

## **Innovation for Sustainable Value Chains in Central America:**

**Multi-sector strategies to strengthen the capacity of farm  
households and grower organizations to innovate under  
ecological and economic uncertainty**

Project Document

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August 2008

## Summary

Poverty in Central America is concentrated in rural regions where two thirds of the population live in poverty and at least a quarter in extreme poverty, representing about 80% of the poor in the region (World Bank 2001 & 2003). The World Bank concludes that the causes of this persistent poverty lie in drought, hurricanes and price volatility that erode the natural and social capital of rural families (World Bank 2001b). To confront this situation requires improving the sustainability of rural livelihoods that is expressed in our development objective.

**Development Goal:** During its 5-year project period, this project is to have contributed to the sustainable improvement of rural livelihoods and thus the reduction of rural poverty in two cross-border regions of Central America.

The project on integrated pest management and coffee agroforestry, implemented by CATIE and financed by NORAD, achieved changes in farmers knowledge enabling production under conditions of ecological uncertainty. Nevertheless, at the same time we recognized that the potential of this change was often not realized due to lack of market opportunities, credit availability to finance the changes and policies that did not favor ecological management practices. Creating the conditions for rural resource poor farming families to improve food security, and generate income and employment thus require concerted actions from multiple sectors from which we derive the three project purposes for which goals have been established.

**Project Purpose 1:** 3000 (2,300 coffee, 700 vegetables) small and medium scale farming households have implemented strategies for ecological production and entrepreneurial management, developed resilience to ecological and economic uncertainty, and improved their incomes, generated quality employment and conserved their natural resource base.

Goals: Farm household income increased by 20%

Number of families living on less than \$1 per person per day reduced by half

Minimum wages are paid by all farmers

Half as many farmers contaminate of water sources and they reduce use of pesticides by 15%

**Project Purpose 2:** Fifty diverse producer organizations (30 coffee and 20 vegetable component) and thirty businesses serving small and medium scale households (15 coffee and 15 vegetable component) have improved their capacity to innovate and react to economic uncertainty and opportunity, improving technical capacity, entrepreneurial management and financial viability, and achieved greater participation in socially and environmentally responsible value chains.

Goals: Increase the number of farming households who are members of business organizations by 20%

Increase the production sold to differentiated and sustainable markets by 20% of the value of sales by the organizations

**Project Purpose 3:** Multi-sector public and private actors, including CATIE, have strengthened their capacity to promote innovation through improved information and knowledge management, and have influenced the design of policies that establish appropriate incentives and development programs.

Goal: The majority of coffee or vegetable development policies have incorporated concepts of agroecology, business organization development, value chains, information and knowledge management and livelihood strategies.

These purposes and goals will be addressed in two different production and marketing challenges that affect the region:

- 1) the fall in coffee prices between 2000 and 2003 led to the income of coffee producing families falling by at least 25% and to over 200,000 rural workers becoming unemployed; despite some recent success in selling quality coffee at premium prices, these markets are still not accessible to a majority of producers;
- 2) extreme pesticide use in vegetable-producing communities in Central America has a negative impact on health and the environment of rural inhabitants, as well as causing contamination of water and food consumed in the regions cities;

They will be addressed through two territorially focused components for the implementation of the project:

### **Project Components**

1. Innovation in Sustainable Value Chains in the coffee highlands of Northern Nicaragua and Eastern Honduras
2. Innovation in Sustainable Vegetable Value Chains in Trifinio: the border region of Guatemala, Honduras and El Salvador.

The strategy for implementation of these purposes is designed to develop lessons and concrete experiences with selected families and their organizations (Result1), which will be shared among a wider range of actors through territorially based innovation platforms (Result 2), and integrated into national institutional capacity and policies (Result 3). The integration between these scales will be through fomenting processes of information and knowledge management among the actors at each scale (Result 4).

### **Expected Results:**

1. 750 farming households and their organizations have innovated in ecological production and entrepreneurial management in partnership with their service providers and other market chain actors, gaining improved participation and negotiation power in sustainable value chains as well as improved incomes
2. Key multi-sector actors have formed seven alliances in local innovation platforms to strengthen their capacity for innovation, improve their participation in value chains and demonstrate influence in the design of local public and private policies.
3. National and regional actors have integrated lessons from the project into the design of their own policies to facilitate national capacity and establish an enabling environment for innovation and development of sustainable value chains.
4. Project partners, including CATIE, have developed strategies to access, generate and integrate information and knowledge among local, national and international actors.

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# Innovation for Sustainable Value Chains

## 1. Introduction

Upon completion of the diagnostic and conjoint planning of the inception phases of the coffee and vegetable components the project met to revise the components, purposes and Results, and even the title of the project. Adjustments were made at all levels. We propose to use “Innovations in Sustainable Value Chains” as the shortened title for the project.

As part of the analysis of the results of the coffee (Nicaragua and Honduras) and vegetable crops (Trifinio) inception phase, integration of new personnel, and to structure the project strategy, as well as the short (2007-2008) and medium-term (2009-2010) planning, an adjusted conceptualization of the results for each component and definition of products has been developed.

In accordance with agreements with the Norwegian Embassy and CATIE in April 2007, the Dry Zone component has been eliminated. The concepts of reinforcing the livelihood strategies of farming families affected by climate change, and other environmental and socio-economic changes, have been integrated into the Coffee Component to become the “Innovation for sustainable value chains in coffee highlands” component. Finally, in at least one site we intend to extend the concept to evaluated intervention and impacts at a landscape level. This provides an opportunity to test the integration of concepts between sustainable value chains, livelihoods and landscapes that is proposed for the Mesoamerican Agro-environmental Program.

### 1.1 Overall Development Objective

The project objective is, during its 5-year project period, to have contributed to the sustainable improvement of rural livelihoods, and thus the reduction of rural poverty, in two cross-border regions of Central America: the Guatemala/El Salvador/Honduras “Trifinio” border region, and Eastern Honduras/Northern Nicaragua.

However, the Project purposes are focused on the strengthening of innovation capabilities among farming families (purpose 1), their organizations and supporting businesses (purpose 2) and national institutions (purpose 3). These innovation capabilities are directed towards, increasing economic and ecological resilience of rural families (purpose 1), greater participation in socially and environmentally response value chains (purpose 2) and creating a better enabling environment for innovation (purpose 3).

### 1.2 Project Purposes

**Project Purpose 1:** 3000 (2,300 coffee, 700 vegetables) small and medium scale farming households have implemented strategies for ecological production and entrepreneurial management, developed resilience to ecological and economic uncertainty, and improved their incomes, generated quality employment and conserved their natural resource base.

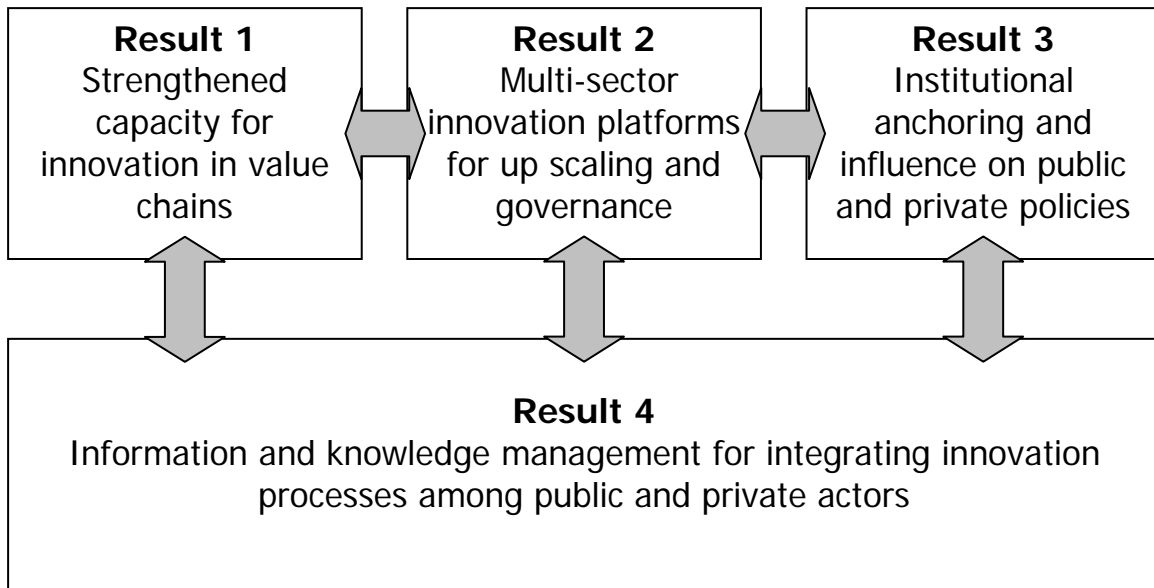
**Project Purpose 2:** Fifty diverse producer organizations (30 coffee and 20 vegetable component) and thirty businesses serving small and medium scale households (15 coffee and 15 vegetable component) have improved their capacity to innovate and react to economic uncertainty and opportunity, improving technical capacity, entrepreneurial management and financial viability, and achieved greater participation in socially and environmentally responsible value chains.

**Project Purpose 3:** Multi-sector public and private actors, including CATIE, have strengthened their capacity to promote innovation through improved information and knowledge management, and have influenced the design of policies that establish appropriate incentives and development programs.

### 1.3 Expected Results

To achieve the above purposes and contribute to overall development objective, the project will be implemented at three levels (Figure 1). At the *local level*, the project will support producer households and their organizations to innovate, in partnership with other market chain actors and service providers, to improve their participation in (or the development of) value chains with social and environmental responsibility that contribute to sustainable land management (Result 1). The project main contribution for the achievement of this Result will be the strengthening of innovation capacities of farming families, producer and private marketing organizations, and technical and business service providers, while fostering partnerships among them to negotiate appropriate incentives to catalyze innovation processes. At the *level of territories* (municipalities, or groups of municipalities), the project will facilitate the collaboration among key multi-sector actors (private and public) around negotiated common tasks or processes, promoting collective action and incentives for up-scaling innovation processes, and facilitating social and environmental governance to develop value chains and promote sustainable land management (Result 2). At the *national level*, the project will promote public-private partnerships between national and regional actors to implement learning processes on strategic and cross-cutting themes for strengthening innovation capacity, improve their negotiation capacity, and influence private and public policies to provide appropriate incentives to foster value chain development and sustainable land management (Result 3).

The achievement of the above Results will be supported by fostering information and knowledge management for integrating innovation processes at the three levels (local, territory and national) and among them. As such, local, national, and international actors of key sectors will rescue, access, generate and integrate information to improve the effectiveness and efficiency of innovation processes, which will be fundamental to improve their negotiation power in the value chains (Result 4).



*Figure 1*  
*Relation among Results for achieving the project objective*

This Result structure differs from that in the original proposal in that training activities (original result 4) have been incorporated into Result 1 while a new Result (3) on up-scaling of lessons to national and regional partners (including CATIE), and influence in public and private policy design, has been created and strengthened from some activities previously in Result 2. We consider this an important change to reinforce institutional innovation and to broaden project impacts by ensuring participation in institutional learning processes and design of national policy and development programs.

## 2. Conceptual Framework and Implementation Strategy

### 2.1 The Scenario of Intervention: The Sustainable Value Chain and its Rural Landscape

The project has been initially designed to be implemented in a supply chain scenario with the aim of contributing to the development of value chains that involve differentiated or specialized products or services, and clearly defined and agreed coordination mechanisms among different but interdependent participating actors. Value chain development requires clearly defined rules and norms among participants who share a long-term vision, resulting in larger and sustainable revenues in the market for all participating actors. For that purpose, two value chains (coffee and vegetable crops) have been selected as the entry point based on market opportunities and their economic, social and environmental impact potential. The project looks to facilitate or reinforce the development of value chains that recognize social and environmental responsibility as well a product quality. The project expects that the alliances between actors and transparent governance of these value chains will contribute to the resilience of these chains to economic and environmental stresses. This resilience and

social and environmental responsibility will combine to create what we denominate “Sustainable Value Chains”

Based on the selection of primary market chains (coffee and vegetable crops), territories (with geographical boundaries) were selected given their importance for the selected chains. As such, the project will work in landscapes defined as geographic areas that share common ecological, cultural and socio-economic characteristics, and where coffee and vegetable production have potential impacts on the ecosystem services provided by those landscapes. These landscapes will be impacted though affecting the livelihood strategies of farming families who derive their living from the natural capital of the landscape, but also alter that natural capital though exploiting or renovating natural resources. The capacity to derive income from the landscape while conserving or renovating natural resources depends on the use of social and political capital of the families and their communities. The incorporation of a landscape and livelihoods focus to the project, at least in some implementation zones, will prepare the ground for the development of these approaches in the Mesoamerican Agro-environmental Program being developed.

The inception phase identified how coffee can affect the environmental services of water quality and biodiversity in the landscape, while at the same time being affected by environmental factors such as climate change and pest epidemics. The response in the livelihood strategies of rural families to these changes will be supported through the promotion of economic diversification. Although vegetable production may not have the same presence in the landscape as coffee, the concentration of pesticide use in these areas potentially damages water quality and the health of the rural (and urban) population. For practical implementation purposes, geographical boundaries will be defined for environmental actions, while the institutional, political and socio-economic actions may overlap these geographical boundaries, and will be determined by the remit of the multi-sectorial public and private platforms fostered by the project.

