workshop that took place in Guatemala during June 2011 for their active participation and support that contributed to these valuable conclusions.

Special thanks go to the support provided by the Food Facility of the European Union, the Special Programme for Food Security (SPFS) and FAO Representation Offices of Central America (Costa Rica, El Salvador, Honduras, Guatemala, Nicaragua and Panama) and in particular the FAO Representation in Guatemala who had full responsibility for organizing the Workshop.

Deodoro Roca
FAO Sub-regional Coordinator for Central America
## List of Acronyms

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<th>Full Form</th>
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<tr>
<td>AECID</td>
<td>Spanish Agency for International Cooperation for Development</td>
</tr>
<tr>
<td>ASOPROAAA</td>
<td>Agricultural Producers Association of Acosta and Aserrí, Costa Rica</td>
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<tr>
<td>CATIE</td>
<td>Tropical Agricultural Research and Higher Education Center</td>
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<tr>
<td>CENTA</td>
<td>National Center for Agricultural and Forestry Technology of El Salvador</td>
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<tr>
<td>COMSA</td>
<td>Marcala Organic Coffee Company of Honduras</td>
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<tr>
<td>COOPEBRISAS</td>
<td>Las Brisas Farmers Cooperative of Costa Rica</td>
</tr>
<tr>
<td>FFS</td>
<td>Farmer Field Schools</td>
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<tr>
<td>FOROSAN</td>
<td>Regional Forum for Nutrition and Food Security of El Salvador</td>
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<tr>
<td>FUNICA</td>
<td>Foundation for Technological, Agriculture and Forestry Development in Nicaragua</td>
</tr>
<tr>
<td>GFRAS</td>
<td>Global Forum for Rural Advisory Services</td>
</tr>
<tr>
<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
</tr>
<tr>
<td>IHCAFE</td>
<td>Honduran Coffee Institute</td>
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<tr>
<td>IICA</td>
<td>Inter-American Institute for Cooperation on Agriculture</td>
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<tr>
<td>INETER</td>
<td>Nicaraguan Institute for Territorial Studies</td>
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<tr>
<td>INTA</td>
<td>Nicaraguan Institute for Agricultural Technology</td>
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<tr>
<td>IUCN</td>
<td>International Union for Conservation of Nature</td>
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<tr>
<td>MAGA</td>
<td>Ministry of Agriculture, Livestock and Food of Guatemala</td>
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<tr>
<td>MAGFOR</td>
<td>Ministry of Agriculture and Forestry of Nicaragua</td>
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<tr>
<td>MARENA</td>
<td>Ministry of Environment and Natural Resources of Nicaragua</td>
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<tr>
<td>MERCASEL</td>
<td>Sustainable Agricultural Production on Mountainsides Oriented toward Markets</td>
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<tr>
<td>MIDA</td>
<td>Ministry of Agricultural Development of Panama</td>
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<tr>
<td>MST</td>
<td>Sustainable Management of Land of Nicaragua</td>
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<td>NRDR</td>
<td>Research and Extension Unit, FAO</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>PASOLAC</td>
<td>Regional Programme of Sustainable Agriculture on Mountainsides of Central America</td>
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<tr>
<td>SPFS</td>
<td>Special Programme for Food Security</td>
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<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
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<tr>
<td>PRODERT</td>
<td>The Project for Rural Development in Fragile Ecological Zones in the Region of Trifinio</td>
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<tr>
<td>PROMEGA</td>
<td>Institute for the Betterment of Cattle of Panama</td>
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<tr>
<td>PROMIPAC</td>
<td>Integrated Pest Management Programme of Central America</td>
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<tr>
<td>SAG</td>
<td>Secretary of Agriculture and Livestock of Honduras</td>
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<tr>
<td>SLM</td>
<td>FAO Regional Office for Central America and the Caribbean</td>
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<td>SNEA</td>
<td>National System of Agricultural Extension of Guatemala</td>
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Executive summary

The Research and Extension Unit (NRDR) of the Food and Agriculture Organization of the United Nations has as its mission to contribute to the strengthening of innovative agricultural systems that respond to the needs of small farmers. Through technical assistance, policy development and evaluation, they work for the reorientation of extension services towards a more pluralistic, demand-driven and market-oriented model through the use of creative financing mechanisms as well as new information and communication technologies. NRDR promotes the development of institutional capacity related to rural knowledge, supporting improved organization and management while reinforcing their ability to generate, adapt and transfer appropriate technologies to improve sustainable production systems in rural areas.

This study reviews and analyzes different successful experiences in Central America where the role of the extension worker has been key to the results obtained within the system of innovation. Our objective is to generate inputs and issues related to the new role that technical advisory services should play and how they must be supported and strengthened within the national extension system.

This document should not be considered a systemization of extension practices per se, but rather an analysis of rural development experiences where the role of extension is fundamental to the support of small farmers in the region. Our objective is to give new inputs as well as visualize the potential and strength of extension. These inputs should be considered as a reflection of those good practices to be adapted to different national contexts incorporating lessons learned which we want to share by way of critical analysis, starting with the reconstruction of what was done.

This study is organized into five principal sections. The introduction, section one, establishes the definition of the concept of good practices of extension and their importance to the development of rural areas as well as the purpose and methodology of the study. Section two presents a brief summary of the situation of extension in Central America. Section three includes the six case studies by country where practices are presented that were selected according to different priority themes (for example, funding, capacity development, decentralization, gender, marketing, etc.). Section four includes two types of recommendations, one, strategies for strengthening national extension systems and the other, recommendations to begin similar studies in other regions of the world.
SECTION 1: CONCERNING THE CONCEPT OF EXTENSION

As the concept and focus of extension has evolved, these services have undergone a transformation towards more appropriate forms which are in accordance with current economic structures and market conditions. In this context, over the last two decades due to the disappearance and/or downsizing of public extension services, initiatives have appeared in Central American countries to support processes of agricultural development through actions undertaken by international cooperation agencies and non-governmental organizations (NGOs). These agencies and NGOs have developed diverse instruments and methodological tools to enable extension services to become more effective and efficient. These new methodologies have been remarkable in terms of their innovative characteristics and particular elements that bring about positive expected results. Several of the features which appear repeatedly in field experiences include:

» Participatory methodologies conducive to the empowerment of local beneficiaries;
» Institutional alliances based on objectives and interests shared with the target population;
» Models of extension based on the voluntary participation of rural leaders (women and men); and
» Strengthening the organizational, administrative, managerial, and business management capacity of the core organizations, as well as others.

These innovative experiences are termed ‘good extension practices’.

What is extension?

*Extension is defined here as systems that facilitate the access of farmers, their organizations and other market actors to knowledge, information and technologies; facilitate their interaction with partners in research, education, agri-business, and other relevant institutions; and assist them to develop their own technical, organizational and managerial skills and practices.*

Christoplos, FAO 2010

1.1 WHAT IS UNDERSTOOD BY GOOD PRACTICES IN EXTENSION

As this study was carried out, and in order to facilitate the selection of experiences to be described and organized by the national consultants, we considered it necessary to define the concept of good practices in extension. It is for this reason and with the purpose of developing a guide to support the consultants, that we must think of good practices in extension as a broad concept that permits us to incorporate many experiences in a direct way; or in other words, experiences that generate or facilitate opportune conditions in order to obtain the best results possible for extension work. Even so, it is important to note that the definition of good practices in extension that as presented later in this document is adapted from the context of this study and not necessarily considered part of usage of the term in other context.
A good extension practice consists of a series of mechanisms, methodologies, processes or strategies that permit extension to function in an effective, efficient and expeditious manner, with the best possibility of reaching the expected results. In general terms, these good practices contribute to the introduction of innovation (whether in production, organizational, administrative, management or other areas) destined to improve the capacities of the groups of families who are being supported by the extension services, and consequently becoming more efficient in the management of rural subsistence systems, as well as the sustainable management of natural resources in the areas where these groups live.

Good extension practices exemplify the process of applying a new focus on extension aligned with the demands and needs of the target population involved in family agriculture. This new focus is based on two-way communication between technical officers and clientele providing information and technological knowledge, as well as facilitating, mediating, and training all the different actors to improve access to the market, all while maintaining a vision of the sustainable management of natural resources. Another characteristic of this new focus is an emphasis on the utilization of methodologies and procedures that promote the development of human capital and social capital within the target population. Through the systematization of these practices in Central America it has become clear that extension services are involved with different development focuses and methods for managing knowledge when they have worked with international cooperation initiatives and non-government organizations. On the other hand, when supported by public funds, their priority orientation tends to be along political lines. This study has as an objective to describe experiences put in practice by public institutions, NGOs and international cooperation projects that could serve as guides for future interventions of national systems involving different actors (public and/or private funding).

It should be noted that these practices frequently stem from experiences of organizations that carry out extension work outside of the public realm, which should not be surprising considering that public extension services in Central America over the past 15 years have, for the most part, not been present. In the case of food and nutritional security, within the context of the Special Programme of Food Security (FAO Central America), the concept of good practices also has been defined and has established criteria to characterize good practices in food and nutrition security, which are compatible with the definition of good practices in extension described in this document. During the selection process, it became evident that experiences existed which included more than one good practice at a time being carried out simultaneously.

The following boxes present in a summary form the most relevant aspects and different categories or types of good practices in extension. Although not an exhaustive list, it does facilitate the identification of what can be considered good practices in extension.

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1 See the definition of good practices of food and nutrition security in the context of the Special Programme for Food Security (FAO-SPFS) [http://www.fao.org/docrep/008/j5566e/j5566e03.htm].
Box 1. Relevant characteristics of good extension practices

» It is made up of a series of mechanisms, methodologies, processes or strategies that permit the implementation of extension in a way that is most effective, efficient and expeditious.

» Contributes to the introduction of innovations (whether production oriented, organizational, administrative, management, markets or others) intended to improve the capacity of groups of families supported by extension services.

» With their application, greater efficiency has resulted in the management of the means of rural sustainability, as well as the sustainable management of natural resources in the areas where targeted populations live.

» Promotes participation and responds to demands, and at the same time brings about learning, promoting efficient changes.

Box 2 Different categories or types of good practices in extension

» Increase the coverage of extension services with the same available resources (cost efficient), and with the same or better quality of service; i.e. the case of rural promoters.

» Increase the quantity and quality of human resource (personnel) who work in extension and/or rural advisory services (administration, marketing, others).

» Support the multiplicity of actors (decentralization) that work in a coordinated manner to benefit the target population. Among these are: public services, private services, municipal services and NGOs.

» Establish different partnerships with development organizations (public-public, public-private, and private-private) to strengthen extension services and provide other necessary services to target populations.

» Demonstrate positive experiences in gender equality: programs targeting women/young girls. Incorporate programming that includes a gender perspective and equality of women in extension.

» Promote greater access to markets, establish marketing channels and providing opportunities with conditions of equality. Apply a focus on value chains for agricultural development.

» Support the ability of groups to access flexible financing and fair interest rates to meet their needs and enable them to realize investments for their agricultural systems.

» Increase and improve the coverage, in a significant way, of the conservation of natural and renewable resources. Clearly defined practices, methodologies and strategies utilized by extension.

» Support effective interaction schemes between research and extension.

» Strengthen the organization of groups among target populations (women and men) and their capacity to manage their agri-businesses, and take better advantage of available resources.

» Sustain the development and adaptation of appropriate technologies according to the different categories of target populations.

» Good practices in communication for development and a participatory focus of extension.

» Promote the use of information and communication technologies to deliver extension services and improve their quality and effectiveness.
1.2 JUSTIFICATION AND OBJECTIVES OF THE STUDY

At the beginning of the 1990s, economic and institutional reforms promoted by the Washington Consensus led Latin America, and in particular Central America, to a process of opening markets and making structural adjustments to rural economies. A decrease in the functions of public administration had as a consequence the reduction or elimination of state services of technical assistance and technology transfer for small and medium farmers, and promoting, at the same time, an increase of other actors in the area of extension. Very often these new actors were not available when needed, nor did they have adequate training, backgrounds and experience: thusly, they were not able to provide the services needed by the most vulnerable populations. In general, the open economy increased the possibilities of export agriculture which subsequently was detrimental to the development of agricultural for domestic markets and especially that which aimed at satisfying the food security needs of thousands of low resource families.

Following this collapse of public extension services during the last decade of the past century, there has been a renewed effort on the part of governments in Central America to recover, re-take and improve public initiatives in extension. In support of these initiatives, the Research and Extension Unit (NRDR), FAO Rome in coordination with the FAO Sub-regional Office for Central America (SLM), as well as the different offices of FAO in the various countries of the region (El Salvador, Costa Rica, Guatemala, Honduras, Nicaragua, and Panama), have identified and are implementing a variety of actions to strengthen the processes underway in each country.

Within these activities, it is important to note the role of FAO as a neutral forum, promoting discussion and the interchange of knowledge which, through analysis and study of successful experiences, will reveal different forms and modalities of how extension services are delivered. This body of knowledge, forged from notable experiences, representing good extension practices should possess certain criteria to ensure its potential for adaptation and/or replication. This body of knowledge should also enjoy the methodological and strategic strength to improve the effectiveness of models of extension in support of the small farmer and at the same time increase the efficiency of the resources destined for this activity. The good practices of extension presented in this document are framed in the context of groups of farmers who practice family agriculture, who are the biggest contributors to local markets, food security and nutrition, and who for the most part are the groups of most interest to national extension systems, as well as to FAO.

STUDY OBJECTIVES

By way of systematizing the experiences, our intent is to collect and reflect on the knowledge that has been built on the base of successful experiences, validated in the field by the efforts of local technical personnel, and incorporate traditional knowledge that has provided. As a result, successful experiences will emerge that can be replicated, adapted and/or used as
lessons learned in the reform and strengthening of extension systems throughout neighboring countries.

This knowledge will be shared among Central American countries for each, within their own national contexts, to determine which practices can be adapted to improve the effectiveness and efficiency of the public extension services as well as the extension functions carried out by other actors.

» General objective

The general objective of this study is to support Central American countries in documenting and systematizing good practices related to extension models, systems and methodologies. Through systematization, the hope is to collect and reflect on knowledge built upon a base of validated experiences from the field with the efforts of local technical staff, incorporating traditional knowledge, as well as successful experiences that meet international standards.

» Specific objectives

As a specific objective, through the systematization of good extension practices that have contributed directly to innovations to improve rural lives, this study intends to:

» Identify and systematize good extension practices developed in each country from a base of validated experiences in the field with the participation of extension personnel, producer organizations and farmers for the subsequent recommendation of these practices to different services and systems of extension, adapted to the different characteristic of each country, and understood as (Angulo, FAO 2011):

» Extension service: a specific activity of extension carried out or offered by a specific institution. This service can be found within a national system or be an activity not attached to any national system.

» Extension system: organized as a part of and related to institutions, professionals and rural families that interact to strengthen competencies in the areas of food production, economic and socio-environmental areas. They frequently use processes of non-formal education which can be combined with technology and information transfer, experimentation and technical assistance.

» Recommend for other countries and organizations that support rural development, the adaptation of those models of extension and modalities that deliver extension services. Also recommend the application of methodologies of extension that promote the concept of good extension practices for family agriculture, and as this study shows have contributed to the introduction of innovation, organizational schemes, institutional arrangements and/or the development of capacities that are conducive to improve the conditions of life in rural areas.
**WORKSHOP AND STUDY METHODOLOGY**

This process came out of a request from Central American countries through the FAO Sub-regional Office for Central America (SLM) who in turn asked for support from the FAO Research and Extension Unit (NRDR) in Rome to promote and debate in more detail the topic of extension in the region. A decision was made to implement a regional study to incorporate representative experiences in six countries (El Salvador, Guatemala, Costa Rica, Honduras, Nicaragua and Panama) as well as plan and carry out a regional workshop to share results of the study and exchange ideas.

To carry out such an initiative, a concept note for the study was prepared and the identification of the different national counterparts (carried out along with the FAO Representation in each country). The next step was to contract a Regional Coordinator for the study and the various National Consultants that would be in charge of carrying out the national studies. The selection of the national consultants was done jointly by representatives of NRDR, SLM, national counterparts, FAO Representatives for each country and the Regional Coordinator of the study.

To support and guide the work of the National Consultants, the Regional Coordinator prepared a guide to be used to orient the development of the national studies. Within the theoretical framework, the concept of good extension practices was defined and detailed characteristics were established for the minimum content of the document in each country.

The experiences to be chosen within the study were subject to a previous process of selection where it was decided to maintain a great diversity of topics to be presented in the final document. The preliminary selection process sought cases that were representative of the range of innovations and to avoid choosing cases that were too similar to each other, thereby enhancing diversity of experiences. A decision was also made as to the number of practices to be included in the study; being three per country.

The studies in each country were conducted through visits to the sites where the cases took place, interviews with key persons and review of secondary information (documents related to the experiences in question). Support was provided to the National Consultants by the Regional Coordinator relative to the objectives, methodology and expected results of the study. This was carried out primarily through direct communication via e-mail, and in some cases by telephone calls.

These procedures resulted in a final draft of the national studies. With these in hand, a single compilation was carried out which served as a base for the preparation of the general study and the final publication.

The last phase of the process was to carry out a workshop to systematize and validate the good extension practices in Central America. This workshop was held in Guatemala City on 21 and 22 June 2011.

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2 The terms of reference for the Regional Coordinator and the National Consultants can be found in Annexes 1 and 2 respectively.
The objectives of the workshop were: (1) systematize, analyze and discuss experiences and practices, and (2) promote exchanges among extension specialists and technical advisory services staff.

The workshop methodology had as its base, presentations from each of the country studies (six in total), along with two round table discussions where a critical analysis of the content was made for each of the practices among all the participants and with presentations by FAO officials of NRDR and SLM under the themes of *New Demands and Roles of Extension* and *Challenges of Extension*, respectively.
SECTION 2: EVOLUTION OF EXTENSION IN CENTRAL AMERICA

The disappearance of public extension services in Central America at the end of the past century resulted from a long process of structural adjustment directed by international financial organizations with the objective of reducing the size of public agencies in each of the countries. The basic supposition was that by reducing the size and scope of the public extension organizations, private sector organizations would appear and that civil society would take over this function and be in charge of providing these services. Even though new institutions appeared outside of the public sector to carry out extension functions, for the most part, the efforts were directed toward a small group of farmers who could afford to pay for the services. As a result, the poorest farmers were the ones most affected as they could not pay for the assistance offered. This type of farmer and their families, in most cases, had to do without extension services to help them with the management of their agricultural systems.

While public extension systems did not completely disappear, over the course of time they did take on different forms and ways of operating. One such scheme was contractual, where farmers would share the costs of extension services. The basis for carrying out this type of arrangement was directed to certain types of farmers who demonstrated potential, those who could more easily link into the market, which would produce economic development in rural areas (SPFS, 2011).

Other initiatives were in the form of bilateral and multilateral rural financial development programmes and/or projects that concentrated their efforts in certain geographic areas with potential for development and sometimes dedicated to export agriculture. We can say that during these years, public extension did not disappear, it only changed its form and was not directed enough toward family agriculture (Ortiz, 2011).

Although in some countries, as in the case of Costa Rica, the system of public extension continues to support small farmers, for the most part, the only organizations who continued to give support to the most vulnerable farmers were the international cooperation agencies and civil society. These types of efforts that seek to improve the lives of the small farmers, but using a different learning focus than the traditional extension model of technology transfer is where sufficient advances have been achieved in the application of methodologies oriented toward the development of human and social capital among the poorest populations. Some of these experiences have been selected for this study because of their innovative nature.

In actuality, due to the phenomena of price increases and availability of food, it is worth noting that a few countries in the region are assuming again a major responsibility in supporting family agriculture, and groups and communities of farmers who are involved. In Guatemala, in May 2010 the Government established a new system of public extension, the National System
of Agricultural Extension of the Ministry of Agriculture and Food (MAGA). This new system started functioning through 93 municipal extension agencies that have been established during the first year of activities (Ortiz, 2011). In the case of Panama, based on a previous structure, they have launched the Integrated System of Extension and Agricultural Innovation; while El Salvador and Nicaragua maintain the institutional and territorial structure in extension through the National Centre of Agricultural Technology and Forestry of El Salvador (CENTA) and the National Institute of Agricultural Technology (INTA), respectively. Honduras, after several years of subcontracting private extension service providers through the National Directorate of Agricultural Science and Technology of Honduras, has begun to consider changing strategy (SPFS, 2011). In Costa Rica, public extension has existed continually since 1948 using different approaches and eventually, due to the effects caused by open markets, has evolved towards a focus of extension based on agricultural value chains. The following includes summaries of the evolution of extension systems in Central America. Even though many have followed a similar approach with different responses, they provide us with various lessons:

**Costa Rica**

In Costa Rica, the approach of extension services has evolved since 1948. Today the focus is on agricultural value chains whereas historically, support to the farmers was been on solving problems related to primary production. This policy approach allowed thousands of small farmers to develop agriculture with good yields and thanks to market conditions it assured that the majority went to local consumption. The State assured the marketing of basic grains while overseeing minor restrictions as to quality and food safety. Even though at the end of the 1980s and 1990s, the market was no longer protected by the State, structural adjustment programmes were applied that were accompanied by a reduction of technical assistance that the State had been providing until then. Due to the fact that the work of extension personnel was focused only on primary production, farmers planned poorly and suffered significant declines in their financial returns.

This situation also caused considerable negative impact on the environment, such as: loss of soil due to erosion; reduced water resources and other natural resources; increase in pests and diseases; poor timing of planting and harvest; and lack of synchronization of agricultural production to coincide with market needs.

As a result of this situation, it became inevitable that the role of the extension personnel needed to change towards a new focus oriented to the small and medium producers through the formation of farmer groups that were able to request solutions to the critical problems they faced with all phases of agricultural production, selected as part of the priority areas of the agricultural value chain (pre-production, production, post-harvest processing, and marketing). The fundamental objectives of this type of focus are competitiveness; economic, social, environmental balance
with a focus on quality; and efficiency in order to obtain sustainable agricultural production and improvement in the life of all those persons involved. Extension personnel who act under this type of focus work with rural men, women and youth, offering training, technical assistance, organizational strengthening, information and communication; seeking more economic, social and environmental sustainability and a greater competitive advantage for rural families.

**The focus of extension work under value chains of production systems**

The work of extension under a value chain focus is a process of partnering with and guiding farmer organizations and other actors; in order to develop and apply solutions to the critical points during all the phases, from pre-production, to actual production, processing and marketing of one agricultural activity selected as a agricultural value chain priority; seeking as an objective competitiveness and economic, social and environmental equality, based on quality and efficiency while realizing sustainable agricultural production and an improvement in the quality of life of all those involved. (Solozano, FAO 2011)

**El Salvador**

Agricultural extension in El Salvador has been historically under the National Centre of Agricultural and Forestry Technology (CENTA), implementing technology generation and transfer for more than a decade, but with limited technical assistance on the part of extension staff.

Fortunately in some cases, technical assistance from CENTA was substituted by many NGO projects that facilitated the development of production with extension methods complementary to other development programs in health, nutrition, housing, gender and income generating projects, often in coordination with CENTA in strategic partnerships with others participating as collaborators. These NGOs incorporate, in addition to their other plans of work, attention to agriculture and the environment from the point of view of the use of local sustainable resources, without adversely affecting the environment and promoting a focus of extension oriented toward agro-ecology, organic agriculture and farmer-to-farmer extension methodologies, *The Human Farm* and networks of promoters. In this manner, there is a change from a concept of conservation in agriculture to one of an agriculture based on the sustainable management of resources found on the farm to be linked to local, national and international markets.

Due to the decentralization policy in El Salvador, CENTA was obliged to develop orientations toward forming farmer organizations, the orientation and amplification of their strategies for technology transfer beyond just the production of food, to the involvement in environment with a focus on watersheds, facilitating access to markets, family agriculture and food and nutritional security. The economic crisis and the series of natural disasters that affected the country during the past two years, along with climate change, has demonstrated the vulnerability of the economy causing a considerable decrease in the production of food.
The Ministry of Agriculture is launching the *Family Agriculture Plan* and the *Food and Nutritional Security Policy Plan* created with the *Council of Food and Nutritional Security* as well as CENTA with their programme of technical assistance and training for farmers and technical staff who are working to improve the situation in rural areas, especially among the most vulnerable families.

**Guatemala**

The Guatemalan public extension services were especially important from the beginning of the 1950s giving advisory services and technology transfer to low-resource farmers practicing small-scale family agriculture. Even though during the 1980s extension had considerable successes, thanks to the collaboration between extension and agricultural research, during the 1990s public extension in Guatemala was affected by the disappearance of institutions such as the General Directorate of Agricultural Services and the General Directorate of Livestock of the Ministry of Agriculture, Livestock and Food, that were respectively responsible for agricultural and livestock extension. It was at this time that an attempt was made to subcontract agricultural technical assistance services for farmers, but this modality failed due to the fact that the majority of small farmers did not have the resources to arrange for this type of assistance.

Although it cannot be confirmed that the public institution responsible for extension disappeared, even so, this assistance did not give proper attention to the groups of farmers that practiced family agriculture. As a consequence of this change, during the last 20 years, the only organizations carrying out development activities using extension methodology were the organizations of international cooperation and the NGOs.

In 2010, a process was finalized that started several years before oriented toward the return of a public system of extension through which the Ministry of Agriculture, Livestock and Food created a National System of Agricultural Extension directed specifically towards small farmers. Today the Extension System contributes to agricultural development in the country, emphasizing the importance of human development and a priority attention to the small farmer practicing family agriculture.

**Honduras**

In 1951, the first Inter-American Technical Service for Agricultural Cooperation arrived in country supported by the Department of Agriculture of the United States of America. This same year the Secretary of Agriculture was created to later be transformed into the Secretary of Natural Resources in 1952.

A few years later, another change produced the Technical Service of the Rural Development Directorate under the Secretary of Natural Resources that expanded and regionalized the agricultural extension services.
With the incorporation of the Integrated Rural Development Programmes during the 1980s, an emphasis was placed on community agricultural extension. During the 1990s, an effort was made to facilitate the entrance of NGOs and with them came the utilization of new participatory methods and an emphasis on sustainable agriculture.

On 6 April 1992, the Directorate of Agricultural Science and Technology appeared which promoted the creation of the National System of Research and Technology Transfer. This model, with its innovative organizational structure, was oriented to mobilize existing resources in the universities, private research centers, foundations and the public sector. At the beginning of 2000, the National Directorate of Sustainable Agriculture was created with two major components: the National Programme of Sustainable Rural Development and the National Fund for Sustainable Rural Development with different outcomes.

Actually it’s the specific projects, official or not, that define the models of extension that are adapted in order to reach the ultimate beneficiaries. The Secretary of Agriculture and Livestock does not have an official extension policy, however its presence in the field exists through the implementation of the Technological Production Bond Project since 2006; today it is called the Productive Solidarity Bond.

During the period 2011 to 2014, the Secretary will participate in the public sector strategy for agri-food (State Policy for the Agri-Food Sector and Rural Areas of Honduras, 2005-2021) through a plan of action for its implementation, represented by the multi-year operational plans for all the units in the Directorate of Sustainable Rural Development and of the programmes and projects with international financing.

**Nicaragua**

In Nicaragua, the extension service began in 1949 as the Technical Agricultural Service of Nicaragua, a replica of the Land Grand University system of the United States, where formal education, research and extension work together. During the 1970s, there was a need to give extension a complementary educational function in addition to its technical assistance role. It started with the application of theories of popular education and a focus on systems applied to research and extension.

During the 1980s, with the victory of the Insurrection in Nicaragua (1979), a change of the extension model of agricultural production was sought, as priority was given to technical assistance to businesses involved in agrarian reform and later to the cooperative movement, leaving extension to work with the small and medium farmers who were not members of cooperatives. The system continued to be vertical in nature, starting with the offering of services, giving a leadership role to research and extension technicians, and in addition to their technical functions, they became responsible for organizing farmer groups, providing incentives, portfolio management and collection.
Seven years later, the first private extension groups were formed: Farmer to Farmer Programme. This programme was created in Nicaragua by the National Union of Farmers and Ranchers, with the purpose of promoting and defining appropriate technologies among low resource farmers. A methodology resulted in developing relationships along horizontal lines and seeking alternative technologies different from the existing packages of practices. From this point, a methodology of popular education developed; learn-by-doing through a process of action - reflection - action in the search of alternative technologies suited to improve situations.

The Government has, as a priority, the reduction of poverty and the production of food where the poorest farmers must have access to resources and services that contributes to food and nutrition security. The principal programme of the strategy is the Zero Hunger Programme which is operational through the Food Production Programme which is a principal instrument of the Food Production Bond, with the priority of reaching the most vulnerable groups which is a key element of both programmes.

**Panama**

The Extension Service in Panama, as the other cases in Central America, evolved within the government sector. At first extension was located with the Secretary of Education and Agriculture in the Department of Agriculture and finally was established in the National Institute of Agriculture in the city of Divisa, where the first extension field agents graduated in 1944.

The first efforts to train Panamanian technical officers in agricultural extension and research took place in 1950 through a mission that arrived to the country from the state of Arkansas in the United States. In 1970, the Ministry of Agriculture and Livestock was formed which offered technical assistance to small, medium and large farmers through agricultural extension, that also had responsibilities for credit and marketing. In 1973, the Ministry of Agricultural Development (MIDA) was created with the mission of coordinating, integrating and unifying all mandated work in the agricultural sector. At that time, MIDA started working with different alternatives for the consolidation of a national system of rural extension. It is worth noting that MIDA is a governmental agency that has national coverage, which represents an advantage at the time to impact the rural agricultural sector. This permitted a restructuring of the agricultural extension system allowing farmers to adopt appropriate technologies, increase their production and productivity, and improve the quality of their products to be more competitive in national and international markets.

In actuality, the implementation of the programmes and projects with international financing is a strategy that is available as an alternative way to reach the most marginal populations. The participation of NGOs is timely and specific. As there is no entity that can give continuation to the efforts with groups, there are few farmers who can sustain them after a NGO intervention...
finishes. MIDA assigns to the Technical Secretary the responsibility of coordinating agricultural extension programmes called Integrated System of Agricultural Innovation (SIDEA), whose objective consists in establishing innovative technological processes to improve the agricultural extension service through the implementation of an institutional scheme that norms its operations and promotes integrated participation of the different actors in the process of innovative technology, as a way to improve competitiveness and food security.
SECTION 3: CASE STUDIES

The case studies of the six countries analyzed present different lessons learned. All of them have been selected because they represent innovative characteristics and contain elements that indicate positively the achievement of expected results. Features that appear repeatedly in the case studies are presented below:

» Participatory methodologies conducive to the empowerment of the local actors (target populations).

» Fundamental institutional partnerships working on shared objectives and focused on the interests of the target populations; these alliances must function within the framework of a horizontal type of relationship which makes it easier to define the forms of participation of each one of the actors and facilitate effective coordination.

» Extension models based on the participation of rural leaders (men and women) who are involved on a voluntary basis.

» Strengthening the organizational, administrative, managerial, and business approaches of the core organizations.

» The application of new focuses of extension which permits advisory services to increase their coverage throughout the entire production and value chain.

» The identification of new schemes or arrangements that improve access of extension services to women, to support their incorporation and effective participation.

» Training activities for human development based on learning-by-doing and horizontal communication, are effective in the process of learning for the members of the target population, as well as for increasing their self-esteem, decision making capacity and leadership development.

In spite of sharing these broad lessons, we cannot forget that although good practices have proven their effectiveness they have been implemented under specific circumstances, as such, their replication depends on many factors. For these case studies it is important to emphasize that due to the omission of certain inputs and/or for lack of follow-up and institutional arrangements with some extension practices, the final impact did not have the expected results. Stressing both scenarios, coming from the positive lessons learned, as well as those factors that were not taken into account, we have tried to share these results and to generate new challenges for the reader. We hope that the experiences that are shared in the following will be of interest and serve as inputs for the future strengthening and/or improvement of extension systems and methodologies.
3.1 SYSTEMATIZATION OF GOOD EXTENSION PRACTICES IN COSTA RICA

SUMMARY

Within the framework of this study, work was carried out to systematize three good extension practice experiences in Costa Rica. The experiences were: (1) responsible management of natural resources by COOPEBRISAS (Las Brisas Farmer Cooperative); (2) strengthening the organization of small coffee farmers by ASOPROAAA (Agricultural Producers Association of Acosta and Aserri Costa Rica); and (3) the value chain of beef cattle production in the region of Chorotega.

From the three experiences it was possible to identify support of the important services directed to farmers such as: the availability of water sources for family consumption; grants for the use of water to irrigate farm parcels; assurances for the proper maintenance of the water reservoirs for future generations; education for families so they understand the need to protect natural resources; and promotion of the organic production of vegetables (all of these were represented in the study of COOPEBRISAS). In the case of ASOPROAAA, farmers were able to generate value-added benefits for coffee in order to receive a better price (25 percent over traditional prices), as well as expand financial services under adequate conditions, technical assistance and training. In the case of the beef cattle value chain, the principal results were demonstrated in a small canton (a canton is a second-level administrative division in Costa Rica) such as is the case of Hojancha Canton that showed it is possible to efficiently produce beef cattle 12 months of the year with good results; and the system was eventually extended to 11 cantons within the entire region. This experience demonstrated that it was possible to develop a validated technology appropriate for beef cattle producers in Costa Rica, and as such is suitable for all cattle producers in the country.

Through a series of mechanisms such as the establishment of partnerships, organizational strengthening, the “learn-by-doing” training methodology, and the elaboration of a plan of action based on the organization, it was possible to accomplish important benefits for small farmers, which resulted in trusting relationships and credibility of the extension personnel on the part of the farmers.

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KEY TERMS

Extension service, organization, formation of partnerships, vision of value chains, and learning-by-doing
3.1.1 Las Brisas Farmer Cooperative (COOPEBRISAS)

The situation that existed before the good extension practice was implemented

The communities of Santa Rosa, Los Angeles and La Legua of Alfaro Ruiz in the Alajuela Province of Costa Rica did not have potable water for irrigation purposes. As the farmers had not formed an organization, they did not have any legal power that would have permitted them to administer an aqueduct. In addition, there were no agreements among the producers for the responsible and sustainable management of water and soil conservation in the watershed. During the months of November through May, there is generally a scarcity of water due to reduced rainfall.

Activities carried out to implement the practice

The agricultural services agency of Zarcero, received a request from farmers to help them obtain water for irrigation, as well as for human consumption; and for the purpose of conserving soils. The effort was organized through the 4-S Club Programme\(^3\), where the 50 members, through an evolutionary process, became a community development association. After major efforts on the part of the local community development association to construct an aqueduct that would store water for the communities mentioned above, the idea of creating a cooperative that would facilitate the task at hand surfaced.