## **2.2 Result 1 Strengthened capacity for innovation in value chains**

*750 farming households and their organizations have innovated in ecological production and entrepreneurial management in partnership with their service providers and other market chain actors, gaining improved participation and negotiation power in sustainable value chains*

The project will focus on facilitating smallholders’ and rural households’ engagement in the market in a continuous innovation process, developing capabilities for meeting new challenges and opportunities. Innovation is defined as the process of technical, social and institutional change among different actors, which results from the analysis and assimilation of new knowledge, to realize the potential to create new things, products, practices, or services. Although 750 families will be direct beneficiaries receiving project financed technical and financial services, up to 3000 families, who represent the sum of the membership of the participating organizations, (as per Purpose 1) will benefit from the improved business capacity of their organizations.

The capacity to innovate will be strengthened through:

- (1) Reinforcing the agro ecological and business decision-making of farming families;
- (2) Strengthening producer organizational processes;
- (3) Entrepreneurial development of producer organizations;
- (4) Development of certification and quality control systems in producer organizations;
- (5) Development of strategies for penetration and development of markets that recognize social and environmental responsibility; and
- (6) Strengthening the capacity of technical, entrepreneurial and financial service providers.

This will be done through strengthening the capacities of producer organizations that provide embedded financial and non-financial services (technical assistance, quality control, marketing etc), or otherwise external services providers but giving priority to local providers. The project will revise the organizational, planning and learning capacity of producer organizations and service providers to strengthen their legitimacy, and their capacity to respond to new conditions. The project will facilitate the sustainable provision of financial, technical, marketing and entrepreneurial development services to develop innovation capabilities among the different actors that participate in coffee value chains, securing its permanence beyond project implementation.

Additional to improving the capacities of producer organizations, and their service providers, to increase participation in value chains, producer organizations need to develop alliances that establish the rules and incentives for investing in new products and markets. These rules and incentives must be established along the value chain from farming families to distributors and consumers. Achieving these alliances requires increased producer organizations' abilities to communicate and negotiate..

By the end of the project, it is expected that farming families will have developed ecologically and economically resilient production strategies, while the producer marketing organizations to which they belong have increased access to markets that recognize social and environmental responsibility supported by improved services to their members and access to external services, especially financial services. These actors will then systematize their learning processes in an integrated manner to share with other actors in the local innovation platforms. This integrated learning process will lead to the adaptive management of practices, processes and policies to improve farmers positioning in coffee and vegetable value chains, contributing to their overall wellbeing.

### **Strategy for Co-Financing of Farmers, Producer Organizations and Service providers**

As noted in the evaluation of the original proposal producer organizations, local service providers and farming families themselves have limited resources to invest in processes of innovation. Thus, the technical and financial implementation strategy of the project was developed to provide minimum financial as well as technical support to these actors. In past projects supported by Norway support was given to farmers, via their service providers, through giving away tools, plants, and agricultural inputs to facilitate the testing of improvements in management practices. However this support is transitory, limited in

impact, project dependent and not very sustainable. Thus in the project it was decided to use the funds budgeted as innovation credit managed by the producer organizations, where this capacity existed, or otherwise through local micro-credit providers. In this way the funds create a working capital upon which the producers can draw in future years, and should represent a model that is easier to scale up with funds from financial development sources in future situations. We will also be exploring with financial services providers alternative financial mechanisms to support innovation by producers and their organizations. The project has hired staff with experience in credit management and in providing financial technical support. In addition, an international financial expert who is a staff member of CeCoEco backs up this project capacity.

Financial support is given to producer organizations, or their service providers, to partially cover the costs of technical assistance to farmers. Actually, most of the service providers depend on external funding to provide technical services. One of the aims of the project is to explore mechanisms where by technical services could be independently financed in the future. Finally, funds are budgeted to support local business initiatives that may include provision of products or services required by the producer organizations or the transformation, processing, and marketing of the product. In most cases, we will be looking to use these funds to leverage other funding sources to increase their impact.

### **2.3 Result 2: Multi-sector Innovation Platforms for Up-scaling Innovation and Governance of Value Chains**

*Key multi-sector actors have formed seven alliances in local innovation platforms to strengthen their capacity for innovation, improve their participation in value chains and demonstrate influence in the design of local public and private policies.*

The lessons and methods developed with specific producer organizations and their service providers will provide a knowledge base to share with other organizations and actors who participate in the sector within the territories where the project is operating. The sharing of these lessons aims to facilitate the up scaling of the innovation capacities to other organizations in the territory, but also to initiate a local learning alliance among local actors. Thus, we hope to upscale from the 16 producer organizations and approximately 12 service providers of result 1 to 50 producer organizations and 30 service providers proposed for Purpose 2. The strategies for strengthening the local platforms will first be to share technical and market information with the local platform members initiated in the inception phase and promote further interaction and information sharing among them. Second, it will facilitate the identification of common interests, and the negotiation of articulating tasks to start generating the trust needed to strengthen these platforms. Thirdly, joint planning, monitoring and evaluation of social, economic and environmental impacts of the projects activities in the different territories will be conducted with the stakeholders in the platforms. The project will not necessarily establish new platforms, but where possible, will identify existing ones, and will participate pro-actively to strengthen their organizational processes. The local platform structures may vary between regions but the different actors will be bound by common tasks or objectives with a set of working rules that define and give them meaning. Where possible the local platforms will be linked to municipal or regional development councils, especially with respect to the monitoring and evaluation of impacts of

projects. This provides the basis for improving the governance of local development processes for the development of public and private policies that facilitate innovation. However the commercial alliances between value chain actors and their service providers may require different kinds of public-private platforms, independent from political influences. These platforms will provide the opportunity

## **2.4 Result 3: Institutional Anchoring and Policy Development**

*National and regional actors have integrated lessons from the project into the design of their own policies to facilitate national capacity and establish an enabling environment for innovation and development of sustainable value chains.*

Institutional engagement, defined as the process that facilitates social learning and promotes its incorporation in the values, knowledge and practice of organizations. Institutional engagement started since the project inception phase, but will be fostered in prioritized organizations based on the importance of the project for their mandate, their political willingness to learn and innovate, as well as their power and legitimacy to influence change and broader impact. Recognizing innovation as a dynamic social process that results from the explicit interaction of multiple public and private social actors, the project will participate in or facilitate appropriate institutions to generate knowledge, and to build or strengthen needed technical and organizational capabilities among national level actors.

Mechanisms for institutional anchoring and influencing policy include the following:

1. Participation in learning alliances between national and regional organizations to identify effective methods and intervention strategies for facilitating rural business development processes;
2. Co-implementation in national and regional platforms and networks of articulating tasks and processes for adaptive learning;
3. Improve the recognition of CATIE and establish mechanisms to engage in national, rural, and sectorial policy development forums.
4. Incorporation of relevant information, experiences and knowledge generated into new programs under development by CATIE.

After four years of being established, the Central America Learning Alliance launched by the International Center for Tropical Agriculture (CIAT) with financial support from the Canadian International Development Research Center (IDRC) in Nicaragua, Honduras, El Salvador and Guatemala, with participation from CATIE and other regional partners, has been promoting organizational learning to influence in institutional policies. The Central American Learning Alliance has achieved significant impact in terms of changes in attitude and capacity development with direct and indirect partners. The project team selected learning alliances because they follow a type of knowledge production that promotes the interaction of multiple actors with multi-layered sources of knowledge to cope with the complexity of fostering continuous technological, social and institutional innovations to respond to rapidly changing contexts and demands. Through more structured learning processes, the learning alliance seeks to affect change in the larger innovation system in a way that provides support for subsequent innovation in rural communities. In this sense, the learning alliance differs from traditional ‘bottom-up’ approaches that seek to push change

through complex systems (i.e. from the farm outwards) by actively identifying and using higher-order leverage points to generate incentives that pull change through the system. The major contribution of a learning alliance is to help organizations move from single-cycle learning processes (planning, followed by action, evaluation of results, and back to planning to start another single cycle) to a double loop learning process. This includes periodic reflection after results are evaluated; during which partners review the basic premises on which strategic decisions are based.

## **2.5 Result 4: Information and Knowledge Management: Integrating the Different Levels of Intervention**

*Project partners, including CATIE, have developed strategies to access, generate and integrate information and knowledge among local, national and international actors.*

The sustainable integration of smallholder farmers into value chains requires addressing the information asymmetries among chain actors in a more comprehensive way than by only setting standards. In addition, rising standards in the markets requires high innovation capacities in the whole value chain to satisfy market demand; this is especially challenging for smallholder farmers. To contribute to crucial innovation, the project will improve the effectiveness of information and knowledge management at the micro, meso and macro levels (and within them), since the project acknowledges that innovation as a socially organized process that requires the active involvement of all stakeholders relevant to the process.

As communication plays a key role in innovation processes, the analysis of internal and external communication and information flows and patterns within the stakeholder organizations, as well as between different stakeholders of the value chain, will complement the value chain approach. Thus, the analysis of socioeconomic activities around a selected product together with the identification of direct and indirect stakeholders involved, will be complemented with a network perspective that contributes to a better understanding of the different kinds of links or ties (strong and weak) between these stakeholders and its effects on learning and innovation. Thus, the analysis will advance the understanding of the complex process of knowledge creation and learning for innovation and change in the value chain.

Special attention will be given to analyze the transparency in information flows; that is the extent to which the different chain actors have a shared understanding of, and access to, the product-related information that they request, without loss, noise, delay and distortion. Specifically, an analysis will be made on how transparency influences the capacity of: (a) producers to anticipate market demand accurately; (b) intermediate actors to plan their capacity accurately; (c) quality control actors to quickly take action when defects surface so that the origin is traced and spreading of the problem can be curtailed; (d) customers to assess where their purchase comes from, its quality and the value-related attributes it possesses. Nevertheless, the information needs for an effective innovation capacity go beyond the commercial to also be able to access and evaluate changes in public policies, technological and administrative innovations, amongst other topics. Based on this analysis, information and knowledge needs by different actors will be assessed and negotiated with them, as well mechanisms to improve the information system.

## 2.7 Supporting the Learning Process: A Robust Planning, Monitoring, Evaluation and Reflection Process

As this project's main mandate is to develop capacities for continuous innovation to develop sustainable market chains a robust monitoring, evaluation and systematization process is crucial to support the continuous learning process required to achieve its objective (part of Result 4). This learning process will be supported within the project and CATIE, among project partners and service providers, and among coffee and vegetable market chain private and public actors. Participatory planning monitoring and evaluation has consisted of various phases:

- i. it started with the Pre-project appraisal and base-line in 2003,
- ii. was followed by the inception phase of 2006-7 of participatory planning of strategies for innovation in value chains,
- iii. subsequently implementation is through participatory small projects with organizations that have an explicit process of monitoring of changes incorporated, and
- iv. finally evaluation of impacts that will be shared with project stakeholders.

### *Phase 1: project proposal design and negotiation (2003-2006)*

This process started with the impact assessment of the MIP-AF project financed by NORAD and implemented during 1989-2004. During its last phase of implementation (2002-2004), in addition to assessing the project impact, a pre-project appraisals and baseline studies were conducted and served as inputs for the formulation of the project proposal. The pre-project appraisal developed the following products:

- i. Identification of the multiple stakeholders, their missions and innovation capacity
- ii. Identification with stakeholders of priority areas of innovation
- iii. Establish and quantify indicators for development of innovation capacity
- iv. Development of a joint proposal to increase innovation capacity in value chains

Project formulation was part of a multi-sector PM&E that involved 22 project partners, and was selected as part of the approach for project implementation. The Norwegian Ministry of Foreign Affairs approved this project proposal in 2005, and CATIE started its implementation in 2006.

### *Phase 2: project inception phase and implementation plan design (2006-2007)*

Project implementation started with an inception phase, when baselines studies conducted in 2003 were updated and complemented. This included:

- (1) *Diagnostic survey of farming families* that will be important for the assessment of development impact on production and income, but also for elements of social impact such as employment generation, labor working conditions, and gender-differentiated impact. This information will be updated as project implementation advances to assess how producing families' decision-making capacity, based on market and agro-ecological criteria, is enhanced by the project, the extent that

producing families comply with sustainable value chains' economic, social and environmental standards, contributing to sustainable land management.

- (2) *Producer organizations entrepreneurial capacities assessment*, which will be periodically updated to assess the extent that producer organizations entrepreneurial (organizational, management, financial administration, commercialization, marketing) and technical capacities are strengthened, as project implementation advances. Moreover, the tool developed for the assessment of these capacities during the project inception phase will be expanded to assess organizational processes and its contribution to the social dimension of development impact related to the accumulation of internal and inter-organizational social capital.

As the project inception phase advanced, the original project proposal was adjusted to respond to the situation encountered by the project during its inception phase, the project implementation plan was developed accordingly, and work plans 2007 were constructed. The process included the following steps:

- (1) Revision of the project purposes, to clearly define the changes expected in different actors and establishment of project goals for these changes.
- (2) Adjustment of the result structure, as explained in section 1.3 and re-definition of project results, accordingly. Based on the generic definition of project results specific definitions for the project results of the “sustainable coffee livelihoods” and “sustainable vegetable chains” components were defined.
- (3) Mapping of intermediate products for the 2007-2010 project implementation period, required to reach the project objective by 2010, and to contribute to the project development objective. These products were mapped taking into consideration: (i) the baseline situation encountered in the project implementation region (ii) the specific definition of the results for each component; (iii) the project purposes; and (iv) the project development goal.

These intermediate products for each project result (see Annex 1 for the coffee component, and Annex 2 for the vegetable component), will be used for internal project planning and monitoring, as well as for process systematization.

#### *Establishment of project goals and indicators*

The project goals are not taken as indicators of success or failure of the project as such, but benchmarks against which the advance of each producer group or territory may be judged. The means of verification include a combination of tools for participatory monitoring and evaluation, but also specific studies that aimed for an in-depth analysis of certain indicators and impacts. Indicators are not established for the Development Objective, although the project is directed to contributing to this objective we do not consider it viable to determine the projects impact against the considerable number of other influences upon rural livelihoods in general. The goals and indicators for the project purposes and results will be evaluated at different scales depending on their nature in the following manner.

- i. Goals for Purpose 1 (directed at farming households) will be evaluated for the sum of the farming households who are members of collaborating organizations, not just the families who direct beneficiaries of the project within those organizations.

- ii. Goals for Purpose 2 of the innovation capacity of organizations will be evaluated at the scale of the territories (maybe more than one municipality) that the innovation platforms cover.
- iii. Goals for Purpose 3 of the national capacity will be for the relevant national actors in each country.
- iv. Indicators for Result 1 will be evaluated only for farming households and producer organizations and their service providers who are direct collaborators with the project.
- v. Indicators for Result 2 will be evaluated for all actors participating in the local innovation platforms whether they be direct collaborators of the project or not
- vi. Indicators for Result 3 will be evaluated for all relevant national scale actors
- vii. Indicators for Result 4 will be evaluated across local, national and regional actors

Project goals for the purposes and indicators for the results with their means of verification are presented in Tables 1 and 2 respectively. The means of verification are explained in more detail in the sub-sections that include the different phases for project PM&E and impact assessment.

**Table 1**  
**Project Goals and Means of Verification**

Project Purpose 1: 3000 (2,300 coffee, 700 vegetables) small and medium scale farming households have implemented strategies for ecological production and entrepreneurial management, developed resilience to ecological and economic uncertainty, and improved their incomes, generated quality employment and conserved their natural resource base.				
	Coffee Component		Vegetable Component	
Indicator	Base-line	Goal	Base-line	Goal
Increase in of farming households	Mean household income \$6970 (range between groups \$1900-\$22,000)	Increase mean household income by 20%	Mean household income \$ 4060 (\$1180-\$6330)	Increase mean household income by 20%
Reduce number of families in poverty	33% of families live on less than \$1 per person per day	Reduce by half the number of families living on less than \$1 per person per day	10% of families live on less than \$1 per person per day	Reduce by half the number of families living on less than \$1 per person per day
Payment of minimum salary	67% of producers pay minimum salary	All producers pay at least minimum salary	50% of producers pay at least \$4.00 per day	75% of producers pay at least \$4.00 al día.
Reduce environmental contamination	25% of producers contaminate water sources	Reduce by half the number of producers who contaminate water sources	On average 33kg per hectare of pesticides are used on each crop	Reduce by 20% the use of pesticides

<b>Project Purpose 2: Fifty diverse producer organizations (30 coffee and 20 vegetable component) and thirty businesses serving small and medium scale households (15 coffee and 15 vegetable component) have improved their capacity to innovate and react to economic uncertainty and opportunity, improving technical capacity, entrepreneurial management and financial viability, and achieved greater participation in socially and environmentally responsible value chains.</b>				
Indicator	Coffee Component		Vegetable Component	
	Base-line	Goal	Base-line	Goal
Participation of farming households in the territory in producer business organizations	Between 7 and 50% percent of farming households are members of business organizations	Increase the number of farming households who are members of business organizations by 20%.	Between <1 and 16% of farming households are members of business organizations	Increase the number of farming households who are members of business organizations by 20%.
Value of production sold to differentiated markets	Between 3 and 34% of the value of coffee per territory is sold to differentiated markets	Increase the production sold to differentiated and sustainable markets by 20% of total value of sales by the organizations	13.5 % of the value of production in Trifinio is sold to differentiated markets	Increase the production sold to differentiated and sustainable markets by 20% of total value of sales by the organizations
Value of production sold to markets which recognize social and environmental responsibility	Between 3 and 14% of the value of coffee per territory is sold to markets with social and environmental responsibility	Increase the production sold to differentiated and sustainable markets by 20% of total value of sales by the organizations	None of the production is sold to markets with social and environmental responsibility.	Increase the production sold to differentiated and sustainable markets by 10% of total value of sales by the organizations

<b>Project Purpose 3: Multi-sector public and private actors, including CATIE, have strengthened their capacity to promote innovation through improved information and knowledge management, and have influenced the design of policies that establish appropriate incentives and development programs.</b>				
Indicator	Coffee Component		Vegetable Component	
	Base-line	Goal	Indicator	Base-line
Public and private policies, and national development and organizational plans incorporate concepts of: agroecology, business development of producer organizations, value chains, information and knowledge management, and livelihood strategies	4 out of 9 policies analyzed incorporated 3 or more of these concepts	The majority of policies associated with the coffee sector in target countries incorporate a majority of these concepts	5 out of 11 policies analyzed incorporated 3 or more of these concepts	The majority of policies associated with the vegetable sector in target countries incorporate a majority of these concepts

*Table 2*  
*Result Indicators and Means of Verification*

Indicators for Expected Results	Means of Verification
Result 1: 500 coffee and 250 vegetable producing families and their organizations innovate in ecological production and entrepreneurial management in partnership with their service providers and other market chain actors, gaining improved participation and negotiation power in sustainable value chains	
<i>Producing Families Indicators:</i>	
1.1 Number of families implementing ecological and quality production strategies	Farm characterization and diagnostic surveys
1.2 Soil fertility management (use of organic fertilizers)	Farm characterization and diagnostic surveys
1.3 Agro-chemical use (kg/cropping area, number of applications per cropping cycle)	Farm characterization and diagnostic surveys
1.4 Number of families who maintain registers of farm management	Farm characterization and diagnostic surveys
1.5 Tree density and diversity in coffee agro forestry systems	Joint planning, monitoring and evaluation of collaborative projects
1.6 Number families who control water pollution	Farm characterization and diagnostic surveys
1.7 Farming families using ecological, economic and market criteria in their decision-making	Joint planning, monitoring and evaluation of collaborative projects
1.8 Return to the investment (land, labour, money) of most important agricultural activities	Farm characterization and diagnostic surveys
1.9 Farm income (US\$/area or US\$/farm)	Farm characterization and diagnostic surveys
1.10 Household income (US\$/household and per capita)	Farm characterization and diagnostic surveys
1.11 Distribution of farm and household income among households	Farm characterization and diagnostic surveys
1.12 Variability in production and price received year to year	Farm characterization and diagnostic surveys
1.13 Household income stability (farm and household seasonal and yearly standard deviation)	Livelihoods analysis
1.14 Food availability at the household level (sufficient, healthy, safe and diverse food sources)	Livelihoods analysis
1.15 Product, market or process diversification and importance as percentage of total farm and household income	Livelihoods analysis
1.16 Number of jobs generated (total, gender-differentiated, and seasonal)	Farm characterization and diagnostic surveys
1.17 Laborers working conditions, or farmers where they are the primary labor force (daily wage rate, benefits, living conditions, health)	Farm characterization and diagnostic surveys
1.18 Producing families complying with sustainable product chains economic, social and environmental standards	Joint planning, monitoring and evaluation of collaborative projects

<i>Producer Organizations Indicators:</i>	
Indicators for Expected Results	Means of Verification
1.19 Organizational process (% of members who are active, representativity of participation transparency, leadership, commitment)	Producer organizations diagnosis
1.20 Strategic orientation of producer organizations (Vision, strategic plans, business strategy and plan)	Producer organizations self-assessment and external assessment consensus
1.21 Entrepreneurial organization (legal status, functionality of directive structures, functionality of operative procedures and structures)	Producer organizations self-assessment and external assessment consensus
1.22 Business management (accounting and financial balances, administration, technical capacity, business capacity, communications and alliances)	Producer organizations self-assessment and external assessment consensus
1.26 Services provided by the organization (business, capacity building and financial)	Producer organizations self-assessment and external assessment consensus
1.27 Producer organizations with communication strategies to strengthen access to information and for internal and external communication	Diagnosis of internal and external communication of producer organizations
<i>Value Chain Indicators:</i>	
1.28 Participation of producing families on final consumer price (farm gate price/consumer or export price)	Value chain economic analysis
1.29 Participation in differentiated markets (% of the value of production sold in differentiated markets, price differential obtained, net income compared with conventional markets)	Value chain economic analysis
1.30 Participation in differentiated markets that recognize social and environmental responsibility (% of the value of production sold in differentiated markets that recognize social and environmental responsibility, price differential obtained, net income compared with conventional markets)	Value chain economic analysis
1.31 Producer organization value added to primary production (selling price/primary product farm gate price)	Value chain economic analysis
1.32 Producer organizations power and legitimacy in value chains (chain governance)	Value chain stakeholder analysis
1.33 Buying policies (paying policies and monetary incentives, complementary technical, entrepreneurial or financial services offered, other non-monetary incentives)	Value chain stakeholder analysis

Result 2: Key multi-sector actors form or consolidate seven alliances in local innovation platforms to strengthen their capacity for innovation, improve their participation in value chains and demonstrate influence in the design of local public and private policies.	
Indicators for Expected Results	Means of Verification
2.1 Equitable governance structures within platform and relationships of power and legitimacy between actors	Analysis of relationships among actors in platforms
2.2 Platforms with effective mechanisms and processes for accessing, exchanging and diffusing information and knowledge	Joint planning monitoring and evaluation collaborative projects with platforms
2.3 Implementation of project lessons by members of local innovation platforms among direct and indirect partners of the project	Surveys of organizations implementation of value chain approaches
2.4 Platforms with strategies for recognition of territories as sources of sustainable-produced goods	Value chain stakeholder analysis
2.5 Impacts of development of sustainable value chains assessed by platforms and used to strengthen social and environmental governance in the territories	Joint planning, monitoring and evaluation in local platforms
2.6 Projects and policies for the development of sustainable value chains designed and mobilized by the platforms	Analysis of local private and public policies and projects that affect the competitiveness and sustainability of value chains
2.7 Availability of technical, business and financial services for value chain development (list of available services)	Analysis of technical and entrepreneurial services, and its articulation with financial services in the territory
2.8 Access to technical, business and financial services for value chain development (requirements, cost of service for clients, cost of service for clients/volume produce, transaction costs, profitability of the activity)	Analysis of technical and entrepreneurial services, and its articulation with financial services in the territory
2.9 Relevance of technical, business and financial services for value chain development (client willingness to pay for the service, impact relevance of service)	Analysis of technical and entrepreneurial services, and its articulation with financial services in the territory
2.10 Quality of technical, business and financial services for value chain development (coverage, timing, relevance and client satisfaction)	Analysis of technical and entrepreneurial services, and its articulation with financial services in the territory
2.11 Sustainability of technical, business and financial services for value chain development (cost of service provision, % of cost provision paid by the client)	Analysis of technical and entrepreneurial services, and its articulation with financial services in the territory

<b>Result 3: National and regional actors have integrated lessons from the project into the design of their own policies to facilitate national capacity and establish an enabling environment for innovation and development of sustainable value chains.</b>	
<b>Indicators for Expected Results</b>	<b>Means of Verification</b>
3.1 Partner institutional agendas and strategies, and the degree that they incorporate information, lessons and knowledge from the collaboration with CATIE	Joint planning, monitoring and evaluation with learning alliances: incl monitoring of partner institution strategic plans
3.2 Public policies that regulate or promote production and marketing promote the development of value chains with social and environmental responsibility	Analysis of private and public policies that affect the competitiveness and sustainability of intervened value chains
3.3 Private policies that regulate or promote production and marketing promote the development of value chains with social and environmental responsibility	Analysis of private and public development projects that affect the competitiveness and sustainability value chains, and the resilience of rural households
3.4 Recognition of CATIE in relevant national and regional agro-environmental decision-making forums of Central America	Participation of CATIE in national and regional policy making forums
<b>Result 4: Project partners, including CATIE, develop strategies to access, generate and integrate information and knowledge among local, national and international actors.</b>	
4.1 Degree that the information and knowledge accessed, generated, exchanged, and integrated, responds to the information and knowledge needs of multiple actors	Evaluation of the information needs of differentiated value chain stakeholders, and existent mechanisms and processes to access the required information
4.2 Capacity of local and national actors to identify future ecological and economic challenges	Evaluation of the information needs of differentiated value chain stakeholders, and existent mechanisms and processes to access the required information
4.3 National research partners incorporate principal project lessons in their research agendas in response to demands for innovation in sustainable value chains	Research centers and national technical providers agendas and comparison with value chain actors needs
4.4 Regional, national and local education partners incorporate project lessons in their curricula in response to demands for innovation in sustainable value chains	Regional, national and local curricula for professional education
4.5 Effectiveness of diffusion of information and publications developed by the project among multiple public and private actors	Publication list and follow-up to diffusion and client use of information and knowledge provided

### *Phase 3: project planning monitoring and evaluation with partners (2006-2010)*

The participatory planning, monitoring and evaluation with partners primarily contributes to the monitoring and evaluation at the level of results

#### PM&E based on collaborative projects with partners

During the last phase of implementation of the MIP-AF Project (1999-2003), PM&E based on collaborative projects with partners became a key methodology to negotiate articulating tasks between the project and producer organizations, and with service providers, or among the three of them. Most importantly, this mechanism improves project relevance as planning corresponds with partners agenda and priorities. As such, the design, negotiation and evaluation of collaborative projects with partners are, and will continue to be, the central mechanism for participatory PM&E, especially as it relates to PM&E of project results 1, 2 and 3. These collaborative projects are designed, negotiated and evaluated with producer organizations and service providers (result 1), partners in local innovation platforms (result 2), and national and regional learning alliances on strategic and crosscutting themes (result 3). Explicit products for participatory monitoring and evaluation are included in each result. Collaborative projects with partners are also important to synthesize the processes developed and the results obtained, which are crucial for up-scaling project results, and for institutional anchoring and influencing policy.