The Las Brisas Farmers Cooperative (COOPEBRISAS) was formed and the aqueduct project was constructed to store water for irrigation and potable water for the communities. Afterwards, a decision was taken to form a water user society to administer the aqueduct. In the beginning there was not much water, but there was enough to keep the cattle water troughs full and some for agriculture said Nidia Mora and Hubert Bolanos, agents of the agricultural services of Zarcero and the ex-promoter of the 4-S Club, respectively. The good practice in this case consists of showing how the farmers became aware of responsible management, sustainable water and soil conservation. For them, there was support from the extension service and especially the 4-S Club Programme of Costa Rica. Members of the community met with one idea in mind and that was the welfare of the community and they channeled their efforts for a unified fight to have and preserve water for their families and the production of their crops. Training programmes were developed in the techniques of conservation and management of soil and water, a water users society was formed, whose principal guiding mechanism was the member assembly to assure that the affairs of the organization were managed in a responsible manner and that the various duties and responsibilities were being carried out and work was assigned among the members. In addition to this, the organization is responsible for watershed reforestation projects and protecting water sources.

\(^3\) 4-H Clubs (4-S in Costa Rica) is a youth organization of the United States, administered by the United States Department of Agriculture. The four Hs refer to health, heart, head and hands (service). Thanks to its philosophy, the programme for rural youth is also way of introducing agricultural innovations to adults.
The extension services and COOPEBRISAS work for natural resource conservation

Ms Nidia Mora, Chief of the Extension Agency of Zarcero, indicates that COOPEBRISAS is an organization where the members are very conscientious of the need to manage natural resources, in a responsible manner, especially soil and water from the watershed where they created a project for irrigation and potable water for human consumption. Also, with the Ministry of Agriculture and Livestock, they managed an agricultural products marketing project since the beginning of the cooperative in 1973.

When asked how it was possible to raise the consciousness concerning the conservation of natural resources, Nadia stated that: the farmers began to see that by coming together it would be possible to carry out a programme of irrigation indispensible for the production of vegetables and pasture. They also became aware of the need to protect the watershed, so that the water sources would not dry up, without which they would not have production on their farms.

In an interview with the extension agent, Mr Hubert Bolanos, ex-promoter, he indicated to us that the idea of an aqueduct was promoted by the Agricultural Extension Service of the Ministry of Agriculture and Livestock, through the 4-S Club Programme.4

The Las Brisas Water Users Society

The Las Brisas Water Users Society was created out of a need to have a specific organization for the administration, management and conservation of water in the watershed. This organization is conscientious about the need to take care of the water, which is basic to not only health of the people, but agricultural production on their farms. Within their concerns

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4 Hubert Bolanos tells the story about the two faucet handles for water service that were given to his father, Hernan Bolanos by COOPEBRISAS while he changed the bus routes between COOPEBRISAS and Zarcero between the years 1973 and 1974.
was the acquisition of land in the high areas near the water sources in order to manage the volume of available water. It was for this reason that the water users society bought land, which was first purchased during the decades of the 1980s and 1990s; and recently in February 2011, they purchased 18 more hectares of land.

**Figure 2: Members of the Las Brisas Water Users Society**

Nidia Mora indicates that in the canton there are 16 water user societies; La Brisas belongs to the Water Users Society of San Rafael. She mentions that the Las Brisas Society includes what were originally 4-S Club members in its board of directors, who were the first ones to push for a water project in 1973. This organization as a result of its concerns and conscientiousness about water conservation, has received support from NECTANDRA (the institute that collaborates by financing organized groups working towards the conservation of water within the San Carlos River Watershed in Costa Rica) located in San Ramon Canton in Alajuela Province; through which they financed the purchase of 18 hectares without interest over a 15-year term.

**Participation of the organization in the payment for the land acquired for the watershed**

This organization generated funds through the administration of the aqueducts (for irrigation and potable water), not only for regular maintenance that is required for its proper functioning, but also needed for the capitalization to invest in additional land in the watershed. It is also important to note that they are very conscious of the needs of future generations. Hubert states that the water project was one of the first projects of COOPEBRISAS and that Mr. Carlos Solis was leader of the 4-S Club and one of the principal promoters who helped organize the group in 1973 and, as such, helped to obtain the necessary permits for the use of water for irrigation as well as for human consumption. This action took place, thanks to the request for help from extension through the leader of the 4-S Club Programme. Many farmer groups are not able to go forward because they do not have help from extension to orient them to know which doors to knock on in order to obtain, for example, a water use permit.
According to Mr. Bolanos, the need to count on services to support the communities of La Legua and Las Brisas found that the 4-S Club that belong to the Extension Service of the Ministry of Agriculture and Livestock, was of great support that permitted the development of Las Brisas District, made up of the communities of Santa Rosa, Los Angeles and la Legua.

**Training**

For Hubert Bolanos, training was the most important factor for the groups as well as the extension agents. The groups received training in vegetable production, temperate climate fruit growing, cattle raising and drip irrigation from specialists of the Ministry of Agriculture and Livestock. It is important to note that drip irrigation was unknown at the time. Later the Learning and Training Institute began training in cheese making.

Mr Bolanos remembers that the groups received a considerable amount of training in vegetable growing, chicken and rabbit raising and temperate climate fruit production. He considers that the training provided by the Ministry of Agriculture and Livestock, in collaboration with the Learning and Training Institute, was the basis for the successes the groups experienced. One of the secrets for the success of the training was that there was no inter-institutional jealousies or rivalries. Mr Bolanos called the groups together according to their needs for training and established a training programme of different sessions from the extension office, taking into account that farmers generally are not available until the afternoon, so the training was scheduled after 4 p.m.

Mr Bolanos said: *Through various partnerships, COOPEBRISAS was able to receive important help from different embassies thanks to the leadership of their manager, Mr Edgar Rojas, who eventually left the job at the beginning of 2011.*

The 4-S Club also developed a fruit project and in one year sold 150 000 grafted peach trees and they introduced over 40 varieties, of which they selected five as the most promising. The specialists in temperate fruit production of the MAG, agronomists Juan Leiva and Jenaro Rojas, provided support through training and research that was outstanding.

It is interesting to note that the initiative that began with the 4-S Clubs led to the formation of COOPEBRISAS and their related entities. 4-S Club leaders, Mr. Jorge Rodriguez and Gabino Rodriguez were also the leaders on the Board of Directors of COOPEBRISAS.

At this time, the extension agency is made up of one chief extension agent and two community youth promoters of the 4-S Clubs – one for girls and one for boys.

In addition, the agency was able to count on weekly visits from the Coordinator of the 4-S Club Programme. Also every week, the fruit specialists visited the Club.

The Agricultural Extension Service of Zarcero was one of the first extension agencies created in the country, and began to function in 1949 with support from the United States Government. It is important to note that the first work carried out consisted of soil conversation projects, where contours on hillsides were encouraged to avoid soil erosion.
4-S Clubs began to disappear with a new emphasis on community development and the government began to implement structural adjustments where budgets for certain programmes were reduced or eliminated. Today there is no 4-S Club Programme of the Extension Service in Costa Rica. Even so, the Agricultural Extension Service in Zarcero continues giving support to the youth organizations in the canton.

The Agriculture Extension Service of Zarcero has the following personnel:

» One Chief
» Two agronomists
» Are office assistant

Testimonies of members of the La Brisas Water User Society

Interviews were made with members of the Administrative Board, Mr Fredy Araya Arce (President), Mr Greivin Quiros Rodriguez (Secretary), Mr Victor Segundo Duran Jimenez (member), and Mr Urbano Rodriguez Cespedes (President of the Financial Oversight Committee). In the words of Mr Urbano Rodriguez: In the beginning there was support for the 4-S Clubs. Then in 1973, the association was formed with some of the 4-S Club members. The four fundamental principals of the 4-S Clubs are: knowledge (head)-health-feeling (heart) and service (hands) which influenced the formation of family chains in Las Brisas.

From 1972 and 1974 there were two aqueducts; one for irrigation and the other for potable water. From the beginning in 1972, it was decided that the organization formed should have the status of a legal person to administer the use and distribution of potable water, for which they opted to form a cooperative and so COOPEBRISAS was born. At the time, there was a threat that the water would be diverted to the town of Zarcero and other communities. Through the Cooperative, 200 people were mobilized to demonstrate their support in the Municipal Building. The organization was created out of a need for people to have water. In the beginning, a ditch to carry water was dug by many people using shovels which became known in Spanish as “paja de agua”.5 Afterwards, with the Las Brisas Water Users Society, money was collected among the members to buy water pipes in order to transport the water. Each member was given a faucet handle to open the water valves. Mr Victor Segundo indicated that in all of this one has to recognize the importance of the leader, who was Mr Carlos Solis, Coordinator of the 4-S Clubs of the Agricultural Extension Agency of Zarcero, in order to maintain the motivation of the group and accomplished acquiring the permits for water use.6

The Las Brisas Water Users Society of Zarcero is the only entity in the country that administers potable water. The Board of Directors is made up of five members and three persons form the financial oversight committee. The Water Users Society has legal status, legal certification and is independent of COOPEBRISAS in their decision making process, although they function in

5 The term paja de agua in Spanish is understood to mean water coming out of a source in the ground which is transported by a small hand-made canal to the cultivated fields.
6 These are the words of Mr Victor Segundo, member of the 4-S Club during the years 1972 to 1973, and founder and member of the Las Brisas Water Users Society.
close coordination. It’s important to note that originally COOPEBRISAS managed the potable water, but afterwards it was considered better to form a water users society that was dedicated exclusively to the management and conservation of soil and water.

The Society explored four water sources in the Lagunilla watershed, which was a source of filtered water. Reforestation began 25 years ago, and at that time five hectares was purchased in Jaular; later an additional 12 hectares was acquired.

Afterwards, through an partnership with the Source Administration of the Mantos Aquifer Association in Alfaro Ruiz Canton, Costa Rica, the Society received a donation of an additional 150 hectares of land.

Recently in February 2011, an additional 18 hectares were acquired, which was obtained through a loan by the NECTANDRA Institute, without interest and with reasonable payments that are covered by the same monthly quota that each member is charged. The idea to conserve and protect the watershed came from the need to protect the sources of water, so they do not become contaminated or suffer a reduced volume of water: remaining able to supply families of future generations, Mr Urbano Rodriguez, founding member and President of the financial oversight committee of the water users society.

The La Brisas Water Users Society assembly names the Board of Directors. The Manager is aware that he/she must contribute work and maintain the water way systems. Actually, there are 700 outlets available for the consumption of water among 540 families and permits for the same number of families for the use of water for irrigation.

The members themselves have constructed six tanks lined with ceramic tile for the storage and distribution of water. Future activities include an increase in the number of canals and distribution of water, through reforestation and additional purchases of land in the watershed.

**Accomplishments**

» Throughout the years the Las Brisas Water Users Society has administered the two water projects: potable water and water for irrigation.

» The principles of taking care of the natural resources, especially water and soil, has been transmitted from parents to children, creating a generational cultural mind-set concerning the responsible and sustainable management of natural resources.

» Responsibly managing tasks and responsibilities by delegation of work. Members themselves protect land and water through reforestation in the watershed and their water sources, which permits irrigation in 500 fields and potable water enough for 565 families. They also provide financial support to acquire additional land in the watershed as a way of providing total protection of the aquifers in the watershed.

» The good practice of creating a fund for purchasing land for the protection of the watershed, shows shared responsibility among the members for the caring for the watershed and the intention of not depending exclusively on funds from the State on the part of the organization,
who with their own funds generated by the administration of the aqueducts (irrigation and potable water), not only for required maintenance of the system, but also for capitalization. Up to now, 173 additional hectares have been purchased to protect the watershed.

» The Agricultural Extension Service gave a tremendous amount of support, especially the 4-S Club Programme of Costa Rica that created awareness among the farmers for the organization and good management of water and conservation of soils. They also developed training in the techniques of conservation and the management of soil and water. Afterwards, the Extension Service, along with COOPEBRISAS, promoted organic vegetable production.

Lessons learned concerning the good practices of COOPEBRISAS

» For the functioning of a cooperative, where there are a great many areas of work, it is advisable to create internal groups or societies that are specialized in a particular function. In this way and through the specialization, there is a greater possibility of achieving objectives related to the specific function, as in this case, the various responsibilities needed for the management of the aqueducts. In this way, the cooperative could dedicate itself to developing projects to benefit the farmers, including inputs, credit, and organic agriculture, among others. The decision, on the part of COOPEBRISAS, to create a water users society to exclusively administer the two aqueducts, for irrigation and human consumption, contributed significantly to its success.

» With the purpose of obtaining support for the organizations, it would be helpful to carry out leadership training with extension in order to have assistance in looking for necessary resources to accomplish the various objectives.

» Extension can support the implementation of water resource projects by helping to link the various parties involved in the process. This articulation role can be useful to facilitate and make possible the implementation of specialized work with this class of projects.

» To receive support, the family farming organizations need to demonstrate clarity of purpose, transparency, integrity and concern for the proposed objectives of the projects. This permitted COOPEBRISAS and the Society to acquire economic support to buy additional land and conserve the watershed.

» It is fundamental that farmers come together, creating awareness in each member of their role and responsibilities. Farmers belonging to COOPEBRISAS were aware of the need for water for drinking and agricultural production and that they had to fight for what they wanted and keep on fighting.

» The extension service can carry out very important support roles with the organizations with whom they are working if they are ready to carry out their objectives. For example, resolving the problem of water, creating awareness for good water management and the conservation of the watershed; while developing training in the conservation and management of water are key technical and organizational roles that extension can play.

» The decision to create capital with their own support and management of the organization
permits the Society to maintain the aqueducts as required and also invest for the acquisition of additional land in the watershed. At the same time, it is an example of the resources generated by themselves in the administration of the two aqueducts.

3.1.2 Organizational strengthening of small coffee farmers

The Agricultural Producers Association of Acosta and Aserri (ASOPROAAA), is an organization located in the two cantons considered to be the poorest in Costa Rica. Families that make up the association are small coffee producers, farming an average of two hectares each. To subsist during the coffee crisis that faced the country during the last years of the 20th century, where the big processors and exporters of coffee declared bankruptcy, the National Agricultural Extension Service helped establish an organization that by consolidating the elements of production, processing and export, created a business that produces one of the best quality coffees in the world. In this way, the coffee producers today earn 25 percent above the going price of coffee.

The good practice of extension in this case consists of facilitating the organization of small coffee farmers and training them in different technical aspect of production, supporting them and motivating them so they can add value to their production through the processing and direct marketing.

The coffee farmers feel they are owners of the organization and reached an agreement allocating a part of the production for capitalization of the business. The coffee farmers, depending on the price, contribute a certain quantity of money for every “fanega” delivered as a fund for capitalization through which the organization has set up a flexible credit programme for the farmers and a programme to sell inputs at special prices. Today, ASOPROAAA is made up of 1 200 coffee producing families that have earned international awards for the quality of coffee, produced in harmony with the environment. One of these awards was the Cup of Excellence (Taza de Excelencia in Spanish)8, which helped to position them in the high value market.

Historical context

According to Messrs Giovanni Sanchez and Rudy Azofeifa, head of the extension agency of Acosta and Manager of the Small Coffee Producers Association respectively (see figure 3), the canton of Acosta has a population of 20 000 inhabitants and is mostly an agricultural zone. The organization began in response to the effects left from Hurricane Mitch, which devastated the agricultural production in the zone. Damage to the coffee growing areas and small cattle production was extreme; due to the mountainous topography in the area.

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7 “Fanega” in Spanish is a term indicating a volume of cherry coffee sold at the farm gate. One “fanega” is equivalent to 20 baskets which is the measure when collecting coffee.

8 The Cup of Excellence (Taza de Excelencia in Spanish) in an international programmer of the Alliance for Coffee Excellence, in coordination with the Association for High Quality Coffee of Costa Rica (Association de Cafes Finos de Costa Rica in Spanish) and the Coffee Institute of Costa Rica.
with very steep slopes, landslides and other movement of soil devastated large extension of cultivated land.

Figure 3: Giovanni Sanchez (Head of the extension agency) and Rudy Azofeifa (Manager of ASOPROAAA)

Mr Giovanni Sanchez also noted that an additional impact from Hurricane Mitch was that the principal coffee buyer cooperative closed. When it closed, the coffee farmers were without a market for their product. Before this occurred, the extension agency promoted the implementation of a participatory diagnosis of the situation, that was carried out with two representatives of the 26 organizations that existed. The outcome of this diagnostic work was that people became aware that there was a very serious crisis in the organization, because they did not have clear objectives and that even though there were 26 concerned member organizations, not one was able to take action. The study also captured the need to develop a large-scale project that would respond to the demands for technical and marketing solutions.

In this process, it is necessary to highlight that one prominent community leader, who together with the extension agency, managed to motivate and bring to the attention of the institutional authorities in the area a proposal to develop a large project for the rehabilitation of agricultural production in the area. The extension agency took advantage of the political power of the community leader to reach the Office of the President of the Republic for support of an agricultural development project, based on coffee production, with complimentary systems of fruit production and forest trees.

Organizational strengthening through participatory approaches

The good practice of extension of organizational strengthening was accomplished through a large meeting of 300 coffee producers in a high school classroom in Acosta, convened by the Ministry of Agriculture and Livestock with the participation of other institutions in the
agricultural sector, which defined four projects to be presented to be a part of the National Production Reconversion Programme: (1) Coffee Development Project in an agro-forestry system; (2) Sustainable Cattle Production Project; (3) Commercial Reforestation Project; and (4) a project to develop in the laboratory a method to controlling flies in citrus. Two project proposals were selected of the four prioritized by members of the organization: the agro-forestry coffee project and the sustainable cattle raising project. During a year, the Technical Agricultural Committee increased in size with the addition of participation from the municipal government and production leaders, and worked on the formulation of a project document for the Production Reconversion Programme of the Government.

The extension agency helped to complete the project documents, consolidating more of the work with the help of the Agricultural Sector Technical Committee, represented by the Ministry of Agriculture and Livestock and the National Council of Production; and integrated the participation of the municipality of the canton of Acosta in the process.

**Consolidation of a strong organization: ASOPROAAA**

The consolidation of the organization was obtained with representation of other existing organizations in order to execute the project financed by the Production Reconversion Programme. For this, the extension service, along with the expanded Agricultural Sector Committee, decided to hold an assembly in order to create a new organization, with representation of other existing organizations. It is important to note the effort of the extension service to accomplish the objective of consolidating a solid organization which could administer funds and execute the two Production Reconversion Programme projects. As a result, the Agricultural Farmers Association of Acosta and Aserri (ASOPROAAA acronym in Spanish) was born.

ASOPROAAA was created on 11 September 1989, with 58 representatives from formal and informal groups from the canton of Acosta, as well as the communities of La Legua, La Uruca, La Vega and Cedral from the canton of Aserri.

This organization began its work in the same building as the extension service in Acosta, maintaining close relations specifically with the agency, as well as the Agricultural Technical Committee, a relationship that is maintained today and that is based on trust and solidarity of the organization, principally for the execution of projects that respond to the demands of the farmer organizations.

Organizational strengthening took place when in the design of projects meetings were held with groups, and all members became familiar with the needs assessment work and gathered ideas for projects that would address the identified needs, a key aspect in the project’s formulation. ASOPROAAA took the project that was being strategically developed during one year of participative work with the help of the expanded Agricultural Technical Committee and the

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9 The Production Reconversion Programme of the Government was put in place to convert the traditional production activities in order to integrate them into the global economy. These were projects with flexible financing that included non-reimbursable contributions.

10 It is important to note that the extension agency of Acosta was the one that provided leadership to the process, providing follow-up and scheduling the work sessions with the rest of the team.
extension agency and presented it to the National Production Council in 1999, the institution responsible for the Production Reconversion Project.

The final formal name of the project was: Sustainable Agricultural Development Production Project of Acosta and Aserrí. Small farmer organizations, supported by institutions and working in teams with representative leaders of the different groups accomplished a development project that came from the base of the organization. However, in 1999 when the project was beginning, there was a strong drop in the price of coffee, 50 percent lower than what it had been.

**Strategy of the organization for facing low coffee prices**

To face low coffee prices, which signified ruin for the farmer members of the organization, ASOPROAAA made a change in the traditional system of conventional coffee production and decided to pursue a value-added component to coffee by establishing micro processors.11

*The decision was not easy* according to Mr. Sanchez, extension agent and Mr. Azofeifa, Manager of ASOPROAAA. It required a strong training programme on the technical aspects of coffee production, including soil conservation. But this was not sufficient; it was necessary to reach the entire production chain to generate value added for coffee, an aspect the was very difficult at the level of the coffee producers.

**Interview with Mr Rudy Azofeifa Monge, Manager of ASOPROAAA: “A vision outside of the organization”**

When the crisis with the coffee prices occurred, he said: *What can we do?* and in response made the decision to go out and see what was happening with the other groups that were trying to sell coffee. Others were selling coffee as value added and not as fresh fruit (the whole unprocessed cherry) like they were doing. It was after this that the extension service invited leaders from the different groups that made up ASOPROAAA and also others from the agricultural sector to make three field trips: one to Dota Province to see a micro coffee processor, another visit to observe the family of the Barrantes brothers in Sirri de Alajuela and the third was to visit Violey. This last experience was the one that actually motivated them to make changes.

**Learning from observation of practices and discussions about experiences among the farmers**

In this way that ASOPRPAAAA planned, with the support of the extension service, the visit with their farmers to share successful experiences. A field trip was organized to see a group of farmers that had a small coffee processing plant in Violey in the Canton of Coto Brus, near the border of Panama, seven hours from the Capital, San Jose. While visiting the zone of Violey, it was possible to discover that the farmers were able to obtain better prices for their coffee than others were even though they were located farther from the Capital and also that the coffee was of better quality. Observing and discussing with the group of farmers of Violey, the members of

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11 The small coffee processing plant is a modern system of processing the coffee fruit that permits a significant savings of water and energy. It permits the organization to market coffee with value added and not in the form of the whole fresh cherry as was the traditional practice. The piece of equipment is of a size that can easily be installed in a small area.
ASOPROAAA were willing to invest in the purchase of a small coffee processing plants that would add value to their coffee. They took steps to acquire the small coffee processing plants with funds coming form their own harvests.

This good practice was strengthened as a result of the experience gained during the field trip that permitted participants to be convinced of the benefits of the new technology. If they come together and share, it is possible to accomplish better results and it was in this way that the initial contribution of two fanegas of coffee from each farmer was made. With this amount, the organization was able to buy the necessary equipment for the micro-processing of their own coffee and sell it to other markets. Today the farmers associated with the ASOPROAAA receive 25 percent higher price than a producer would traditionally receive that would not add value to their coffee. The organization has had the vision of maintaining partnerships with the extension agency of Acosta and the Agricultural Technical Committee, for which the results has been a great institutional support for services such as flexible financing, greater technical assistance, resources from projects that provide assistance when faced by the consequences of natural phenomena, such as Hurricane Thomas and others.

Without a doubt, the organization created through ASOPROAAA became a facilitator to deliver a series of services, in a form both opportune and expedient, that before were not available to the farmers including: adequate financing, opportune technical assistance, and secure markets with better prices. Equally important is the fact that the members are treated in a way that make them identify closely with the organization.

The organization, which from the beginning advocated the preeminence of technology was able to evolve in their approach to the different phases of the agricultural value chain. According to the words of Mr Azofeifa, Manager of ASOPROAAA: today other groups and organizations, seeing the experience of ASOPROAAA, are following in our footsteps. The focus of extension on agricultural value chains contributes in this case as a strengthening factor. Extension also played a role in promoting the participation of ASOPROAAA to provide services in the different steps of the value chain, through the institutions of the Escorial Technical Committee and other key partners such as the National Institute of Coffee, the National Service of Animal Health and the National Institute of Learning.

**Identification of the farmers with the organization**

The need to bring initial capital for the purchase of equipment making it operational, including the process of packaging and making the product ready for market, led the members to decide to put up their property and belongings for collateral so that the Board of Directors could obtain credit. In addition, each member contributed the equivalent of 200 US dollars in coffee. In this way, the new equipment was brought from Colombia with their own resources. Also, labor was contributed by the farmers to build a drain and platform of concrete on which to put the new equipment. ASOPROAAA began processing 100 fanegas de coffee for each harvest cycle; today 3 282 fanegas are being processed, generating a 25 percent higher price in the market over what was previously obtained.
Key factors contributing to the success of ASOPROAAA

According to Mr Azofeifa: *the good administration of the organization is key to its success. The farmers believe in the organization because they have confidence in the Board of Directors and its Manager; equally, they have the needs assessment and the plan developed by ASOPROAAA which responded to the needs put forth by the members.*

Through the extension agency, ASOPROAAA has been able to obtain very important services, such as financing under favorable conditions. ASOPROAAA makes available to its members credit with an annual interest rate of six percent, which is less than that offered by other banks and financial institutions in the country. The collateral for the credit is the harvest delivered, in this way farmers can obtain fertilizers and other products to use during the production cycle on their farms. For members, ASOPROAAA created a second-tier bank, making credit available to farmers based on the moral integrity of its members. Among the members in all the projects, 33 percent are women.

Increase in training services

ASOPROAAA, through a policy of establishing partnerships, has been able to expand the coverage of technical assistance services and training in the different agricultural value chain steps. In this way, they have established partnerships with the National Coffee Institute of Costa Rica and the Phyto-Sanitary Services of the Ministry of Agriculture. They have also established partnerships with private businesses. ASOPROAAA has an agronomist permanently available for its members who visits member farms. The Board of Directors recommended that the organization leave the traditional way of selling coffee and enter high quality coffee markets (gourmet coffee). Participation of the organization in the *Cup of Excellence* competition provided an opportunity for their high quality coffee to be known. In 2007, the organization participated in the *Cup of Excellence* competition with one lot; in 2011 they will participate with nine lots that have already been selected. The organization participated in the largest fair in the world; they are on the internet and have motivated members to learn English. The organization has as a future project the establishment of a chain of coffee shops.

Accomplishments

» Small coffee producers of Acosta and Aserri have, through the support of extension, carried out a diagnostic study/needs assessment with representatives of the different organizations, planned a project based on their needs and obtained economic support for its execution.

» Today, other groups and organizations, seeing the experience of ASOPROAAA, are following the same steps.

» The good practice of extension can be seen from the experience that was gained through the field trip to Violey which convinced the farmers of the benefits. They were able to come together and share; where each farmer contributed two fanegas of coffee so that the organization could purchase the necessary equipment for the micro-processing of coffee.
The good practice shows how organized small farmers supported by institutions and working as a team with representative leaders from the different groups can reach an agreement to formulate a project born out of the grass-roots participation of the organization. Equally important, they reached a conclusion that they had to consolidate to create a strong organization made up of representatives of the existing organizations.

With the help of the extension service of Acosta, a needs assessment was carried out with the 26 organizations of the region which resulted in four projects involving the Productive Reconversion Programme and thus enabled the strengthening coffee production.

ASOPROAAA is made up of 1 200 farm families, winning international awards; one of these was the Cup of Excellence, which helped position them in the high-value market.

The decision to create the micro-processor for coffee with an initial production of 100 fanegas per growing season (today they process and market 3 282 fanegas), generated an increase of 25 percent over returns under traditional growing and processing methods.

Lessons learned for ASOPROAAA

To promote the adoption of new practices in the transformation of primary products and successfully adding value, an extension practice based on the principle of learning-by-doing yields the best results.

To gain an understanding of new business ideas and the application of new technologies, learning developed through observation on the part of farmers is important.

Good administration of the organization is key to its success. Farmers believed in the organization when they have confidence in the administration, the Board of Directors and the Manager.

Having a strong and consolidated organization, with representatives of the base membership of the entire area, is essential to affect government decision-making and to receive the necessary support that the communities needed in order to develop the projects that were to meet their needs. This was a decision taken by the 26 existing organizations with the support of extension.

The work of extension can be seen as decreasing in its effectiveness, efficiency and impact if extension staff work with many disarticulated organizations, without power to bring about any change. Working with groups and helping them to strengthen their organizational capacities ensures that extension will be more effective and recognized as such.

The development of communication processes in extension using large-scale workshops for reflection and analysis, with the participation of representative leaders of the different formal and informal organizations, is key for developing awareness on the part of the organization for the prioritization of projects and the consolidation of the different groups into a single strong organization in the area. This was the case of the large-scale workshop for the organizations and institutions organized by extension in the high school of Acosta.
Certain types of extension activities can have strategic value in processes of innovation with groups and organizations. One of these practices is the field trip with group leaders, where they can observe first-hand what other organizations have done, even under conditions with more disadvantages than they have. Group leaders can also acquire the motivation to bring about change through field trips.

3.1.3 Value chain in beef cattle production in the region of Chorotega

Background

The region of Chorotega is mostly a cattle raising area with 81 percent of the agricultural land dedicated to pastures, of which most are worked by small cattle farmers with generally fewer than one head per hectare. Due to their low levels of production, the marketing system does not allow them to receive a fair price. In addition, these small cattle raisers are disconnected from the organizations that should be helping them with better technology to increase their production capacity and well as better marketing to receive higher prices. The extension service, as a result of the situation mentioned above, began in 2007 putting into practice a new effort for the region called extension focus on value chains for agriculture (Solozano and Zeledon, 2008).

Through this system, the extension service sought to help the small cattle producers understand their problems in the primary phase of production and well as the other phases that usually take place beyond the farm gate. These approaches can be aspects of processing, value added and marketing in which other actors participate that are not necessarily the farmers themselves. In this same year, the cattle farmers along with the Ministry of Agriculture and Livestock, the Cattle Promotion Cooperation, and the National Institute of Learning developed a strategic plan for meat in the region of Chorotega applying a focus on agricultural value chains.

The practice surfaced when the cattle farmers, organized into a commission coordinated by representatives of different boards of the Chamber of Cattle Producers and small groups of cattle farmers with the support of the extension service, carried out a study of the characterization of the value chain for beef cattle, identifying the different problems from the time the animals are on the farm until they are marketed. In addition they were able to determine the different actors who are part of the entire agricultural value chain. With the help of the extension personnel they were also able to determine, in a participatory manner, the critical points in the value chain of meat and eventually to develop a plan of action. For the plan of action, it was possible to establish agreements among all the participating actors.

During the entire process, the work carried out by the two agronomists, Mssrs Juan Bautista Mendez and Gilberto Lopez, Chief of the Extension Association Hojancha and Regional Coordinator of the meat value chain, respectively, was significant. (See figure 4).
Since 1985, some action was taken to improve the situation for cattle farming in the region, specifically in the canton of Hojancha (one of the 11 cantons in the Chorotega Region, with an expanse of 26,100 hectares of land). This action was undertaken through efforts of the canton agricultural centre and Chamber of Cattle Producers. Unfortunately, these efforts were isolated and did not have positive results.

In 1994, through joint action of the Agricultural Services Agency headed by Mr Juan Bautista Mendez and the Chamber of Cattle Producers, it was possible to realize improvement through better technology for raising beef cattle. This improvement was due to a shared vision and integrated work of the extension service, the Chamber of Cattle Producers and other important actors in the value chain for beef cattle.

**Participatory diagnostic study**

In 1994, with a new extension service team, a diagnostic study was carried out to better understand the situation of the cattle producers, using a survey form to ask what were the principal problems with cattle production in the region and how they thought the situation could be improved.

Through the diagnostic study, a plethora of problems were identified. It was found that the land carrying capacity for cattle was only .66 head per hectare, and that pastures with Jaragua grass were poorly maintained. There was no pasture rotation, no fodder banks, and generally deteriorating pastures. There was no supplemental feeding programme, and many signs of hunger among cattle during the six month dry season. Credit was at 36 percent interest, and banks were not lending to cattle producers. Pastures had many weeds and there was a high cost for weed control with three machete cuttings per year. The Prosapia disease was affecting the pasture. There was low productivity on the farm, there was no sugar cane or other forage supplement, and cattle were dying of hunger during the six month dry season (from 15 May to 15 November).

12 Mr Juan Bautista Mendez, an agronomist, is the head of the Agricultural Agency Services in Hojancha. He initiated the participatory work with the livestock association in Canton to address producers needs and demands and improve their livelihoods.
The Chamber of Cattle Producers of Hojancha existed since 1985, but they did not have a plan of work, nor a strategic plan. They did not have the capacity to help solve the multitude of problems producers were facing. Marketing was in the hands of the middle-men who determined the prices to be paid. There were no auctions taking place for producers to sell their cattle. Technical assistance was weak and the producers essentially had no one to help them.

**Alliance between the Chamber of Cattle Producers and the Agricultural Services Agency**

The Agricultural Services Agency (Extension Service) decided to seek a partnership with the Chamber of Cattle Producers considering that in the past there had been bad relations between the Chamber and extension, and the cattle farmers in turn had received poor support. As Mr Juan Bautista stated: *as a result of everything, the farmers and cattle producers in general did not believe in the agricultural services or in the other technical staff of the Ministry.*

As a product of the initiative, a partnership was established with the Chamber of Cattle Producers and they began to work in the office in the Ministry of Agriculture. The Chamber, working with the extension agency, agreed to develop a plan of work together which would respond to the needs encountered in the diagnostic study, having as the immediate priority coming up with a solution to the supplemental feeding problem. According to the diagnostic study, they made a work plan and defined as a priority a plan for feeding, so cattle would not die of hunger. In this way, extension together with the Chamber of Cattle Producers convinced higher authorities in the Ministry of Agriculture and Livestock to help with the distribution of chicken manure in the summer of 1995.

Through this effort, five thousand bags of chicken manure were distributed. Transportation was supplied by headquarters of the Ministry to Hojancha where, with the help of the extension service, it was determined how it would be distributed. The Chamber coordinated the distribution with trucks of their farmer members. His was the first joint action with the Board of Directors of the Chamber of Cattle Producers and the extension agency. It was from this point forward that the Chamber began to believe in and have confidence in the Ministry.

**The partnership with the Chamber of Cattle Producers made possible an extension process that began with observation at demonstration farms**

By viewing on-farm demonstrations of improved pastures in 1996, 1997 and 1998, farmers were motivated to make changes to pastures on their own farms. By 2000 there were more than 4,000 hectares of improved pasture. The Chamber sold the seed to the farmers at cost and the extension agents provided training on planting and management of these pastures. Prior to the project, extension did not have funds to purchase seeds or supplies. Nor did they have funds to set up demonstration plots. The partnership with the Chamber, allowed extension to acquire the supplies, services and labor needed to establish demonstration plots. At the same

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13 According to Agronomist Juan Bautista Mendez of the Chamber of Cattle Producers, over the years they had not believed in extension. As a representative of the Chamber, he invited the local extension agent to work with them for one year, with the idea that the Chamber would evaluate the results and then decide whether or not to continue. As of today and since 1994, the extension agency and the Chamber of Cattle Producers have been working together.
time, extensionists developed a technical package to support the plots, and contributed to the selection and motivation of cattle farmers in the project area.