#### PM&E based on analysis to support decision-making processes

As part of the process of analysis and planning with partner organizations we will develop a series of exercises that also serve to monitor and evaluate the changes in their situation and capacities. Primary among these is value chain analysis and its periodic update to support producer organizations and service providers' decision-making processes. Value chain analysis, will include four dimensions of analysis that will be developed progressively with producer organizations, innovation groups and in local innovation platforms. The first dimension, deals with value chain actors mapping, product flow and transformation along the chain, and product price formation from the farm gate to the consumer. This analysis will also include the analysis of market trends and opportunities and will be crucial to develop annual action plans for value chain development that aims to resolve value chain constraints and take advantage of new market or product development opportunities.

The second dimension of analysis, aims to have a better knowledge of embedded and external services (financial, technical and entrepreneurial) provision, differentiated by commercialization channel. The analysis of embedded services will become an important decision-making tool for value chain actors to identify actions and strategies to improve these services to advance in the construction of sustainable and competitive value chains, mainly related with project result 1. On the other hand, the analysis of external services will become a decision-making tool for value chain services providers (NGOs, technical assistance agencies, and financial organizations, among others), most of them members of local platforms. This analysis will provide key information to define strategies and actions to improve the relevance, quality and timing of services provided, or to develop new services that have a real demand and are important to improve value chain competitiveness and sustainability.

The third dimension of the analysis relates to social network analysis among market chain actors and between them and external service providers, as networks of informal relationships have a critical influence on performance, learning and innovation. Yet despite their importance, especially for developing sustainable value chains, most organizations and value chain platforms rarely attempt to assess or support them, as it seems too difficult to manage what cannot be seen. Thus, with this type of analysis, the project will support organizations along the value chain and in local platforms to design strategies to improve the system through a targeted approach for improving collaboration and network connectivity that yields the greatest payoff for organizations within the value chain and in the local platforms.

The fourth dimension of analysis deals with value chain governance, defined as authority and power relations that determine how tangible and intangible resources flow and are allocated among value chain actors. Many studies have showed that chain governance influences the possibility to develop sustainable value chains, and has a direct influence on how benefits from it distributes among differentiated actors that participate in the value chain.

Other tools are still in development such as the evaluation of the information needs of differentiated value chain stakeholders, and existent mechanisms and processes to access the required information. These tools will be developed as part of implementation to complement the analysis monitoring and decision-making among partners of the progress of the project.

#### *Phase 4. Monitoring and evaluation of impact*

##### Purpose 1: Household sustainable livelihoods surveys

To evaluate development impact at the household level, the primary means of verification will be household livelihoods surveys using a sustainable livelihoods approach. These surveys will build upon the farm surveys conducted in 2003 and 2006, which included some household characterization but did not complete a full livelihood analysis. These surveys will be repeated in mid 2010 for final evaluation. 'Livelihoods' are defined as the capabilities, assets (including both material (tangible) and intangible resources or capitals), and activities required for a means of living. A livelihood is considered 'sustainable' when it can cope with and recover from stresses and shocks, and maintain or enhance its capabilities and assets, both now and in the future, while not undermining the natural resource base. Thus, "sustainable livelihoods" have two sub-components. The first focuses on well-being, or 'livelihoods', which includes aspects of employment, income, and poverty reduction. The second is the 'sustainability' dimension, comprising the resilience of livelihoods and the natural resource base on which they depend.

Project implementation contribution to sustainable livelihoods will be assessed by evaluating its effect on accessing livelihood resources (or capitals: human, social, economic/financial, political, natural, physical), but not only the endowment of livelihood resources, but also who is entitled to use these resources. Different components of project implementation may effect a different combination of livelihood resources endowment and/or can change the entitlement to use these resources by differentiated value chain actors, influencing their governance and the benefits they accrue from the development of sustainable value chains.

Furthermore, the household sustainable livelihood analysis will permit a detailed evaluation of the participation of the different members of the family in the costs and benefits of the changes promoted by the actions of the project. This in turn will feed-back into the decision-making process with producer organizations and their service providers on how to direct project interventions to achieve gender equity.

To complement this primary analysis of livelihoods the project will fund research projects of CATIE graduate students to develop and assess the indicators related to the impact of production systems on environment (e.g. water resources) and health. The indicators selected (or developed) will be monitored with local partners within the local platforms. Their evaluation will also provide key information for decision-making on the local environmental impacts of production practices.

#### Purpose 2: Innovation in entrepreneurial capacity in value chains

The surveys of organizational technical, business and innovation capacity (or entrepreneurial capacity) developed during the original base-line and inception phases will be repeated in 2010 to evaluate changes in organizational capacity (see earlier section). This will be complemented with more detailed studies of business capacity as part of the monitoring of training processes in 2008-09 and 2010 (see project planning and evaluation with partners).

#### Purpose 3: Innovation capacity and influence in private and public policies

Analysis of the learning capacity of local and national organizations will be conducted in 2008 and 2010. This analysis concentrates on the ability of the organization and its members to monitor and access new information sources, analyze the relevance of this information for the organizational mission, and integrate these lessons into the organizations plans. This integration may then lead to changes in public and private policies, which is the next level of evaluation.

Analysis of public and private policies, especially the latter, influence value chain governance by establishing incentives (or disincentives) to develop sustainable value chains, affecting value chain competitiveness, the distribution of benefits among differentiated value chain actors, and the resilience of rural households to economic and ecological uncertainty, their assessment will also be a key component of development impact evaluation. This analysis will be conducted at the beginning of 2008 as the baseline, but at the same time providing important information for decision-making to determine the issues in which the project will have to concentrate for institutional anchoring and influence on policy development. Changes in these policies will be assessed in 2009 and 2010.

Certain aspects of the strategy for the monitoring and evaluation of the project are still incomplete, especially the methodologies proposed to verify certain indicators that may require specific studies. It is expected that a more complete proposal for monitoring and evaluation will be presented as part of the annual work plan for 2008.

## 2.8 Project team composition for implementation of the project

A multidisciplinary team has been hired for the implementation of the project with complementary specialization between team members to cover the broad range of capacities in which the project aims to intervene. The team has two main offices, one in Managua where most of the coffee team and specialists who work in both components are based, the other office is in Esquipulas, Guatemala in Trifinio. The team can be divided into those who provide support to both components or specific to one, and support specialists from thematic group members from headquarters.

### ***International Staff***

Dr Jeremy Haggard, Project coordinator, coordinator of Coffee Component and specialist in Agroforestry Systems

MSc Danilo Padilla, Coordinator of Vegetable Component and specialist in agroecology of vegetable production and multi-institutional learning processes.

MSc Veronica Gottret, Coordinator of rural business development processes, specialist in value chain development and innovation processes.

### ***National Staff***

#### *Coffee Component*

MSc Mirna Barrios, Agroecology of coffee management and participatory training

Lic Raquel Reyes, Rural business development and local markets

Ing Rut Pinot, Agroecology of coffee and diversification (local coordinator in Honduras)

#### *Vegetable Component*

Ing Jose Gabriel Suchini, Agroecology of vegetable production

MSc Nestor Rosales, Rural business and value chain development

#### *Both Components*

MSc Elia Kuan, Participatory, planning, monitoring and evaluation.

MSc. Alvaro Espinoza, Communication

Lic. Sandra Hernandez, Socioeconomy and livelihood strategies

### ***Specialists from Headquarters Thematic Groups***

#### *Centre for Competitiveness of Ecoenterprises*

Dietmar Stoian, Value chains and livelihoods

Ruth Junkin, Financial management

#### *Agroecology Group*

Galileo Rivas, Institutional relations for technology innovation

Vera Sanchez, Agroecological management of diseases

Eduardo Hidalgo, Agroecological management of pests

#### *Coffee Group*

Gabriela Soto, Coffee certification and organic management

Elias de Melo, Research (formal and participatory) on ecological management of coffee

Jeffrey Jones, Geographic Information Systems for coffee quality mapping

***Support Staff***

Arelys Cano, Administrator

Dominga Maltez, Accountant

Waleska Gutierrez, Secretary

Armando Palacios, Driver

Database Manager (to be contracted)

### 3. National and regional context of the project

#### 3.1 Relation to CATIE, National and Regional Development Strategies

##### *Scope of the project in relation to CATIE's strategic plan*

The actions of this proposal are centered on contributing to CATIE's mission "To contribute to rural poverty reduction by promoting competitive and sustainable agriculture and natural resource management, through higher education, research and technical cooperation" (CATIE 2003). The components of this proposal for the coffee highlands and vegetable growing areas, fortify CATIE's actions in the priority area of "Agricultural Diversification and Reconversion" where the priority themes include:

- production systems management and diversification
- added value, new products and production chains
- entrepreneurial capacity for small and medium enterprises
- and environmental services

especially for the production of coffee, vegetables, fruits, bananas and non-traditional species (Table 1). Member countries have also expressed the need for assistance in productive reconversion and diversification for drought affected regions where traditional commodities such as cotton and sisal have marginal economic viability.

**Table 3:**

*Contribution of the current proposal to CATIE's future priority areas and capabilities 2003-2012*

	1	2	3	4	5	6	7	8	9	10	11
Agricultural Diversification and Reconversion	X	<b>X</b>	<b>X</b>	<b>X</b>		X	<b>X</b>	<b>X</b>	X		X
Integrated Forest Management											
Land and Water Management		X	X	<b>X</b>	X	X	<b>X</b>	X	X	X	X

1. Genetic resources and biodiversity
2. New products, added value, production chain
3. Local governments, community empowerment
4. Production system management and diversification
5. Watershed and water resource management
6. Environmental services
7. Development of small and medium rural enterprises
8. Climate change, drought and desertification
9. Risk management to prevent disasters and reduce vulnerability
10. Protected and buffer area management
11. Policies and regulations

The project is developing a number of themes that are closely related to the concepts of the Mesoamerican Agro-environmental Programme (MAP). Obviously, this project contributed

directly to the Market Chain component of MAP, and to a lesser degree Adaptation to Climate Change, but also the overall integration of agricultural development processes to generate social and environmental benefits.

### ***Context of the project in relation to regional and national poverty reduction strategies***

The World Bank has conducted poverty assessments for Nicaragua, Honduras and Guatemala (World Bank, 2001a, 2003a, 2003b). For Nicaragua, although overall poverty between 1990 and 2001 declined from 50.3% to 45.8% of the population, poverty remains severe in rural areas with 64% of the population living in poverty of whom 25% are in extreme poverty. However, in the Central Highlands of Nicaragua, which cover the coffee growing regions and the dry Pacific highlands, poverty increased by 10% largely due to the coffee price crash. In Honduras, poverty levels have not substantially recovered since Hurricane Mitch with 63% of the population in poverty of whom 45% are in extreme poverty. Again poverty is concentrated in rural areas where 62% of the population lives in extreme poverty. In Guatemala the analysis is less complete; 56% of the population is considered to live in poverty and 16% in extreme poverty. Again poverty is concentrated in rural areas; 81% of the poor and 93% of the extreme poor live in the countryside. Poverty levels in El Salvador are less up to date. Data from USAID from 1997 indicates 48% poverty overall with rural poverty levels, as in other countries, higher at 62%. A more recent study reported by Cacaes (2000) indicates that 54% of rural households are in poverty and 27% in extreme poverty.

Analyses by both the World Bank and national governments recognize the vulnerability of the agricultural and rural sector both to natural disasters of drought and flood but also to economic disasters of unstable commodity prices (GoN 1999 and World Bank 2001b & 2001c). As well as responses in terms of improved natural resource management, risk reduction and credit availability, the Government of Nicaragua (2001) recognizes the need for multi-sectorial and multi-disciplinary approaches to risk management and vulnerability. In the final version of the Strategy for Productive Rural Development for Nicaragua (MAGFOR 2004) agroforestry, natural resource conservation and non-agricultural production are defined as the strategic aims for the drought affected Pacific regions.

Poverty Reduction Strategies promoted by the World Bank in Honduras (World Bank 2001a) and Nicaragua (World Bank 2001c) aim to invest in human and social capital to increase the resilience of the poor against natural and economic change, and increase their capacity to improve their economic situation. In Honduras, strategic areas include reducing environmental vulnerability and its impact on poverty, and strengthening civil society participation and decentralization. This proposal, through the promotion of multi-sector actions, strengthens civil society in the process of innovation and rural development, with the primary aim of generating employment and income to farming and other rural families, while reducing their vulnerability to environmental stresses. Specific actions on agriculture in the poverty reduction strategy highlight concentrating investment on tropical products in which the country has competitive advantage, participation in certification schemes and developing alliances between producers and enterprise.

Within the Poverty Reduction Strategy for Nicaragua, under the pillar for broad based growth, emphasis is given to expanding agricultural production through providing agricultural technology to the poor, providing demand driven funds, and providing training and developing marketing capability. Environmental vulnerability is one of the cross cutting themes of the strategy and is based on the Environmental Plan for Nicaragua which promotes sustainable development and management of water, soils and forests, identifying Segovias, and Jinotega among the high priority departments, all of which are included in this proposal. The National Development Plan of Nicaragua, produced in 2004, identifies priority clusters for development in the country, one of which is coffee. The most recently presented Rural Development Plan PRORURAL, lead by the Ministry of Agriculture and Forestry (MAG-FOR), includes the concept of territory based development associated with inter-institutional Departmental and Municipal Development Councils.

### ***Context of the project and the “coffee crisis”***

The fall in coffee prices in 2000 from over \$100 per sack to less than \$50, and recovering to only \$70 by 2004, created mass unemployment in the coffee highlands of Central America with the loss of some 150,000 permanent jobs and half a million temporary jobs. Export revenues of coffee from the Central American countries have declined between 33-61%; for some countries, such as Nicaragua, coffee was the principal source of export revenue. Due to the economic and social importance of coffee, great attention has been given to the “coffee crisis” over the last four years. Two strategies are identified: increasing the competitiveness of Central American coffees through ensuring quality and increasing marketing capabilities; and diversification into other productive activities (summarized in Varangis et al. 2002). Although prices have improved to around \$1.00 per pound during 2005 this is still below the floor price of \$1.35 agreed between producers and consumers during the coffee trading agreements of the 1970s and 1980s. Without regulation price instability is endemic in the coffee markets.

Substantial programs have been financed by USAID, Inter-American Development Bank (IADB) and the World Bank (amongst other donors) to support these initiatives. CATIE is the implementation agency for the World Bank funded program on “Linking Small Farmers in Central America to Specialty Coffee Markets.” CATIE has also been a collaborator in the USAID funded GeoCafe project, the IADB funded TC “Support to Competitive Diversification of Central American Coffee Producers” and FAO funded “Preparation of Program for Reconversion and Diversification of Coffee Production with Reduced Market Prospects.” Nevertheless these programs tend to last less than three years in their field implementation, make low investment in developing capacity in local institutions, or only work with already capable local institutions. This leaves the majority of producers, who are not members of successful producer organizations and for whom longer periods of investment are needed to facilitate change, outside the reach of these programs. The five-year time horizon of this proposal provides us with the opportunity to develop methods to facilitate change in communities marginalized from participation in these development programs.

### ***Context regarding impacts of pesticide use and market development in Central America and Trifinio***

Throughout Central America, agricultural modernization over the last 35 years has been synonymous with increased use of inputs, encouraged by state-supported credit programs. Pesticide use has escalated, despite the well-known problems and the growing information from other countries of the indirect costs to society. Although economic policies in the late 1980's reduced the state's role in subsidizing input use, a culture of routine use of toxic pesticides in agriculture had already been well established (Murray, 1994). As a result, every year thousands of persons suffer from occupational acute pesticide poisonings in Central America. In addition to acute poisoning, pesticide and fertilizer residues present in food and drinking water cause chronic health effects, including carcinogenicity, mutagenicity, teratogenicity, and negative effects on the immunological and reproductive systems (Armero 2004). Thus the use of pesticides and fertilizers has turned out to be a costly technology. With increasing frequency, a question is being raised by a broad range of actors in the society "Are synthetic pesticides an appropriate and effective technology in crop production?" This presents the challenge to figure out "How can Central America move towards sustainable crop management, reducing costly and dangerous pesticide use, while providing profitable, low-risk crop production and healthy, abundant food?"

The Lempa river and other watersheds, located at high altitudes of the Trifinio area (border areas of Guatemala, Honduras and El Salvador), have been prioritized by the member countries, Interamerican Development Bank and other organizations including NORAD, for a long-term integrated rural development project. This process is coordinated by the Trinational Commission for the Trifinio Plan, who are currently implementing a project for the management of the Upper Lempa River watershed, amongst other projects. The development strategy focuses on competitiveness and increases in production of quality goods in order to achieve economic growth and poverty reduction. The strategy states that in order to achieve high and sustainable growth that would permit a permanent reduction in poverty, production needs to be boosted through measures to improve the competitiveness of goods and services on international markets. Furthermore, the strategy identifies the need to implement sustainable programs that: 1) increase investments and the production of tradable goods with high economic returns; and 2) promote production and the productivity of the rural economy. In this context, special interest is laid on economic integration, trade liberalization and policy dialogue to facilitate the transition toward regional integration and freer trade with principal trade partners. The project is collaborating in a study led by RUTA together with the Commission designed to evaluate the "Drivers for Growth in Trifinio", and directed at characterizing the six value chains including vegetables, coffee and livestock among others.

### **3.2 Local ownership and exit strategy of the project**

The result structure of the project is designed to create the conditions for local ownership in the implementation and integration of the lessons from the project. The structuring of intervention from local organizations, to learning in regional forums, to engagement of national programs is designed to develop local ownership of the lessons from the project. Furthermore, the project took a strategic decision at the start of the project not to promote

the development of multi-institutional forums specific to the project but to buy-into and negotiate our agenda in existing multi-institutional initiatives. These include the coffee networks and clusters in Nicaragua, the Trinational Commission for Plan Trifinio and Municipal Alliance for Trifinio, amongst other forums. During the execution of the project, we will shift our efforts from developing lessons on how to reinforce producer organizations through Result 1 during the first 2-3 years, to sharing these lessons and creating capacity in local and national actors through results 2, 3 and 4 during the last 2-3 years of the project. For this reason, the budget for Result 1 declines substantially during the last year, while the other results maintain or increase their budget allocations. This strategy will be refined during the execution of the project, and will depend on the identification and negotiation of opportunities to institutionalize the lessons between our partners. Ultimately it also should be recognized that CATIE as a regional institution has a permanent role as conduit and facilitator of innovation in the countries where the project is being implemented.

### 3.3 Governance, equity and gender

Governance is about decisions and how they are made. Governance in general and environmental governance in particular is an extraordinarily dynamic process. It encompasses all the ways we exercise authority over the environment, including how we set the timing or the overall strategy of management actions like timber harvests, fishing limits, type of crops to grow and export and technologies to use as well as how we determine their financing and implementation, what we consume and how much are we ready to pay for the preferred products. The setting of public policies such as tariffs, subsidies and investments, and private policies like consumption trends and volumes, willingness to pay premium prices, are important aspects of environmental governance since these policies determine the economic and social incentives that drive business decisions which impact on the management of the ecosystem, the environment and conservation of natural resources.

Environmental governance relates to *decision-makers* at all levels - government managers and ministers, organizational leaders, business people, property owners, farmers and their families and consumers. Environmental governance is also about *the manner* in which decisions are made: Are they made in secret or in public? How are the interests of the affected communities and the ecosystems represented during the discussions? How are decision-makers held responsible for the integrity of the decision process and for the results of their decisions?

We have known about the basic principles of good environmental governance for more than a decade and all of the 172 nations attending the Rio Earth Summit in 1992, endorsed the environmental governance principles when they signed the *Rio Declaration on Environment and Development*. The five main principles of environmental governance as defined in this document are:

- Decisions at the appropriate level
- Access to information
- Access to participation
- Integration of environmental concerns into all decisions
- Integration of equity concerns into all decisions

We understand that the problem in applying these governance principles is not their novelty, but the fact that they profoundly challenge our traditional institutional and economic practices. So can we make progress in meeting up with this challenge in the context of the proposed project? As indicated by the fifth governance principle in the above list, we must make sure that equity and gender balance concerns are integrated into all decisions related to actions promoted and supported by the project, and that the project strategies and actions in turn promote and reinforce integration of equity and gender balance. In the next section, we illustrate briefly how we will address this issue in the context of the proposed project.

Development of dynamic innovation alliances, information and learning systems and policy forums around specific issues, with the participation of multiple stakeholders and involvement of diverse interest groups as proposed in the current project, are the gateways through which we propose to embark on improving the nature and scope of environmental governance at village, communal, municipal, regional and national levels.

While *strengthening capacity for innovation in producer organizations* (Result 1), we propose to include the farm households, and its members in the process and not limit ourselves to only the head of the families, thereby ensuring that the decisions are equity and gender sensitive. For example, some of the rural business enterprises to be set up in the supply chain for quality products or services (e.g. vermiculture, biological control agents, or local sale of products) will be opportunities for leadership, participation and economic benefit of rural women or young adults. We will promote discussion within the producer organizations on how to ensure the equitable representation and distribution of benefits among different family members, but especially women and young adults. One of the mechanism will be to promote exchanges between organizations that have initiated these strategies and those that have not.

Monitoring of the effects of the project on the livelihood strategies of farming families will enable us to evaluate the distribution of benefits within and between families. The development of actions to reinforce livelihood strategies in vulnerable families will provide the opportunity to develop strategies to improve the participation of different family members in the generation of income. This will also require an analysis of the division of labor between family members, that may restrict the time that women have available to participate in organizational or productive activities.

While we promote *multi-sector innovation platforms* (Result 2), we not only must assure that there is gender balance in the participants, but also will strive to create a discussion environment that is sensitive to gender equity and gender balance.

While *engaging national programs and policies* (Result 3), we have an opportunity to improve the gender equity through balanced participation in national decision making forums. Also, the processes of curriculum design for training, formation and human development of national professionals will be creative, critical and inclusive of gender equity and gender balance issues.

While we *promote information and learning systems* (Result 4) to include growers, field technicians, specialists and traders not just as passive receivers of information but active members

providing information and input, looking to make access and content of the information and learning systems equity and gender sensitive.

Finally, the gender composition of the project itself will demonstrate our commitment to equity both internally and to our collaborators.

### **3.4 Anti-corruption strategy**

CATIE has internationally recognized management systems (e.g. our internal regulations were certified by the World Bank auditors before CATIE was awarded a series of projects), including clearly defined transparent financial controls and independent external audits, carried out every year by one of the major international companies. Project funds are directly managed by CATIE staff in the headquarters (Turrialba, Costa Rica) and in the target countries, in each of which CATIE maintains an administrative and technical office, to ensure efficient transparent use of all resources. In cases where funds are advanced to project collaborators, contracts with defined outputs and agreed financial control procedures are signed and supervised by CATIE staff who take responsibility for the correct and efficient use of these funds. The selection of project collaborators takes into account their capacity and record for respecting international standards for the use of donated resources.

Furthermore, CATIE's internal auditor, who reports directly to CATIE's Board of Governors, also makes random checks on the accounting and procedures used by CATIE's projects (including projects funded by Norway) to ensure that they are complying with contract conditions and CATIE's regulations, to improve efficiency and to check for any evidence of mismanagement of funds and others resources by CATIE staff as well as by collaborators.

### **3.5 Financial/Economic Risk of Trade Liberalization Policies**

The Central America Free Trade Agreement (CAFTA), an attempt to meld the markets and interests of the United States with those of the five Central American countries and the Dominican Republic, proposes a time path for trade liberalization as well as rules regarding the treatment of foreign direct investment, intellectual property rights, labor rights, environment and conflict resolution. CAFTA comprises the following components: (1) trade tariffs reduction for industrial and agricultural commodities in Central America; (2) a system of tariff rate quotas (TRQ's) for a subset of sensitive agricultural products for Central America; (3) permanent duty-free access to the US market for Central America products; (4) TRQ's for access to the US market of selected commodities (sugar, beef, peanuts, dairy and textiles); (5) Stimulus of foreign investment in Central America.

The effect of trade tariffs reduction, a key component of the reform agenda, may not be significant as the average level of pre-CAFTA protection in Central America is already well below ten percent as a result of the Caribbean Basin Economic Recovery Act (CBERA) put into effect in 1984 and that will expire in 2008. However, it could still be important for particular sectors or commodities where tariffs remained high prior to CAFTA. For the subset of sensitive agricultural products in Central America, the system of TRQ's define amounts of certain commodities that can be imported free of tariffs, providing safeguards if

imports exceed the quota established, restricting imports beyond the safeguard level. However, the effect of quotas on domestic prices and production is likely to be small as in most cases the quotas are less than the current level of imports in which case they have no effect on domestic prices, or because they are small relative to the current level of production.

For the specific case of the value chains in which the project intervenes (coffee and vegetable crops), the risk of trade liberalization in Central America is not significant. As Central America is a net exporter of coffee, a reduction in import tariffs would not pose any risk for the sector. Fresh fruits and vegetables under CAFTA have been placed in categories A and B that comprises those products whose tariffs will be eliminated immediately or over the first five years of the agreement, respectively. However, as estimated by IFPRI in a study commissioned by ECLAC, the World Bank, IDB, UNDP and RUTA, and published in September 2007, in the case of vegetables it is unlikely that US prices would be competitive with local production even at a zero tariff.

Permanent duty-free access to the US market for Central America products would neither have a significant impact as US already permits tariff-free access to most commodities from Central America including coffee and vegetable crops. In the case of products with TRQ's, CAFTA would not significantly change the situation as imports beyond the quota have prohibitive import tariffs, but coffee and vegetables are not included in this group of products.