By 2003, there was a profound change in the benefit farmers perceived in the improved pastures. Those benefits included:

» Increase in the animal carrying capacity of the land dedicated to cattle production.

» The development of 5,000 hectares of improved pastures.

» Reduction in the cost of maintenance per hectare.

» Improvement in farm family income.

» Renewed enthusiasm on the part of the family to continue farming.

The extension - Chamber of Cattle Producers partnership made possible external and internal support for the development of successful cattle production projects

The partnership between the extension service and the Chamber of Cattle Producers stimulated renewed interest on the part of national and international organizations in supporting initiatives to improve cattle production in the canton. It was because of this that the following projects were developed:

1. Sustainable cattle farming

This project focused on sustainable cattle production to protect the environment. According to the words of Mr Juan Bautista Mendez: money was given to the Chamber of Cattle Producers for the project’s administration, and through the partnership they enabled the extension service to develop training activities and provide follow-up technical support. The objective of the project was to demonstrate to all cattle farmers in the canton that they could produce all year on their farms with positive results.

In this way the project responded to the expressed needs of cattle farmers and developed ten demonstration farms in the area, with the following components:

» Investments at the farm level, providing good forages, sugar cane choppers, drinking troughs and the establishment of calving schedules and;

» Training component. The project conducted a variety of training events that permitted direct observation of new technology on the farms. These events included field days, talks/lectures, field trips, and informational meetings with farmers.

The project helped to define and conceptualize sustainable cattle production. A manual was written14 and interest increased greatly among cattle producers in the area. Producers were motivated by what they saw on the demonstration farms located in the different localities

14 According to the words of Agronomist Gilberto Lopez, Coordinator of the Beef Cattle Agricultural Value Chain in the region of Chorotega and Agronomist Juan Bautista Mendez, this was the first project that encouraged the extension agency and the Chamber of Cattle Producers to conceptualize and write criteria for sustainable cattle production as part of the agricultural value chain in the region of Chorotega. See Manual of Recommendations for the Sustainable Management of Beef Cattle in the Chorotega Region by Mr Juan Bautista Mendez. (Available in Spanish only).
of the canton, allowing producers to see for themselves the benefits of a variety of new technologies.

2. Technical assistance and establishing demonstration farms project

Another project for sustainable cattle production was presented to the Agricultural Development Project for the establishment of 20 demonstration farms, and at the same time, finance technical assistance, equip an office and provide other assistance for the extension service. An agronomist was contracted to strengthen the technical assistance effort. Investments were made on farms financed by a revolving loan fund\(^\text{15}\) and backed up with increased technical assistance. This project was carried out in 2004 - 2005. Each project included the improved water conservation techniques and living fences.

3. Development of 15 demonstration farms

Through another project, also with funds from the Agricultural Development Project, 15 demonstration farms were established.

4. Project to support 30 small cattle farmers with a social financing plan

Thanks to collaboration between extension and the Chamber of Cattle Producers, a partnership developed with the Institute of Social Assistance to support 30 small cattle farmers with a social financing plan allowing them to apply newly developed technologies to their small farming operations.

One product from this project was an action plan based on a participatory diagnostic study involving the cattle farmers themselves. In addition, a farm plan was developed in which the cattle farmer participated and the extension agent acted as an effective tool for the farmer, helping them increase their awareness of the actual conditions on their farm. Formats for the application of technology were created to apply to the farms and training was provided; these same tools found useful through the project are used by extension today.

The three proposals put forward by extension and the Chamber of Cattle Producers, accomplished the following:

» Strengthening farms with improved pastures and infrastructure.
» Organizational strengthening with a strategic plan.
» A well defined, valid technology for beef cattle production.

A regional plan based on the experience in Hojancha

According to agronomist Gilberto Lopez Lara, Coordinator of the Beef Cattle Agricultural Value Chain for the Region of Chorotega: there were three aspects that influenced the work of extension with the beef cattle agriculture value chain in the region:

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\(^{15}\) The revolving loan fund was created with 38 percent support from the cattle farmers themselves and 62 percent from the Agricultural Development Project. Clear rules for the management of the funds and the recovery of the loans for the projects were established. The funds made available to the male and female farmers were with flexible credit and also support for training opportunities.
Availability of a new official methodology for extension to work under the focus of the agricultural value chain.

A model of sustainable cattle production available to technical staff and cattle farmers which was developed in Hojancha Canton thanks to the partnership between the Chamber of Cattle Producers and extension.

Working in partnership between the Chamber of Cattle Producers and the extension agency of Hojancha.

These three factors promoted the development of a model for sustainable cattle production in the region during the years 2007-2008. For the development of the regional strategic plan, the same procedures were followed that were used in Hojancha Canton. The first step was to hold a regional workshop that identified the principal problems. Participants in this regional workshop included the Federation of the Chambers of Cattle Producers of Guanacaste, the Corporation for the Promotion of Cattle Production, technical staff from the Ministry of Agriculture and Livestock and extension agents from Hojancha.

With these actors, a technical commission was established. Agronomists Juan Bautista Mendez and Gilberto Lopes were named Coordinators by the Commission, both had extensive experience with the work that was carried out in the previous years with extension and the Chamber of Cattle Producers of Hojancha which had improved cattle production in that Canton.

As a product of the workshop, problems associated with various phases of the agricultural value chain were determined and a study of the beef cattle value chain was conducted. This study used extension’s methodology for analyzing value chains, and it conformed to the requirements of the Beef Cattle Agriculture Value Chain Commission. This resulted in identifying the following participants: the National Institute of Research in the region, the Manager of the Agricultural Value Chain for Meat, a representative of the National Animal Health Service, the Corporation for the Promotion of Cattle Production, President of the Federation of Chambers of Cattle Producers from the region, and Agronomist Juan Bautista Mendez. The formation of the Commission with the different institutional actors and representatives of the different chambers of cattle producers gave a global vision for the work of extension covering not only problems associated with primary production, but other problems throughout the entire agricultural value chain as well.

The Commission meets every month in the morning and in the afternoon, they meet with the Federation of Chambers of Cattle Producers which includes the 12 local chambers. In this way there is regular contact among officials from the different chambers.

The goal of the work of the Commission is to know who participates in each step of the agricultural value chain and how they can help develop it. Up until now the most resistant, in terms of constructive participation, has been the industrial sector because, from their business

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16 The methodology for extension work in the agricultural value chain analysis (which was mentioned previously) focuses on each step or phase in the value chain, which are: (1) primary production, (2) processing-value added, and (3) marketing. The methodology includes extension working with the various actors who participate each of the different steps.
perspective, it is not to their advantage to make any changes because it means they will earn less profit.

According to comments from Mr. Mendez and Mr Lopez, a proposal has been made to bring together the Chamber of Cattle Producers of Guanacaste\(^{17}\) and the Federation of Chambers into one single organization with the objective of having greater influence over negotiations and take greater advantage of combined resources.

**Plan of action for the beef cattle agriculture value chain**

The action plan was developed once the study of the value chain was completed and the critical points or problems in the chain were determined. It is extremely important to know the different processes and actors involved in each step of the value chain. For example, one critical point identified was the meat processors claiming that 35 percent of the cattle reaching their slaughterhouses were underweight. In the action plan, a solution was proposed to solve this problem. The solution was based on the programme to improve pasture in Hojancha, for which the extension service and the Commission had the relevant technology that could be applied to the rest of the region.

The most important actions taken in the plan were the purchase of sugar cane choppers and the establishment of seed beds, having as a reference what was done in Hojancha. For the first time, a strategic plan was developed for each chamber that took into account organizational aspects, behaviour of the members, administration and management on the part of the managers. Afterwards, a training programme was created for each chamber, where at least one technical staff member from the Ministry of Agriculture and Livestock participated in each canton. The plan provided for a partnership between the respective chamber and the extension agency in each canton.

It is important to note that confidence in and the credibility of the extension agents improved notably, and participation of the cattle farmers in the training events increased dramatically. This resulted in significantly greater coverage of the training effort with the same resources.

**Accomplishments**

- As a result of the work of extension in partnership with the Chamber, it has been possible to implement a methodology of extension that allows for learning through observation of new technologies directly on the farms of the cattle farmers. Thanks to the partnership, the extension agents have the available resources at their disposal to establish demonstration farms with the cattle farmers.

- The development of a regional plan of action to improve technology in the beef cattle agricultural value chain of the region. Underweight cattle in the region was a problem that was solved though the improvement of pastures in Hojancha; and by the extension agency.

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\(^{17}\) The Chamber of Cattle Producers of Guanacaste was the first Chamber of Cattle Producers formed and have a branch office in each canton. Afterwards, the Federation was born with chambers in each canton. However, the Chamber of Guanacaste remained and continues to be strong in terms of resources of infrastructure and their economic situation.
service and the Commission successfully applying the technology developed for the cattle raising in Hojancha.

» Developed valid technology appropriate for the region, applying the methodology of analyzing and improving agricultural value chains, permitting a greater coverage of technical assistance services and training.

» A proposal for marketing is in progress and includes:
  • Installation of a complete slaughterhouse in Guanacaste.
  • Establish only the de-boning and distribution segment.
  • Develop a market center for cattle on the hoof.

» Resources from the project were given to the Chamber of Cattle Producers for their administration, and through the partnership, extension was able to develop training and follow-up activities.

» A plan of action came out of the project, based on a participatory diagnostic study with the cattle farmers themselves. Formats were created that were applied on the farms and training was provided. These are among the tools that extension uses today in their work.

Lessons learned from the beef cattle agricultural value chain

» An integrated vision of work on the part of extension frequently brings better results than one with a reductionist focus. The vision of integrated work by the extension service the Chamber of Cattle Producers of Hojancha and other important actors in the beef cattle agricultural value chain allowed for global solutions to emerge, as opposed to isolated actions of the extension service alone - which generally would not have resulted in the outcome that the organizations would have hoped for.

» For the formation of successful partnerships it is necessary that each organization knows what they are supposed to do; which is to say, that there is a fully understood distribution of roles among the extension service and the organizations/institutions making up the alliance.

» There is greater willingness to participate in training events organized by extension if the topics for training are included in a plan of action developed in a participatory manner among extension, the institutions and the target groups.

» Establishing partnerships strengthens the vision and willingness of the extension agents to discover and accept their work with the different actors who participate in the agricultural value chain, in addition to their routine work.

» Prioritizing the work objectives of extension based on the critical points determined in participatory diagnostic studies allows for the development of scaled up actions through a gradual process. The decision to first solve the problem of providing adequate feed for the cattle through improved pastures, and then the other investments on the farms, contributed to the success of this experience.
A conciliatory attitude and a willingness to work together is key to building partnerships, above all when confidence in extension had been lost. This was the case of the extension agent from Hojancha who visited the Board of Directors of the Chamber of Cattle Producers of Hojancha and offered to work with them in improving the beef cattle agricultural value chain. From that moment, the Chamber began to believe in extension and gain confidence in the extension services provided by the Ministry of Agriculture and Livestock.

The formation of partnerships is based on the principal that actions taken by the partnership should favor all parties in accomplishing common objectives. In this case, it provided economic resources that normally would not have been available to extension to develop on-farm demonstrations and field trips for farmers that allow them to learn by directly observing in the field. The benefits to the chambers were that with the support of extension their members received significant benefits to help make a better life for themselves and their families.

When forming a partnership, it is always important to have a steering committee with representatives from the different organizations and institutions to make decisions with respect to the alliance and in this way assure that the different partners are involved and in agreement.

Extension agents need to identify all the different actors involved in all phases of the agricultural value chain (extension operating under a focus on agricultural value chains).
3.2 SYSTEMATIZATION OF GOOD EXTENSION PRACTICES IN EL SALVADOR

SUMMARY

Agricultural extension in El Salvador has been traditionally under the National Centre for Agricultural and Forestry Technology (CENTA, acronym in Spanish) and the Ministry of Agriculture and Livestock. CENTA has had as its mandate the generation and transfer of technology for at least a decade, with a limited focus of the extension agents on technical assistance in the areas of basic grains, horticulture, minor species of livestock and fruit production. This limited role is the reason why many communities of small and medium producers have not been reached by the Ministry of Agriculture - CENTA. Fortunately, in some cases, the work of CENTA has been substituted by technical assistance provided through many NGO projects that generally facilitate the development of non-agricultural programmes, such as health and nutrition, housing, gender equality and income generating projects, often coordinated with CENTA in agricultural activities as a collaborator in a strategic partnership. With the policy of decentralization of CENTA, the organization has started the development of innovations such as working with communities and groups of farmers and also an orientation toward the expansion of a technology transfer strategy beyond the production of food. Now, there is an effort to seek greater involvement in such areas as the environment (using a watershed focus); facilitating access to markets; support to family agriculture; and food and nutrition security for small farmers. The results of this study are a product of the application of good extension practices with the following cases: (1) support to markets for sustainable mountain agriculture for farmer groups from Lempa Acahuapa; (2) technical services oriented toward farmer demand with a focus of extension on the programme Invest in Mirada; and (3) experiences with a food and nutrition security fund in public policy. These are carried out by CENTA-Ministry of Agriculture and Livestock with support from the Special Programme for Food Security (SPFS-FAO). The central purpose of this study is to show that the principal lessons learned facilitate understanding and a definition of the new role for those involved in extension systems at the national and international levels.

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KEY WORDS

Acquisition of knowledge, technical assistance oriented toward the demand of farmers, advocacy, market oriented production, and food security.
3.2.1 Experiences with markets for sustainable mountain agriculture (MERCASEL, acronym in Spanish)

Introduction

The programme for Sustainable Mountain Agriculture of Central America (PASOLAC, acronym in Spanish) has been on-going for more than a decade, dedicated to the innovation and transfer of technologies and methods for small farmers in the mountainous areas of Central America. During the 2000-2003 phase, pilot actions involving the sustainable management of soil and water along with concerns for markets became part of the programme to contribute to the improvement of the competitive capacity of small mountain farmers of Central America. Following these recommendations, actions were oriented toward Sustainable Mountain Agriculture (ASEL, acronym in Spanish) with their connection to markets. From there came MERCASEL (Markets [Mercados in Spanish] and ASEL), seeking to improve the competitiveness of relatively small-scale female and male mountain farmers (PASOLAC, 2003).

With the experience of markets for sustainable mountain agriculture (MERCASEL), several different entities were involved, as well as groups of farmers from El Salvador, Honduras and Nicaragua. In the case of El Salvador, which is described below, the objective was to facilitate and strengthen the efforts mentioned, supporting already established groups such as Acopo, Agrocrecer, Lempa Acahuapa and Guzamalut Cooperative.

The experience for this good extension practice was selected due to its innovative characteristics in the application of techniques to access the market, and the role played by the technical advisory services working with the irrigation association of Lempa Acahuapa, located in the Department of San Vicente. This initiative was carried out within the framework of a letter of understanding signed by Agronegocios, the Ministry of Agriculture and Livestock (MAG, acronym in Spanish) of El Salvador and the PASOLAC Programme. The basis of this agreement was to strengthen joint actions based on the work carried out in the previous phases; improving the capacity of vegetable production and other crops with farmer groups of Lempa Acahuapa, executed directly by Agronegocios and the Ministry through the extension agency of CENTA in Lempa Acahuapa irrigation district (PASOLAC, 2006).

Background

During the decade of the 90s, different projects supported this area in the processes of training and financing, creating an agricultural business with two branches which included the sale of inputs and a mini greenhouse for horticultural crops. Other projects organized interest groups for the production and marketing of hot peppers, pigeon peas and mung beans. Toward the end of 2000, the agro-market of San Martin was created with the idea of internalizing the concept of marketing and it is under this initiative that CENTA began to support the production, marketing,
training and advisory services, with a focus on micro-watersheds (Aburto E., Martinez A. and Orellana R., 2003). As experienced in previous cases, expectations were created in different groups for the possibility of forming their own legally recognized agribusiness and apply a different and more integrated methodology, from a production perspective, with keen attention on the final consumer. As a result, at the end of 2000, the Lemma Acahuapa Farmers Group decided to become associated with PASOLAC with the vision to have a focus on agricultural value chains (PASOLAC, 2006).

The Lemma Acahuapa Farmers Group at that time began with a group of 80 farmers whose purpose was strengthening their group and business management, beginning with the need to understand the environment in which they were to operate, the variables that would influence forming their own legal agribusiness, and the direction they should take in production and marketing.

Where to begin

For the implementation of this study, contact was made with the head of the extension agency, Agronomist Cesar Augusto Ayala and the technical officer who participated in the execution of the project, Agronomist Oscar Abilio Lazo, with whom a work meeting was carried out with the participation of one female and five male farmers. As a follow-up, results of their experiences were shared during and after the execution of the project, which took place in 2004.

How MERCASEL functioned: principal characteristics of its focus:

» **Internalization of the project at the level of CENTA.** Agri-businesses and the Ministry of Agriculture and Livestock, facilitated the implementation of the project, emphasizing the importance of all the extension agencies in its execution.

» **Strategic plan for basic marketing.** The result was a plan that included a description of the product, target population, segment of the market, price strategy, promotion and publicity strategy, distribution, estimates of volume of sales, and the consideration of critical factors for success.

» **Sales plan.** This is where the capacity of the offerings of the group was projected, the possible points of sale, costs of production, value added, marketing, and possible price points.

» **Responsibility.** The marketing committee needed to consider planning, evaluation, organization, information, execution, direction, financial control and oversight.

» **Calendar of activities.** The activities to be carried out for one year, identifying expected results and who is responsible for each task.

» **Contingency business plan.** At this point the objectives and expected outcomes in the original plan\(^\text{18}\) were set aside, and early alert indicators, forecast and backup actions were incorporated.

\(^{18}\) The proposed marketing methodology and rapid diagnostics study of agricultural value chains, the MERCASEL component of the PASOLAC Programme, January 2002.
Principal actors in the MERCASEL experience

Farmers of Lempa Acahuapa, technical staff from CENTA, personnel for Agronegocios, the Ministry of Agriculture and Livestock and PASOLAC participated in the marketing study. The principal actors and their roles were as follows:

» Marketing agents (supermarkets, restaurants and local markets) whose role was to establish the demand for the different products, timing and frequency of deliveries.

» Financial institutions and technical assistance (China Taiwan Cooperation, FAO, PASOLAC, CENTA); whose role was to facilitate technical and financial resources to support the production and access to the market. With the specific case of CENTA, they were responsible for the involvement of the farmers with the extension agencies.

» Farmers provided the products requested based on demand. During all the phases of the project, leadership was assumed by Agronegocios-CENTA and the farmers.

Global vision of the MERCASEL strategy

Through the application of the MERCASEL strategy\(^\text{19}\) the mountain farmers achieved better income which contributed to their rural development efforts. This focus established possible effects or expected results in each one of the initiatives in progress:

» Better access to markets for the small mountain farmers;

» Farmers more motivated to introduce changes in their production systems on their farms; and

» In response to the demands of the market, farmers improved their level of production which accelerated the process of acceptance and adoption of sustainable agricultural technologies in the mountainous areas.

In general, MERCASEL has sought a focus on providing methodological tools and techniques to strengthen the individual and organizational capacity of small farmers, facilitate opportunities for them to incorporate themselves into production and marketing processes, and at the same time preserve soil and water resources.

Description of the MERCASEL focus applied to El Salvador

The farmers themselves discovered how to improve their management practices, speed up the process of obtaining the legal prerequisites (copyright, bar code, Value Added Tax [VAT] registration and an operations permit), make presentations, and incorporate value added to the production in a way that permits the group to be more competitive in the market.

A total of 30 men and women farmers from the horticulture and plantain group were trained in value chain analysis methodology for fruits and vegetables; and on the internal components of the group, including management, administration, technology, and marketing; production;

\(^{19}\) At the beginning of 2000, a group of professionals from the MAG and NGOs, members of the PASOLAC Programme, using the MERCASEL methodology, was formed and at the same time teams of specialists from Honduras and Nicaragua were involved.
and financial management. The method of determining these elements was through SWOT analysis (Strengths, Weaknesses, Opportunities and Threats). In addition, a study of the micro environment was developed through a participatory assessment of the market among technical staff and farmers. Data was obtained with this activity related to demand, sales, consumer prices, quality requirements, preferred varieties, seasonal availability and distribution problems (PASOLAC, 2006).

**Principal accomplishment and effects of the MERCASEL experience**

» The MERCASEL initiative facilitated the incorporation of farmers into the market and enabled them to understand the importance of the quality and quantity of products being requested. The initiative also helped them decide to change the technology on their farms and where to sell their products. This knowledge and understanding has been passed on to the majority of the 400 members of the Irrigation Association of Lempa Acahuapa.

» Farmers have accepted the fact that they should come together and, in addition, establish contracts with supermarkets, understand the demands of the market and know how to bargain more effectively. Actually, the Irrigation Association of Lempa Acahuapa is looking into an opportunity for a global market with Wal-Mart to deliver 24 000 kilograms of plantain weekly.

» The chain of intermediaries has been reduced significantly, whereas before the project products were sold at very low prices.

» The Ministry of Agriculture and Livestock has assumed responsibility for the MERCASEL initiative within their Family Agriculture Plan in terms of produce fairs; fruits and vegetable value chains; assisting farmers with business plans; terracing the hillsides for crops; and training in the billing process for products sold.

» MERCASEL is a good practice where extension plays a key role facilitating a methodology that was able to increase incomes of farmers without having them pay more for costs of production. It is a practice that can be replicated, obtaining results over a relatively short period of time and bringing about significant increases in income for family farms.

**Lessons learned**

These lessons learned are based on the experiences of seven farmers interviewed during the month of May 2011 seven years after the project started:

» According to Mrs Elena Rivas, the way selling of produce went before meant that the intermediary took almost all the earnings. Now, in addition to being the farmers, they themselves are also the sellers. She stated that the most important things she learned was how to manage within the market, carry registries of products and know the seasons that bring the best prices. I am a maize and pumpkin farmer and if the market demands I grow loroco (a vine flower bud from Central America), guisquil (also known as chayote), chili peppers and, if I do not have any, I will buy it from neighbor farmers, and if it is not available in the canton,
I will buy it at another market and take it to my stall at the Mercedes Umana Market says Mrs Elena Rivas, farmer from Lempa Acahuapa.

» It is important that the training programmes for farmers be specifically oriented to their needs, especially related to their connection to the market; at the beginning there will be losses, but also earnings; many of farmers had losses when we took our produce to the San Martin Market related Jose Luis and Elena.

» Farmers involved in the market have learned that in the beginning there will be losses and that the produce needs to look good to get a better price, and not everyone can be a farmer and seller of produce at the same time. It is important to involve the rest of the family members and distribute the different roles. In the case of Jose Alexander Gonzalez from the community of Galera, after learning about the results of the diagnostic survey of the market carried out by the group from Lempa Acahuapa, an agreement was made with his sister that he would be the famer and she would be responsible for sales to the market.

» Market activity is considered a process that begins with the producer deciding to produce something that is sellable; then reconsidering post-harvest preparation again considered market, the distribution and how the consumer will use the product. The adoption of new technologies for sustainable mountain agriculture, will result in greater success within the framework of certain specific value chains of production and marketing for mountain farmers.

» The institutionalization of the good extension practices were part of the strategy from the beginning. The extension agency of Lempa Acahuapa gives support so that the farmers who have experience with MERCASEL teach other farmers to become involved in the market by establishing their own niche for their products.

» The adoption of good extension practices in MERCASEL requires that the projects are eventually transferred to the institutions to ensure continuity and that the farmers do not feel abandoned.

3.2.2 **Technical services oriented towards the famers demands: a focus on investing in La Mirada**

**Introduction**

During the period from 2000 to 2005 PASOLAC put in place an initiative focused on *Investing in La Mirada* en Nicaragua, Honduras and El Salvador. The idea resulted from a request by the mountain farmers associated with PASOLAC (which had promoted greater farmer participation in the management and development of groups and associations) for contracting and administration of private technical assistance services.
This case study was considered relevant to include in this publication because of its novel approach whereby technical advisory services have a greater responsibility toward their clients (in this case farmers); as a result, there is a substantially better quality of service that responds clearly to farmers’ needs.

The importance of this effort as an example lies in the relevance of technical services oriented towards the requests of farmers, under certain organizational conditions. With this approach, capacity in terms of effectiveness, efficiency and efficacy of advisory services has been proven for groups of farmers who contract for these types of services.

In the case of El Salvador, this experience was implemented principally based on requests of farmers belonging to the Tamache Group from the organization named Agrocrecer in the Municipality of San Pedro Puxtla, Department of Sonsonate and the Guzamalut Cooperative Association of Agricultural Production in the Municipality of Tacuba, Department of Ahauchapan. Both experiences were inclined to visualize an integrated market made up of micro-businesses of women guided by the demand of the market for ag-industrial products.

In 1994, the Guzamalut Cooperative was awarded, by the courts, two coffee and fruit farms that had been abandoned. One called El Tepeyac has 45 hectares and the other, El Tamarindo, with 83 hectares. This acquisition of land was made possible thanks to innumerable institutional requests and a willingness to fight for the land.

**Geographic location**

This study focuses on the actual experiences of members of the Guzamalut Agricultural Production Cooperative in the Cantons of El Rodeo and El Chaguite, Municipality of Tacuba, Department of Ahauchapan. It was created in 1991 with the support of 36 members (29 men and 7 women).

**Description of the focus of investment La Miranda**

In the focus *Investment la Miranda*, farmers expressed their needs and formulated a request to search for the best suited provider of technical assistance. The process of contracting for technical services was decided upon; meaning that the process of contracting a service provider to give technical assistance was guided by the demands of the farmers (PASOLAC, 2003).

The Guzamalut Cooperative obtained support from PASOLAC to develop a process of acquiring appropriate technical assistance and carry out a survey of marketing value chains for processed fruit. Technical assistance was also needed for sustainable management of soil and water in coffee and citrus production.

As a result of this process and subsequent technical support, the group of women formed themselves into a agri-business dealing with alternative crops, such as pacaya (the initial blossom from a variety of date palm) and izote (the Salvadorian national flower used in cooking). These products have been copyrighted to provide protection and their sales are increasing. Although they have not yet overcome the barrier of obtaining fair prices in the market, they have a
processing plant financed by the Spanish Agency for International Cooperation (AECID, acronym in Spanish). The Cooperative has assumed the management of the plant; and seeking alternative markets continues to be the principal challenge.

**Principal characteristics of the project and its coverage**

» **Strategy for survival.** As a result of the fall of coffee price, citrus fruits were used as the principal source of income and generation of employment. The Cooperative requested projects that would help them strengthen the production of coffee and pickling of izote and pacaya, products from the live fences on the farms.

» **Coordination and taking advantage of opportunities.** After finalizing the PASOLAC Programme, the Cooperative continued improving its capacity for self management and collaboration with international organizations such as AECID and other cooperation projects.

» **The experience.** This effort sought to increase the quality and effectiveness of local technical services through direct contracting in order to respond to requests made by male and female farmers. This enabled them to request resources for their farms, build productive capacity with equality and at the same time focus on boosting their resources and their productive units, in turn promoting greater and better local empowerment.

» **Fulfillment of the technical assistance services.** The expectations of the Cooperative were fulfilled and the investment was good because, as the work was still on-going, one could see the improvement in the soil and the overall condition of the coffee farms.

» **Technical aspects applied to Guzamulut.** Various technologies on soil conservation were established and MERCASEL, and were principally guided by the demands of the market.

| TABLE 3: Some technical aspects of soil and water conservation and of MERCASEL |
|-------------------------------------------------|-------------------------------------------------|
| **Soil and Water Conservation Techniques** | **Techniques of MERCASEL** |
| Living fences using izote | Survey of fruit and vegetable market |
| Dikes | Packing products |
| Infiltration tanks | Quality control for handling food |
| Handling the repopulation of coffee | Marketing of processed products |

**Principal actors**

The Cooperative of Guzamalut has ties with various actors, principally with its members, sharing a vision of prosperity and human development. During the project, collaborative relationships were articulated and coordinated among PASOLAC; the Ministry of Agriculture and Livestock, (principally CENTA), Agronegocios; and other member institutions of the PASOLAC Programme.
Global vision of the project

With the priority of expanding the base of production and creating employment, members requested and obtained assistance to diversify production and develop the capabilities of women members and non-members in areas such as processing of fruit jams and making preserves and candies with pacaya and izote, at the ag-industrial and agri-business level.

Providers of technical assistance services

Before the project, the Cooperative solicited technical assistance from CENTA and the Salvadorian Foundation for Coffee Research. They also counted on the support from an international cooperation institution, that directly paid for technical assistance.

With the Investment La Mirada focus, the Cooperative sought to contract for technical services through a process of soliciting and reviewing several proposals. They selected Agronomist Dario, as he fulfilled all the requirements that were sought in a candidate: (1) he was immediately available and had sufficient time to dedicate to the group; (2) he did not charge an extra commission; and (3) he was able to provide training during the contract period.

The form of payment was made through a mechanism based on work completed in each training, under terms of the contract where it was established that the payments of honorarium were to be made for each training session or technical visit. This leadership responsibility was given to the Cooperative so that they could make direct observations of the services provided and guide technical assistance towards the learning needs.

Principal results and accomplishments

» The focus of the project was the establishment of systems of technical assistance based on the demands of male and female farmers, enduring a business vision guided by the market creating pickling micro-businesses, to this date establishing a processing plant with the support of AECID and developing other products and brands. The Creole Sauce has been in great demand.

» According to Mssrs Joel Antonio Garcia Molina and Santiago Garcia20, after PASOLAC, the Cooperative successfully requested a project of competitive financing by AECID. The products have improved, employment has been created for members, the copyright brand has been registered, and there is now a recognized logo and bar code for these ag-industrial products. Even though marketing is lacking in some aspects, support has been provided by the Ministry of Agriculture and Livestock from the Reconstruction and Rural Modernization Programme of the International Fund for Agricultural Development (IFAD) for equipment and infrastructure in the plant.

» The experiences of Investing in the Mirada were complemented by a focus on MERCASEL. Taking a market based view, the Cooperative is supported by a project through CENTA that seeks to strengthen the fruit and vegetable value chain, that includes modern technology and equipment in the form of a food processing plant; and improved production, processing and marketing of vegetables.

20 Personal interviews with members of the Guzamalut Cooperative, May 2011.
The experience promotes a new dynamic capable of developing skills, contracts and products when new support projects are requested. The products have created interest on the part of a private bank\textsuperscript{21} for financing and socially viable activities which are environmentally sustainable. In rural areas, this process encourages or at least reaffirms the common empowerment of farmers considering factors such as requests, development, learning, sustainability, decision making and equality in relationships between men and women.

\textbf{Lessons learned}

\textbullet\ Success in the conservation of natural resources and achieving a market based vision was a meaningful experience in terms of human development and growth for the Cooperative; even though marketing continues to be a challenge to be overcome so that the processing plant functions according to size of the harvest. As a result of this, at this time the plant is working based only on the demand for products from the market. This has serious repercussions given the fact that various members rely on the processing as their principal source of employment.

\textbullet\ At the beginning, it was not easy to select a technical assistance service provider as it required a data base of providers of technical assistance, mainly in the local area. It is important to mention that the territorial providers, for the most part, already have offers for technical services and provide them on their own terms, without considering the needs and requests of the farmers. It is for this reason that the farmers should make a contract with a clear vision of the technical assistance services required.

\textbullet\ The experience of the Investing in the Mirada for the Cooperative signified a step in the process of their growth and management, but it was not possible for them to take the leadership in contracting the services of technical assistance for marketing, which limited their participation in decision-making. At this time, to address the marketing challenges additional research is required; and a survey is being conducted with the local stores in town to analyze different packaging and marketing techniques for new small-scale pickling products.

\textbullet\ The good extension practice of providing technical assistance that is responsive to the expressed needs of farmers is a practice that has facilitated human development, notably for both male and female members. For the women, their paradigm has changed with new access to markets as a way of improving family income. In the case of men, they have learned how to manage an agri-industrial business and how to integrate women members into its management. However, the knowledge and skill acquired by members of the cooperative have not been sufficient to face all the challenges of the market, as merchants and financing agents are strict, and the Cooperative has areas still in need of strengthening.

\textsuperscript{21} The Commerce Bank of the City of Ahuachapán, at the time, showed interest in supporting the initiative but could not go further due to limited production capacity on the part of the members.
3.2.3 Experiences in Food and Nutritional Security for Public Policy Advocacy

Introduction

In El Salvador, after various years, there is now a public policy for Food and Nutrition Security (SAN, acronym in Spanish) as a result of the coming together of diverse factors that favored this process. The good extension practice presented in this study, is founded on a process that initially concentrated on technological innovation and ultimately resulted in being an element of public policy. This is a case to share with all those who seek innovative aspects in the execution of extension activities. The origin is found in the implementation of the SAN programme oriented toward the poorest regions of the country, and which, from the beginning, concentrated on the promotion and validation of good agricultural practices to guarantee food security country wide.

It is worth emphasizing that in this process many actors were involved. It is also important to note the important role that extension staff played in explaining the concept the implications of SAN in the fight against hunger and poverty of small family farmers in El Salvador, and how this training and transfer of technology had repercussions that together with many other initiatives have become an approved part of SAN policy.

To give an idea of the actors involved that have come together to work on a strategy under the SAN theme, we should mention, among others: municipal governments and government ministries (the Ministry of Agriculture and Livestock; the Ministry of Education; and the Ministry of Public Health and Social Assistance). What is described below is the beginning of what constitutes an experience that shows how SAN themes have influenced different areas:

» Local: Incorporating the municipal governments, generating in them an interest in the SAN theme and integrating the concept into municipal plans.

» Regional: Shows how the positive interaction of institutions representing various sectors results in decision-making aimed at generating positive solutions to the problems associated with SAN, and at the same time impacting decision-making with the regional structure of institutional and civil society.

» National: To demonstrate that local initiatives from the homes of people in the process of reconversion sensitizes municipalities and motivates them to assume a leadership role in the technical discussions of SAN and from there proceed to the Council of Food and Nutritional Security for the formulation of the SAN Law 22 and Food Security Public Policy.

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22 Still in progress.
Background and context

At the national level, 14 percent of all children under the age of five year are malnourished and 14.5 percent of school-age boys and girls suffer from chronic malnutrition. Economically, the cost in health care caused by malnutrition in 2004 was 1 175 million US dollars, which represents seven percent of the gross domestic product and is 1.37 times greater than the public expenditure, which is a major concern for the Government of El Salvador, (FAO, 2009).