Given the above specific changes that are expected as a result of CAFTA implementation, the above study modelled the impact of those changes on economic growth, employment, income distribution and poverty using a recursive dynamic economy-wide CGE model constructed for four of the Central American economies. The first result is that CAFTA has a positive effect on growth, but, unless it has a big impact on productivity or the rate of investment, that effect is small. The second result is that impacts of CAFTA on employment and capital formation follow closely the patterns on economic growth. This means that the project, if successful in improving productivity and investment in the coffee and vegetables value chains, will contribute to improve the economic growth impact of CAFTA and to foster employment generation. The third result is that rural and urban poverty is lower with CAFTA than it would have been without it, however, the effect is small and income inequality will be slightly widening, demonstrating the critical importance of capital formation and/or increases in productivity to growth and poverty reduction.

Thus, we can conclude that the overall impact of CAFTA on output, employment and poverty is positive, but modest. CAFTA will not be a magic bullet that will bring much higher growth rates to the region without a complementary development strategy that takes advantage of export opportunities made possible by the agreement. As the project is successful in achieving coffee and vegetables value chains upgrading by contributing to productivity and investment increases, product quality improvements to overcome non-tariff barriers for export, and promoting alliances among value chain actors to reduce transaction costs, it will contribute to exploiting the full potential of trade liberalization. In addition, specific interventions of the project for strengthening and diversifying livelihoods in coffee producing areas are based on the strategy of supporting farming families to take advantage of existent of new market opportunities, and CAFTA will broaden these opportunities.

## 4. Innovation for Sustainable Value Chains in Coffee Highlands of Nicaragua and Honduras

### 4.1 Value chains and producer organizations in the coffee highlands

Together with collaborators from the original base-line study we defined three municipalities in which the project should be developed, Jinotega and Jalapa in Nicaragua and El Paraiso in Honduras. Subsequently two or three producer organizations were identified in each municipality who may benefit from the project, together the organizations that market their coffee and provide them with services. Producer organizations were selected to represent different levels of existing participation value chains and different types of value chain (Table 4).

*Table 4*  
*Characterization of producer organizations with different capacities and participations in value chain*

Organization and Municipality	Commercial Functions	Services provided	Exporter	Supply chain model
SOPPEXCCA- Jinotega PROCOCER-Jalapa	Collecting and drying coffee	Financing, certification and technical assistance	Directly export at least part of their coffee	Cooperative
COMUEL-El Paraiso CCAJ-Jalapa	Collecting coffee	Financing	Second-tier marketing cooperative	Cooperative
COMICAOL-El Paraiso	Collecting and milling	Financing	Transnational trader	Cooperative-Transnational
ASOCAFEJ-Jalapa	None	None	Transnational trader	Producer-transnational
COMIPIL, El Paraiso La Unión, Jinotega	None	None	Sell to intermediaries who sell to exporters	Producer-Intermediary-exporter

To facilitate development of the value chain strategy in each municipality we started by identifying the demands of coffee roasters and consumers, which were: i) a consistently quality product, ii) with environmental and social certification, iii) produced at the volume and delivered at the time contracted, iv) with effective communication and information to generate trust. With this basis, we evaluated the capabilities of the local producers, their organizations, and their support services to meet these demands from the consuming countries. The results of this analysis were shared in multi-stakeholder workshops with producers' organizations, technical service providers and exporters, and formed the basis for the planning of results to be achieved over the four-year period of the project (Table 5). The participants of these workshops form the basis of multi-sector innovation platforms that provide opportunity to share the lessons from the project as well as develop multi-institutional territory based actions. In the case of El Paraiso, this role is being assumed by the Municipal Coffee Development Council and in Jinotega by the coffee cluster, in Jalapa by the Segovias Coffee Network.

**Table 5**  
*Results over four years by critical success factor for organizations in each municipality*

Critical Success Factor	Jalapa	El Paraíso	Jinotega
Quality and consistency	Quality profile for coffee by zone	Characterization of coffee quality by zone	Development of method and system for characterization of quality
	Quality management system	Apply policies for quality control Good quality management in wet milling	Quality management systems improved
	Recognize quality through better prices and services	Recognize coffee quality in price	Actors in the supply chain recognize quality through prices and services
Comply with volume and delivery	Efficient administrative systems	Producer organizations with business capacity including strategic and business plans	Administrative and management systems in accordance with organizations functions
	Market information system	Producer organizations have capacity to manage market information and improve their negotiation skills	Service providers use key and opportune market information to support farmers groups to comply with market demand
	Rules for compliance validated	Producer organizations with rules and policies for compliance	Producers, cooperatives implement policies for incentives and compliance with buyers
Certification	Large scale implementation of agro ecological management practices	35-40% of coffee producers implement agro ecological management	Farming families and service providers improve agro ecological and business knowledge for innovation
	Producer organizations with capacity to manage certifications	Cooperatives, intermediaries and exporters manage certification processes	Producer organizations manage internal control systems for multiple certifications and negotiations with different markets
	Identification of financing for sustainable production	Establish credit lines for conversion to certified coffee	Producer organizations effectively manage seed capital for certification and identify other potential financing

Communication and confidence	Information management and knowledge development capability	Better decisions on basis of improved access and use for information	Effective local information system developed and functioning that contribute to linking the different actors of the value chain
	Strategy for promotion of coffee from Jalapa	Coffee council functions with dynamism and representation of coffee sector	Different actors of the supply chain maintain information flow for better management decisions
	Local fair and coffee competition	Greater participation in cup of excellence and local competition	Producers organizations and service providers develop and improve marketing strategy

In each municipality a core group of direct project beneficiaries have been identified, whose producers and organizations will form the pilot groups to work on innovation of capacities to participate in value chains. Eight producers' organizations and three technical service providers are participating in this process, for each we have developed a detailed plan to reinforce their capabilities in: i) technical assistance in coffee agronomy and quality control, ii) provision of financial services to producers, iii) marketing and commercialization of coffee, and iv) the management of information and innovations in the organization. The small projects developed to implement this will directly benefit some 350 families, while an additional nine hundred coffee producing families will benefit from the improved capacities of their organizations.

A report from the Inception phase of the coffee component was presented in December 2006.

#### 4.2 Reinforcing sustainable livelihoods in coffee landscapes

The integration of the concepts of reinforcing livelihood strategies in the context of environmental and economic and the provision of environmental services from landscapes will be integrated with that of sustainable value chains. As new concepts to be added to the strategy for innovation in value chains, we have selected to apply them only in some of the municipalities where we are working on coffee (see Table 6). The development of processes to reinforce livelihood strategies will be concentrated in Jalapa and El Paraiso as the producers in this area are considered to be more threatened by climate change, and to include some groups who are more economically marginal (results of inception study). In Jalapa where the farming families of the organizations are concentrated in one watershed the project will attempt to establish the landscape level environmental and socioeconomic impacts of value chains with social and environmental responsibility. Adaptation to climate change of the coffee sector will be considered in all regions. Although expected impacts are greatest for Jalapa and El Paraiso, the impact of low rainfall on harvest in 2005 was equally severe in Jinotega as the other two regions.

**Table 6**  
*Application of concepts in implementation of the component in different municipalities*

Municipalities	Jalapa	El Paraiso	Jinotega
Value chains	Coffee and alternative income sources	Coffee and alternative income sources	Coffee
Livelihoods	Reinforce livelihoods and monitor impacts	Reinforce livelihoods and monitor impacts	Monitor impacts on livelihoods
Adaptation to climate change	Develop strategies for resilience for rural families	Develop strategies for resilience for coffee families	Develop strategies for resilience for coffee production
Environmental impacts and landscape level	Monitoring and adaptive management of the landscape	Monitor environmental impacts on farm	Monitor environmental impacts on farm

The original proposal was to address these themes in a separate “Dry Zone” component that would develop them in different municipalities outside the coffee region. However, it has been agreed that we do not have sufficient resources to undertake this proposal. The superimposition of zones for implementing the work on effects of climate change with the coffee component will lead to considerable logistic efficiencies and reinforcement between the activities. This will also allow us to maintain most of the conceptual and methodological goals originally proposed, but within a more efficient implementation structure. Obviously the impact in communities is reduced compared to the original component, but this is compensated by the Coffee Component investing in 50% more families and producer organizations than originally proposed. The comparison of Results from original and adjusted proposal for the “Dry Zone” component is presented in Table 7.

**Table 7**  
*Comparison of Results from original and adjusted proposal for “Dry Zone” component*

Original Dry Zone Component	Proposed Addition to Coffee Component
<p><b>Result 1.</b> Proposed to work in two Municipalities, Somoto, Nicaragua and Namasigue, Honduras</p> <p>Implementation with two communities per municipality</p>	<p><b>Result 1.</b> Propose to work in two municipalities within the existing coffee growing zones in El Paraiso and Jalapa</p> <p>Implementation with one or two additional producer groups per municipality</p>
<p><b>Result 2.</b> Establish new innovation platforms to address multi-sector strategies for climate change</p>	<p><b>Result 2.</b> Incorporate multi-sector strategies for climate change into the agenda of existing coffee innovation platforms</p>
<p><b>Result 3.</b> Engage institutional anchoring and policy development specifically addressing climate change</p>	<p><b>Result 3.</b> Engage institutional anchoring and policy development to address climate change on coffee sector</p>
<p><b>Result 4.</b> Facilitate information and knowledge management to develop responses to climate change</p>	<p><b>Result 4.</b> Facilitate information and knowledge management to develop responses to climate change impact on marginal coffee producers</p>

### 4.3 Household beneficiaries and stakeholders in the coffee component

The project has different degrees of influence or engagement with farming households that may be qualified as follows:

- i. Households who receive project financed training and credit to introduce changes as part of result 1. These are the 500 families referred to in the Result1
- ii. Households who are members of producer organizations participant in the project, who will receive benefits from the improved business capacity of their organizations and service providers but do not receive direct support from the project. These benefits come from a combination of actions from result 1 and 2 and total approximately 2400 families as indicated in Purpose 1.
- iii. Households whose organizations or service providers have improved their capabilities due to the activities through improve access to information, services, alliances from result 2 and to a lesser degree 3 and 4. The number of families that may benefit is somewhat difficult to estimate, but we consider should be at least 6000 families.

It is also important to indicate that, as indicated above, territories and producer organizations were not selected to impact the maximum number of producers but to maximize the lessons of how to improve the business capacity across a range of scenarios, thus the project works with both small emerging organizations as well as larger better developed organizations.

**Table 8**  
*Household, producer organizations and service provider stakeholders in the component*

Producer organization /service provider	Number of households direct beneficiaries of project	Total membership of producer organizations	Approximate number of households represented by organizations in platforms
Jalapa / Nueva Segovias	210	1295	3000 (in N Segovias)
CCAJ/UNICAFE	50	425	
ASOCAFEJ	50	120	
PROCOCER	50	450	
2 Sustainable livelihood groups	60	300	
Jinotega	100	800	2000
Coop 17 de Julio/SOPPEXCCA	50	650	
Coop La Union/FUNJIDES	50	150	
El Paraíso	190	390	1000
COMICAOL/CORECAFE	50	230	
COMUEL/CCCH	50	60	
COMIPIL/IHCAFE	30	30	
2 Sustainable livelihood groups	60	60	
Total	500	2415	6000

Similarly, there are different degrees of participation with producer organizations and service providers (also producer organizations often provide many services, thus there is overlap between these two groups).

- iv. Producer organizations and service providers that have direct participation in reinforcing the capabilities of the farming households and producer organizations as part of result 1. There are eight such producer organizations participating in the project, with five service providers.
- v. Within result 2 a larger number of producer organizations and service providers who participate in the innovation platforms through which they will contribute to and benefit from the purposes of the project. Membership of the innovation platforms is still being consolidated, but we expect that at least 30 producer organizations and 15 service providers will be stakeholders in these platforms.

Finally, through collaboration with national organizations and policy development forums (R3) the influence of project should reach a far larger number of producers. Just the primary technical service providers in Nicaragua and Honduras CAFENICA and IHCAFE, with whom the project has collaborative agreements, attend some 10,000 households.

#### 4.4 Result and Product Structure

In annex 1 there is a description of the products for the project from 2007 to 2010, and in annex 2 a detailed plan of activities for the products in 2007.

***Result 1: 500 farming households in coffee producing areas and their organizations, innovate in partnership with other market chain actors and service providers to improve capacity for ecological production and entrepreneurial management, gaining greater participation and negotiation power in value chains, and effectively responding to economic and ecological uncertainty.***

During 2007 the project will concentrate on reinforcing the internal structures and capabilities of the producer organizations in providing technical, financial and markets services as well as their organization and administration. This will include the analysis of the capacities and options to solve major constraints or take advantage of new opportunities, and the identification and prioritization of actions for innovation. Prioritized actions for improving penetration of producer organizations into existing or new markets will start to be implemented and monitored. The strengthening of the production and business decision-making of farming families will be based on an analysis of their livelihood strategies to subsequently reinforce their understanding of agro-ecological and economic processes that affect the productivity and profitability of their farms. At the same time the diagnostic of participating farming families will be amplified to enable an analysis of the livelihood strategies of the families to enable identification of groups of families that may require a broader approach to reinforcing livelihoods, than just improving income from coffee.