Based on this situation, at the end of 2002 a project was created entitled, Support for the Formulation of a National Plan for Food Security, with the objective to design in concrete form, with the different sectors of Salvadoran society, an instrument that promotes the development and facilitates the implementation of a Policy for Food and Nutrition Security. This was approved and launched by the Government on July 2003 (FAO, 2011).

In this context, FAO provided to the Government of El Salvador the Special Programme of Food Security (SPFS), whose results can be seen with the effort to improve the SAN\(^23\). This programme was executed by CENTA-Ministry of Agriculture and Livestock, with technical advisory assistance from FAO and financed by AECID.

The SPFS Programme, demonstrated a series of positive results in terms of the adoption of agricultural practices to strengthen food security. In addition, it was possible to promote the incorporation and interaction of different institutions with various programmes within the country to interact with the target population, establishing diverse institutional strategies that resulted in forming public policy. As a result of this process, a national effort was undertaken with broad public discussion and considerable consultation to formulate public policy for SAN. The SAN policy was approved and launched by the President of the Republic of El Salvador on May 16, 2001.

Finally, as a result of the official SAN policy, the Government of El Salvador, through the Ministry of Agriculture and Livestock, launched the Family Agriculture Plan with the objective of strengthening agriculture in El Salvador by benefiting 325 000 families. With this effort, a good part of the technological and methodological experiences came from the SPFS, specifically the National Programme for Food and Nutrition Security (MAG, 2011). During May of the same year, the official Food Security Policy was launched which had been developed by the Council of Food and Nutrition Security supported by FAO.

For this study, it was considered important to present the experiences of the process of advocacy for policy of the SPFS Programme in the eastern region of the country. The general objective of this programme was to contribute to the improvement in food and nutrition security for the most vulnerable families in that part of El Salvador. One if its specific objectives was to expound on the value of exercising effective technological, managerial and administrative capabilities through effective communication mechanisms that permit advocacy at the local and national level in the theme of SAN, as well as promoting the adoption of good technological practices.

\(^{23}\) A good SAN practice signifies the involvement of families and communities in the adoption of nutrition, hygiene and health measures, guaranteeing better nutrition and health for rural populations (FAO, 2009)
The programme will be active from 2007 to 2012 and actually is in phase III of its execution (2009-2012) which will develop an emphasis on policy at the local, regional and national levels.

**Areas of the programme intervention**

With all the previous information explained, the execution of the programme SPFS-CENTA was carried out in the eastern region of the country, specifically in the municipalities of Guatajigua, Sensembra and Yamabal located in the Department of Morazan, and Nueva Granada and Estanzuelas in the Department of Usulutan.

**Important elements that are emphasized in the experience**

- **The target population.** Includes the vulnerable families affected by food and nutrition insecurity, and farmers groups producing for the market. Participating families have the following characteristics: subsistence agriculture, with a maximum land area of 3 manzanas24 degraded soils; and are located in mountainous zones. These families are also made up of women heads of households; nursing mothers; pregnant women; youth and infants; and other low-resource families with children under five years of age; and the elderly. The target families were called *demonstration families*.

- **Coverage.** Actually, 1 039 demonstration families participated from five municipalities in the Departments of Usulutan and Morazan; and 5 195 families took part in an indirect manner (data facilitated by Agronomist Walter Torres, responsible for the production and access component, and the generation of businesses).

- **The model of management and advocacy based on the participation of the family.** An important element in this model is the management and advocacy based on the participation of the family, along with the coordination of various ministries for the development of the components of the programme:
  - Strengthening the capacities in food production and income generating activities.
  - Education in food and nutrition security.
  - Communication for development.
  - Institutional strengthening and advocacy.

**Principal actors.** From the beginning,25 a broad, country-wide effort to coordinate multiple sectors and ministries effort was planned. In the following figure, it can be seen how the different participants interact, as well as how the direction of policy advocacy within SAN was developed.

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24 A *manzana* is approximately the equivalent to 0.7 hectares.
25 Personal interview with Agronomist Nestor Deras, Director of SPFS (2006-2009) who is now advisor to the *Agriculture Family Plan* of the MAG.
Extension strategy for policy advocacy

The strategy exercised in SAN for policy advocacy was developed at three levels, with the following actions in these areas:

» **Local.** Incorporating the municipal governments and generating in them an interest in the SAN theme. Then integrating this concept into their municipal plans as strategic actions for municipal development through the technical group of SAN26.

» **Regional.** Holding a series of meetings involving institutions from multiple sectors where they came together to share a vision and make decisions concerning measures to be taken to reach positive solutions to the problems associated with SAN; and advocate for a structure for regional decisions at the institutional and civil society level, as in the case of the Eastern Regional Permanent Forum on Food and Nutritional Security (FOROSAN, acronym in Spanish)27. This regional entity was created in 2007 with a vision to become a socio-political platform for advocacy, a builder of linkages among key actors in the eastern region and the rest of the country, facilitating concrete action and contributing to food and nutrition security to improve the quality of life of the population in the region.

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26 The technical groups are made up of all the social, public, private, religious, community associations, community development associations, farmer associations, municipal governments and international cooperation projects.

Demonstrating how local initiatives, from the homes of people in the process of reconversion, along with the development and adoption of innovative new practices to work the land, improved hygiene in the home, and improved food production sensitize the municipalities and motivates them to participate by providing leadership in SAN technical groups, and initiate a process of finally taking the steps to formulate SAN law and policy and introduce it to the Council of Food and Nutrition Security. Other factors that affected the final results of this process were climate change and natural disasters that demonstrated how vulnerable rural families are.

In summary, the good extension practice of SAN resulted from the role that extension played in the municipal technical groups, in micro-regions and FOROSAN to acquire knowledge related to innovative technologies in SAN, supported by the work carried out by extension staff. The Council on Food and Nutrition Security for the formulation of the SAN law and SAN public policy, coordinated and solicited support from FAO for orientation and consultation on the SAN policy for the zone of influence of the projects in cooperation with FAO of El Salvador. In this context, the extension strategy for SAN is a model for management and advocacy in the programme. Fundamental elements in the process of advocacy include that part of the process of technology transfer where demonstration families and neighboring families participated with the support of extension, was combined with effective coordination of institutions representing multiple sectors.

**Figure 6: Extension strategy for the transfer of technology and advocacy in food and nutrition security**

- **Strengthening of the Capacities of SAN through Transfer of Knowledge**
  - FAO experts train technical staff of CENTA and health promoters in the technical and methodological aspects of production, access, income generation, use of local sustainable resources, eating nutritional foods, and hygiene - including preventative health by washing hands and the management of grey water.

- **Strengthening the Capacity of SAN through Training**
  - Integrated technical teams train the demonstration families in the innovations of technology transfer in SAN and at the same time facilitate the acquisition of knowledge.
Technical and methodological elements with the good extension practices of SAN

» Technical elements accepted and approved by the target population. The following elements can be listed: development of capacities, farm plans, implementation of farm plans in the farmyard and/or fields, delivery of direct incentives, household workshops, farmer field schools, soil and water conservation, school and home gardens and programmes for sensitizing people to SAN.

» Methodological elements for good extension practices in SAN. Of the principals that have contributed to advocacy for policy are the following: participatory community diagnostic survey, baseline studies, demonstration families, “irradiated” families (families who live in areas surrounding the demonstration families), interest groups, field trips and exchange of experiences, fairs and forums for the exchange of experiences, monitoring and follow-up, inter-institutional coordination and institutional synergies at the local, regional and national levels.

These elements raise the visibility of SAN in the programmatic territory and make possible, through the acquisition of knowledge, advocacy in institutions at the regional and national levels; and with the support of FAO, the advocacy proceeds onward to the Council of Food and Nutrition Security.

Principal results

The programme executed by CENTA-FAO generates a level of advocacy in the diverse actors and their interaction in the entire communication and learning process. The themes of SAN are promoted by the different means of communication (radio and television) and have helped reach the civil society directly.

» Local advocacy. One result at this level was the acquisition of knowledge by demonstration families, according to Jose Luis Martinez and Elsy Noemi Duran, participants in the programme executed by CENTA-FAO: We are satisfied that now our leaders, with the little experience they have, can share what they have learned. We are happy to learn and teach to someone who does not know. Our children have changed, they are growing normally and have increased in weight, with the food we are healthier, we can see the results of SAN.

» Municipal advocacy. The Mayor, Professor Francisco Adonay Gomez, President of the technical group and President of the of the Council of Mayors from the Department of Morazan, mention the following: It has been two years since we have been active, we solicited the Minister of Agriculture and Livestock to incorporate the municipality of Yamabal in the SAN Programme and Agriculture Family Plan. They said that the prerequisite was the payment of an agricultural technician and value the importance of the benefits of the programme for vulnerable families. The Municipal Council accepted

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28 CENTA did not have a technical officer to take care of this municipality, for this reason the municipality was asked to provide the persons salary.
the opportunity as a social investment to pay for an agricultural technician and a bilateral agreement was signed between CENTA and the mayor. Our interest is in a new way of thinking, to produce what we are going to eat, and we have to institutionalize the social area of health and production through SAN, assigning part of our budget for this. We hope to convert ourselves into a productive municipality to generate food and continue working with school gardens in coordination with the Ministry of Education. There is an interaction among all the multi-sector actors and each one has a defined role in the municipal plan executed by the technical group.

» **Regional advocacy.** FOROSAN was selected as the entity in the law and SAN policy to carry out advocacy through the cooperation of the Food and Nutrition Security Council for regional consultation on SAN public policy. Virginia Margarita Gonzalez²⁹, President of FOROSAN and Martha Alfaro, Representative of SPFS-FAO in FOROSAN, told us that: FOROSAN is a non-political entity, transparent, no operations, where each institution assumes a specific role in accordance with their competencies. Their visions are to become a platform for advocacy in public policy for food and nutrition security and be a reference for SAN in the region through the process of consultation with the Food and Nutrition Security Council. FOROSAN was born out of the World Food Day celebration in 2007. There is a perspective on advocacy in the local governments so that they can incorporate SAN actions for families into their municipal plans. With the launching of the SAN policy on the 16 of May 2011, it was hoped that FOROSAN would become strategically operational in support of the SAN policy.

» **National advocacy.** The Agriculture Family Plan of the Ministry of Agriculture and Livestock contains at least five pertinent technical elements and methodologies, which are:

- Demonstration families.
- Farmer Field Schools.
- Household workshops.
- Agricultural and non-agricultural interest groups.
- The management of incentives to facilitate chicken raising, vegetable production and seed modules, and vocational workshops.

In the same way, SAN Public Policy³⁰ incorporates the local aspects; the work of the mayors with all of the social sectors forging a common vision.

**Lessons learned**

» Working collaboratively in teams in the local area is of vital importance. It permits putting together a development strategy that offers an opportune direction, facilitation of decision-making concerning local requests, cementing agreements and letters of

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²⁹ Regional Nutritionist and President of FOROSAN.
³⁰ Personal interview with Ms Irma Yolanda Nunez, Technical Director of the Food Security and Nutrition Council.
understanding for institutional collaboration, and accomplishing, as a visible result, SAN learning in a shared manner.

» The mobilization of key actors of SAN facilitates integrated and effective planning in different aspects, such as:
  • Home-based production and production activities generating changes in attitudes of demonstration families and “irradiated” families;
  • At the municipal level, with SAN advocacy in their operational plans, budgeting funds to pay for technical assistance; and
  • At the micro-regional level, two to three municipalities come together with a vision to develop a shared strategy for SAN. This process of advocacy has permitted human development within the target population in a short time to bring about changes in their living conditions, guaranteeing access to healthy foods on a sustainable basis and with healthful surroundings, and reducing the levels of malnutrition in children under five years of age and pregnant women.

» The coordination of ministries and institutions from multiple sectors and integration of effort facilitates the process of institutional advocacy, always and when SAN is incorporated into their priorities. The directives of the involved organizations demonstrate their awareness in approving and accepting the need to expand their knowledge of health, hygiene, sanitation, agricultural production, integrating efforts and working with a shared vision for the region. They accomplished this through the application of innovative technologies, the institutionalization of the focus on SAN and effective integration and coordination among public entities and international cooperation organizations.

» In the process of bringing together various institutions in a common forum, one key principle is that these institutions and their objectives can complement others in ultimately reaching a common goal. In the case of the present good extension practice, the creation of a network of institutions that make up FOROSAN, with the ultimate objective of having greater advocacy in the region and the nation in SAN themes, evolved into a linking mechanism or alliance to advocate in the Food and Nutrition Security Council and support national development plans.

» It is very important to define from the beginning an advocacy plan capable of identifying the different actors, and among them, identifying the partnerships and shared objectives that will promote an effective course of action and bring about good decisions. In the development of a process where multiple actors participate it is necessary to develop a level of knowledge in all the central themes so that those taking part will share basic understandings that will lead to good decision-making and achieve the desired results. An important factor in the good extension practice is that, from the beginning, training in SAN needs to be carried out in order to impart the theoretical and practical knowledge which contributes to the development and acceptance of ideas and concepts among all who are involved.
Box 4: Lessons learned from the cases of El Salvador

» **The mobilization of actors.** In each one of the cases, it has been shown how the promotion and implementation of actions in the field defines the role of the different actors. Possibly this is due to the fact that there is a great camaraderie among the technicians in the area and that the demands from the farmers are aligned with the objectives and results of the programme.

» **Target population.** In each of the three cases the target population is the rural family. Also in each experience there was a principal emphasis on human development, changes in attitudes, and the adoption of alternative technologies for agricultural production, thus overcoming poverty and promoting sustainability and advocacy.

» **Social learning.** Each one of the cases demonstrated how the target population learns and makes improvements in production systems, has the capacity to express their ideas, and possesses the organizational ability to achieve their goals. There is strong evidence that the interest groups now have the capacity to self-manage their work.

» **Advocacy.** Each of the cases used institutional and local advocacy with emphasis on the importance of public policy proposals. Institutionally, CENTA plays both a collaborative role in general and the specific role of appropriating the technical and methodological processes for transferring knowledge, even with limited participation in the formulation of agricultural policy proposals.

» **The bases of sustainability.** The three cases start with participatory planning involving all the social actors and facilitating the development of different project activities, thereby guaranteeing the quality of the actions taken.
3.3 SYSTEMATIZATION OF GOOD EXTENSION PRACTICES IN GUATEMALA

SUMMARY

In the last few years, different methodological instruments or tools have been generated to enable extension to be more effective and efficient. This has particularly been the case in Guatemala where, with the disappearance of the public extension service, initiatives to support agricultural development through various extension activities within international cooperation projects and non-governmental organizations appeared. Some of these initiatives have been notable as to their innovative characteristics and certain factors that indicate positively the ability to obtain the expected results and which appear repeatedly in these experiences. Among these we find participatory methods conducive to the empowerment of the local actors (beneficiaries); institutional partnerships based on shared objectives and associated with the interests of the target populations; models of extension founded in the participation of rural leaders (men and women); strengthening of the capacities to form and work with groups; and administration, management and business approaches of the core organizations.

At the beginning of 2010, a system of public extension reappeared in the country. As a result of the legal framework that supports its existence and operation, a significant number of extension agencies have been established. This document contains a description of some of these initiatives which led to good extension practices, and could provide valuable support for the development of a new model for public extension in Guatemala, and serve as a methodological reference for extension in other Central American counties and Panama.

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KEY WORDS

Systematization, family agriculture, rural development, extension model, rural promoters, incentives and capitalization.
3.3.1 Planning for the management of micro-watersheds linked to extension\textsuperscript{31}

During the last decade in Guatemala, until 2010, with the absence of a public extension service, technical assistance and/or extension for family agriculture was carried out in large part by cooperation organization projects and non-government organizations. It was during this time that some of these organizations and projects developed experiences that demonstrated noteworthy methodologies, which are now being revived in order to study their systematization.

The first of these examples deals with the application of a focus on the management of micro-watersheds and the involvement of rural extension where the International Union of the Conservation of Nature (UICN) has had an important role utilizing the development of partnerships with principal local actors in order to achieve the objectives. In the functioning of this network of partnerships, the University of San Carlos has had an important role through the assignment of students in their last year to conduct studies that serve as a base for the formulation of projects and develop plans for the management of micro-watersheds, which were implemented through joint actions among the local organizations and members of the communities.

\textbf{Background and context}

During the past 30 years several initiatives and efforts were planned with the aim of establishing integrated management projects of watersheds in Guatemala. From the decade of the 1980s, several research and academic activities were initiated to characterize the condition of some of the principal watersheds in the country. In addition, projects were formulated and carried out with direct state intervention mechanisms and principally with a focus on physical-conservationist actions.

The vision of these projects was sectored and private. At the same time, the pressing issue of water scarcity during recent years has caused many regions in the country to have interest in training professionals to become specialized in the management of hydrographic watersheds. This has permitted the strengthening of and opening up of opportunities relating to the concept of integrated management of watersheds; and as such, those concerned have come to realize that the different territories are the ideal units for planning and so they were selected with the purpose of accomplishing sustainable use of natural resources.

During the post-Hurricane Mitch period, social and economic aspects, although weak, were incorporated into a more participatory focus in the local communities. In this step, it was clearly recognized that water is the integrating element and at the same time, the means for a more practical diagnostic study to determine the state of conservation or deterioration of the hydrographic watersheds in the country. In addition, there was a better...

\textsuperscript{31} Original source: Document \textit{Good Practices in Rural Research and Extension in the Micro-Watershed Squish, of the watershed Coatan, San Marcos, Guatemala}, prepared by Ottoniel Rivera, Coordinator of the Tacna II of the UICN-Guatemala Project, with support from technical personnel of the Project and edited by Ramiro Ortiz. (In Spanish only)
understanding of the cause and effect relationships in watersheds and the high degree of vulnerability facing hydro-meteorological phenomena for populations located within the hydrographic geographies. More integrated, multi-sectoral and multi-disciplinary focuses were applied to face the accelerated deterioration observed in the hydrographic watersheds of Guatemala. Finally, an historically significant accomplishment in the management of watersheds at the national level was reached in 2006 when the Ministry of Agriculture, Livestock and Food of Guatemala (MAGA, acronym in Spanish) took the initiative to form the National Commission of Micro-Watersheds of Guatemala. The MAGA, the Ministry of the Environment and Natural Resources and the Secretary of Executive Coordination of the President were the first institutions to belong to the Commission, which afterwards others joined. The objective of this Commission was to provide opportunities for dialogue and the development of proposals concerning the problems associated with water use and the integrated management of natural resources as a function of productive development of the local population and their organizations. From this process, the signing of a technical cooperation agreement occurred in which the need to promote the National Programme of Micro-Watersheds was planned.

The model of extension planning and implementation prior to the good extension practice

In trying to highlight the effects of this good extension practice, it is necessary to briefly describe how the planning and implementation of rural extension activities were previously conducted in the area where the new methodology was introduced. Each municipality had a micro-regionalization, with a set of criteria for their relationships and communication. Planning for the localities was carried out by municipal extension technical staff with little community participation. This resulted in a list of projects that had no foundation in neither a characterization or diagnostic study; nor did it include any work in the areas of forestry, water or soil.

Rural extension was carried out by NGOs and international cooperation programmes. The entities that implemented action in the communities sought to accomplish their organizational objectives, those which in the majority of the cases did not correspond to the needs of the communities. In addition, they developed their activities with individuals, with little or no inter-institutional coordination, which caused confusion and losses in the communities and there was little efficiency in the use of resources.

The beginning of the process of the good extension practice

The activities of the International Union for the Conservation of Natural Resources (UICN, acronym in Spanish) that eventually established the context of this study began in 2003. At that time, two of their projects (Tacana I and Tacana II) applied this new methodology to their work in 12 municipalities in the Department of San Marcos, in the western region of the country. It included a geographic coverage of 27 micro-watersheds (16 pilot micro-watersheds located in the municipalities in the high, medium and low parts of the watersheds
under the main watersheds of Coatan, Suchiate and Naranjo, and 11 micro-regions within the micro-watersheds in the municipalities of Ixchiguan, Tajumulco and San Pablo, which in addition had their respective municipal plans for development of the watersheds). The actions and accomplishments of the good extension practice that is described below takes place in three watersheds that are found in the Department of San Marcos.

For the Tacana Project of UICN, different required activities were identified for the development of the integral management of watersheds (characterizations; community and inter-community diagnostic studies; management plans for micro-watersheds; and financial management for the implementation, monitoring and evaluation of projects carried out) and physical presence of the technical staff in the communities of the micro-watersheds was necessary. Even so, a serious limitation existed for the implementation of these projects because there were few staff in the project and there were not sufficient resources to contract consultants. The solution to this limitation was identified in the need to have a person with university training. University students are required to have an extension work experience in rural communities (Professional Supervised Exercise) as a way to offset the investment that the country is making in their professional formation.

Agreements were established with those responsible for the professional supervised exercise from San Carlos University of Guatemala of San Marcos, Quetzaltenango and Huehuetenango with the results being that the students could carry out their Professional Supervised Exercise in the communities of the micro-watersheds and that through them, necessary studies could be carried out. In this way the communities could benefit from the portfolio of projects and base-line studies in order to monitor and evaluate livelihoods in the communities. In addition, the students would be able to fulfill university requirements needed for graduation and the Tacana Project accomplished the objectives of integral management of the micro-watersheds with high levels of participation from the community, as well as other institutions present in the area and the municipal governments.

**Actions that were developed for the implementation of the good extension practice**

The first actions carried out were in three micro-watersheds selected in 2007, where through the first partnership with the University Centre of San Marcos, the process of designing the characterization and diagnostic survey at the level of the micro-watershed was initiated and an annual management plan was written. All this was done with students in their last year of study.

During 2008, the number of micro-watersheds engaged increased to 14 and also there were more students in charge of implementing diagnostic studies of the micro-watersheds, management plans and annual plans for the management of the projects. After these increases in citizen participation, the Tacana Project formed 14 micro-watershed councils that made up the Communities of Development Councils of the second level which integrated 10 to 20 communities in territories that range from 10 to 50 square kilometers in area. Here the management plans of the micro-watersheds were formulated and implemented with portfolios of projects concerning food security, income generation, environmental conservation and basic social services. Some of these have been implemented utilizing funds from the municipalities, international cooperation
and with support for government institutions and from the communities, which have contributed to food security, the generation of incomes and an improved quality of life for the populations that find themselves in poverty and extreme poverty.

Figure 7: Student from the University Centre of San Marcos working with women in the community of San Pablo in the micro-watershed of Esquicha in 2009

As a result of the requirement of the Tacana Project to have students live in the communities of the micro-watersheds, a close relationship developed between the students and the communities they were working in and a greater institutional presence in the local area (micro-watershed) delivered credible results and enhanced the prestige of the participating institutions.

For the inclusion of the students in the Professional Supervised Exercise in the elaboration of the micro-watershed management plans, it was necessary to consider the following: (1) change the local area of intervention for the student, going from originally assigning only one community as pilot to include all the communities in the micro-watershed; and (2) some of the activities were designed to accomplish specific needs of the project, such as studies of the actors, characterization, and diagnostics. In the case of the students who were working on their theses, it was necessary to make the following changes: (1) they carried out adaptive research studies (studies of the actual situation of the micro-watersheds, based on the livelihoods of the farm families); (2) Students were not required to carry out a traditional thesis study using the null or alternative hypothesis; and (3) the themes were selected so students could carry out exercises that would permit theories, planning of methodological processes and application of tools to carry out adaptive research.

Implementation of the process of university extension with a focus on watersheds

In the process of implementation, agreements of cooperation and letters of understanding were signed with the University Centres of the University of San Carlos of Guatemala with the
Tacana II Project, UICN-Guatemala. The promises of the greatest relevance of the Tacana project of the University of San Carlos of Guatemala were to: (1) train and provide technical backstopping of the students and (2) provide a monthly stipend to the students during their stay in the area. On the part of the University Centres, they agreed to: (1) supervise the quality of the work of the students and (2) provide technical backstopping of the students.

The students signed professional contracts (with a duration of ten months) which defined the products that were to be generated. In addition, the students could count on the support from the supervisors from the University of San Carlos of Guatemala.

In addition, as a way to guarantee that the students completed their products, the following actions were necessary: (1) training days for the specific products; (2) practical workshops for the development of the products on the part of the advisors from San Carlos University of Guatemala; (3) periodic presentations of the progress to date; and (4) on-site visits of the advisors to observe tangible actions and professional practice.

The principal products generated by the final year students were: (1) facilitation of the characterization study of the micro-watersheds; (2) facilitation of the diagnostic studies; (3) facilitation of the micro-watershed management plan; (4) formulation of project profiles; (5) facilitation and implementation of the plans for policy advocacy; and (6) development of training days and implementation of projects of diverse nature.

The projects were generated by applying a ‘sustainable livelihood’ focus. ‘Livelihoods’ of the community refers to the means of satisfying fundamental needs of people and the degree of satisfaction of these needs used to determine the well-being of the community. Livelihoods are defined as activities, property, capacities and strategies required and employed to satisfy the fundamental needs of families (Chambers and Conway, 1992).

**Principal accomplishments of the good extension practice**

» Micro-Watershed Councils established by law through the Development Councils with municipal recognition.

» There is a portfolio of projects that include short and medium term development plans, which corresponds to the focus of the overall management plan.

» Integrated planning for development of the micro-watershed communities with a focus on livelihoods.

» Community leaders acquired the ability to carry out management of micro-watersheds.

» The extension service benefited from the studies generated by the students in that they are required to include theoretical and methodological considerations in their work in order to graduate.

» The studies were of high quality, as the students were supported by faculty from San Carlos University of Guatemala in San Marcos and at a relatively low cost.
The population benefited from the implementation of the good extension practice, including 581 communities and 13 municipalities of San Marcos (Tacana, Sibinal, San Jose Ojetenam, Ixchiguan, San Pablo, Malacatan, Catarina, Ocos, San Pedro, San Marcos, Palo Gordo, San Cristobal, Cucho, and San Antonio) with a population of approximately 416,193 inhabitants in addition to the 80 students who participated, as well as the University Centers of the region, the Faculty of Agronomy of San Carlos University of Guatemala and the Tropical Agricultural Research and Higher Education Centre of Costa Rica.

A summary of the students who participated is presented in the following table:

**Table 5: Summary of the work of the students coming from University Centres of Guatemala during the life of the project**

<table>
<thead>
<tr>
<th>Year</th>
<th>Students of the Professional Supervised Exercise</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CUSAM</td>
<td>CUNOROC</td>
</tr>
<tr>
<td>2007</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>3</td>
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<td>10</td>
<td>11</td>
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<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
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<td>24</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Doctoral Thesis Students</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CUSAM</td>
<td>CUNOROC</td>
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<tr>
<td>2007</td>
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<tr>
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<td>2011</td>
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<td>0</td>
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<tr>
<td>TOTAL</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Source: UICN

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32 CUSAM, University Centre of San Marcos; CUNOROC, Northwest University Centre; FAUSAC, Faculty of Agronomy; CUNOC, University Centre of the West; CATIE, Tropical Agricultural Research and Higher Education Centre of Costa Rica
Some of the perceptions of the population in the projects supported at the level of the micro-watershed are the following:

» In the potable water projects, there have been improvements in infant health (fewer gastrointestinal sicknesses) and improvement and change in the hygiene habits of the families that benefited from the project.

» In the project for housing of sheep, children of the families can now go to school, farmers have contributed to the growth and development of reforestation and soil erosion decreased which was caused by overgrazing of the pastures.

Events that have influenced the development of the experience

» The community request for continuing support, technical assistance and the processes of extension.

» Opening of the University Centres and faculty exploring new ways of carrying out research and university extension.

» The possibility of the projects providing a monthly stipend to the students.

Lessons learned

» The existence of a micro-watershed management plan creates conditions for the institutions’ support for the development of communities, making it easier to identify the manner, form, and location where their intervention should take place.

» In the area a diverse array of conceptual focuses have been applied, such as diversified farming systems, ecosystems focus and sustainable livelihoods. However, it was found that the livelihood focus provided for better involvement of university personnel, students and the community. This permitted easier access to conduct characterization and diagnostics studies, and for developing and monitoring management plans involving all actors.

» The work and studies where there was no direct local involvement had little or no possibility of obtaining the expected results or contribute to the development of the communities. Even so, when these communities carry out the work with the others, there is more empowerment of the local actors and as a result there is a greater possibility of obtaining the results.

» The adaptive research carried out by the students from the Professional Supervised Exercise in the micro-watersheds permitted them to analyze the changing situation of the livelihoods in the communities and the faculty helped them adapt and relate to the programmatic contents of their courses taking into account the national reality.

» The training of local personnel of the regional University Centres provides the opportunity to advocate for development in the area and to incorporate them with the work force of other projects or entities with similar characteristics.

» The extension service did not have the capacity to conduct the applied research that was needed to prepare the studies required for the management of the micro-
watersheds. The university students demonstrated that they can carry out this type of activity as part of their academic requirements to graduate, in light of the fact that there is no government entity that is able to carrying out applied research in the theme of watersheds. Considering what happened with the extension programme of MAGA, other institutions could take advantage of using students to provide important information that can be used with their groups.

3.3.2 Community organization-based extension utilizing rural promoters

The western high plains of Guatemala have long been home to a large concentration of indigenous populations in the rural areas, who have for some time been forming small farmer groups or associations with the objective of improving their conditions through group effort. But not all have prospered so easily, as the group development process presents many challenges. In the case of the good extension practice described in this section, a FAO project working in the Marquense area of the high plains of Guatemala, introduced a series of mechanisms that in addition to strengthening the organizations, was also instrumental in establishing a local system of extension that utilized extension promoters who came from the communities where they served. This has improved the economic condition of families in the communities through advice for better management of the productive systems.

Background and context
In 2007 FAO initiated the Support to Groups and Organizations in Local Development in the Department of San Marcos and Municipalities in the Southwest of Huehuetenango project, better known by the target population as the High Plains Project. This project had as its central objective to contribute to the consolidation of a social organization and the sustainable management of natural resources in the local economy of seven municipalities in the Department of San Marcos and two municipalities in the Department of Huehuetenango. The project was co-executed by ten local organizations, with 3,827 families involved in subsistence agriculture in 89 communities where 73 percent of the target population were women. The project came to a close at the end of 2010.

The extension system based on rural promoters
The establishment of this system was one of the principal instruments in the intervention strategy of the High Plains Project as this was the means that the organizations used to reach the member families and to provide them with training and technical assistance for the management and improvement of the productive systems. The reasons for their establishment

33 Original source: Agricultural Extension Based on Rural Promoters, prepared by Israel Cifuentes, Ex-Director of the High Plains Project and afterwards edited by Ramiro Ortiz (Available in Spanish only)
34 Extension materials elaborated for the project is available through the portal TECA, Technologies and Practices for Small Agricultural Producers (http://teca.fao.org). (Available in Spanish only)
of a promoter based extension outreach effort were based on various aspects: (1) the absence of the State in providing agricultural extension services; (2) the need for technical assistance for men and women producers under a systems focus on that sees the farm in its totality; (3) the environmental vulnerability of the region and the pressing need for adequate soil and climate smart management of the productive base; (4) the continuing increase of the rural population and its concurrent concentration; and (5) the need to increase and sustain production and productivity of basic grains and other products.

The methodological focus utilized for this system was based on the farmer-to-farmer methodology which consists in the transfer and diffusion of experiences and knowledge by the farmers themselves who, through the process of training and exchange, improve their capacities (Ortiz, 2009).

The base in which to construct the agricultural extension system based on rural promoters was part of previous extension experiences that used this element in the past for diverse institutions, projects, NGOs, local organizations and by FAO as well. Building on the base of the existing promoters, other institutional actors were involved (MAGA, the Institute of Agricultural Science and Technology of Guatemala, NGOs present in the local area and others) to take advantage and enhance the resources and experiences that these promoters with the objective of having them reach the target families with the services they offer.

**Characteristics and functions of the agricultural promoters**

The promoter has been the central figure in the system having among their principal qualities that of being native to the area and the situation that for most it would be difficult for them to leave the community. According to their profile, the promoter could be a man or a woman with the capacity for leadership, and having credibility within their group, the organization and their community. They should have knowledge and skills in agricultural themes, especially those related to productive activities and that are being promoted in the community and in the areas of action. As to previous schooling, it is preferable that they can read and write, know the Mayan language of their community and have accreditation for training events they may have attended. Also preferable is a capacity for understanding the standards and application of agricultural pesticides in the production of vegetables and knowledge of rural development.

In relation to their functions, they cover a wide range; beginning with carrying out diagnostic studies of their communities; elaborating work plans for their groups to writing monthly reports to the organization; support the plans of work carrying out extension activities; and finally evaluate the accomplishments based on the planning and determine what else needs to be done. In addition, the promoters should be able to prepare reports indicating successes and failures and identifying possible causes of each.

**Principals that orient the functioning of the rural promoters**

Other aspects that were defined from the beginning include principles that govern how the promoters carry out their work:
» Application of a farming systems focus. The intervention in the communities began with a characterization study of the systems of production. The objective of the promoters was to obtain greater efficiency and productivity within the production systems on the farms, applying participatory methodologies.

» Work with the farmers. The new form of horizontal extension is characterized by the fact that it is the same farmers who promote and develop the practices of teaching-learning.

» No dependency. The system sought sustainability for the extension service; for which the idea was planted with the groups that the solutions to the problems facing the farmers could be found within themselves and their capacity for self management.

» Increased technical capacity of the men and women farmers. To improve the farmers’ production systems, it is important to strengthen their capabilities and create conditions allowing access to knowledge and technological innovation, always in accordance with their needs, expectations and requirements.

» Identify opportunities and not only problems. In this aspect it is assumed that productive agricultural and non-agricultural development in the area is a function of the existing possibilities, which need to be strengthened in the development process.

» Retrieve and value knowledge, resources and local culture. Valuing the human resources of the communities and the existing resources on the farms is fundamental.

» Differentiated attention. To families, they provide technical assistance and training in accordance to with their level of development (below-subsistence, subsistence and surplus farmers) as well as to their position within the nuclear family (women, men and children).

» Participatory farmer research. This is based on the management of knowledge and technological innovation, resulting in creativity and the dynamics of the farmers and their families.

» Strengthen farmer organizations. An effort was made to strengthen the organizational structures with the object of creating in them a culture of association with a vision and a business attitude. This was necessary, as the local organizations are the means to promote development in the communities.

Selection and initial evaluation of the promoters’ knowledge
For the identification and selection of the promoters, the majority of the organizations already had certain experience in the process, as they had some general and community promoters whom they called by different names (promoters, animators and representatives). The selection of promoters was the responsibility of the organizations and the community groups (where they are organized) and with support of the project in case it was warranted. Where there already were promoters, these were also required to go through the selection process and for the majority, they fulfilled the requirements and stayed. By virtue of this, selections were made in a participatory manner by the organizations themselves, culminating in 116 promoters.
(49 women and 67 men) of which nine were general promoters and 107 were community volunteer promoters. The general promoters were given stipends as they worked full time in agricultural extension and because they had to remain in their assigned area where the offices of the organizations were located. The community promoters carried out work in a voluntary manner and the incentives they received were in the form of inputs, equipment and tools for them to use as well as in their groups.