In 2008, the project will continue supporting experimentation of farming households, and producer organizations to promote learning and hence adaptive management of coffee and

alternative value chains. Moreover, new options will be implemented to respond to markets for coffee prioritized during 2007, and markets for new products, based on the profitability and feasibility for the organizations to enter into these markets, the social and environmental sustainability of these market opportunities, and other criteria set up by households and their organizations. This will include the identification of alternative products and markets for producers for whom coffee alone is not sufficient to lift them from poverty. Business skills will need to be developed in these producer groups related to these alternative products. The management and integration of the initiatives and capacities in the producer organizations will require them to improve their communication strategies both with their members and with the actors in the value or supply chains in which they are participating. Furthermore, the project aims to strengthen the access of producer organizations to technical and financial services, the latter being one of their primary limitations to maintaining or expanding their businesses.

In 2009, the project aims at the consolidation of multi-stakeholder learning processes on: (1) agro ecological practices in coffee and farm management, (2) quality management control, traceability, and certification to enter the prioritized markets, (3) entrepreneurial management of producer organizations and agribusinesses, and (4) practices to strengthen organizational processes. By the end of the project these learning processes will have contributed to the consolidation of linkages among producer organizations and other (direct and indirect) market chain actors, and the establishment of favorable private policies for buying and selling coffee and the provision of services. Producer organizations will evaluate the impacts of the project activities, including not just the benefits to their members, but also the wider social, economic and environmental benefits that may have accrued.

***Result 2: Key multi-sector actors consolidate alliances in local innovation platforms to strengthen their capacity for innovation, improve the positioning of the territory in value chains and develop influence in local public and private policies***

Based on inception phase implementation, local initiatives were identified with whom we have agreed to collaborate under the project concept of local innovation platforms. These are the Jinotega Coffee Cluster (coordinated by the Municipality and the local delegation of the Ministry of Agriculture with support from AECI), Segovias Coffee Network (Coordinated by FUNICA with support from SNV) and El Paraiso Municipal Coffee Development Commission (Coordinated by the Municipality and the Honduran Coffee Institute). These spaces will be used to promote the sharing of information and experience between the participants, and monitor the changes and impacts of the different projects operating in the territories on the social and economic well being of producers, as well as environmental impacts.

During the course of the project, it is planned that the platforms will develop activities of common interest and that impact the conditions and capacity of the territory as a whole. These include: (i). positioning of the territory as a source of quality coffee providing social and environmental benefits; (ii) development of strategies to adapt to climate change; and (iii) establishing a functioning sustainable market for the business services demanded by the sector.

The innovation platforms will also evaluate the advances and lessons from the project together with partner producer organizations and service providers. Towards the end of the project, evaluations of the social, economic and environmental impacts of the project will be analyzed with the participants in the platforms. This together with the above activities will contribute to the consolidation of functional public-private local innovation platforms for the coffee value chain that will include local governments, and will influence local public and private policy design.

***Result 3: National and regional actors have integrated the lessons from the project into their institutions, and participate in the design of appropriate private and public policies to facilitate national capacity for innovation and participation in value chains***

The project will use three mechanisms for new knowledge generation and to influence policy development. Firstly, the project will coordinate (or pro-actively participate) in learning alliances, or will promote them. Innovation processes in identifying and developing markets for smallholders, supply chain analysis as well as upgrading, information and knowledge management in rural communities have been prioritized for study. By the year 2010, the project aims to participate in consolidated and legitimized learning alliances that generate relevant knowledge and content to have influence in public and private policies, influencing the development of the coffee sector specifically and rural areas in general.

Secondly, the project will also participate in other inter-institutional platforms at the national and regional level related to the coffee sector and rural development. At the national level, we will look to engage national development processes such as PRORURAL in Nicaragua, a nation-wide Program that implements the National Policy for Sustainable Agricultural and Forestry Development and in Honduras the National Agriculture and Food Development Policy (PESA) through the National Agriculture and Food Science and Technology System (SNITTA). We will also look to participate in national decision making bodies specific to coffee such as the National Coffee Commissions (CONACAFE) and Clusters in Nicaragua and Honduras, participating in initiatives developed by them where the project has competence, e.g. coffee certification, coffee quality mapping, evaluation of internal markets etc. In Honduras these initiatives are primarily developed by the Honduran Coffee Institute, who is a partner in the local implementation of the project in El Paraiso. Some of these initiatives also have a regional context under the coordination of PROMECAFE, who coordinate activities of common interest between the coffee institutes of Central America, such as the mapping of coffee quality (although CATIE is a member, Nicaragua is not). Another emerging initiative is to collaborate with national initiatives to develop strategies for adaptation to climate change for the coffee sector, a theme of interest to the Ministry of Environment in Nicaragua.

Thirdly, the project together with the national technical offices and headquarters will promote strategies to increase the recognition of CATIE projects through improved communication of our capabilities and impacts. This also includes increased collaboration and interchange of lessons between projects and thematic groups, and their incorporation in the new Mesoamerican Agro-environmental Program.

***Result 4: Project partners, including CATIE, develop strategies to access, generate and integrate information and knowledge among local, national and international actors.***

The sustainable integration of smallholder farmers into the specialty coffee chains, or value chains for other products, requires addressing the information asymmetries among chain actors in a more comprehensive way than by only setting standards. In addition, rising standards in the specialty coffee industry requires high innovation capacities in the whole value chain to satisfy market demand; this is especially challenging for smallholder farmers. As communication plays a key role in the innovation process, the analysis of internal and external communication and information flows and patterns within the stakeholder organizations, as well as between different stakeholders of the value chain, will be prioritized during 2007. The analysis will be differentiated according to the business models that operate to address different end markets: e.g. fair trade, organic, high quality/gourmet and the mainstream market. Based on this analysis, information and knowledge needs by different chain actors will be assessed, as well mechanisms to improve the system of communication. Results will then be shared with the local learning platforms.

In 2008 and 2009, based on the analysis of information and knowledge needs and flows, and the negotiation process among value chain actors, a strategy to link farmers' knowledge systems with market demands, emphasizing an improved flow of information and knowledge between coffee chain actors, will be designed and initiated. Emphasis will be given to the types of knowledge needed for: (1) process upgrading - transforming inputs into Results more efficiently by re-organizing the production and commercialization system; (2) product upgrading - a movement into more sophisticated lines of products; and (3) functional upgrading - the acquisition of new functions, such input procurements, off-farm processing and/or collection of farm produce, development of knowledge systems and skills for negotiation/cooperation with downstream chain partners, branding and consumer marketing. At the end of the project (2010), the strategy to strengthen internal and external communication and information flows, to access, generate and integrate knowledge, will be evaluated and adjusted at the local, national and regional levels, and the experience will be fully systematized.

Integrated into this process is the function of the project and CATIE as a generator and conduit of information and knowledge. Firstly, the project needs to develop a plan to present and disseminate the lessons generated on agro ecological production, reinforcing business capacity in producer organizations, evaluation of relationships between actors in value chains, criteria for mapping of coffee quality, amongst other themes. To alimnt this process some research topics have been identified on the generation of knowledge for a technical proposal for ecological the management of coffee, developing geographic characterizations of coffee quality, and development of strategies for adaptation to climate change.

The knowledge generated will be integrated into the CATIE Post-graduate and training programs, incorporating new relevant information, experiences and knowledge generated by the project. During 2008 and 2009, the project expects to be producing new training and teaching contents, and adjusting and updating those already developed, contributing to

CATIE Post-graduate Program, but also to National Universities and Technical Schools. By the end of the project, the adjusted and finished training and teaching content as well as materials will be fully integrated in teaching and training programs of CATIE and other national educational organizations. This will strengthen the link of the project with CATIE and will be crucial for a broad diffusion of new knowledge and experiences generated by the project.

An integral part of the management of knowledge and information is the ability to monitor implementation and evaluate impacts of activities. During 2007 indicators for the project purposes and results will be defined, and the status of these indicators will be quantified from the base-line study in 2003 and the inception phase in 2006. During the implementation of the project specific studies of project impact will be developed and methods prepared for the evaluation of the final impact of the project (see section 2.7 Supporting the Learning Process: A Robust Planning, Monitoring, Evaluation and Reflection Process).

## 5. Innovation for Sustainable Vegetable Chains in Trifinio

### 5.1 The Context

This component of the project will be implemented in the Trifinio region that comprises approximately 7,541 Km<sup>2</sup> in the border among Guatemala (44.7%), El Salvador (15.3%) and Honduras (40%). This region constitutes an indivisible ecological unit as the result of a treaty subscribed by the governments of the three countries for the implementation of a Tri-national Development Plan called “Plan Trifinio”. The region includes 45 municipalities (8 in El Salvador, 15 in Guatemala and 22 in Honduras) with a population of 670,000 inhabitants. The region’s major resources are water and the biological diversity of their ecosystems.

The Trifinio Commission has the mandate to contribute to Central America integration through collaborative action among the countries of Guatemala, El Salvador and Honduras, to contribute to the integral, harmonic and equilibrated development of the border region. With that general objective, the Commission implements different projects and programs in the region. Among the most important is the Tri-national Program for the Sustainable Development of the Lempa River Upper Watershed (PTCARI) that includes 20 municipalities influenced by the Lempa River (a sub-set of the 45 that make part of the Trifinio region).

This program works on four areas: (1) renewable natural resources sustainable management; (2) promotion of productive and economic activities and their diversification; (3) institutional strengthening within a tri-national integration framework, and (4) the reduction of vulnerability to natural risks and disasters. The project is relevant for all these four areas, especially for the first three, and will work in seven of the 20 municipalities that make part of the Lempa river watershed. These municipalities were selected for their importance for vegetable crops production, and the influence of these production systems on water resources availability and quality.

### 5.2 Household beneficiaries and stakeholders in the vegetable component

The project has different degrees of influence or engagement with farming households that may be qualified as follows (table 9):

- i. Households who receive project financed training and credit to introduce changes as part of result 1. These are the 250 families referred to in the Result1.
- ii. Households who are members of producer organizations participant in the project, who will receive benefits from the improved business capacity of their organizations and service providers but do not receive direct support from the project. These benefits come from a combination of actions from result 1 and 2 and total approximately 700 families as indicated in Purpose 1.

**Table 9**  
*Household, producer organizations and service provider stakeholders in the vegetable component*

Producer organization or service provider	Number of household direct beneficiaries of project	Total number of members	Number of households attended by service providers
<b>Guatemala</b>			
Grupo del Valle de Esquipulas,	20	25	
Chortí fresca, Camotan,	30	41	
FASAGUA			130
<b>Honduras</b>			
Empresa Productiva Santa Anita, La Concepción	25	30	
COPRAUL-Sinuapa	60	240	
CENOC-Ocotepeque	30	270	
CELTA			300
<b>El Salvador</b>			
ACOPO-La Palma	20	30	
ACAMCERTA, San Ignacio	25	31	
ACARIA, Metapan	20	30	
Asociación Río San José	20	26	
CENTA-La Palma			150
CENTA-Textistepeque			100
<b>Total</b>	<b>250</b>	<b>723</b>	<b>680</b>

- iii. Households whose service providers have improved their capabilities due to participation in the project and through improve access to information, services and alliances due to result 2 and to a lesser degree 3 and 4. The number of households that may benefit is more difficult to estimate, but we consider should be about a 700 families in addition to the 700 household beneficiaries mentioned above

A report on the Inception phase of this component with greater detail on the stakeholders in the component is being presented together with this project plan.

### 5.3 Results, Product Structure and Implementation Plan (2007-2010)

Project Results that contribute to the project development objective (broader and long term objectives), and intermediate products to be achieved along the next four years of the project in chronological order that contribute to achieve the project objective, were mapped based on the results of the inception phase. These are presented below prior to the presentation of the specific work plan for 2007. In annex 2 there is a detailed description of all intermediate products for each Result.

In annex 4 there is a detailed description of all activities that will be implemented in the remaining of 2007 to achieve intermediate product set-up for the year, including responsibilities allocated among the CATIE project team as well as partners that will contribute to achieve those intermediate products, deadlines and budget allocated for each activity.

***Result 1: 250 vegetable producing families and their organizations, in partnership with private and public actors, innovate in their capabilities for ecological production and entrepreneurial management, providing incentives to increase the demand and supply of ecologically grown high-value vegetable crops***

Vegetable crops production and market chain rapid appraisals during the inception phase of the project, showed that although some initiatives exist in the region for the production of organic or BPA certified vegetables, promoting the use of more sustainable vegetable production practices (a producer association in San Salvador with twenty members is already producing and commercializing organic vegetables), the market does not pay a price premium for product differentiation based on production practices, but only on product appearance. As such, the major challenge of the project will be to provide incentives and develop capabilities to foster ecologically produced vegetables demand and supply.

To overcome this challenge, the project's best bet will be to foster the development of sustainable vegetable chains. From the demand side, the project will focus on:

- (1) implementing mechanisms to engage in private policy analysis, including buying policies of mayor wholesalers and retailers of vegetable crops, as well a input supplier policies, to provide the necessary market incentives and information for product traceability and differentiation; complemented with
- (2) supporting educational programs to develop conscience on the health, social and environmental responsibility of consumers in local and national markets.