Generally, a promoter was assigned to a community group and in the case that the group was very large or that the promoter had difficulty writing, then an assistant, preferably a young person would be named so they could learn and in the future become a promoter. After the selection, a technical and methodological evaluation of the promoters took place on sustainable agriculture and agricultural extension, to assess their knowledge on these topics and in this manner, know their strengths and weaknesses which could be utilized in formulating training plans.

Elements that contributed to the sustainability of the system of rural promoters

» Training, technical and methodological assistance to the promoters. To improve the technological and methodological knowledge of the promoters, a training programme was provided that consisted basically of theoretical and practical courses such as the participation of agricultural extension activities within and outside of the area of action. The promoters and families participated in local and municipal field trips; local and regional gatherings; and established various types of field plots with community groups (field plots for experimentation, demonstrations, transfer of technology and validation).

The training period was for two years, given the need for gradual progression and follow-up in the field that was provided for each topic, and considering that learners should not be saturated with too much training at one time; and also given their limited previous experience with the learning process and because the farmers had to carry out field activities on their own farms. The training was carried out in three levels: (1) training and technical assistance provided by technical staff from governmental institutions and from the private sector given to the general and community promoters; (2) training and technical assistance that the general promoters (accompanied by the technical staff of the project and other government institutions) gave to the community promoters; and (3) training and technical assistance to the community promoters, with the accompaniment of the general promoters and given to the community farmer groups.

During the execution of the training plan, the level of knowledge of the members of these organizations improved in social organizational skills, sustainable agriculture and agricultural extension. The extension skills training was oriented to the execution of actions with an integrated vision and with a rational for work that seeks to take advantage of the available resources and inputs on the farms and, in addition, to generate an increase in the level of knowledge in the process of learning and better organizational management.
» **Strengthen and transfer capacity to the board of directors of the local organizations.** Work was carried out jointly with the authorities of the local organizations on strengthening and transferring capacities for the process of formulation, planning management and negotiations conducive to seeking complementary resources to subsidize the extension service, as well to as promote the relationship with other institutions for their technical and financial support, all with the goal of continuing to finance the rural promoters.

» **Incentives for the farmer groups.** The incentives have as an objective to contribute to the strengthening of the organizational skills and the production and business capabilities of the group with the goal of reaching a state of self-management, a key to the adoption of new practices. Incentives in the form of inputs, tools and equipment also served as support for the beginning of new projects that generate income.

» **Equipping training and learning centres.** These centres were an important element in the work of supporting the promoters so they could carry out, in a comfortable and efficient manner, the work of agricultural extension with their groups. It was necessary to create adequate conditions to hold technical meeting and planning; and to impart capacities. In addition, supplies such as teaching materials, furniture and reference documents were important for training of the groups.
Advisory services to local organizations for income generation. To ensure that the use of rural promoters is sustainable, the issue was raised that the organizations themselves should be the ones to pay the costs of training and technical assistance. To support this process, support and advisory services were charged with helping the organization generate economic resources as a product of the implementation of productive and profitable projects that would serve to pay the promoters, and as such contribute to their sustainability. On one side, field trips were carried out where existing organizations had been able to make their own extension system sustainable. In addition, work was carried out closely with the directors of the organizations to seek and put in place services and projects that generate benefits to both the farmers and the organization. This financial support was on a decreasing basis depending on the increased improvement of management, the generation of income and the involvement of private entities.

The insertion of networks and productive value chains. With the goal of having the work of the promoters become economically sustainable, it was important to identify and adopt measures which would produce economic benefits to the organizations as well as the farmers. One additional measure was to attempt to insert and involve the producers from a productive value chain into organizational networks and partnerships with private enterprises.

Principal accomplishments of the experience

As a result of the promoters’ efforts in the Teaching and Learning Centres and on the farms of the group members, a total of 2,350 families implemented 26 sustainable agriculture practices. The majority of the practices were carried out utilizing local resources and knowledge. Among the products obtained from the application of the practices were: the production of 4,902 tons of solid organic fertilizer, 22,707 liters of liquid organic fertilizers, and 7,032 liters of organic insecticide. In addition the small producers were able to maintain and improve 602 hectares through soil conservation measures. Also, a
total of 1,451 families implemented sustainable agriculture livestock practices by using by-products to make liquid and solid organic fertilizers. These practices were the ones that were of most interest and had the greatest impact, resulting in less dependence on external inputs and better soil conditions.

This model of the rural promoters costs less when compared to conventional systems (Ortiz, 2001). The cost for training, technical assistance, supervision and incentives per family and per year was 72 US dollars, of which 26 percent came from the local organizations (in-kind and monetary).

Using rural promoters was a strategic instrument that permitted the local organizations to assist more families than were defined in the project document (3,827 and 1,000 families respectively) with training and technical assistance services on their own farms, applying the methodological focus of farmer-to-farmer.

With respect to the family farming production systems, these improved in a significant manner; reflecting increased efforts on agricultural and livestock sub-systems which is viewed as better diversity of production and improved interaction among components which translated into greater stability and sustainability of the farm system.

Of the socio-economic indicators evaluated, the importance of the following was clear: (1) there was an observed decrease in the amount of off-farm employment which implies the family invested more time on the activities on their own farm; (2) there was an increase in the sale of products generated from farm crops and livestock production; (3) there was an increase in inputs generated on the farm for production which contributed to greater efficiency and productivity in the production systems; (4) there was a significant increase in the amount of food grown for household consumption; and (5) there was an increase in the use of family members to work on the farm as a result of an increase in the number of production sub-systems and due to the improvement of the existing sub-systems.

**Lessons learned**

The use of volunteer rural promoters is a form of work aimed at the development and well-being of the community. Here, the promoters give of their time without receiving remuneration with the objective of supporting members of their community and/or their group. The effectiveness of their work stems, in large part, from the credibility that they have in the eyes of the community. This credibility is earned based on their sacrifice and voluntary service in support of others. At the same time, it is extremely important for these persons, so they can continue to be effective in their work, receive periodic training and support.

The implementation of a system of agricultural extension based on the utilization of rural promoters has much lower costs in comparison with the conventional systems of extension (contracting and placing extension professionals). The lower cost of this model allows the opportunity to provide greater coverage for the service.

The partnerships of local organizations through formal instruments such as letters of agreement, can be an important mechanism that permits the transfer of resources and
responsibilities to the organizations, enabling them to provide extension services to their groups through the use of promoters.

» To begin a development intervention, in this case by extension, it is very important to establish an adequate base with the target population founded on valuing and recognizing local capabilities and knowledge and recognizing the importance of experiences previously generated by these populations.

» The institutional partnerships and coordination among organizations can be a key and crucial element in improving the effectiveness and efficiency of an extension service with rural promoters. The contributions and support that come through these organizations can be utilized in a better way for the population when they are channeled by the promoters who at the same time orient the groups on their proper application.

3.3.3 **Capitalization of incentives for innovation**

In addition to providing inputs and support to the technical training, the new Guatemalan advisory services seek to support the strengthening of human and social capital of community groups and their members. It should be noted that the description of the following practice seeks to reconstruct and reflect on the experience of creating and managing seed capital, known as the process of capitalization of incentives provided by the project to the benefitting farmers and their families. For the readers who are not familiar with the concept of seed capital, it is understood as **the total physical and financial resources that an economic entity possesses, obtained through contributions from the members and shareholders destined to produce benefits, utilities or earnings**. In other words, in this case as stated by a farmer from the community of Sutin Cubulco: *The seed capital is like a tree with potential, if I take care of it, trim it, it will give me more fruit and at the same time will have more seeds and successively multiply; and in this way the seed capital will grow.*

The good extension practice here is concentrated in the description of the experience of this new system of extension, where through a productive type project the community is motivated to **go beyond what is normally expected**; putting special emphasis in their own empowerment and community organization for their own development. This good extension practice has accomplished varied results. Its success is directly linked to the perception of the beneficiaries that this practice implies the use of seed capital. We have considered it relevant to emphasize this for its great potential and for promoting, among other things, the sustainability of farmer organizations and the empowerment in decision-making.

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35 Original source: Seed Capital in an Emergency Project. Document revised by a FAO team (Rubí Lopez, Gustavo García, Estuardo Pacheco y Araminta Galvez). The original document of integrated research was by Claudia Maria Villagran, Lyz Mellina and Elizabeth Bacaro. FAO January 2011. (Available in Spanish only)

Background and context
With the support of the European Union and with the goal of reducing the impact of increased food prices on the most vulnerable populations, FAO began in 2009 the project called *Extraordinary Programme of Support for Food and Nutrition Security*, better known as the Food Facility. In a coordinated manner the MAGA, the Secretary of Food and Nutrition Security, the Food Facility Programme is working through letters of agreement in three departments of the country (Alta Verapaz, Baja Verapaz and El Quiche) with 22 116 families and with the extension service from 14 municipalities and an NGO which promotes developing capacities within the local governments, who at the end of the project (estimated for July 2011) would be those in charge of giving follow-up to the activities jointly with the National System of Agricultural Extension of MAGA (SNEA). For this good extension practice, the project carried out in Baja Verapaz is described.

What is understood by incentives and by capitalization

As has been commented on earlier, the utilization of incentives has as its objective to support the development and strengthening of human and social capital, for adequate self-management of the natural, physical and financial capital; so that in concert these factors guarantee the most needy persons a life with dignity, fair public policy and equality, as well as the sustainability in rural development (SPFS, 2007, p. 18-20).

Incentives are understood as those goods and services that complement the execution of a project, with the intention of stimulating and motivating a sustainable process of development and empowerment of the participating population. The types of incentives to be utilized in a project may include:

- **Training and capital.** Learning and/or the strengthening of knowledge and/or abilities.
- **Technical services.** Marketing, technical assistance and/or organizational strengthening.
- **Food.** Goods of collective food to be consumed.
- **Equipment.** Tools, equipment and facilities (physical capital).
- **Economic inputs.** Funds destined for the promotion of environmental services, partnerships, local financial services, etc.

The incentives, in accordance with the FAO guidelines, must be applied under the following fundamental principles:

- **Priority toward the poorest and equality in the distribution of inputs.** The distribution must be differentiated according to needs and independent of the ethnicity or gender of those who receive them.
- **Avoid patronage.** The incentives should be managed from the point of view of demand and should not create dependence among those who receive the incentives.
- **Complementarity.** The incentives should complement those inputs provided by other institutions that work in the area.
» **Temporality.** The incentives must facilitate the beginning of the process but should not be used during the entire period of execution of the process. In any case, it is preferred to apply this only one time and always when the incentives will boost the capitalization of those who use them.

» **Invisibility.** The processes should not depend directly on the existence or absence of incentives. The results of the process should be visualized by the realization of concrete actions by the actors and not as a result of the delivery of incentives on the part of any institutions.

» **Promise of repayment.** Every person who receives inputs must promise to give something clear and formal in return that will benefit the rest of the participants and the community.

» **Formality and transparency.** The incentives must be delivered through a formal and transparent process that includes documentation.

» **Materiality.** The use of monetary incentives should be keep to a minimum.

» **Support for the innovation.** The nature of the incentives can support any process that implies development, including technological innovation.

Capitalization is considered a product or effect that transforms a service or good, delivered in the form of an incentive that is ultimately effected by persons, families, organizations and the participating community. Capitalization can be translated to mean learning in the formation of attitudes or new and/or better abilities related to the financial, physical and natural capitals of their homes. Capitalization contributes to empowerment and increases in linkages with more sustainable decision-making and the generation of micro-credit funds for small income-generating projects.

**Principals that orient the functioning of the seed capital in the project**

It is important to mention that the Food Facility Programme is above all a productive type of project. The productive aspects of the project are not the objective of this case study described here. The conditions in which the communities found themselves were determined at the moment a decision was made deciding which would be part of the processes of seed capital. The practice that is described in the following is part of a production project implemented in 59 communities in the municipalities of El Chol, Granados, Rabinal and Cubulco all of which are in Baja Verapaz. The number of families that have benefited has come to a total of 3 800.

The inputs offered to these families were chemical fertilizers, chicken manure (organic fertilizer), foliar fertilizers and veterinary supplies. At the time inputs were distributed it was suggested (or in some cases required) by the FAO technical team that the communities create a seed capital fund. In the majority of the cases, the seed capital was accepted by the various interest groups that began the process. The technician suggested, among other things, some ideas concerning used of the seed capital, such as creation of small communal banks and the purchase of agricultural inputs at wholesale prices.
According to the final mission document of the Food Facility Programme (GCP/GUA/020/EC), as of June 2011 the collection of seed capital in the four municipalities reached a total of 674,573 Guatemalan Quetzales (equivalent to approximately 80,950 US dollars).

Normally the seed capital is utilized as a small communal bank to favor the beneficiaries of the project. These groups seek to offer and/or access small credit with a lower interest rate than is available with national banks (the interest rate applied to the loans was from 3 to 6 percent, the most common rate being 5 percent).

The largest part of the micro-credits offered were used to satisfy needs in the home when there was no source of work, for example medicines. A smaller amount of money was used to invest in agricultural inputs. The maximum time to restore the money to those who administered the credit was four months and the follow-up was carried out within the group of beneficiaries. Some communities used notary documents (promissory notes) and others requested loans with collateral, using copies of real estate documents.

The delivery of inputs was backed through an internal process of the group of beneficiaries and a copy of the documentation was given to the field technician as an external demonstration of proof. Despite the fact that no community had established their own administrative regulations concerning the seed capital, they showed that they had applied some sanctions when a beneficiary did not return the money within the time established. The sanctions could be that the individual would not have the right to request another credit in the short term, or the need to execute a notarized promissory note and/or incur an increase in the rate of interest.

It is worth mentioning that it is estimated that those communities where they used the internal process as the only backing mechanism (instead of notarized documents) and where the amounts approached the maximum allowed, there was more risk that the seed capital would perish. To the extent that the capital given as credit is high and the guarantee is sustained only on the word of the debtor, is more probable the none of the capital seed money will be recovered, especially in those cases in which the person is seen as being temporarily or completely unable to meet his or her obligation to pay.

**Principal accomplishments of the experience**

The perception of the communities is that the project in general (including the support for the productive part, as well as the implementing of the seed capital), has introduced important changes in the forms of community organization; in the technology of production and care of animals; as well as in the agricultural knowledge of farmers; and in the manner in which they invest resources.

Before executing the project, a request was made to participating groups (promoters, participants, leaders and community leaders) to produce a drawing that would show the initial situation in their communities to become aware of production techniques and care of animals as well as their agricultural knowledge. For example, Figure 10 illustrated the situation in the community of Chitanil where the animals are malnourished and are located very close to the

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houses. In addition, the cultivation of vegetable is affected because it can be seen that they are being eaten by chickens and pigs.

**Figure 10: The initial situation in the community**

After the execution of the project, a request was made of the participating groups to make another drawing and it could be seen how the project promoted the enclosures for animals in specific corrals according to their type. This has contributed to the increase in weight in the animals. In the case of chickens, a prophylactic plan has been initiated that has resulted in the reduction of death due to contagious diseases. One promoter from Sutun said: *If before the animals were outside it is because we thought they would eat better and get fatter, now we know that this is a lie, inside they are more protected; many of us have layers and we place them apart inside the chicken house.*
Lessons learned

Some of the key factors contributing to the success of the implementation of the seed capital projects in the communities are:

- **Community organization.** The fact is that it is the families, through an assembly, who decide in a participatory manner the most adequate form of capitalization of incentives, which facilitate the process of empowerment.

- **Transparency in decision making.** The participatory selection of the group that will manage the capitalization of incentives in each community permits the process transparency in the administration of resources; and elevates the credibility of the administrators and the mutual confidence of and among the beneficiaries.

- **The men and women who are promoters are community volunteers.** This is a strategically important factor in the capitalization of incentives.

- **Respect for the structure and the legitimate authorities.** The mechanisms of approaching and entrance into the communities, respecting the structures and legitimate authorities of the communities contributes to the formation of the capitalization of incentives. In addition, the link of the committee that manages the process of capitalization of incentives with the municipal authorities and the government services of extension is an important factor in that it permits the generation of interest on the part of the authorities toward the communities that administer funds for the capitalization of incentives.

- **Training Component.** The implementation of the capitalization of incentives in the communities must be accompanied by training in administration, management and management of funds for each of the committees formed.
» Confidence and previous experience. When families have not participated in similar projects or have had negative experiences, it is difficult to integrate them into the process as they tend to fear risking the economic resources they have.

» Participation of women. In the communities that have experienced the greatest success with the capitalization of incentives, the responsibilities within the committee have been assumed by both men and women.

» Requirements and suggestions: When the capitalizing of incentives is perceived as a requirement to receive the inputs, it lacks attractiveness for some families and they remain solely to not be excluded from the project.

» Information and clear rules. The mechanism for information concerning the administration of the capitalization of incentives must be strong, clear and transparent to provide the confidence concerning the destination of the funds.
3.4 SYSTEMATIZATION OF THE GOOD EXTENSION PRACTICES IN HONDURAS

SUMMARY

Big changes have taken place in agriculture and in rural areas of Central America. The economic sectors have been stimulated by greater access to technology, aggressive markets, increases in demand and substantial changes in institutions. As a consequence, there was a need to revise, salvage and reorient or reinvent the concepts of rural development and agricultural extension. There was a need to revive and redefine the role of the state in the generation and transfer of technology that proved to be inefficient over the past decades. The governments of the region wanted to make changes and the initiative was supported by the Research and Extension Sub-Division of FAO, Rome and the different offices of FAO in the region, which immediately identified actions to support this process in the various countries. The effort deals with trying to use knowledge of existing successful experiences that are considered good replicable practices in Central American countries to improve the overall modalities of extension in the region; becoming part of a process of innovative methodologies in agriculture. In Honduras, there are innumerable good extension practices implemented through specific projects in association with other local institutions or partnerships among the actors in the value chain of production and marketing. In this document, three experiences have been identified where good practices support a competitive component that permits farmers to differentiate their products and compete for better prices under organizational models and management which improves the capacity of the farm families to be more efficient in the management of their livelihoods; and as a consequence, receive better prices; gain access to fair markets; and learn new cultivation and processing techniques. The learning gained from these experiences can provide elements for proposals to update public policy in relation to agricultural, rural development and rural extension.

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KEY WORDS

Extension, territory, rural bank, denomination of origin, fair markets
3.4.1 Rural development with a territorial focus: organization and management experiences to improve the capacities of targeted families by extension services

Introduction

The experience was developed within the framework of an agreement between the Inter-American Institute for Cooperation on Agriculture (IICA) and the Rural Development in Fragile Ecological Zones in the Trifinio Region Project (PRODERT, acronym in Spanish). Trifinio is a region shared by Honduras, El Salvador and Guatemala.

PRODERT was implemented with funds from a loan from the Central American Bank for Economic Integration (CABEI) and executed at the national level by the Secretary of Agriculture and Livestock (SAG, acronym in Spanish) for the Trans-National Commission of the Trifinio Plan. PRODERT proposes, to implement a pilot experience of rural development with a territorial focus based on increasing the coverage of the extension and advisory services to farmers with local resources. The experience developed in the municipality of Belen Gualcho in the western part of Honduras between 2006 and 2008.

Figure 12: The local area and the actors

Principal characteristics of the territory and of the experience in the territory selected

The Municipality of Belen Gualcho is located in the eastern part of the Department of Ocotepeque which is in western region of the Republic of Honduras, 82 kilometers from the departmental capital, the city of Nueva Ocotepeque. Belen Gualcho is an area of 156.9 square kilometers and is one of the most populous areas with the highest altitude in the country, between 1 400 and 2 000 meters above sea level. There are 16 301 inhabitants distributed in 17 villages, 14 hamlets and four neighborhoods. Ninety-seven percent of the population
has indigenous origins from the Lenca group and they still maintain their own customs. The most important productive activities are high-altitude vegetable and fruit production, coffee, maize and beans. On a small scale, cattle and small animals are managed as activities for home consumption for the family.

For more than 20 years NGOs, international cooperation agencies and official programmes have promoted an integrated development process in this region; noteworthy among the NGOs are the Brotherhood of Honduras, Association of Non-Governmental Organizations (ASONOG, acronym in Spanish) and Global Village. Major projects have included the Rural Development Project for the Western Region (PRODERO, acronym in Spanish), the Agricultural Development Programme for the Western Region (PLANDERO, acronym in Spanish), PRODERT and the Millennium Challenge Account. For this case study, Belen Gualcho was selected because it has the following characteristics: a physical delimitation that corresponds to one municipality; high interest on the part of the municipal mayor to implement the experience; more than 90 percent of the population are ethnic Lenca; and the local area is located at an altitude that goes from 1 400 to 2 000 meters above sea level, with ecosystems that delimit it. The principal economic activity is the production of high altitude fruits, vegetables and coffee, and characterized by an integrated economy with a good level of activity and growth.

**Characteristics of the experience**

Essentially, the experience consisted in demonstrating the concepts and principals of the rural territorial development as an opportunity to channel extension services and as a viable alternative for the population to significantly improve their lives and, as a consequence, to obtain greater efficiency in the management of their livelihoods. At the end of the experience, an agreement was reached on the concept of rural territorial development as being a simultaneous process of productive transformation, human and institutional within a determined rural space where the goal is to reduce poverty and conserve natural resources.

For the concept “territory” a definition by Jara (2005) was adopted: a geographic space constructed socially, economically and culturally. It is a dynamic concept and is in a permanent state of construction. The territory, according to how the Central American Territorial Development Strategy was established, it is not only a physical-geographic space, but also a social construct where the inhabitants share a sense of identity.

**Principal social and institutional actors interacting in the experience**

The role of the different actors and their contributions to implanting the process of territorial development is seen in the following manner:

- *Municipal government.* Officially recognizing the requesting group as a focal point for the development in the municipality, incorporating relevant topics in the sessions of the municipal corporation and managing community projects.

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38 Fortín, Marco Tulio. ICA (2010), Summary of the Participation and Empowerment of the Group Manager in the Development of the Territory of Belén Guacho, Ocotepeque, Honduras, pp 1-2. (Available in Spanish only)
» **Global Village and Brotherhood of Honduras.** These actors provided a generation of systems and methods of extension oriented to the diversification of agriculture, including the implementation of irrigation projects with small farmers; clean energy projects using solar panels; execution of a marketing programme for vegetables; and the establishment of agreements for buying and selling with merchants, exporters and supermarkets; carrying out training of the organization of families of the Farmers Association of the High Plains of Celaque; training and technical advisory services for the producers of vegetables for urban markets.

» **Millennium Challenge Account.** Financing for the irrigation structures, produce collection centers and a market intelligence center - implemented by Global Village and the Brotherhood of Honduras.

» **Farmers Association of the High Plains of Celaque.** The implementation of vegetable projects under irrigation and organizational strengthening of the association.

» **Rural banks.** Tasks related to second degree financing (recovery of loans with funds from PRODERT and other programmes); management of the legal person status for the community banks and the second degree entities; management of financing for the programme to improve housing; financing of agricultural incentives; and marketing of their members.

» **Catholic and Evangelical churches.** They offer transparency and moral support for the process, promoting the cultural initiatives such as the history of the municipality and having the old church declared a national monument.

» **Inter-American Institute of Cooperation for Agriculture (IICA).** The principal function of IICA in the process has been to increase the quantity and quality of the human resources of those who work in extension in the territory (public, private, municipal and NGO services); technical and methodological support for the preparation of the territorial development plan and the investment plan; a study of the market in the principal marketing centers of the West, San Pedro Sula and San Salvador; general support to the territorial studies; development of a programme for the training of leaders; training in micro-businesses, business plans and marketing; technical support in the preparation and management of irrigation projects; technical accompaniment in the creation and functioning of the Management Group; and generation of knowledge with the analysis of information generated from the experience.

**Global vision of the experience and intervention strategy**

The experience consisted in the integration of a local agreement on the part of the municipal government, the institutions of the central government, organized civil society actors in the territory and the NGOs, to provide leadership for a process of rural development with the principals, and methodological and conceptual instruments that have a focus on territory. This partnership is known as the Management Group.

The intervention consists in the selection of the territory using economic, environmental, cultural, institutional and social criteria. After selecting the territory of the municipality of Belen Gualcho, among five proposed, a study of the territory was carried out with diagnostics
using secondary information, an inventory of investments, a mapping exercise of social actors, and a study of local leadership. These studies served as a base for integrating the group managers.

What was learned through the study of the territory permitted the actors represented in the management group and the support organizations to define the coverage of the extension services and the productive activities contributing to growth in the territory. The activities for growth identified were high altitude vegetables production, coffee and tourism. For the high altitude vegetables, the priorities for production were potatoes, cabbage and carrots. Elements such as urban markets, institutional strengthening and partnerships with the actors were considered horizontal factors in the entire process and as a new theme to be part of the intervention of technical advisory services provided by the organizations responsible for technology transfer to the farmers.

The Management Group, after identifying the productive factors of development, carried out studies with a focus on value chains, elaborating these factors in each of the diagnostics. A plan of action was created with technical support from the extension services of the NGOs and the cooperation programmes. A territorial development plan was then prepared that included a programme of investments representing urgent needs suggested by the actors. In this way, they themselves constructed the vision that leads to sustainable improvement in the conditions of life in the territory in line with established cultural patterns.

**Description of the experience**

This section will demonstrate how to carry out in practice a focus on rural territorial development in a concrete manner, in this case in the municipality of Belen Gualcho. This focus drives sustainable development in the economic-productive, social, institutional and cultural dimensions mobilizing the social actors and institutions in the territory of Belen Gualcho, pushing for systematic changes, generating new opportunities, and strengthening capacities in order to reach their potential for the agreed upon future project.

The territory became a platform for the practice of extension under more favorable conditions towards better quality of the services; those who are farmers have more possibilities to use innovative practices and connect to fair markets.

**Results reached**

» Though the contracted extension services, a total of 300 small vegetable farmers have been linked to external markets. They have incorporated drip irrigation techniques and terraced production systems with plans to delivery from 25 thousand to 40 thousand pounds of vegetables per week to supermarkets in San Pedro Sula and Tegucigalpa as well as to exporters such as Hortifruti and Mejia Investments.

39 In the diagnostic study meetings, farmers, providers of technical services, merchants, local promoters and some of the suppliers of inputs participated; with these actors it is hoped to consolidate the productive groupings in the territory.

40 Taken from the Central America Territorial Development Strategy, 2010-30, p 4.
» Physical capital strengthened with the construction of a collection centre for vegetable crops and a market intelligence centre.

» Integration and functioning of the Management Group with municipal recognition and with political advocacy in the territory.

» A territorial development plan with investment programmes in the project that have to do with the different dimensions of development, elaborated and implemented by the actors themselves.

» Making available alternative financing such as using the “second floor” approach.

» Strengthening the institutionality of the rural community savings and loan banks and second grade with legal recognition in order to provide financing and incentives for family agricultural.

» A new vision of extension work toward programmes to improve housing with rotating funds with a value of 48,770 US dollars through 13 community savings and credit banks, in 8 communities where 24 families have installed solar panels to generate electricity.

» Recover and maintain cultural values through the development of materials on the culture and history of the municipality.

» Develop social and human capital in association with farmers from the high planes of Celaque that includes 300 families.

» Territorial studies, territorial development plan and an investment plan for the territory.

» A training programme developed for leaders.

» Training in micro-businesses, business plans and marketing with food safety good practices.

» A diagnostic study on the potential for tourism in the territory.

» Since 2006, once a year a forum on sustainable rural development has been carried out with a focus on the territory as a time to share experiences and energize participants from the territories. In the second forum, accomplishments with the experiences was presented in the high zone of Chalatenango in El Salvador as well as Belen Gualcho in Honduras41.

» Heads of State from the countries that are part of the Central American Integration System agreed on 5 December 2008 to instruct the Central American Agricultural Council to prioritize the formulation of a Central American Strategy for Territorial Rural Development. This strategy was approved at the presidential level 30 June 2010 by the Summit of Heads of State of the Central American Integration System.

» In Central America, the implementation has been initiated for the strategy with funds from AECID in five territories in the country, within which Belen Gualcho is included.

41 The forum was made up of a multi-disciplinary and integrated institutional team by international organizations such as the United Nations Development Programme (UNDP), IICA and FAO, the Pan-American Agricultural School, Zamorano, the National School of Forestry Sciences, the National Autonomous University of Honduras, the Regional University Centre of the Atlantic Coast, and public, private and social sectors of the economy.
Methodological technical aspects crucial to the success of the experience

» Political support to the process on the part of the municipal government.

» Dedication and contributions of the members to the Management Group for the development of the territory.

» The opportunity to have financing for irrigation systems and productive infrastructure on the part of the Millennium Challenge Account.

» Linkages of small vegetable producers in the territorial economy with a dynamic market.

» Increase in the technical quality and methodology of human resources who work in extension.

Lessons learned

» Insight into a model of community intervention through a legitimate and validated territorial focus and the incorporation of tactical and scientific criteria for making decisions about the alternatives to development, food security, fighting poverty, and the coverage of the extension services.

» Importance of leadership, technical as well as methodological, with professional respect from the institution that manages territorial development. These are highly valued aspects at the level of territory, including the actors who implement the experience and contributed from the beginning to the success of the process.

» The figure of group manager is an issue that requires agreement and legitimacy. This is established at the outset of the process to implement a territorial focus.

» This mechanism is an opportunity that contributes to the sustainability of the actions of the extension services; the social actors and institutions which value their cultural identity and their own potential.

» Through the organization of the Management Group, a process developed for training human capital allowing a positive participation in the planning and identification of investment priorities in the territories; at the same time strengthening the development of social capital, an objective recognized as basic to rural extension services.
3.4.2 Participation of small coffee farmers in high value markets through the use of the protected denomination of origin trademark for Marcala coffee

Introduction

In reality, good agricultural practices become a component of competitiveness that permits the rural producer to differentiate their product from the other products on the market, with the implication that this supposes better process, access to new markets, new cultivation and processing technologies, etc. In this context the contribution of the extension system to increase the profitability, sustainability and the benefits for small scale agriculture is aimed at satisfying the demands for food security that farmers face, and their desire to compete in the market of products (Christopolis, 2009).

The small coffee producers of Honduras are an example of farmers linked to an agricultural product for export on a large scale and with high value which could not be obtained directly for multiple reasons, even though it signifies the livelihoods for 100 thousand families in 15 of the 18 departments in the country and represents 33 percent of the country’s gross domestic product and 14 percent of the total gross domestic product. It generates in total a productive chain of more than one million direct and indirect jobs.

The incursion into the high quality market had been limited because the coffee produced in the country has traditionally been considered of bad quality, which meant that the majority of the coffee produced in Honduras received low prices in the international market.

Coffee production is an activity that is associated with many risks due to the degree of uncertainty of prices and for this reason it creates a vulnerable position, particularly for the small producers who represent 90 percent of the total (IHCAFE, 2008).

Within the framework of this context, in the last few years, coffee produced in the Marcala Region has obtained a certain positioning, reputation and notoriety in the world market of beans. It has obtained exceptional qualifications, which is very important to the recognition of its quality and organoleptic (sensory properties of coffee such as taste, color and smell) characteristics, agricultural technologies, ecology and socio-cultural aspects proper to this region, awarding it with the best differential prices.

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From these conditions, since 2005 the coffee farmers organized small businesses or cooperatives in the region, together with marketers worried about protecting the name of their coffee and with support from international cooperation and the coffee extension services, formed a partnership to reach the goal of acquiring the legal designation of Denomination of Origin for Marcala Coffee. Denomination of Origin constitutes a mechanism to protect the producer, the consumer and free and legal competition.

At least 14 small coffee businesses involved with the Denomination of Origin for Marcala Coffee effort are used in this study to provide precise information and to be used as a reference for the case of the Marcala Organic Coffee, Limited Liability Company (LLC) (COMSA, Acronym in Spanish).

Principal characteristics of the territory, the population and the project

Characteristics of the territory

The City of Marcala is located 50 kilometer from Tegucigalpa, in the centre of the country. The zone where Marcala coffee is produced is an average of 1 430 meters above sea level. The average temperature is between 18 and 20 degrees centigrade; and the evapo-transpiration rate oscillates between 110 and 162 millimeters per month; in addition, the relative humidity is a minimum of 65 percent and a maximum of 84 percent. Annual precipitation is 1 265 millimeters with more or less permanent cloud cover. These factors affect the quality of the coffee, in these altitudes, the intrinsic attributes of coffee such as its body, acidity and aroma are more balanced and express these better qualities.

44 A Denomination of Origin, according to the World Intellectual Property Organization, is a special type of geographic indication that serves to distinguish and protect a product with special characteristics, exclusively derived or essentially from the natural and human factors unique to the geographic place of origin.

Characteristics of the population

The Denomination of Origin for Marcala Coffee is made up of approximately 202 villages in 19 municipalities located in the Montecillos Mountains with a population of beneficiaries of approximately 8,000 families of small coffee producers (with an average of 4 hectares of land and a production of 15 quintals ‘gold’).

Eighty percent of the coffee producers plant alternative crops in the productive units, the most common being maize, followed by beans and on a smaller scale, vegetables and fruits. Fifty-seven percent of the heads of families have had only a primary education.

Characteristics of the project

The Association Denomination of Origin Marcala Coffee Project is an initiative with technical and financial support by the integrated partnerships of the Honduran Institute of Coffee (IHCAFE, acronym in Spanish), the Spanish Agency for International Cooperation (AECID) and the producers of coffee in the Marcala Region. The partnership came about to lead the legal process for the inscription of the first denomination of origin in Honduras and Central America with the purpose of protecting this special coffee from encroachments in the market and position the small coffee producers for the possibility of entering the international markets.

As a complementary objective, it was an attempt to contribute to consolidate the productive value chain through the certification of their products, thereby improving their competitiveness so they could enter more profitable markets.
In November 2005, the partnership was able to inscribe the Association Marcala Coffee in the Registry of Merchandise Property of Honduras as the Association Denomination of Origin Coffee Marcala, being backed at the national level by the National Council of Coffee and at the regional level, as producers of coffee, by IHCAFE and the Regulator Council.

Marcala Coffee developed a work plan to take care of the demands of development and maintenance that is requires by the Denomination of Origin, through four strategic and inter-dependent components: organizational, legal, marketing and technical.

Strategic intervention

The intervention model was centered in the extension service supporting the organized producers in 14 cooperatives and/or private businesses. The extension and advisory services were given on request by the Honduran Institute of Coffee (IHCAFE), a private entity with financing by the producers themselves at the national level through a percentage of the money paid per quintal of coffee exported.

NGO extension services have also helped and recently businesses formed by the producers themselves as is the case with COMSA; that in 2011 initiated a training programme for the organic conversion of the farms of the members with a team of technical staff (that are also members and producers) including one non-academic producer. It is important to emphasize that the extension service not only supports traditional cultivation practices, but as a result of the effects of training and technical assistance from previous projects and advice from previous projects and the IHCAFE, the farmers are able to maintain discipline in their work.

The technical assistance and training is oriented to the topics such as:

- The management of the coffee bean processing in accordance with the required norms of the regulations for Marcala Coffee, the same as required by the special markets.
- Techniques for marketing and negotiations.
- Administrative matters.
- Keeping at the forefront the basic conceptual fundamentals for the Denomination of Origin in order to develop an awareness and a base of support to the initiative in the coffee region covered by Marcala Coffee.

Principal actors

In this process all the actors of the coffee chain are involved, where according to the 2009-2010 report, there are 1 383 producers inscribed, 14 producer businesses and/or cooperatives, 13 intermediate merchants, 14 export businesses, one roasting factory and one broker.

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46 Among others: COMSA, RAOS, CARUCHIL, CABRIPEL, Choacapa Coffee, MARCAFE, COMBRIFRON and COMUCAP (organization made up of women).
47 Marcala-Goscaran Programme (SAG-COSUDE, 1982-1992), Promotion and support to the formation of the CARUCHIL and CABRIPEL Cooperatives.
48 In May 2011, 1 553 members were registered; personal interview of agronomist Rodolfo Penalba, Manager of COMSA.
AECID, IHCAFE and the foundation for the investment and development of export markets and the Foundation for Rural Development (created and supported by COMSA) are directly linked to the process as technical and financial support for Marcala Coffee. They also maintain strategic relationships with 19 municipalities, with financing cooperatives, national and international banks and commercial businesses of coffee such as Royal Coffee, Equitable, Gepa German, Sustainable Harvest/SHG FTO and Gustas Canada.

COMSA is linked for financial matters with the Western Bank; Savings and Credit Cooperative INYIBUCANA Limited; Financial Alternatives of Belgium, Responsabilité; Shredinterest; and for fair marketing matters with FLO Central America (Fair Market Certification).

Description of the experience

In this experience, the good practice that is visualized is the work of the extension service in consolidating the productive value chains by strengthening the capacity of the small coffee farmers to improve the competitiveness of their product so they can enter a more fair market with greater value.

The producers through the organization in small businesses are able to place their product in European markets at prices significantly higher than the traditional markets, with a resulting improvement in food security and their quality of life.

The efforts, the procedures, the problems that have been overcome, the model of technical assistance, the organization of producers and the institutionality is replicable, not only with coffee, but with other agricultural, artisanal and forestry products which can achieve a similar position in the market.

Support and interaction of the different actors

Marcala Coffee has shown a great amount of activity through the different components, from coordination, preparation and implementation of an annual meeting of members, to the registration of affiliates, the certification of lots of coffee, carrying out studies of the quality of the coffee beans, training in the system of quality control and traceability of the denomination of origin, development of a plan to improve the humid processing (infrastructure and management of the sub products of coffee), socialization of the system, geo-referencing of the farms, administrative training for the businesses, lot control, publicity campaign for the trademark, and international relation with high value markets. For their part, the businesses/ cooperatives established buying-selling contracts with the purchasing companies and the banks; these are the same entities who provide financial resources for the commercialization of coffee and to cover the investment needs of the members, buy coffee and affiliate members.

COMSA, through the extension service, trains the coffee producers to convert their farms into organic operations, finance the acquisition of organic inputs with their own resources, and

49 FAO, SPFS, Hunger to Know, Know of Hunger.
accompany the farmers in the process of certification, including fair trade markets with the Central American FLO.

Technicians of IHCAFE designed the installation of the COMSA coffee processing facility, at the same time this business awarded scholarships to sons and daughters of farmers to study at the Central American University in Nicaragua, and supported the improvement in the infrastructure of schools and helped the Red Cross.

The AECID provided technical support and financing (50 percent of the budget) for Marcala Coffee, coordinated a study for the systematization of the experiences, and they are the technical and methodological references for the process of Denomination of Origin.

The IHCAFE defined the profiles of the different qualities of a cup of coffee and delimited the area of the Denomination of Origin. In the training component they made available a system to take care of the needs of the actors in the commercialization of the coffee value chain and the establishment of the Superior School of Coffee (taster’s school, promoters school, administrators of coffee businesses and rural mechanics, coffee processors and farm administrators).

Accomplishment and benefits achieved

» Accomplished the inscription of the trademark for coffee using the Denomination of Origin Marcala Coffee (Denomination of Origin Marcala Coffee Association), a first for Honduras and a first for Central America.

» At least 14 businesses and/or cooperatives comprising 1,553 small farmers from 19 municipalities have connected to the market, establishing channels of commercialization under fair conditions.

» Strengthened the capacities of farmers for competitiveness in order to enter the high standards and high-value markets.

» Reduce the effects of middle persons in the marketing of coffee, as a consequence the small farmers are able to obtain good prices on a continuing basis, reducing the effects of great vulnerability due to a volatile market (traditionally 90 percent of the small producers sold their production to intermediaries).

» Valuing the effort to protect the environment and obtaining differentially higher prices as a result of the organic management of their farms (as is the case with COMSA in 2010: more than 25 percent above the standard price of coffee).

» Significant contributions in human, social, environmental and productive development based on self-management and with a focus on salvaging their customs, good practices and intelligent management of local resources.

» Expanded the coverage of extension services, obtaining greater efficiency in costs by using local human resources. New topics have been incorporated into the extension service, learning from practice and generating experiences in the field with ample possibilities for young technicians to make a career.
» COMSA in the 2010-2011 harvest sold 50 thousand quintals of coffee, including 17 thousand with the Denomination of Origin to special markets.

» The members of the businesses/cooperatives have participated by promoting their coffee in five international fairs (two in Europe, two in the United States and one in Mexico).

» For the coffee competition organized by the Specialty Coffee Association of America, with samples of coffee, Mr. Fabio Caballero took third place at the international level. In the competition of the international Cup of Excellence, five members of COMSA were part of the ten best coffees, which signifies sales contracts of up to 30 quintals at an average price of 1,500 US dollars per quintal and long-term selling-buying relationship.

Technical methodological aspects crucial for the results obtained

» The crisis of low coffee prices from before 2005 and the financial downfall of the principal coffee cooperative in the zone, COMARCA (Marcalina Coffee Cooperative).

» The reputation and better positioning reached for Marcala Coffee in the last several years.

» The appropriations that actually exist on the part of those affiliated and the promise to maintain the quality of coffee required by the international markets.

» The good prices over the past several years has stimulated the interest in investing in coffee.

» The reactivation of the cooperative and the formation of new businesses of coffee producers.

» The extension services specialized in topics of markets and the norms of high quality markets and the extension modality assumed by the same businesses.

» Support from international cooperation and national entities related to the export of coffee and support to the producers.

Lessons learned

» The businesses/cooperatives took on the role for technology transfer and advisory services for the small coffee farmer.

» In this experience, four objectives of extension can be seen: technology transfer, development of human capital, the creation of social capital and sustainable management of natural resources (Swanson, 2008).

» Improvement in the price paid for coffee contributed to food security for the farm families and the generation of a more dynamic local economy.

» The expansion of coverage of the extension services with local human resources which improved the quality of the services and at a lower cost.

» Partnerships of the cooperating organizations and technical advice with the farmers empower the extension service which resulted in services provided that would have been very difficult if they had been acting alone.

» The transparency and the fair trade reduced the vulnerability of the small farmer in a market as volatile as it is with coffee.
» The external markets are an opportunity for the small farmer if the extension services can link the groups appropriately with these markets.

» The small farmers who are not members of any organization do not have the possibility of taking advantage of the special high-value markets.

» The transparency, the discipline, the respect for the norms, the payment of bills and the traceability are transversal to the sustainability of the channels to the market.

» The certification increases the value of the products and the products are only available to those who pay more, as such the activity is purely economic in nature.

3.4.3 The rural savings and credit banks: an intervention strategy suited to boost the work of extension with small farmers

Introduction

In the search for alternatives for rural financing, low-resource farm families have established private community entities administered by themselves (men, women and youth). After experiencing difficulties in accessing credit from private banks, they found ways to come together for solidarity, trust and transparency in order to manage resources at the level of the community and solve financial problems with their productive units, which also includes a social dimension. These entities are known as rural savings and credit banks (from here on referred to as banks)50.

The database of the National Plan for Rural Banks\(^5\) indicates that there are 3,700 rural savings and credit banks functioning in Honduras with 77,162 clients of which 59 percent are men and 41 percent women. They manage a volume of capital in the amount of 1,591,376 US dollars.

The Rural Development in Fragile Ecological Zones of the Trifinio Region Project (PRODERT 2006-2008) used rural savings and credit banks as an entry point strategy of the project which continues even today.

Based on the above and considering the multiple good extension experiences at the national level, the case of PRODERT (2006 to 2008) was selected since it was the oldest experience and one whose effects are still found and continue at different levels of specialization known as “second degree” banks. The case takes place in Honduras, specifically in the Departments of Copan and Ocotepeque and the area of intervention of the project covered 17 municipalities and has reached 4,271 families in these departments in the western part of the country.

The Central American Bank for Economic Integration is the entity that has provided the funds through financing with the SAG and at the regional level the Tri-National Commission for the Trifinio Plan. The administration of this project is provided by UNDP.

**Characteristics of the territories selected**

The area selected for execution of the Trifinio Regional Development Plan is a unified geographical area formed by three countries: Honduras, El Salvador and Guatemala, near the Montecristo massif, where the borders of the three countries converge. A large part of the area is arid with superficial soils, rugged topography in which more than three quarters of the land surface has steep slopes of more than 25 percent, and of which the best potential use for 80 percent of the land is forestry.

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\(^5\) Secretary of Agriculture and Livestock (SAG, acronym in Spanish), National Fund for Rural Development, United Nations Development Programme (UNDP)
Characteristics of the population

The direct beneficiaries of the project are inhabitants in the Departments of Ocotepeque and Copan; 85 percent of this population live in conditions of extreme poverty. They live on steep mountainsides and have small plots of land but ownership rights suffer from irregular land tenure systems. Sixty-three percent of the farms have less than five hectares of land. A few farmers have more land with a title, but are still poor.

Characteristics of the project

PRODERT has an innovative strategy that focuses on contributing to the improvement in the quality of life of the population in the zone of influence, and measures results through very concrete indicators: (1) increase the production and the agricultural productivity in the zone by 35 percent; (2) increase by 20 percent the nutritional level; (3) local organizations strengthened in order to raise their capacity to make requests related to development and to execute local projects; and (4) improvement in the infrastructure of roads for production.

Eighty percent of the beneficiary families participated in the work of production and marketing. Accessing credit through the rural banks, transfer of technology for business development and technical assistance services that were provided.

Intervention strategies

The intervention strategy considered existing rural savings and credit banks as a means to channel extension services and provide financial support as production and marketing incentives to the participating families in the project. To provide extension services local private businesses were contracted, and they were also provided training and advice.

The rural banks emphasize the project objective of organizing farmers into groups to carry out specific activities, including activities of production and marketing through access to alternative and flexible credit.

Principal actors

The principal actors in this experience were the representatives of the rural savings and credit banks, supported by personnel form PRODERT, municipal governments in 17 municipalities, the NGO Brotherhood of Honduras, the Agency for the Development of the Valley of Sensenti, the Integral Development Alternative, and the Tri-National Association for Development. Other important actors included the Secretary of Industry and Commerce, the Inter-American Institute for Cooperation in Agriculture, the National Institute for Professional Training, the Agri-business Education and Training Service of the Secretary of Agriculture and Livestock, and the Association of Community Development Integral to Women.

**Description of the experience**

The good extension practice is demonstrated by utilizing rural banks as a strategy for community intervention where two major objectives of rural extension cross: the development of human capital and the development of social capital\(^{53}\). This practice shows how public extension services can more efficiently address the needs of rural families.

The rural savings and credit banks are an alternative rural financial system that complements the project’s objectives to help solve the problems of the small farmers in the zone of intervention, which includes the following situations\(^{54}\):

- Low crop yields due to lack of access to financing for making investments and purchasing supplies such as seeds and fertilizers;
- The expected sale of the harvest to formal and informal intermediaries, at prices lower sometimes lower than the cost of production; and
- High interest rates charged by local money lenders that are sometimes as high as 20 percent a month.

In addition, the banks become an appropriate channel for extension personnel to provide training and technical assistance to the participants of the project. This facilitates an expansion of coverage of the extension service and helps assure their sustainability. Also, extension personnel can apply their progressive and multifunctional approach toward themes they traditionally do not pursue, such as managing development initiatives; institution building\(^{55}\), administration of banks, and the marketing of production. Working on these types of issues helps expand the role of extension in agricultural development.

Extension services coordinate multiple actors, making public-public and public-private partnerships with local organizations and institutions that provide advisory and extension services. All the models of extension and advisory services to the small farmers is executed through five local NGOs.

In the banks, each member (family) receives financing for one or two elements of production. The extension personnel of the NGOs transmit knowledge that is required for the farmers by the banks. It is here where two previously mentioned important objectives of extension (the creation of social and human capital) cross and where it is shown how the systems of extension can more efficiently address the needs of rural families\(^{56}\).

To facilitate the exchange of knowledge and technology transfer, Extension personnel use demonstration plots on farms of collaborating members, educational field trips, and exchange visits among banks.


\(^{56}\) Swanson, B., 2008 *Global Study of Good Practices of Agricultural Extension and Advisory Services*. FAO, Rome.
Contributions and interactions among the different actors

» **PRODERT:** Technical assistance and seed capital to finance the productive projects. The funds are not considered grants to the banks, but rather loans that must be paid back with an annual interest rate of 12 percent. Even so, a culture of paying on time and fulfillment of the requirements of the project assures the bank the availability of the initial funds plus paid interest of 12 percent which is capitalized and creates an awareness that the available funds have a cost. When the project ends, PRODERT will transfer a total of 1,561,251 US dollars to the network of second-tier banks.

» **Municipal governments:** Certifying the legality and propriety of the accounting records and controls, licensing operations and, in some cases, transferring funds from the Strategy for the Reduction of Poverty.

» **NGOs:** Training and technical assistance for the management of the banks and agriculture production and, in a few cases, transferring funds for seed capital.

» **Inter-American Institute for Cooperation Agriculture:** Evaluation of the system of rural banks, and training of NGOs that offer extension and advisory services to the farmers.

» **National Institute of Professional Training:** Training in veterinary medicine and cattle management; and training in organic crop production.

» **Agri-business Education and Training Service of the Secretary of Agriculture and Livestock:** Training in business development and preparing business plans.

Results and important impact

» Generation of a culture of timely payments for loans: the books for 2007 reflect that 96 percent of the banks have no problem with late payments and two percent of the banks have payback problems with between five and 20 percent of their clients.

» Access to flexible credit at low cost has enabled farmers to diversify their cropping systems (plantain, potatoes, soybeans, cassava, pineapple, and more crops for consumption such as maize and beans).

» Farmers are now able to access financing at a lower cost, where they used to pay 20 percent, it is now 2 percent. In addition, the cost and time of applying for the loans has been reduced to a minimum.

» Development of collective crop production to capitalize the bank (vegetables, basic grains, coffee nurseries, supply stores and food stores).

» Reduction in the cost of fertilizer and transportation as a result of collective wholesale buying by the rural banks.

» Ninety-five percent of the loans went to the agricultural sector (coffee, maize and cattle).

» Developed capacities among the members of the rural banks in micro-enterprise, business plans and marketing with good food safety practices.
A network of “second floor” rural banks are actually functioning, they collect the financial resources given by PRODERT to the community banks. The association of rural banks in this case includes some municipalities with offices equipped with desks, file cabinets and computers. PRODERT transferred 1 561 251 US dollars to provide operating capital to these “second floor” banks.

Farmers reduced their dependence on local money lenders and intermediaries, giving up much less of their harvest, which permits them to sell under fairer market conditions.

For 35 percent of the members, agricultural production increased; 20 percent were able to make improvements to their houses; 15 percent now have better food security and ten percent have acquired additional land for cultivation.

Seventy percent of the members indicate that their total household income has gone up with respect to the previous year, combining better harvests with better prices and lower costs of production through diversified farming.

Almost 100 percent of the members have savings accounts in the bank of an average of from 50 to 100 US dollars (the average for the country is 10 US dollars).

The project succeeded in expanding the coverage of extension services and achieved the stated strategic objectives.

The Healthy Homes Programme (of the Brotherhood of Honduras) utilized the organizational structure of the rural banks to improve the houses of members, through plastering of walls, ecological cook stoves, bathrooms, latrines, and cement floors: all of which contributed to improving living conditions for these families. The programme included the installation of solar panels on 120 homes of poor families. These panels also are utilized to generate energy to power the irrigation pumps.

With the support of SAG and UNDP, a leadership training programme was developed that included modules on:

- Ethics and values
- How to organize savings and credit banks
- Administration and accounting in the banks
- How to sustain the rural savings and credit banks. This component of training is being given in each rural bank and in some cases the managers of these “second floor” banks are the instructors.

Methodological technical factors in obtaining the results

- Political support on the part of the central government has been important, issuing laws providing for the legal establishment and management of the banks and at the same time providing training and organizational support.

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The Energy Programme for Development of the German Cooperation, in association with the NGO Brotherhood of Honduras.
The responsible participation of each member permits the granting and recovery of funds in a completely transparent process.

The interaction and mutual benefits (symbiotic relationship) that generated relationships between the banks and the project.

The utilization of local NGOs to provide extension services constitutes a good extension practice when the rules are clear.

The utilization of the rural banks as a means to intervene with the target population is another good extension practice which resulted in strengthening the social and human capital of the communities.

Lessons learned

The development of human capital is easier if the formation of social capital is promoted first, considering these two capitals as part of the main objective of rural and agricultural extension (Swanson, 2008).

The banks are converted into an appropriate channel so that the extension service can provide training and technical assistance, facilitating the expansion of the coverage of their services and assuring their sustainability.

Demands of the urban consumer create new opportunities for investment in agriculture, which contributes to improving the livelihoods or subsistence living in rural areas.

Rural extension services contracted with local NGOs of recognized capacity, offers potential for desired results and assures continuation of extension services after the end of the project.

The banks are an effective instrument to boost investment and make extension work more effective, having, in addition, a positive effect on the population that practices subsistence agriculture and comprises the majority users of the services provided.

The viability of the banks is principally a function of their taking care of the real needs of the members and adapting to their ability to repay.

After training, follow-up by way of visits to the banks and carrying out exercises related to accounting management assures the sustainability of the process.

Consolidating the organization, developing of a programme of accounting training, constituting initially with their own funds, initiating loans with low interest and financing real needs of their members are the aspects that do most to ensure the bank accomplishes its objectives.
3.5 SYSTEMATIZATION OF GOOD EXTENSION PRACTICES IN NICARAGUA

SUMMARY
Changes in extension services are inextricably linked to shifts in the general nature of agricultural development, evolving priorities in agricultural production, and new methods of managing knowledge. As such, in Nicaragua distinct models and modalities of extension have been developed and applied to situations and users in a differentiated manner. These new models and modalities, in certain moments, have placed in danger the existence and development of public extension. However, it is possible to develop a system that combines private extension and public extension based on clients and their needs, as well as on national policies and their concurrent strategies. This section presents three different cases, each developed by distinct entities (public and private) and each contributing to the enrichment of a new concept of extension in Nicaragua. Each case is based on horizontal relationships among the actors, and the establishment of partnerships within these relationships and interactions. Each case promotes a good practice of extension with the actual “on the ground” situation or people’s demands as the starting point. From there comes the development of technical, administrative and management capacities; along with the promotion of leadership through processes of action-reflection-action and learning-by-doing.

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KEY WORDS
Technological services, capacity building, horizontal relations, learning-by-doing, action-reflection-action.
3.5.1 **Practices for the adaptation and mitigation of climate change**

Nicaragua is an integral part of the United Nations Convention for the Fight against Desertification that surfaced in 1994, as a result of the negotiations of the Earth Summit in Rio de Janeiro (1992) and its ratification in 1996. As a part and by mandate of the convention, in 2004, the formulation of a national plan for Nicaragua against desertification and drought began and was concluded in 2005 (Cáceres et. al, 2011).

The focal point of the international convention for the fight against desertification and drought in Nicaragua is the Ministry of Environment and Natural Resources (MARENA, acronym in Spanish) therefore they were responsible for the execution of the project. Other institutions of government participated, including: the Nicaraguan Institute for Agricultural Technology (INTA, acronym in Spanish), the Ministry of Agriculture and Forestry (MAGFOR, acronym in Spanish), the Nicaraguan Institute for Promoting Municipalities, the Nicaraguan Institute for Territorial Studies (INETER, acronym in Spanish) and the municipal governments where projects were implemented.

**Background**

The sustainable management of land project (MST, acronym in Spanish) executed under MARENA has as its goal to contribute to the stability, integrity and functionality of the improved ecosystems through the sustainable management of land and the promotion of productive systems and practices that support sustainable livelihoods in municipalities of the northern Departments of de Leon, Chinandega and Managua.

The project began in seven municipalities: (Cinco Pinos and San Francisco del Norte in Chinandaga, El Sauce, Achuapa, Santa Rosa del Penon y El Jicaral in Leon, and San Francisco Libre in Managua), with an area of approximately 2 450 square kilometers. Afterwards, five other municipalities were added including Somotillo, Villanueva, San Pedro del Norte and Santo Tomas del Norte in Chinandega and Malpaisillo in Leon (Cáceres et. al., 2011).

**Focus of sustainable land management (MST)**

*Sustainable land management is understood to mean a focus that supports proper management of soil, water, air, forests and biodiversity in a manner that maintains the environmental benefits for present and future generations.*

**Characteristics of the project**

MARENA is the regulatory entity with no technology transfer functions. As such, its principal job is to support and advocate for other institutions participating or involved in incorporating a focus of sustainable land management into their various lines of action, their practices and their methodologies. At the same time, MARENA helps each one according to the nature their work and specific functions (Cáceres et. al., 2011).
In this sense, the Nicaraguan Institute of Territorial Studies (INETER in Spanish), the government land use planning agency, took over the territorial planning topics and helped with the consulting on the pre-project Territorial Planning Law and its local application. From INTA, SPFS-FAO\textsuperscript{58}, and World Vision, there was a renewed emphasis on agricultural productive systems with a concern for the environment. From MAGFOR, topics of land policy, cattle traceability and productivity bonuses were incorporated. The Institute of Rural Development, coordinating with the Ministry of Education, undertook the theme of water management; and the National Agrarian University supported environmental education and the development of knowledge in the collection, storage and management of water. For their part, the Ministry of Health monitored the quality of water and environmental health and the Tropical Agricultural Research and Higher Education Centre (CATIE) supported training in numerous relevant topics.

Jointly financed funds were created working with the Foundation for Technological, Agricultural and Forestry Development in Nicaragua (FUNICA, acronym in Spanish), the Millennium Challenge Account and the National Fund of Forestry Development. This funding was used to develop and implement activities on the land (Cáceres et. al., 2011).

With each entity or designated member, different partnerships were established through the signing of agreements. Each one contributed according to their functions and the project, and the local governments managed projects in the territories, which were enriched with methodological, technological, policy and regulatory aspects helping to break down the barriers identified to the successful incorporation of a focus on sustainable land management.

Methodology of work

A principal characteristic of the process employed in this experience is that all work activity was developed through and with the local municipalities and mayors. A fundamental educational tool was the exchange of experiences among key actors and entities, such as the farmers, which facilitated the acquisition of knowledge. Field demonstrations allowed participants to directly observe the positive results of each alternative or practice; in this case MST (Cáceres et. al., 2011).

Member institutions that were executing extension activities exchanged methods of implementation with each other in order to motivate farmers to invest in MST. Based on the experiences of member institutions, they worked with a focus on watersheds (at the territorial, farm and farm field levels), utilizing rural promoters and farmer field schools (FFS).

Among the methods used were validation and demonstrations. Following the principles of FFS, practical workshops were carried out for each step of the productive process, introducing an MST focus in each one of them and at the same time weaving in a place for complementary practices (routine management practices of local farmers) and innovative practices having to do with MST. With local governments, workshops using the action-reflection-action methodology were implemented so that MST activities incorporated into the territories could be evaluated. In addition, workshops were held to strengthen the reflection component (Cáceres et. al., 2011).

\textsuperscript{58} Special Programme of Food Security (SPFS)
Different plans were formulated at all levels: farm plans, institutional plans, territorial planning and municipal environmental plans; all with a focus on MST.

In general, a communication strategy was developed as an instrument improving decision-making at the different levels (from the individuals to the institutions). This strategy combined oral and written messages; information days; celebrations and events. The strategy made use of fairs; concerts, and contests; even taking advantage of the local government open council meetings to discuss the topic. (Cáceres *et. al.*, 2011).

Among the good practices for the adaptation and mitigation of climate change through the incorporation of MST are all technological practices that help maintain the environmental functions that generate water, soil, air and biodiversity. Likewise, other good practices include: soil and water conservation measures (terracing, live and dead barriers, dikes, green manure, compost, worm culture, and cover crops), no burning to clear land, use of cook stoves that save wood, and carbon capture.

Of the nine models identified with the member institutions, five that were best aligned with local conditions were selected to be implemented: two agro-forestry systems (basic grains with trees and basic grains with improved rows); a pasture-forestry system (hillside bushes) and two forestry systems (protection of water sources and gallery forest in the zone of potential forestry use and sustainable forest management in broadleaf dry forest) (Cáceres *et. al.*, 2011).

The farmers, in accordance with the conditions of their productive units and through the FFS, identified their problems and the alternatives to follow. They developed knowledge and abilities in reflection and analysis to apply technology appropriate to their own productive units. They gradually developed an active, participatory role in the development of knowledge and in defining and validating techniques and practices to be implemented. The participating institutions had the role of providing support to the jointly defined activities according to their specialties and functions (technical assistance/transfer, training, financing, tax breaks, certificates and others). in the jointly defined activities.

**Principal accomplishments of the experience**

The principal accomplishments from this management process for implementing a focus on MST, are as follows (Urquiza y Meyrat, 2009; MARENA 2010):

- Each of the municipal councils of the seven municipalities that were involved from the beginning set aside three percent of the municipal budgets to go towards environmental matters. In addition, within the municipal investment plans, counterpart contributions were defined for implementation of projects with a production and environmental character, wherein demonstration systems and the management of water sources are replicated.

- The municipal mayors guaranteed the sustainability of actions taken; providing technical follow-up and leading the process of certification of areas under MST in order to receive preferential treatment by micro-financiers and from the municipalities. The institutionalization of this procedure is expected through a municipal ordinance.
At the local level, 13 projects were formulated for a total sum of around three million U.S. dollars. The principal theme, management of water sources, was adapted to include climate change.

Identification of complementary and innovative practices of MST.

At the farmer level, there were 2,020 persons who applied for MST, of those there were 11 women’s organizations. A total of 1,477 women in the 12 municipalities have initiated activities with a focus on MST; 67 women from the union of Cooperative of Women of San Francisco Libre incorporated MST into 75 agri-forestry systems and 14 women are raising worms (10 kilograms each culture) for the application on production systems and for marketing earthworm castings.

25,000 hectares have been regulated under the focus of MST and agreements have been signed with municipalities.

Nine thousand six hundred hectares within the project area are now managed under sustainable forestry systems. Of these, 1,000 hectares are under agri-forestry systems, 2,400 by pasture-forestry systems and 6,200 with forestry systems.

In talks held with the men and women farmers and technicians, accomplishments included: increases in productive harvest from 1 to 10 quintals of maize per manzana59 (from 0.06 to 0.63 tons per hectare in maize); from 12 to 25 quintals per manzana for beans (0.76 to 1.59 tons per hectare); and from 1 to 4 litres of milk per cow per day. There has been a reduction in firewood consumption from 19 packs of split wood a day to 6 per day from the use of energy-saving kitchens (almost 70 percent in savings) in an effort to reduce the pressure on forest resources.

Lessons learned

The strategy of communicating is fundamental in the process of innovation because it permits one to know the goals that are being pursued and the possible actions to implement in order to reach them. It also allows the different actors involved to visualize, according to their functions, the roles they are to carry out.

The development of capabilities, principally cognitive, is basic in order to incorporate new concepts such as those associated with MST.

Acknowledging that there is someone with more experience than yourself in the exercise a certain function facilitates understanding, learning and incorporating new modalities and focuses into the process of sharing experiences for building and rebuilding the knowledge base.

Adaptive management, in the technical as well as organizational aspects, and coordinating with changing and pertinent local and national entities and structures, permits development of the capabilities necessary for local management (in this case, environmental themes).

The establishment of partnerships among actors, formalized under conventions and agreements, facilitates identification of the responsibilities each party plays, according

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59 One quintal is equal to 0.1 metric tons; one manzana is equal to 0.7 hectares.
to their roles and possibilities, and develops a synergy that contributes efficiency and efficacy in the achievement of common goals.

» The planning process at the distinct level permits the clarification, sorting and prioritizing of ideas and activities to reach proposed objectives.

» The coordination and activities carried out through the local governments guarantees the sustainability of actions in a process of decentralization of functions that favors local development.

» The recognition of the mayors as administrators of local governments and the respect of their rights to make decisions, permitted the development of mutually helpful relationships that facilitated the incorporation of the concept of MST into local development strategies.

**BOX 6: Summary of practices of sustainable land management.**

<table>
<thead>
<tr>
<th>ACTORS AND ROLES</th>
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<tbody>
<tr>
<td>• Normative and regulatory governmental institutions</td>
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<tr>
<td>• Providers of technical services</td>
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<tr>
<td>• Users of technical services</td>
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<tr>
<td>• Priority: Authorities and municipal technicians</td>
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<tr>
<td>• Accompaniment on the part of project personnel</td>
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<tr>
<th>RELATIONSHIPS AND INTERACTIONS</th>
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<tbody>
<tr>
<td>• Horizontal relationships among actors</td>
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<tr>
<td>• Intra and inter-sectoral coordination</td>
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<tr>
<td>• Horizontal relationships among men and women farmers</td>
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<tr>
<td>• Leveraging funds</td>
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<td>• Leadership Development</td>
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<tr>
<th>PRINCIPAL TECHNICAL AND METHODOLOGICAL ASPECTS</th>
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<tr>
<td>• Municipal Coordination</td>
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<tr>
<td>• Development of Capabilities</td>
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<tr>
<td>• Exchange of Experiences</td>
</tr>
<tr>
<td>• Rural Promoters and Farmer Field Schools</td>
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<tr>
<td>• Practical Workshops</td>
</tr>
<tr>
<td>• Reflection-Action</td>
</tr>
<tr>
<td>• Establishment of Partnerships</td>
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<tr>
<th>ROLE OF THE TARGET GROUP</th>
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<tr>
<td>• Participative</td>
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<td>• Enterprising</td>
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<td>• Builder</td>
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<td>• Executor</td>
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### 3.5.2 Toward a new model of extension: combining rural promoters and farmer field schools

In this section we present an approach of the new agricultural extension model combining rural promoter and farmer field school (FFS) methodologies. These two methodologies of extension, recognized as effective, were incorporated as the principal elements of Nicaragua’s new model for public extension. Nicaragua’s institutional experience with FSS had been timely, and INTA had used it in the context of the execution of SPFS-FAO from 2003 (Ortiz, 2009).
Background
In the last 17 years an effort has been established to decentralize extension services in Nicaragua, stemming from the application of broader policies to reduce the size of government, backed by international financial organizations. This effort resulted in the strengthening of a pluralistic system for providing extension services and in the establishment of different modalities for assigning public resources through competitive funds to finance extension activities; with these extension activities being carried out by entities in the private sector in support of the small and medium agricultural and forestry producer (Ortiz, 2009). In this manner the following modalities took hold within the framework of INTA, as described by Ortiz (2009):

- Basic technical assistance which, starting in 1995, covers processes for diversification under two models: Co-financed public technical assistance directed by technical personnel of INTA with the goal of creating incentives for the technical personnel by giving part of the money collected to the technician offering the service.

- Co-financed private technical assistance where INTA contracts with five private businesses who provide services to producers who also cover a portion of the costs of these services.

- Collaborative technical assistance where INTA supports other organizations that carry out extension with training and advice so they can improve the quality of the services they offer.

- Technical assistance though mass media as part of free extension services to populations located in marginal areas; and technical assistance associated with the production of subsistence foods.

With the beginning of a new government in Nicaragua in early 2007, new priorities were established in which led to changed policies, and in this framework public research and extension services were reoriented (Ortiz, 2009).

The conditions that generated the change
Among the priorities that the new government established is the reduction of poverty through programmes that support the generation of wealth and the production of food where the poorest have access to resources and services to develop their productive capacity. The principal programme of this strategy is the *Zero Hunger Programme*, which is operationalized through the Food Production Programme of which the principal instrument is the Food Production Bond, a package of goods given as a means for organization, training, and technical assistance to poor rural families.

Even though support is provided to families, it is given specifically in the name of the women of these families to guarantee it is used by them and they are supported with training and technical assistance on topics such as gender, health, animal feeding, cooperatives, environment, marketing, among others (Ortiz, 2009).
The changes in INTA

Technological innovation goes from benefiting conglomerates to a new focus on generating new technologies appropriate to the socio-economic and environmental conditions of small and medium producers of food, emphasizing sustainability of the Food Production Programme “Zero Hunger” though technical assistance and training. The new institutional strategy is found within the re-socialization plan of INTA that is framed by a focus on reducing poverty and has as its objective improving food security for the rural family (capitalization in the form of transferring assets and supporting small and medium farmer to access the market) and strengthening farmer organizations at all levels (political, legal, education and training) (INTA, 2007; cited by Ortiz, 2009).

INTA defines among their principal functions the generation of appropriate technology and supporting the process of innovation through all links in the agricultural value chain, as well as disseminating the technologies generated to the broader society (with emphasis in an extension model based on rural promoters). Among the principal lines of action, identified through public consultation were:

» Collection of water for human consumption and productive development.
» Production and distribution of seeds.
» Feeding cattle during dry periods.

Among the strategic lines of action the following are offered:

» Rural promoters to expand the coverage and quality of the services with models of horizontal communication.
» Inclusion of rural youth as part of the farming team and becoming future men and women farmers, eventually replacing the older generation; Cooperatives (different forms of association to gain advantages: credit, marketing and prices).
» Attention to the Caribbean Coast.
» Application of a gender focus.
» Protection of the environment (INTA, 2007; cited by Ortiz, 2009).

Restructuring the strategy of public extension

The strategic plan of INTA contemplates a process of restructuring public extension, reconsidering the relationship with research through:

(i) a focus in Research and Extension Agricultural Systems which promotes the interaction of research, extension and clients of technology;
(ii) greater attention to poor families without excluding other groups of men and women farmers, maintaining a diversified scheme of modalities for target groups of the population with different characteristics and under different focuses;
(iii) technical assistance to support the transfer of assets;
(iv) increasing the number of extension services and serving the different groups of the population (men and women); and
(v) attention directed to the different phases of the productive and organizational agricultural value chain (INTA, 2007; cited by Ortiz, 2009).

**The technical assistance model with rural promoters in the new strategy**

In the search for ways to increase the coverage of extension services and improve their quality, INTA started to consider the possibility of integrating male and female promoters in their modalities of operation. To start this effort, in 2007 they organized, with the support of SPFS-FAO, a workshop to learn about the experiences of organizations in Nicaragua who had already carried out work with rural promoters. In this workshop, a profile of the rural promoter was defined and INTA established a rural promoter strategy for the purpose of creating a new modality of technical assistance as a non-formal educational process; this modality is based on the farmer-to-farmer teaching and learning model, utilizes the help of extension personnel to accomplish the transfer of knowledge, abilities and values to the other farm families, and takes into account the principals of adult education and learning-by-doing. With this modality, it is estimated that each extension agent can cover 10 to 15 promoters and these at the same time, can take care of 15 to 20 farmers, reaching a coverage of an average of 200 farmers for extension agent (Ortiz, 2009).

INTA carried out workshops for the entire country directed to technicians, researchers and heads of programmes in order to reinforce the strategy of rural promoters with the purpose of improving the international coordination and higher quality outreach to the small farmers through the promoters, “The strategy was for the development of the promoters in each zone. This process has been organized in the different areas where other actors are involved, such as the mayors, trade associations and other institutions.” affirms Maritza Fuentes, responsible for the institutional development of INTA, 2010. The rural promoters receive training form INTA concerning methodologies, field schools; gender; youth; food and nutrition security; and climate change. In addition, other topics include integrated management of crops, cattle raising and seed production (http://www.elpueblopresidente.com, 19 September 2010).

**The figure of the rural promoter**

The rural promoter should be: (1) a collaborator, proactive, entrepreneur, innovator, and a researcher with the capacity to communicate and teach other farmers; (2) carry out the role of leader of the community and participate in a voluntary form without salary; (3) facilitate information and knowledge through the processes of transfer and training; (4) is a change agent that promotes the development of the communities (5) must know how to read and write; (6) have the time to devote to being a rural promoter; (7) be willing to train and transmit knowledge; (8) willingness to change; (9) ability to adequately manage their farm; (10) willing to utilize their farm for transfer of technology; and (11) reside and stay in the community.
The farmer field schools

SPFS works in dry zones, unifying efforts with diverse sectors and applying an integrated focus. INTA as a counterpart also utilizes a pluralistic approach for extension; since 2003 both have incorporated the Farmer Field School methodology as a way of working to improve the group work with their clients and also improve the effectiveness of the learning processes for new technologies on the part of the target population (Monterrey y Ortiz, 2006).

Taking into consideration the interest of INTA in overcoming the limitations of materials and methodology, the SPFS, in its second phase, conceived of an integral model that was based on a participatory and developmental focus. This is to say, it aimed at developing research, extension and education locally, to promote leadership and self-management of resources and the adequate use of existing resources.

Among the methodologies of extension and types of training techniques with greater impact and recognized effectiveness in the face the practical learning situations with men and women farmers under conditions of poverty were Farmer Field Schools\(^60\) (Monterrey y Ortiz, 2006).

A new model for extension

SPFS and INTA united these FFS methodologies with other methodologies that have had much success, such as the training of male and female promoters, to assure high quality in horizontal technical assistance services, along the lines of the farmer-to-farmer programme (Monterrey and Ortiz, 2006).

With the results from the Farmer Field School and the positive experiences generated with the men and women promoters, the SPFS visualized the combination of these two methodologies - focusing on acquiring added value in coverage and effectiveness, in addition to efficacy in the delivery of extension services. These two methodologies together, focused on integrated watershed management, are being applied throughout the entire context of the INTA programme and constitute the central methodological elements of the new model of extension for better coverage and improved results. A process of validation of the experiences with FFS and the promoters was initiated to establish the justification and feasibility of the new model (Monterrey y Ortiz, 2006).

The case study carried out by Monterrey and Ortiz (2006) tries to demonstrate that the combination of the two methodologies (Farmer Field Schools and agricultural promoters) provides the possibility of adding value within the initiatives in the form of projects to achieve a greater coverage of services and improve the effectiveness and efficacy of the processes of technological innovation and development at the rural community level.

\(^{60}\) To implement this methodology technical and methodological supervision was provided by the Integrated Pest Management Programme of Central America (PROMIPAC), this methodology was developed by FAO in Indonesia in 1989.
The rural promoters, by the voluntary nature of their work, permit a greater coverage for extension at a low cost. The costs to implement a FFS in some cases can be high due to the use of new alternatives that utilize external resources outside of the farm; but as much as possible, low cost technology is used, along the lines of integrated pest management and the integrated management of crops. As such, the complementary nature of both methodologies permits the development of a new, efficient and effective model of extension. In other words, low cost, expanded coverage and quality services; developing, in a participatory manner, appropriate and useful alternatives for rural families.

INTA is in the process of evaluation and systematization of these experiences to identify lessons that contribute to the new model. Discussions are being carried out with the producers in their communities so they can say what they have learned with the rural promoters; as well as the positive aspects of what needs to be improved: Arsenio Rayo, from Matagalpa and participant in the Workshop in 2007 (http://www.elpueblopresidente.com, 14 October 2010).

**Principal results obtained by INTA in these experiences**

From 200 promoters that in 2007 were incorporated into the work scheme of INTA, 2,419 promoters were working in the year 2010, of which 40 percent were women. During 2009, INTA served 60,609 farmers of which 38,044 or 62.7 percent were reached through the rural promoters (http://noticias.universia.com.ni 3 April 2010; http://www.elpueblopresidente.com, 19 November 2010).

In 2010, the National Council of Universities and the Nicaraguan Institute of Agricultural Technology, developed a joint university plan designed to strengthen technical assistance for the poorest farm families in the country and give opportunities for recent university graduates to enter the labor force, reinforcing values of responsibility, solidarity and humanism. The university graduates strengthened the rural promoters and expanded by 12 percent the technical assistance of INTA. Agronomist Miguel Obando, Sub-director of INTA expressed his satisfaction with the objectives achieved: *This experience that we have carried out jointly with the National Council of Universities and INTA has been one of the best expressions of partnerships among the productive sector, government institutions such as the Ministry of Agriculture and Forestry, the National Forestry Institute, the Institute for Rural Development, farm families and the universities* (http://noticias.universia.com.ni, 23 April 2010).

Teaching others in the community is the motor that drives Damaso Urbina, 66 years old from Boaco: *It motivates me to teach the people, for this reason being a promoter, I am continuously learning and I am not going to stop learning.* Angela Velazquez, 56 years old, comments: *It motivates me to be a promoter, in the first place because I am a farmer and with the training they have given me I am fully integrated as a promoter into the*
community. I am enthused that other farmers put into practice all that I have taught them (http://www.elpueblopresidente.com, 19 November 2010).

Swiss Cooperation has been supporting the Rural Promoters Programme since 2008 and conducted a workshop to evaluate the programme and analyze the continuing processes that permit the retention of the greatest number of promoters: We value this positive experience because it has permitted us to enter zones that have not been taken care of before and strengthen our work in the territories said Eva Acevedo, Director General of INTA in 2008 commenting about the experience on the part of INTA. Bischof, Representative of the Swiss Consulate in Nicaragua stated that the people and the Government of Switzerland have decided to continue supporting this effort that is being carried out by the Government of Nicaragua in the agricultural sector to, above all, to improve the productivity of small and medium farmers. He said that he has seen in the field that the programme works and for that reason they have decided to continue backing these efforts in the sector of the small farmer (http://www.el19digital.com, 30 November 2010).

At the beginning of 2011, a total of 170 technicians from INTA finished the first phase of the Farmer Field Schools, involving integrated pest management with an agro-ecological focus on vegetables, basic grains and cucurbits. The technicians replicated the methodology of extension with the promoters and farmers served in the three zones of the country where Farmer Field Schools were carried out simultaneously: South Pacific (Masaya, Granada, Rivas and Carazo), North Pacific (Leon and Chinandega) and the Department of Managua. These FFS activities were carried out in coordination with the Integrated Pest Management Programme of Central America under the auspices of Switzerland Cooperation (http://www.elpueblopresidente.com, 4 February 2011).

Harold Rodríguez representing PROMIPAC said that for this year it is hoped that 200 farmer field schools will be developed in the three zones where technicians of INTA already have the capacity to replicate the project with promoters and farmers on how to produce vegetables at low cost and of good quality. Ali Romero Guardian, extension agent of PROMIPAC, gave assurance that the primary technology that promotes the schools is the integrated crop management that includes managing pests by utilizing plastic mulch to control vectors, living fences around the crops for the prevention of the white fly, and drip irrigation to optimize resources. The costs of the technologies are compensated for by the results of the production and the ability of the majority of small and medium farmers to adopt them. (http://www.elpueblopresidente.com, 4 February 2011).
Among the principal opinions espoused by the technicians, promoters and farmers of the Farmer Field Schools of Las Jaguitas, Managua61 are found in the following:

**Lessons learned**

The principal lesson identified can be summed up as: the training and development of promoters through the Farmer Field Schools way key. This guarantees the quality of technical assistance services and expanded coverage because the promoters promote the acquisition of knowledge through learning-by-doing, starting with in-the-field, hands-on practice in a group setting. Developing the capabilities of the promoters through FFS in a participatory and constructive way supports the development of research attitudes, experiments and diffusion that brings about pertinent adaptive changes. An economic analysis is needed to determine levels of efficiency of the model.

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**Notes:**

61 Source: Group interviews carried out by the consultant with technicians, promoters and farmers of Las Jaguitas, Managua, 3 and 24 May 2011.
BOX 7: Summary of the practices in the combination of the rural promoter strategies and the Farmer Field Schools

| ACTORS AND ROLES                          | • Normative and regulatory government institutions  
|                                          | • Providers of technical services  
|                                          | • Consumers of technical services  
|                                          | • Poor rural families as priority (consumers)  
|                                          | • Accompaniment on the part of institutional personnel  

| RELATIONSHIPS AND INTERACTIONS           | • Inter-institutional and inter-sectoral relationships and coordination  
|                                          | • Strengthening of the relationships among research, field extension, central extension, central education and the field  
|                                          | • Cascading provision of communication and training (integrated and sequential)  
|                                          | • Formation of men and women community leaders  

| PRINCIPAL TECHNOLOGICAL AND METHODOLOGICAL ASPECTS | • Provision of goods and services as a means of organization and training  
|                                                   | • Rural promoters to expand coverage  
|                                                   | • Organization of group goals  
|                                                   | • Focus on value chains, gender, watersheds and the environment  
|                                                   | • Establishment of partnerships  

| ROLE OF THE TARGET GROUP | • Participative  
|                         | • Proactive  
|                         | • Constructive  
|                         | • Executor (Protagonists in Process)  

3.5.3 Developing the market for technologies (DMT, acronym in Spanish)

This experience was generated and carried out by the Foundation for the Development of Agricultural and Forestry Technology (FUNICA) and recently conducted a systematization of their experiences, which is covered in this section of the publication. The model for technological development promoted by FUNICA is based on four strategic elements: (1) networks of innovation and dialogue concerning the value chain; (2) identification of gaps and technological demands; (3) adaptive research based on prospective technologies; and (4) promotion of technologies to the men and women farmers who request them. The implementation of the institutional model is carried out through three sub-programmes: (1) the development of technological products and services in the value chain; (2) rural entrepreneurship and business development; and (3) institutional development of FUNICA and their associates (FUNICA, 2011).

The market for technological services

The first sub-programme, development of products and services in the value chain, promotes the marketing of technological services and strengthens organizational capacities in order to (1) assure adoption of the new technologies and (2) contribute to improved competitiveness in the agricultural sector (FUNICA, 2011).
Three types of actors who participate in this process have been identified:

» The creators of technologies; made up of governmental institutions, universities and NGOs linked to the sector and the field of research.

» The providers of technologies, made up by farm supply stores, agricultural service businesses and some NGOs take the role of facilitating access to conventional technologies or alternatives to target groups.

» The consumers of the technologies, the farmers, who use them as a production input; or the institutions who request them so they can in turn provide them to the men and women farmers who are users of their products and services (FUNICA, 2010).

Historically, leadership for the creation and transfer of technology belonged to the national organizations and institutions who developed the technology. However, for a variety of reasons (one of these being the vertical relationship of research centres and farmers) the technologies developed were generally inaccessible because of their high costs and low value. As a result, new groups surfaced in the rural areas of Las Segovia’s and the western part of the country, working on innovations in agriculture, incorporating improved systems of production through the implementation of technologies in harmony with the environment. These technologies were not channeled through formal institutions such as INTA and MAGFOR, even though the creators of these technologies had the knowledge and information necessary to validate what they discovered. The formal institutions lacked the methodologies and procedures to assure product quality, and this restricted their official promotion. Nonetheless, the technologies’ used among consumers became their own calling card. This series of factors gave rise to the need to develop the market for technology (FUNICA, 2010).

**Some requirements of the technical services market**

A focus on the development of a market for advisory services necessitated a proposal that would strengthen:

» The demand. Demand would be strengthened through the development of economic organizations of farmers and rural inhabitants, and facilitation of processes of negotiation leading to a convergence of needs and problems; in turn, that convergence of needs and problems would be expressed as a demand for technical-economic advisory services;

» The supply. Supply would be enhanced by strengthening the diverse types of intermediate organizations with the skills, knowledge and capacities necessary to respond to the various types of demands;

» Systems to regulate the market. Building systems that facilitate the interface between those who offer services and those who need the services by establishing clear and enforceable contracts, controlling the quality of the services, and developing systems of incentives so that the public interest would be adequately tended to, especially in terms of equality so that the different strata of rural society, particularly the poorest, have opportunities for easy access to the technical advisory services they require (IFAD, 1998).
In 2006, FUNICA with the support of Swiss Cooperation in Central America and within the framework of the collaborative agreement with INTA, promoted the initiative to develop the market for agriculture technology services. The initiative consisted in expanding opportunities for the supply and demand for technology to come together by increasing the number of businesses that facilitate access and availability of technologies at the local level; permitting not only the growth of the technology markets but also the number of users of technologies. The process was designed and approved by the internal team of FUNICA in June 2006. The process started with defining the technologies and proceeded through to accompanying farmers in their execution (FUNICA, 2010).

Characteristics of the process

The process that was designed consists of the following seven steps (FUNICA, 2010):

» Round-table discussions were held with interest groups that shared information and/or knowledge to analyze the existing situation of technology markets in Nicaragua. For each component selected, and in order to generate pertinent information by zone or region, the approach and type of existing and available technologies for small and medium sized farmers were identified. The result of this step was the development of a catalogue technologies prioritized by the different actors, and also including the existing gaps in technology. They then proceeded to convene (in various ways) different actors (individuals and legally constituted businesses) to either create a new or strengthen an existing business or company in order to create and/or provide technologies.

» Elaboration of profiles using a guide that was provided by FUNICA. The selection/approval criteria for the profiles were: (1) clarity of the idea of the technology business; (2) the technical soundness of the proposed technology, whether innovative or based on researched; (3) quality of the content of the profile as formulated (capability of the organization); (4) rationale or justification of the importance of the technology to solving problems in the areas proposed; and (5) definition of the need for the technology in the area being considered.

» Preparation of business plans. The service providers were supported by several kinds of specialists: (1) independent specialists selected at the local level; (2) external consultants contracted through Central American University; and (3) through the Techno-Serve’s “Your Business Idea” program. The different types of support led to complications in the scope and cost of the plans which caused tensions between the consultants and the businesspersons. Due to this, and based on the existing agreement with the University, help was requested, and it was then decided to proceed with the following steps: (1) characterization of the product; (2) organizational plan; (3) production plan; and (4) financial and budget projections.

» Plan review and presentation to a panel of experts. The FUNICA team reviewed the plans together with the panel of experts (in agricultural economics, agri-business; and

62 Methodology defined together with collaborators such as INTA, taking into account the productive chain.

63 The ways were: (1) by a study of the sub-sectors; (2) by way of actual knowledge of the technological situation of the approach and prioritization in round-table discussion; (3) technology that was being use at the artisan level or small scale, previously prioritized in the round-table discussion; (4) continuation of pilot testing technologies; (5) “Your Business Idea” with Techno-Serve; and (6) by public meetings.
in evaluation of agricultural technologies and their impact on the environment) and afterwards each businessperson carried out a presentation of their plan.

» Approval of the business plans. A technical committee was formed to review the plans with the final approval being made by the Administrative Council of FUNICA, taking into account the recommendations of the technical committee. The criteria used to evaluate the plans were as follows: (1) logical consistency of the proposed technology; (2) sustainability and profitability of the actions of the proposed initiative; (3) business and management skills of the provider of the technology; (4) relevance of the technological problems to be resolved; and (5) activating and utilizing business development services.

» Implementation of the initiative. Once the business plan is approved, the financing scheme, amount, and repayment plan is negotiated; then the disbursements can proceed as agreed upon.

» Follow-up. Once disbursements were made, the next step was to carry out supervisory visits and review trimester progress reports in order to incorporate the results into a monitoring system that periodically verifies progress (compliance with the principal activities and progress towards the objectives based on pre-determined indicators, and monitoring expenditures to ensure they are being made according to plan).

**Principal accomplishments of this experience**

The supported initiatives can be categorized as follows: (1) pilot testing, (2) up scaling, and (3) emergence; depending on the initial organizational levels and those that are reached.

The initiatives of the pilot groups were carried out with well established organizations, generally of families. Among these initiatives are ESAGRI that distributes biological products (Mo-enzymes); BIOTOR, laboratory producers of biological control; REPROTECSA, which develops activities of artificial insemination of cows; and PRISA, a business that produced minerals for vegetative nutrition, principally chelates.

In addition to these businesses of family character, there are cooperatives such as the Ninth of November (ECOBIOL) and SOCOPROM, producers of biological products. These initiatives were able to grow not only in the productive area, but also develop administrative and managerial capacities. They also introduced accounting records, although with some limitations on internal controls by the family or group trust. These businesses oriented their efforts to improve the quality of their product to better position their business and they based their sales strategy on taking advantage of inter-institutional relationships with those institutions who are known to request the technology. (FUNICA, 2010).

The up scaling initiatives were carried out with more developed groups. Among these were the Center for the Production of Seedlings Lorna Linda; the Production and Development Cooperative of Local Ecologically Sustainable Initiatives; Minerals of Nicaragua Company,

64 The Technical Committee was made up of: (1) representatives of the Nicaraguan Institute of Agricultural Technology; (2) the Ministry of Agriculture and Forestry; (3) the College of Agronomists; (4) the National Union of Farmers and Cattlepersons; and (5) the Union of Agricultural Producers of Nicaragua.
At the onset of implementing the experience these organizations and businesses already had technical and productive knowledge of the technologies. Their investment was oriented toward up scaling the initiative with the purpose of improving their productive capacity in terms of quality; incorporating services to the farmer combined with demonstrations in the field, client visits, sales at the counter, specific studies, agreements and credit; and developed additional capacities including, leadership, direction and control of their businesses (FUNICA, 2010).

The following are among the principal results obtained from these initiatives:

» The initiative permitted the of creation of a vision of the organization and its members as being more sustainable and business-like. The initiative also permitted expansion of the radius of action or operation they had as a business; strengthened their knowledge of production technologies; improved their production capacity and techniques, as well as sales; and strengthened their technical, administrative and managerial knowledge.

» Among the strengths that the organizations now have are: (1) they possess the knowledge and ability to develop technology for their producers; (2) the personnel have greater technical capabilities, and with work experience; (3) the majority of the initiatives carry registry books on the production and sales of their technologies; and (4) they now have an organizational structure.

» The principal weakness, at the moment, is that the organizations, even though focused on a sales strategy that considers the customer base have not sought to expand productive capacity. This will require them to take an even more strategic approach (FUNICA, 2010).

» The “emerging initiatives” are those that began the productive processes and the marketing of their technologies with the support received. They employed a participatory approach in all the steps of the implementation process, oriented by the different guides, tools and consultants provided by FUNICA. The process strengthened the organization, consolidated their structure and managerial opportunities; and increased their participation in the development of the productive processes and marketing. These initiatives required a strategic approach for the promotion of sales from the business plan (FUNICA, 2010).

The initiatives that were developed led to:

» The introduction of different types of technologies to the market.
» The development of a methodology aimed at the development of technology providers.
» Businesses internalized the idea that development for the market for technologies is central to the organization and their initiatives.
BOX 8: Summary of the practice of development of a market for technology

| ACTORS AND ROLES                          | • Board of directors of public and private institutions  
|                                          | • Technical services providers                           
|                                          | • Technical services consumers                           
|                                          | • Priority: providers of services                         
|                                          | • Accompaniment on the part of personnel from the Foundation. |
| RELATIONSHIPS AND INTERACTIONS          | • Horizontal relations among actors                       
|                                          | • Intra and inter-sectoral                               
|                                          | • Promoting leadership                                   |
| PRINCIPAL TECHNICAL AND METHODOLOGICAL ASPECTS | • Round-table discussion                                  
|                                          | • Identification of gaps                                 
|                                          | • Adaptive research                                      
|                                          | • Focus on the value chain of production                   
|                                          | • Theme promotion                                         
|                                          | • Development of capacities                              
|                                          | • Steps and procedures with orienting guides              |
| ROLE OF THE TARGET GROUP                | • Proactive                                              
|                                          | • Constructive                                           
|                                          | • Executor                                               |

Lessons learned

» Promoting and coordinating participation of the different actors (creators, providers and consumers of technology) - in this case, through round-table discussion in the development of a catalogue of technologies - is important in the process of identifying existing technologies as well as the gaps that need to be covered.

» Incorporating focuses (production value chain) permits expansion of the array of technological services required to support the users in improving production, administration and management.

» In the process of developing technology, accompaniment in the field, by external agents, contributed to the development of the capabilities and facilitated immediate solutions to difficulties encountered by the users.

» The degree of organization of the groups determines how well their technical and accounting functions will be performed; but the organization of the initiatives depends on the business vision of the group.

» Positive attitudes help improve internal relations and the development of confidence.
Box 9: Lessons Learned from the Nicaraguan Cases

» The exchange of experiences is a fundamental tool for the development of knowledge; this exchange and creation of knowledge is most effective when relations among the principal actors is horizontal.

» The acknowledgement of weaknesses and/or limitations by the actors leads to a more open mindedness in the collection, internalization and acquisition of knowledge in the joint process of exchange and development. The development of capabilities, principally cognitive, is essential for the incorporation of new concepts or focuses. In as much, all innovative processes are more effective if accompanied by a training plan on technology, administration and management.

» Practical, real experience is always the beginning point for the identification of gaps, alternatives and modalities of work. Adult education methodologies provide incentives for learning by using the “action-reflection-action” process to develop alternatives. The practical approach of learn-by-doing facilitates the acquisition of knowledge and its replication.

» The orientation guides and the supporting visits to target groups, in order to support them as they learn-by-doing, are important tools to assist them in their development. The implementation of new models and alternatives must accompany these tools to encourage the development of capabilities.

» Establishing partnerships among the actors is a key element for increased coverage and improved efficiency and efficacy. The framework of horizontal relationships permits the identification of roles and responsibilities of the different parties according to their functions; facilitating the organization and coordination of actions and resources in order to accomplish common objectives.

» The communication strategy is important for sharing and being able to jointly internalize the objectives, plans and benefits of these activities by the different actors involved - principally the user population, as there is a need for feedback from the time concrete results are first obtained.

» In the processes of developing and implementing the models at the territory level, recognizing local authorities (municipal and community) and respecting their roles and authority allows identification of the most viable ways to support them in the development of the capabilities that guarantee the sustainability of their actions.

» With the new focuses, the technological services can expand their field of action throughout the whole length of production and value chains, taking into account the transversal themes of gender/population and the environment. The extension services should then carry out the pertinent adaptive changes in their models to respond to the needs of the users.
3.6 SYSTEMATIZATION OF THE GOOD EXTENSION PRACTICES OF PANAMA

SUMMARY

With good extension practices it is possible to impact in a positive manner the socio-economic conditions of beneficiaries of an extension system in any country, zone or region.

Panama has incorporated in their extension system, as a good practice, the development of specialists in extension methods and techniques with a view that these methods and techniques are to be used to present alternative technologies that are efficient, effective and appropriate for the users. Another good extension practice is that of guaranteeing conditions where obstacles causing the low participation of women are minimized through training activities that have been designed to improve the conditions of their lives. Partnerships in the execution of extension are effective and are considered good practices. Partnerships between the government sector and private businesses guarantee that the product being offered is in line with the quality demanded by consumers. In addition, the best way to define a product is by what the market determines, and adequate technology is then provided to obtain the quality demanded, thus enabling farmers to receive good prices for the products they produce.

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KEY WORDS

Extension service, extension system, rural women, Indians, partnerships.
3.6.1 Training extension specialists

One of the most important aspects for guaranteeing efficiency and effectiveness of an extension system is providing training and/or professional development for extension agents. The Ministry of Agricultural and Livestock Development in Panama (MIDA, acronym in Spanish) considers training to be of great importance.

Background

As proof of the importance that the Ministry places on the training of technical personnel, from 1950, with the arrival of a Mission from Arkansas, United States, a training process was put in place for Ministry personnel in agricultural research and extension. Lacking a national model for extension, components were borrowed from the land grant university system in the United States, which responded very well over the years to the needs of US farmers, but not necessarily to conditions in Panama. This was a phenomena that was repeated in the majority of the Latin American countries. Consequently, as with the rest of the Latin American countries, Panama was obliged to create, restructure or reorient their Ministries of Agriculture and Livestock Development to accommodate the programmes and processes of the new system of extension.

From the decade of the 1950s, there have been changes and adjustments in the extension system in Panama until 1984, when a National Agricultural Extension System was created by ministerial decree on February 14. The decree empowered MIDA with the normative functions for executing extension programmes through national directorates in the 84 agencies of the Ministry. In order be able to carry out the objectives of this new extension system, it became clear that personnel needed to be trained.

In the 1980s, the United States Agency for International Development granted scholarships for the agricultural sector and a select number of individuals were assigned to become rural extension specialists. From this initiative, five persons graduated with master degrees in rural extension, which began the process of strengthening staff. It became evident that the five persons with graduate degrees was not sufficient, considering that they had the responsibility of training all the extension personnel in the 84 agencies of the Ministry. In addition, not all of the five technician graduates were employees of MIDA, as some worked in the Faculty of Agricultural Sciences of the University of Panama. The effects weakened the possibility of establishing a training system to support 84 agencies of MIDA. It was not until the 1990s, when more personnel with master degrees in extension were given responsibilities with specific functions in extension in the Ministry. Even so, there continued to be a need for persons with training in this area.

The beginning of the process

In 2001, the interest of the then Minister was to strengthen the extension system of the Ministry, and to do so, he agreed to the need for trained personnel. As a result, a Masters Degree in Rural
Extension was established in collaboration with the College of Agricultural Sciences of the University of Panama. The most important objective was to respond to the need to prepare human resources with the ability to deal with the existing problems associated with rural development, thus promoting sustainable development based on participatory and democratic processes. In addition, it was hoped that the professionals receiving the specialized training could carry out activities of research, extension and teaching with an inter-disciplinary focus to construct viable forms for development with the relevant social sectors and communities involved in the diverse processes of development. It was also expected that this type of professional would also interact with the different public and private institutions in the communities, productive sectors, organized groups and farmers in order to be able to contribute to the formulation of policy and rural development programmes that facilitate the well being of the rural population.

As a result of this decision, a Masters Degree in Rural Extension was designed and 90 agronomists from the Ministry were selected to participate. The graduates of the masters degree in extension were placed in the established structures of the Ministry (agency and regional levels). In addition, some were assigned to the Technical Secretary, an administrative unit of MIDA responsible for all the activities of the agencies of extension at the field level.

In addition, all the actions carried out by these graduates were under the extension system of MIDA existing at the time, which later would focus its attention around four key points:

» Should be through priority productive systems.
» With a focus on value chains of production.
» Based on demand and requests for results.
» With integrated responsibility shared by all key actors.

Principal results and conclusions of this experience

The results and principal conclusions of this strengthening project for the development of the human capacity of professionals that work with extension activities can be highlighted in the following manner:

» Seventy-eight professionals graduated with a masters degree in extension thus strengthening the extension processes of the Ministry. A weakness was that intervention strategies were not designed for these persons after they graduated.

» The graduation projects should have been developed focusing on the resolution of specific problems of the extension agencies where the agents came from, given that the training was supposed to help them deal with the solution of problems in the field. This defect was a result of not having a follow-up strategy and evaluation of the previously established agreements.

» The research projects (thesis for graduation) were not focused on the solution of problems in a timely fashion in the extension system of MIDA.
For not having strategies during the process of professional development, there was not a system to capture and implement the results of the research projects developed by the participants of the programme in order to strengthen their capacities.

Despite being an overall positive experience, the process was not conceived as an initiative of the country, nor considered one of the permanent strategies of the Ministry. By not having a strategy of intervention, the processes could not be monitored or supervised. As a result of not having a defined intervention plan for post training, the technical personnel were not assigned to areas or places where they could have the most impact.

The extension system of MIDA could not be consolidated for lack of a process of follow-up and evaluation of the designed intervention strategies. This did not permit the identification and separation of actions that would have had positive a effect from those that would not.

The strategy of strengthening personnel of the Ministry has been replicated in different technological directorates of the Ministry (Plant Health, Animal Health and Cattle Raising, among others).

There are trained personnel to design programmes and projects focused on strengthening the knowledge and skills of staff in the field.

**Lessons learned**

Countries should incorporate in their country strategies the design of a functioning and efficient extension system based on the existence of well-trained human resources. In the absence of a defined intervention strategy that utilizes adequately trained human resources, there is a risk that these persons eventually will be used for other activities for which they were not prepared. Therefore, it will not contribute to the strengthening of a more efficient and effective extension system.

At the moment the intervention strategy is designed in the field, follow-up and evaluation strategies must be included and periodic adjustments in the system made. These must be established from the beginning.

Without a system of follow-up and evaluation of the system, corrective measures and adjustments cannot be made and thus it is most likely not possible to gain the maximum impact from the training for strengthening the extension system.
3.6.2 Assuring greater access to extension services for women

Strengthening the organized women groups and women who are independent at the community level must be a priority in all projects in order to guarantee their participation in extension activities. It has been proven that resources women receive go to improve their home, food for the family, educate their children, improve the quality of life in their homes and, when they have the resources, to realize savings. This is the reason why they must be included in all actions that aim to improve the socio-economic condition for them and their families.

To obtain positive results, it is indispensible to design and implement training activities that are of high quality and are specifically for groups of women in the communities. To accomplish this, obstacles that impede the participation of women in training activities need to be identified. In many occasions in the life of a project, women find it impossible to participate in training because there are obstacles that prevent them from attending the events organized for them.

The description of this good extension practice is focused primarily on the case of indigenous women from the area of Darien, participants in the Sustainable Rural Development Project of Darien. This project was carried out from 1996 to 2005, having as the objective to improve the conditions of life in rural communities promoting community organizations and strengthening the traditional institutions to make request for public services. As a special aspect, financing was provided for the women’s organizations.

As a prerequisite to be eligible for the benefits that were offered by the project, the groups of women had to have training in technology related to sustaining a business as well as knowing how to access financing.

At the end of the project, it was hoped that the women would have accomplished the following:

- The group would become legally recognized, a prerequisite for obtaining the resources for the projects.
- They would have technical and administrative training to establish small profitable businesses.
- They would be able to establish channels to market their products and handicrafts.
- They would have access to credit.
- They would participate in community organizations of their own ethnic background and that of other ethnic backgrounds in the province.

The study found that the reality of the situation was that women did have difficulties participating in training events. The project from its beginning identified a series of limitations for the participation of women. The first that presented itself was at the level of the home. Husbands only permitted the participation of women if they could go with their children. Other limiting factors for the participation of women were the hours, the places selected to hold the
training, as well as the communication that should have existed to inform them concerning the nature of their participation. The planning of the hours, dates and permission for participation were topics that could not be established outside of the framework of the participant and their families without prior discussion with the women as well as the husbands.

Communication is one of the most serious obstacles that was faced during the training process. The indigenous women do not leave their surroundings very often, for this reason they have problems with Spanish and with the processes of communication with persons who are not Indians. Occasionally their children serve as interpreters.

Very important aspects to consider when making decision concerning the type of organization to be established were the regional laws and regulations of the “comarca” (an administrative region for an area with a substantial Indian population) which play an important role in the type of organization that can be formed in this special region. For this reason, extension activities should have the approval of the traditional authorities in the comarca.

The project, with the idea of encouraging women to have good communications with other groups of women in order to share experiences typical to them, explored the possibility of creating a network of women at the “comaca” level. To make such an organization official it must be approved by the comarca authorities. For this, meetings were planned with the authorities to present the objectives and expected results in order to formally establish such an organization at this level.

For the indigenous women, when they were in training they were not in an environment they were accustomed to and also did not eat traditional food. Many women and their children experienced stomach sicknesses, headaches and the cultural management of menstrual periods. Often these become barriers for them to achieve objectives for their training. When training in indigenous areas these factors must be considered when planning. They go beyond just indentifying the technical topics to meet the needs of the community in order to reach the objectives established for the project. When planning for work in indigenous areas it is important to analyze other factors, such as how cultural, ethnic, social and communication processes affect the active participation of women.

**Strategy for achieving the participation of women**

This project, conscious of the situation, identified alternatives to overcome the obstacles that impeded the effective participation of the women in training activities planned to help them improve their lives. The strategies designed to minimize these barriers were:

- Plan for the training in the communities where the women live. In the process of planning, in addition to the women themselves, their spouses and the local authorities should be included. With this is done in a correct manner, it will guarantee that the hours, dates and places selected will not interfere with activities previously planned in the community or conflict with the daily life of the participants.
» Identify trainers who know the language of the women participating; in this case they had to speak “Embera”, “Wounaan” or “Kuna”. On occasion and depending on to the topic to be covered, it was difficult to find trainers who could speak the three languages, given that in the training there were often representatives from the three ethnic groups. In the case that it was not possible to find trainers who spoke the local languages, the project contracted translators. Another communication obstacle was the lack of knowing about the subject matter on the part of the translators. This barrier became worse when there were only male translators who did not understand the topics concerning the exclusive responsibilities of women.

» Include the “comarca” authorities in the presentation and review of the plans and projects with groups of the community, specifically groups of women to guarantee that there were no obstacles at the moment of execution of the projects.

» As far as the participation of women, it was found important to have someone look after the children. In this way the mothers could concentrate better on the training and it reduced their level of anxiety. The training unit established a mobile childcare programme that was made up of women and young people from the communities where the training took place, especially when it involved training in localities outside of the communities of the participants. The babysitters had toys, learning material for children, diapers, cleaning articles, plates, drinking glasses, bibs and medicine among other things, to respond to needs that might arise with the group of boys and girls. In addition, the planning for the training allowed time for the mothers who were nursing to be with their babies.

» Awareness of the projects on the part of the government authorities, the “comarca” leaders and the men of the communities, especially the husbands of the participants in topics of gender, helped them better understand the role of women in society.

» Guarantee that at the moment training is planned for women, special considerations are taken into account to foster their effective participation in the training activities.

**Results and principal conclusions**

» Participation of women in the training activities of the project increased by trying to understand and apply solution to the obstacles that impeded them from participating in an effective manner.

» Programmes and projects specifically for women were made possible by including them in the planning process. This guaranteed that the participants selected were consulted with and that the training programme designed was based on their needs, situations and real conditions.

» The level of acceptance and understanding of the topics that were presented increased. To break the communication and cultural barriers, the process of teaching and learning was effective and as a result the topics presented were adopted.

» The implementation of business ventures increased on the part of women.

» The process of follow-up and evaluation facilitated breaking the barriers of communication. This meant that the project could better evaluate the processes carried out with the groups
of women, making necessary adjustments and sharing with the authorities and with their families, specifically the husbands, the accomplishments.

» Seeing the successful results, project personnel were better able to facilitate the process of applying solutions to eliminate the cultural, communication and structural barriers that affected the active participation of the women.

**Lessons learned**

To guarantee the participation of indigenous women innovative strategies need to be designed, Some of these were:

» To respond to the communication barriers, interpreters and translators are needed who speak the language and know the proper terms used by the women.

» Create the appropriate conditions to guarantee the participation of women by establishing child care centers during the training.

» Prepare a medicine cabinet available to guarantee the health of the participants and their children, preventing particular situations and considering that the changes in habits and food customs may affect them.

» The topic of gender should be part of every project and must be part of the awareness of the technical staff of the project and the different beneficiary groups or members of the projects in order to guarantee a greater economic, social and cultural impact, as well as good results at the level of the family.

» The selection of the localities where the training is offered is important. The closer the training is to the communities where the participants live, the greater the participation of the women in the programmed activities. They, as well as their families, feel more secure, especially their husbands.

» Topics for the training must be planned with the participants to respond to their real needs. In addition, while planning, alternatives topics should be considered which may not have been previously considered or thought about, but could substantially improve their lives if presented.

» Groups of women are interested in topics beyond those that are conceptualized by society for them such as traditions based on the role traditionally assigned to women such as sewing, cooking and handicrafts. Rural women are also interested in agricultural production and business topics. Arts and craft topics are also of interest to women. The topics that deal with groups of women should be focused on giving timely responses to their needs and aspirations. In other words, they must provide alternatives to improve their living conditions.

» At the moment that planning takes place for women, it should include communication with the men and the rest of the community, as well as the traditional authorities of the “comarca”. These steps prior to the training have the objective of communicating the goals, content, activities and expected results of the training to induce confidence in the population.
3.6.3 **Partnerships to facilitate the process of adoption of innovations**

This good practice reflects the benefits of working in partnership to promote the adoption of technologies. The partnership that will be described is with the Nestle Company, the Institute for the Improvement of Cattle Raising in Panama (PROMEGA) of the University of Panama and the private company Superior Fertilizers. Partnerships contribute to one of the strategies included in the *Integrated System of Extension and Agricultural Innovation of Panama* of the MIDA. It is intended to improve priority production systems by involving the responsible parties in the processes to bring about changes in behavior of the farmers.

**Background**

According to the Office of the Comptroller of the Republic of Panama in 2001 there were 39,205 farms with cattle of which 34,412 were between 0.5 and 99.99 hectares. In this group there were 6,591 farms that produced milk and 16,343 that raised beef cattle. For the most part, these exploitations significantly contributed to the economy of the country through the production of milk and beef.

More recent data presented by the Comptroller of the Republic, indicates that 9,117 of these farms received technical assistance from the State and 905 received technical assistance from non-government organizations. If the situation is analyzed, it can be concluded that in relation to the registered farms who have cattle, only a reduced number are provided with technical support to increase production and improve the quality of the cattle. This is to say that the total number of the farms with cattle (22,934) or only 43 percent were taken care of (10,022).

MIDA, the institution responsible for providing extension services to farmers found itself in a stage of organization and restructuring of the system of extension and decided that all the action to be carried out should be under a new focus. The new extension system was based on four areas of action as mentioned below:

- Should be through priority productive systems.
- With a focus on value chains of production.
- Based on demand and requests for results.
- With integrated responsibility shared by all key actors.

In December 2006, a workshop was carried out for the milk producers of Panama with the purpose of supporting the competitiveness of this sector. The event, organized by MIDA and the Inter-American Institute for Cooperation in Agriculture, was of great socio-economic importance for the country in that a large number of small and medium farmers, dedicated to the production of milk, participated at the national level.

The workshop was based on the application of the value chain concept of agriculture and food.
Participants were asked to discuss relevant topics to the production of milk with the idea of identifying the different actors in the value chain, the problems and the alternative solutions to the problems. The themes dealt with were: primary production, the milk industry, marketing, milk consumption, the national and international environment related to the value chain of milk, and the provision of inputs, equipment and services.

Factors that influenced the practice

The participants of the workshop indentified the factors that needed more attention with the goal of overcoming the problems that restrict competitiveness, whether in phases of the value chain or in the entire value chain. Among the factors indentified, those that contributed to the good extension practice identified in this study, were training and technical assistance.

Two parameters were proposed:

» Orient the efforts in a manner that focuses on the true realities in the ecological zones.

» Involve businesses, banks and producer organizations in the process of transfer of technology and extension.

Association and partnership strategy

The entire plan established partnerships among the actors in the value chain and the government to work in coordination. Some of the specific actions were:

» Construction of factories for making mineral salt, an strategic alliance with the salt cooperatives.

» Establishment of partnerships among industries and farmers to improve the issues of payments, contacts and quality.

» In general, strengthen the farmer organizations.

The two last factors considered were the free trade agreement and topics related to competitiveness. The conclusions that resulted at the end of the workshop were that all private businesses that had providers of raw materials for the elaboration of milk products for national and international consumption should offer technical training to their producers so they could face the changes that influence the economy of milk production in the country.

Principal actors and their roles

Nestle Company, a company that processes milk, receives raw milk from 2 800 dairy farms located in five provinces: Cocle, Veraguas, Herrera, Los Santos y Chiriqui. These farmers produce an average of 45 litres each per farm and receive for their production a payment per litre of milk, based on the solids present in the milk.

Nestle has supervisory technicians in the provinces where they receive raw milk from the producers. The technical team from Nestle supervises the conditions of production in terms of the infrastructure and management that is given to the animals, the pastures and the milk.
The parameters used are the parameters established for the company, always seeking efficiency, sustainability and adequate management of the environment.

For the reasons mentioned, the company needed to associate with an institution that could give training to their technicians and the farmers who provide raw milk. The training should help the dairy farms improve their conditions on a permanent basis, through the adoption of technologies.

For their part, the PROMEGA Institute of the University of Panama has as one of their objectives, improve the production and productivity of cattle through the process of adaptation of existing appropriate technology and the training of small and medium cattle farmers in the country.

Over the years of their adaptive research and extension activities the PROMEGA Institute has developed the “Sustainable Farm” concept. This concept is the one that they present to the farmers, with hopes that they will adopt the necessary practices so that they eventually will have a sustainable farm that is friendly to the environment.

The topics that are included by the Institute in their concept are the following:

1. Registry of activities of the farm for decision-making.
2. Programming the planting, care and management of improved pastures.
3. A plan for feeding the animals all year.
4. Taking into account the use of by-products on the farm.
5. Planning natural breeding and the practice artificial insemination.
6. A program of animal health.
7. A program of animal selection.
8. A programme of culling unproductive animals.
9. Having a minimum of installations for milking and sources of water.
10. Maintaining fences.
11. Carrying out a programme of weaning and raising replacement animals.
13. Fulfilling the practices of management of natural resources.
14. Verification of the economic efficiency and sustainability of the farm.

Training about the concept suggested by PROMEGA is made through field days, talks and demonstrations with the farmers who supply milk to Nestlé. This relationship has been going on for almost four years. During this period there have been four to six training session in different provinces where the Nestlé Company has providers of raw milk. Approximately 200 to 300 farmers have been trained through this programme.
The “Sustainable Farm” concept that PROMEGA promotes at the farm level is the same concept that is used with suppliers of milk to Nestlé. PROMEGA provides training in technical topics that enables farmers to include this concept on their farms. In the training, the topics are presented with a theoretical-practical focus. In addition, method demonstrations are carried out that incorporate learning-by-doing where the farmers learn the management of the technology presented. Nestlé company carried out follow-up with the farmers who implemented the innovations presented during the training on their farms. This entire process guarantees that the innovations are correctly implemented and their use is appropriate. It also provides an opportunity for the farmers to analyze and discuss the advantages of the practices on their farms with the technical team.

In order to be able to apply the technologies taught through training, farmers need inputs to be able to adopt and implement the technologies on their farms. The reality of the producers is that they do not have sufficient resources for this investment in order to begin or maintain the technologies on their farms, therefore an alternative form of financing for this situation was required.

While working with the farmers, a new partnership was created which included a commercial house that supports financing at the farm level. Selecting the technology to use on the farm, the necessary inputs were identified in order to implement the innovation. The commercial houses seeking to support the farmer offered lines of credit that would permit the acquisition of inputs required for the farm.

The Nestlé Company backed the credit for the farmers and the payments to the commercial houses, which was worked out between Nestlé and the financing agency. In addition, the strategy for the partnership permitted a guarantee of the quality of the inputs that were recommended by the PROMEGA Institute. So that the strategy would work, the commercial houses participated in the process of training so as to be able to offer adequate inputs for the implementation of the innovations, to make promotional packages and to offer alternatives as to costs of the products offered.

Another one of the benefits of the partnership with the commercial houses is that the farmer does not need a co-signer, or pass through all the obstacles to open a line of credit. The only requirement is to demonstrate that he or she is a provider of raw milk to Nestlé. Being a provider of milk to Nestlé permits immediate access to a line of credit and in addition permits farmers to receive competitive prices in relation to other commercial operations.

This process has as its final objective that the company who buys milk can offer, on a sustained basis, better prices per litre of milk. The partnership permits the provider to receive better income by offering a product of better quality through a process of improving the systems of production, after participation in the continuing training programme in a systematized and organized manner.

In addition, the farmer does not have to resort to traditional financing (banks, financial institutions, speculators) to acquire the required inputs. With this process, patterns
are established that promote the adoption of innovations, appropriate training and the adoption of technology on the part of the farmers who provide milk: PROMEGA → farmers → commercial houses → Nestlé = A good price from the moment the company buys the raw milk.

Results and conclusions

» A strategy of interventions was designed for farmers who provide raw milk to the Nestlé Company, involving the PROMEGA Institute and commercial houses, permitting farmers to improve their exploitation and hence improve their income through better sustained prices for the sale of raw milk.

» The farms with dairy cattle improved their technology level. This happens when the technology that is presented is appropriate, has been applied and validated before being presented as an alternative to the farmers.

» The concept PROMEGA finds centres of diffusion of the suggested technology on the farms where the concept is implemented. These farms function as showcase windows for the diffusion of technology with the neighboring farmers. It is hoped that this process of diffusion, in time, enables the dairy industry to increase production and productivity for a sustainable dairy industry.

» The commercial houses of the area benefit by opening credit portfolios, with assured repayments of the capital. The co-signer of the credits is the milk company, which guarantees that any debts will be settled. This permits the development of the territory, involving other companies in the development of the region.

» The effective partnership between the private sector and the government requires planning to design its implementation for execution and monitoring in the field as well as close communication among the actors involved in the partnership.

» The partnership between the private sector and the state, supports the processes to eliminate or minimize the factors that restrict competitiveness, in the individual links or in the entire chain of production; factors which at the moment were identified in the workshop for the dairy sector of Panama that was carried out in December of 2006.

» The farmers who completed the training have all the technical elements that permit them to evaluate the technological innovations, enabling them to considering whether or not they are appropriate for their operation and rejecting those that are not.

Lessons learned

» While establishing a process to improve the conditions of the incomes of agricultural producers it is necessary to establish partnerships among the providers of the raw material, the generator and adapter of innovative technologies, the providers of inputs to implement the innovative technologies, and the companies that establish the parameters of buying, including the prices for the raw material produced.
Partnerships are effective and possible between government institutions (PROMEGA) and private companies (Nestlé, commercial houses; providers of inputs in this case) when there is a desire to improve the conditions of the agricultural producers in the area or region.

The partnership dealing with marketing, the purchase of raw material and the providers of inputs; and the research and adaptation of technologies, tend to improve the economy of the area or region.

The training should include learning-by-doing components, especially with method and result demonstrations. This permits the farmers to have the elements for decision making in order to determine for themselves whether or not to adopt the new technologies presented in the training.
SECTION 4: RECOMMENDATION

4.1 RECOMMENDATIONS AND LESSONS LEARNED FROM THE CASE STUDIES

The strengthening and the improvement of technical advisory services focused on small farmers and family agriculture is increasingly important at the global level, including the region of Central America. The issues such as globalization; the information technology revolution; climate change; and the liberalization and privatization of the markets are the major challenges that extension is going to face which need to be addressed in the medium and long term.

Considering that human capital is the most valuable resource that extension has, historically it has not been used optimally in the management of systems and programmes. An emphasis on integrated, multi-disciplinary and sustainable development has been discussed for rural areas affirming that the farmers must reach higher levels of learning, but this also implies new requirements for agricultural extension such as becoming “facilitators of innovation” or what is also called today, Innovation Brokers. In the past it was understood that extension had a function of linking science and practice. Today, the vision is much broader, including the role of the extension worker in carrying out important intermediary functions such as conciliation among different actors (organizations, sectors, disciplines, donors, etc.); the transmission of knowledge and information (articulation of the available technology offered and that requested); mediation and facilitation of learning; and having a vision of the future.

Until now there are few in-depth studies that have analyzed the impact that the new demands and challenges of extension have on the management of technical assistance services. Even so, the extension workers must be prepared for social changes, so they are able to adapt and integrate new capacities for individuals and institutions. In this study, new experiences are presented emphasizing the fact that there is no one unique solution for all the problems, but a transition of the types of focuses are necessary from “best practices and/or only model” to a focus on “good adapted practices”.

To learn about good adapted practices, the models and examples are always a good starting point. We hope that the lessons found in these case studies will help readers learn how the different actors have been able to carry out the good practices by being efficient and by applying positive measures; and may help in the search for similar experiences. We hope that this publication will serve to show how it has been possible to be efficient and introduce these focuses, which could be adapted in other communities with the same limitations and available resources.

Critical factors of success that come from the case studies

The review and analysis of the results of these national studies were carried out in a workshop in Guatemala City in June 2011. During the workshop, 58 participants coming from FAO, NGOs, universities, civil society, farmer groups, international cooperation (European Union, Japanese, America and Spanish Cooperation), Ministries of Agriculture (Guatemala, Costa
Rica and Panama), discussed the lessons learned from the studies to gain new inputs and raise issues with respect to extension in the region. The pattern that emerged from the study suggested that the majority of the successful cases were a result of strengthening capacities to face new challenges through a combination of: (1) good will and disposition of the institutions or principal actors; (2) the technical suitability of the support organization that operated in an inter-sectorial and multi-disciplinary manner; and (3) an environment favorable for change.

This pattern is in line with the framework of FAO for the strengthening of the capacities that interlace the three dimensions: the individual, the organizations and a favorable environment. Strengthening of capacities many time carries with it the reinforcement of the knowledge of the people involved. However, the results that an individual can achieve often depends on a large measure on the quality of the organization in which they work. In addition, the effectiveness of the organizations and the network of organizations can be seen to be affected by a facilitating environment. Following this logic we can affirm that the strengthening of the services and systems of extension cannot be carried out simply by implementing certain practices after imparting knowledge. It is the result of interconnected factors that optimize synergies in different dimensions of the system of capacity in a country.

![Figure 16: Different dimensions of the capacity system in a country: facilitating environment of policy, institutions and individuals](image)

An overview of the critical principal factors that contribute to the good extension practices (as well as those that can eventually contribute), following the three dimension of capacity development (individuals, organizations and the enabling environment), are understood as:

» Capacities developed within the dimensions of the individual: are those that bring about changes in abilities, behavior and attitudes in a broad spectrum of actors in the agricultural sector and rural development. Training, exchange of knowledge and the creation of networks constitute forms within this dimension in which the capacities can be strengthened.
Capacities within the organizational dimension: implies taking measures in the functioning and overall performance of the organization. This dimension has a direct impact on how an individual within the organization develops their competencies and exercises their abilities.

Capacities within the enabling environment: This is the context in which the individuals and the organization put into practice their abilities and where the capacity strengthening processes are carried out. This enabling environment encompasses: political compromise and vision; political, judicial and economic structures; allocations and budgetary processes; governing structures and power; and incentives and social norms.

A. Identification of capacity development in the individual. The following factors can facilitate the identification and projection of adequate interventions so that the technical advisory services aid in the creation of the necessary conditions to bring about change:

a.1 The new role of the extension worker as a facilitator of the innovation

When we talk of extension workers as facilitators of innovation, it should be understood that the innovation contemplated is not only the result of new technologies adopted, but also the establishment of new processes, such as the formalization or gaining legal status of a local group or organization that makes it easier to reach the objectives of the members, or the establishment of a process that permits farmers to access markets and sell their products in a fairer manner. From there, the innovation for the extension worker must be understood in relation to the reality of the life of the target groups (this includes limitations and potential), as well as in relation to their expressed needs. The realization of this reality should not only be attributed to the agricultural production factors, but rather the means of existing livelihoods and the agricultural context (rural environment) that affects them. It is necessary that the extension workers have a vision of a broader rural focus rather than purely an agricultural perspective. In addition it is hoped that the technician, even if they cannot respond with a solution to a specific topic, has the capacity to analyze the problem, establish contact with other local actors who can provide the service or the knowledge required and negotiate a solution that would be beneficial for all. Through the process of searching for partnerships among local actors in order to promote the more efficient use of available resources or services coming from the multiplicity of local partners, this can be included as a function of the plans established by the local communities together with the extension worker. (Leeuwis, C., 2004)

For example, the case of participation on the part of the small coffee farmers in high value markets in Honduras through the trademark of protected origin, Marcala Coffee, should be mentioned. During this intervention the role of the extension worker was not purely technical, as a specialist in the production of coffee, but rather supporting an improvement in the competitiveness of the producers through partnerships with all the actors in the agri-marketing value chain of coffee, as well as donors and municipalities. In this way, the universities and other centres and institutions of rural knowledge play a key role in that they
must face the challenges such as attracting as well as preparing students/extension workers so that they can satisfactorily accomplish this new role as facilitator of the innovation.

**a.2 The revaluation of the function of the extension worker**

The study recommends revaluation of the function of the extension worker in the region, broadening their mandate beyond technology transfer by training them to enhance their capabilities. For this, it is necessary to promote actions directed to the training and professional development of extension workers, generating conditions in an academic and rural environment to revalue their service. For this, the extension worker must adapt to the new needs that arise in the communities through different training relating to the new topics required within planning for their groups, utilizing a focus of “learning-by-doing”.

In addition, the extension workers must be backed up by a team of specialists in different specific fields to which they can go to when they need knowledge on specific topics. In this team, there should also be included a specialist in extension methodology to give training and follow-up in the application of the methods of extension.

For example, in the case of El Salvador, with the practice of *Investing in the Mirada*, it is the farmers who are in charge of the management and contract the providers of technical assistance services that fit their own requirements. For this reason, the providers of technical assistance services must be sufficiently prepared to satisfy their clientele. Another similar experience is the case in the high plains of Guatemala where the payment of the extension worker is made in cash and/or in-kind arrangements that generates a greater interest in the providing high quality service on the part of the extension worker.

**B. Identification of capacity development in the dimension of the organization.** The following factors have permitted the identification and projection of adequate interventions for advisory services that favor the creation of necessary conditions to promote changes:

**b.1 The efficiency of the actions of the extension service in response to their orientation to the services requested**

Although in different contexts, the extension services are efficient to the extent that they are directed to solve the problems and work on opportunities identified or brought up by the population where the services are directed. In each situation, this orientation is effective when the problems or potential of the production, such as opportunities, requirements, restrictions of the market or other needs are directly linked to the target population.

This orientation should predicate the supply of technologies and solutions by the entities who provide such services. Such an orientation facilitates clarity and transparency of a shared vision among the various actors, in terms of the content of the planning, prioritization and scaling up of the strategy to be applied; and utilization of follow-up and evaluation. In addition, as was expressed by the representatives of the farmer groups, we should not forget that establishing the priorities that the groups have and working to help provide for their highest priority needs, will give credibility to the future work of the extension worker. In other words, after helping
farmers resolve their greatest problem or find what they most need, the innovations that are offered by extension and advisory services will be considered with greater interest.

Promoting the participation of all the actors in the preliminary steps contributes to the collective valuing of the dimensions and processes that carry the alternative possibilities of implementing the projects. This also permits the creation of the necessary conditions for strengthening the organizations. The interventions of the extension workers in the MERCASEL Programme in El Salvador is a clear example of this. The fact that the users or beneficiaries of the project participated in the diagnostic study of the market, which was the start of the activities of generating incomes, was suggested in discussion by the technical assistance services and the farmers.

Another example is the case of Guatemala, when the extension agents worked directly with the students that were carrying out their Supervised Profession Exercise and with the communities to develop action plans through the diagnostic studies of the micro-watersheds. This permitted a greater ownership of the action plans by the communities in that work carried out together made it easier to better establish the priorities according to the needs identified by the farmers themselves.

b.2 The organization, development of partnerships and the identification of all relevant actors is key to advocacy, impact and sustainability of the results being sought

The application of a focus of rural development where you have to take into account the economic, social, human, political and environment factors, understood and treated in relation to their interrelationships (a different focus than that of just agriculture) permits a broadening of the reductionist concept of a vision where the work of extension staff is limited to the provision of technical assistance for production activities. This expanded focus implies there are new actors (public, private, and local) as well as different forms of organizations and partnerships, which results in being key to access new resources, mitigate risks, expand the scale as well as the sustainability of the activities related with the target communities of the extension workers. For example, the intervention of the extension workers in the agricultural value chain of beef cattle of Chorotega (Costa Rica) was fundamental in order to reach an agreement and look for common objectives among the different factors such as the Chamber of Cattle Producers, the National Institute of Learning and the farmers themselves.

b.3 The partnerships among local actors and population groups in search for the concept “sum-sum”

An interesting concept that arose from the workshop discussions about the case studies is that the institutional partnerships in support of enhancing the extension and advisory services who work with rural communities, not only should be established based on the principal “win-win” where all involved organizations come out winning, but also include the concept of “sum-sum”, which emphasizes the importance of helping the target communities; in other words, the key is to assure that the additive effects that each organization in the partnership brings benefits the target populations served by rural extension and advisory services.
This focus was utilized in the partnership with the Nestlé Company, the PROMEGA Institute of the University of Panama, private businesses and the dairy farmers to establish a process to improve the conditions of the farmers through the provision of inputs and other support.

b.4 Medium and long-term processes to reach sustainability

To make an impact on a large scale and bring about changes in the conditions of life of the population that are being supported with the extension services, a medium and long-term process with measurable efficiency is required, one capable of adapting and evolving according to new requirements. It is important to stress that to plan with the groups, the result is a “group plan” and not that of the extension worker. But this plan, at the same time, must take into account the actions of the extension worker who is supporting the group. The constant presence of the extension worker in the work area is key to achieve credibility and confidence within the target group and to better know the challenges that they face and the opportunities they have to improve their livelihoods.

Capacity building requires that long-term efforts occur in a gradual manner. By guaranteeing a medium to long-term time horizon for the interventions, and allowing it to be extended over a period of various years in distinct forms and different scales or financial mechanisms, it can be assumed that profound changes will take place in the mentality of the participants and the modus operandi of the projects. For example, the COOPEBRISAS Cooperative in Costa Rica has been administering water for personal use and for agriculture for more than 30 years. One of the key factors in their success was the constant support of the extension services not only in technical matters of water, but also in the consolidation of the group and the autonomous management of their resources, which gradually led to their being able to buy new land and explore new productive activities. In this example, it is important to emphasize that the leaders of the cooperative were also members of the 4-S Clubs that were supported by the extension system for 30 years.

The practice in Costa Rica is an example of extension support over the long period of time where the continuity allowed the group to expand their projects and specialize in different activities, achieving sustainability in their actions. In other cases, that occurred in numerous projects, if a strategic vision is not considered, including medium-term objectives, it is difficult to have an impact because sufficient group strength cannot be generated among farmers or in communities for them to continue with their activities in an independent manner. This resulted in the case of the Salvadorian farmers of MERCASEL, where it should be emphasized that it is necessary that good extension practices be institutionalized so that they can continue and that the farmers will not feel abandoned.

b.5 Measuring the impact of extension

It is necessary to quantify the results of actions taken by extension. For this, it is important to establish a baseline at the beginning of the extension activities, and establishing a system of follow-up and evaluation that supports the process of measuring changes and resulting effects of extension activities.
The combination of using rural promoters and the methodology of the Farmer Field Schools carried out by INTA (Nicaragua) from 2008 until now puts forth a new model of agricultural extension that can significantly increase the impact of their activities. A good system of follow-up and evaluation can give answers to the question of the extent to which promoters increased institutional capacities, or on the other hand, brought advisory services closer to the communities. The resulting information is extremely useful in planning and the inclusion of local actors in the national systems of extension.

**b.6 Promotion of the use of appropriate extension pedagogical methodologies and the importance of communication**

It is worth mentioning that throughout the workshop, in the minds of some of the participants, there was the notion that extension workers needed to be a type of technical “super human” as a result of the multiple knowledge and abilities they must have. However, it was made clear that they are not expected to have complete technical knowledge in different fields (crops, fisheries, nutrition, irrigations, etc.) but they are expected to be able to analyze the reality of the situation that the target groups face and based on this, facilitate the development of their capacities and attitudes on the part of farmers so they can generate the changes needed.

Extension workers should in addition be able to manage the pedagogical focus based on the principles of adult learning such as assuring that there is a two-way flow of information to and from the farmers. In a positive manner in the case of Panama, the extension workers explained in detail to the members of the communities and their leaders how to carry out the extension activities with specific groups, making it possible for them to participate in these events.

### Global forum for rural advisory services guide to extension evaluation

*Recently the Global Forum for Rural Advisory Services (GFRAS) supported the development of the Guide to Extension Evaluation with the purpose of improving the contributions of the rural advisory services. During 2011, the draft of the document was field tested so it could be finalized and translated into French and Spanish. If you are interested in downloading the English version go to the link: [http://www.g-fras.org/index.php/en/knowledge/gfras-publication/20-guide-to-extension-evaluation](http://www.g-fras.org/index.php/en/knowledge/gfras-publication/20-guide-to-extension-evaluation).*
C. Identification of capacity development in the dimensions of an enabling environment.

The following factors allow the identification and promotion of relevant interventions on the part of technical advisory services which help with the creation of conditions necessary to bring about changes:

c.1 Application of a multi-dimensional focus promoting the participation of all the actors

Capacity development should include a combination of intervention modalities where the different social, political and economic structures are included to obtain impact at the national level. For example, in the case of El Salvador, the role of the extension worker in the technical working groups at the local level with representation of the communities was key to promoting and creating partnerships for the topic of food and nutrition security. The process accomplished the creation of enthusiasm that reached the institutions such as FOROSAN and CONOSAN. The results of this initiative demonstrates the effectiveness of an intervention applied at the level of the individual as well as the institution and their positive impact in terms of policies (for example launching the SAN Policy of El Salvador).

4.2 RECOMMENDATIONS FOR SIMILAR STUDIES OF EXTENSION AND TECHNICAL ADVISORY EXPERIENCES

Following the suggestion of the participants of the workshop of making the case studies widely available, as well as the collaborators in this publication, some advice is listed that we think can be useful in carrying out similar study and analysis initiatives in different contexts and/or regions. Taking into account that the objective of this publication is to highlight methods, methodologies, experiences as well as new extension practices that we think will give the best results, one must take into consideration the following recommendations:

» Involve the largest number of actors possible in the identification of successful cases. Bring up the objectives of the study not only as an economic analysis with evaluation alone, but rather a description of the experiences that serves as a seed for the design, strengthening and implementation of extension systems.

» During the study, establish among the actors the concept of good extension practice so that they understand what they are and how to identify them.

» Attempt to have the case studies capture, to the greatest extent possible, the wide range of experiences without repeating; deal with topics ranging from food and nutrition security; to orientation to the market; programmes focused on women; the management of natural resources; professional development and training of extension workers; to partnerships and pluralistic systems.

» It is recommended to clearly differentiate the specific roles of the extension worker and/or the technical assistance service in the description of the experience and/or practice.
» For the majority of the cases, there is a difference between the description of the rural development activity and the role of the extension worker; it is important that the role of the extension worker should be clear so it can be replicated and/or adapted.

» Negative aspects of the practices and/or experiences should be included, where problems can be identified and not just rely on the best results.

» An informational and clarification workshop is essential to the analysis, discussion and collection of lessons learned. At the same time, the coordination mechanisms to carry out a study is key to harmonizing and disseminating the concepts of the study.

» It would be relevant within the studies to include some topics that are to be treated in more depth, above all to know the efficiency and impact, for example, of the use of information technology and communication in extension projects.

It is recognized that the roles of research within the process of generation and exchange of knowledge has not been sufficiently integrated into this study, however FAO recognizes the importance of agricultural research within the process of agricultural innovation which should be included in new studies.
ANNEX 1

TERMS OF REFERENCE, GENERAL COORDINATOR OF THE STUDY

Job objective

The General Coordinator of the study shall be in charge of leading the process of design, formulation and permanent adjustments for the study to systematize the good extension practices in Central America, assuring that the different national studies and activities developed by the national consultants are directed to support the Central American counties in documenting and systematizing good practices related to systems and methodologies of extension.

Specific responsibilities

» Plan, coordinate and direct in coordination with the Research and Extension Unit (NRDR), FAO, Rome and with the collaboration of the Sub-regional Office of FAO for Central America (SLM), all and every one of the activities to execute the project.

» Design the technical framework for the implementation of the studies (adapted in each country to reflect and coincide with specific interests) and supervise their correct application on the part of the national consultants.

» Coordinate and participate in the selection of the national consultants.

» Guide, coordinate and supervise the elaboration of the studies of the different national counterparts.

» Analyze, diagnose and systematize the good practices of methodologies and systems of extension in the Central American country where the General Coordinator lives.

» Guarantee the development of a publication (final document of the project); an edition with adequate standards that compile the different studies of the countries. Through this systemization, it is expected that the compilation and reflections concerning the knowledge included in the study are based on validated experiences in the field with the efforts of the local technicians, incorporating traditional knowledge, as well as successful experiences that meet international standards.

» Coordinate, design and execute the development of a regional workshop that will take place on June 2011 in Guatemala City, to exchange experiences about good practice of methodologies and systems of extension in the Central American Region. The objectives of the regional workshop are, among other things: present the results of the national studies, exchange experiences and lessons learned among the different countries and develop policy guidelines for extension work related to family agriculture and food security.
Expected products

1. A theoretical framework designed in collaboration with NRDR and SLM that serves as a base for the studies in the different countries.
2. Implement an orientation programme for the national consultants with the objectives, methodology and expected results of the study.
3. Provide direct follow-up to the different national consultants.
4. A regional workshop carried out with the analysis and review of the results of the studies about good practices in each one of the countries of the region.
5. Document the systematization of good extension practices in Central America incorporating the analysis of the different country studies.
6. A report of the recommendations and analysis carried out during the regional workshop.

Professional profile required

» Post graduate and/or masters degree in agricultural sciences, rural development or a related field.
» Relevant experience in planning and management of agricultural extension and systems of advisory services.
» Knowledge of English.
» Experience in Central America.
» Capacity to work in a team and under pressure.
» Availability to travel.
» Mastery of Office programmes (Word, Excel, PowerPoint, Project, etc.).
ANNEX 2
TERMS OF REFERENCE, NATIONAL CONSULTANT FOR COUNTRY STUDY

Job objective
The National Consultant will be in charge of elaborating the country study, coordinating, compiling and analyzing the necessary information following the recommendations of the regional consultant.

Specific responsibilities
- Be a national focal point during the process of the study.
- Collect and analyze information at the national level for the needs of the study, work that contemplates consultation with national institutions and/or other relevant actors.
- Participate in the on-line orientation programme of the study together with the other National Consultants and directed by the Regional Consultant.
- Participate in meetings (on-line or in person) concerning matters related to the study.
- Provide the information required by the Regional Consultant and NRDR/SLM team members during the different steps of the study.
- Guarantee the development of a publication including adequate standards that compile the elaboration of the study by country according to the guidelines established by the Regional Coordinator and the NRDR/SLM/EUFF/PESA team.
- Participation in the regional workshop (two days) that will take place towards the end of June 2011 in Guatemala City, for the exchange of experiences about good practices in methodologies and systems of extension in the Central American region.

Expected products
1. A national study with information collected and analyzed in accordance with the theoretical framework developed by the Regional Consultant.
2. Participation in the orientation programme (on-line) with the objectives, methodology and expected results of the study.
3. Give feed-back to the Regional Consultant and follow his/her suggestions.
4. Document the systematization of good extension practices in the country (including photographs with credits/authors).
5. A regional workshop with an analysis and review of the results of the studies about good practices in each one of the countries of the region.
6. Presentation (PowerPoint) during the regional workshop of the report with analysis and recommendations.

**Professional profile required**

- Post graduate and/or masters degree in agricultural sciences, rural development or a related field.
- Relevant experience in planning and management of agricultural extension and systems of advisory services.
- Experience in Central America.
- Capacity to work in a team and under pressure.
- Availability to travel.
- Mastery of Office programmes (Word, Excel, PowerPoint, Project, etc.).
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