From the supply side, the project will work to:

- (3) develop capabilities among producer families for agro ecological management of vegetable production systems that reduce costs and improves the penetration on and the development of higher value markets for differentiated vegetable crops, promoting sustainable land management;

- (4) strengthen entrepreneurial capabilities of producer organizations to perform effective and efficient product traceability, differentiation and marketing processes, and
- (5) foster the sustainable provision of effective and sustainable financial, technical, entrepreneurial and information services.

Thus, as shown in Figure 2, to achieve this Result, the project will develop its activities around three entry points: (1) the producing families and their related landscape, (2) producer organizations, and (3) the market chain (including embedded and external service providers). These entry points will be integrated in the implementation process by the conformation and functioning of “Innovation Groups” that will be conform by (1) CATIE that will serve as facilitator as well as a source of alternatives for sustainable vegetable chain development, (2) relevant service providers (including financial, technical, entrepreneurial and information services), and (3) producer organizations.

During the inception phase of the component, seven producer organizations were identified and approached for project implementation, one in each of the selected municipalities. In the case of Honduras, the project will work on two municipalities of the Ocotepeque Department (Sinuapa and La Concepción), specifically with COPRAUL (a Cooperative of Agricultural Producers) and the Productive Enterprise “Santa Anita”. The former groups 200 vegetable producing families, mainly potato producers, selling 80% of its produce in “Dandy”, an open market in San Pedro Sula, and 20% to Hortifruti, a company specialized in wholesaling and distribution of fresh products, meats and vegetables, as well as product development with trade marks for supermarket chains in Central America. Since 2005, Wal-Mart owns 33% of the company. “Santa Anita” is a less-developed association with 25 members who sell their product, mainly onions, individually to wholesalers in “Dandy” in San Pedro Sula, and “La Tiendona” in San Salvador.

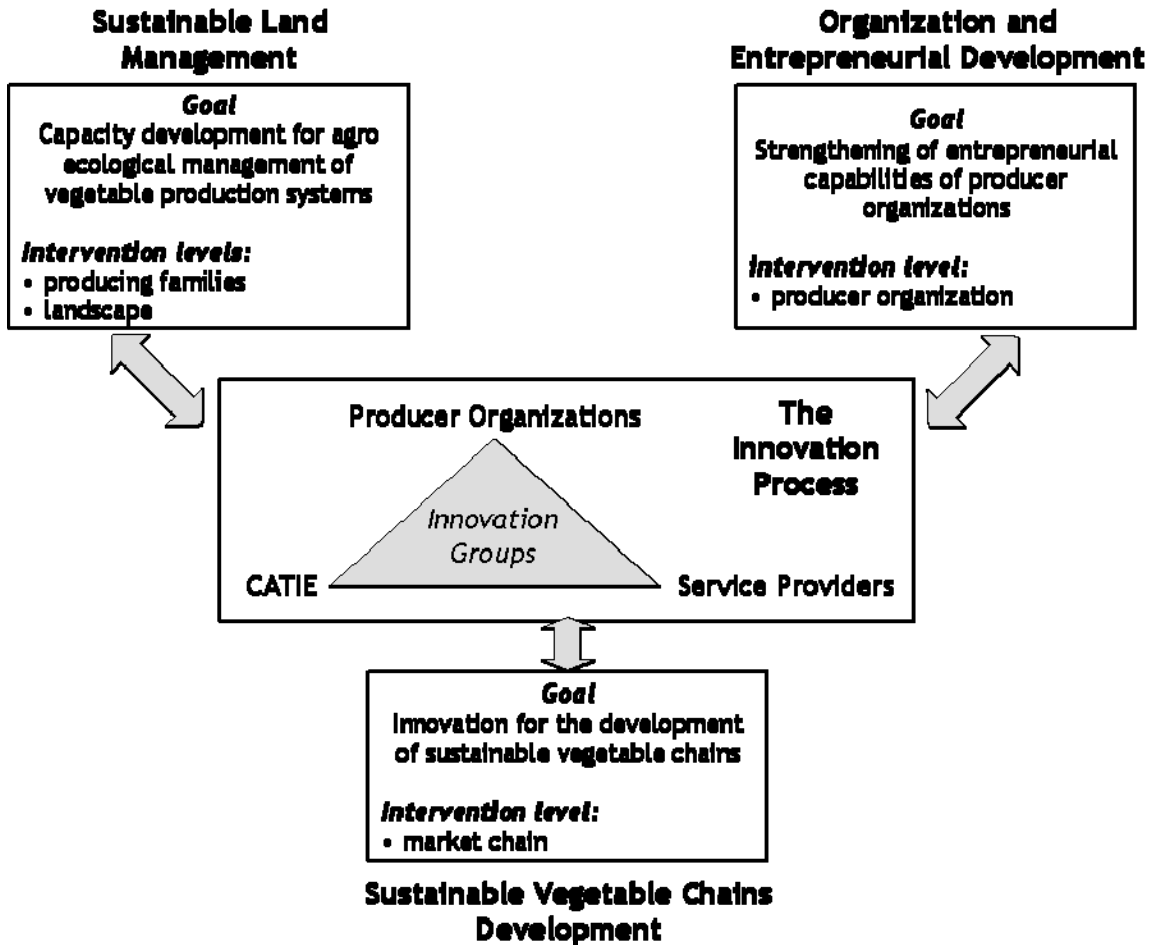


Figure 2

Implementation strategy to achieve Result 1 and to integrate of different implementation entry points

In El Salvador, the project will work in two municipalities of the Department of Chalatenango (La Palma and San Ignacio) and one municipality of the Department of Santa Ana (Metapán). In La Palma, the project will work with ACOPO, a cooperative of organic producers with 30 members, and in San Ignacio will work with ACAMSERTA, a community association for agricultural marketing and the provision of agro tourism and environmental services that associates 120 producers who market vegetables collectively and produce organic inputs. In Metapán, work will start with the Producers Cooperative of San Jerónimo that is in the process of legalization and affiliates 30 vegetable producers of tomato and sweet peppers, who commercialize their produce individually through intermediaries who sell it in “La Tiendona” of San Salvador, and the open market of Santa Ana.

In Guatemala, work will be conducted in two municipalities of the Department of Chiquimula (Camotán and Esquipulas). Implementation in Camotán will be in collaboration with the Producer Association of Vegetable Producers of Camotán (CHORTI FRESCA) with 41 members who produce tomatoes and sweet peppers in greenhouses and sell the

produce individually in the open market of Chiquimula and CENMA in Guatemala City. In Esquipulas, the project will collaborate with a producer group in the Valley of Esquipulas that is a member of the Federation of Agricultural Associations of Guatemala (FASAGUA), which commercializes tomato in the wholesale market of Guatemala City (CENMA) and sweet peppers in the wholesale market of San Salvador (La Tiendona).

*Product 1.1: PM&E process to assess Sustainable Land Management with direct partners designed and functioning*

The project will finalize the characterization of vegetable crops production systems in the selected municipalities by December 2007, including the development of indicators related to the impact of production systems on water resources and health at the landscape. This characterization includes the identification of agro-ecological constraints that limit the possibility to produce “differentiated vegetable crops”. This will serve as the baseline for future evaluations, and the indicators selected (or developed) will be monitored with local partners starting in 2008, particularly with producer associations, and other organizations within the local platforms for the duration of the project, providing key information for decision-making. To support this process, the project will fund research projects of CATIE graduate students to develop and assess the indicators that will be incorporated into the designed M&E system. As such, the project aims to establish a functional M&E system for sustainable land management that includes indicators at the farm and landscape levels, which will support a continuous PM&E process with direct project partners (2008-2010).

*Product 1.2: Evaluation of producer organizations entrepreneurial and service provision capacity and establishment of a PM&E process with partner producer organizations*

The initial evaluation of producer organizations entrepreneurial capacity, including its capacity to provide technical and financial services will be finalized in 2007, establishing a baseline and a M&E system for the assessment of producer organizations capacity development. This system will support a continuous PM&E process with producer organizations, providing them with key information to support decision-making processes, at the same time that feeds back the M&E systems for further improvements. Improved and informed decision-making processes in producer organizations will result in adjustments to their organization and managerial structures and procedures to respond effectively to business opportunities and uncertainty (2008-2009). This will contribute to the strengthening of producer organizations entrepreneurial capacity and organization processes, improving their linkages with the market chain, and increasing their negotiation power, which contributes to improved net incomes and reduced risk (2010).

*Product 1.3: “Innovation Groups” established with partner producer organizations and selected service providers to support continuous innovation processes along the market chain*

Work with producer organizations started in 2007 providing them with technical and entrepreneurial coaching to improve the project team knowledge about these groups and to start developing the necessary trust for project implementation. Generated information on:

- (1) the characterization of vegetable production systems and its effect on water resources and health in its related landscape;
- (2) agro-ecological constraints that limit the possibility to produce “differentiated” vegetables;

- (3) the evaluation of the entrepreneurial and organizational capacity of producer organization; and
- (4) rapid market assessments, revised and conducted during the inception phase;

will be shared with direct project partners (producer organizations and service providers) in all selected municipalities. Facilitating interaction and information exchange on these issues will be an initial motivation mechanism to start the conformation of “Innovation Groups”, one in each producer organization selected for project implementation. These groups will be conform by representatives of vegetable crops producers, service providers (including input suppliers) and commercialization agents that will search for options to solve constraints or take advantage of new opportunities, analyzed and prioritized through a participatory market chain analysis.

Criteria for the selection of members of the Innovations Group include:

- (1) Knowledge and experience in at least one component of the market chain;
- (2) Interest in experimenting with new practices, things, products or services and applying them to their specific socioeconomic, institutional and cultural context;
- (3) Capacity to assume a certain level of risk; and
- (4) Vision and entrepreneurial abilities

Based on these criteria, members of the Innovation Groups will be selected by participating market chain actors, but the decision to participate will be a voluntary decision based on an understanding of the responsibilities and compromise that this requires. The conformed Innovation Groups will then be sensitized and trained in different aspects such us entrepreneurial development, organizational processes, markets, participatory research and experimentation, or the value chain approach, based on the needs identified in the group.

The methodology that will be used for the functioning of Innovation Groups is based on the one developed by the MIP-AF project that is based on the periodic encountering of producer groups, extensionists and researchers according to the phenological phase of the crop, where observation and agro ecologic analysis is promoted to strengthen decision making for integrated crop management. This methodology uses a learning approach based on discovering, where successive learning cycles are followed, according to crop phenology, including harvest and post harvest practices. This methodology will be combined with the GIAR methodology, developed by the International Center for Tropical Agriculture (CIAT) with its learning alliance partners, with the aim to develop value chains based on participatory innovation processes. This methodology promotes the conformation of Innovation Groups composed by representatives of the different actors that participate in a market chain who get together to work on the improvement of their products, practices, processes and technologies to take advantage of a market opportunity, or face a market threat. Experience have showed that in order to develop sustainable capacity to innovate, at least 2-3 learning cycles are necessary, therefore, the project aims to develop at least three learning cycles with the conformed “Innovation Groups”.

The first task of Innovation Groups will be to analyze their market chain, identify and prioritize constraints for value chain development, assess opportunities to develop sustainable vegetable crop chains, developed action plans and diffused their results to

participating producing families. To support this process, working tours will be organized in 2007 with Innovation Groups to other similar experiences in Central America to identify and assess promising practices for agro-ecological management of vegetable crops that permit the differentiation of the product based on production and commercialization practices that contribute to the development of sustainable chains. Innovation Groups will also complement existing market assessment results via a participatory rapid appraisal of market opportunities for vegetable crops.

Once innovation priorities have been negotiated, Innovation Groups will design and negotiate collaborative projects, together with service providers and CATIE, to start implementing their first action plans in 2008, conducting a first learning cycle. Collaborative projects aimed to generate belonging of producer organization on the initiated process, and to develop producer organizations' capacity to manage collaborative projects. These Innovation Groups will then share their results, experience and knowledge with other members of the value chain. As such, the project will support the conformation and functioning of Innovation Groups to promote the interaction among different sources of knowledge from different areas of expertise along the market chain to promote needed technical, social and institutional innovations to develop sustainable vegetable crops chains. The project will play a double role in these Innovation Groups: as facilitator and as one provider of innovation alternatives.

In 2009 and 2010, Innovation Groups will assess the results of their first and second learning cycle, respectively, and will design and implement second and third learning cycles that gradually involve a higher degree of complexity, accordingly with the developed capacity, and that are aimed to reach medium and longer-term goals.

*Product 1.4: Producer organizations accessed prioritized market opportunities, improved their negotiation power in their market chain, and developed influence on private policies*

In 2007, "Innovation Groups" will start with a participatory market assessment in local and national vegetable markets to identify and analyze market price and demand tendencies for their products and to assess new market opportunities. Results will be shared with producer families, members of the producer organizations, who will evaluate these opportunities and decide the market strategy or strategies that the organization will pursue (penetration, new market development, new product development, or diversification), and will prioritize them. Based on this decision, in 2008, producer organizations will contact identified buyers to negotiate collectively their produce. Results of the collective marketing exercise will be assessed and corrective measures will be taken for improvement. If required, market assessment results will be updated or its reach extended. This information will be used to adjust or improve the developed market strategy that the producer organization will follow in 2009. This "hands-on-experience" on collective marketing developed by producer organizations will contribute to improve their negotiation power for effective and equitable participation in sustainable vegetable chains with differentiated products, and to have influence on buying policies of vegetable wholesaling and retailing market chain actors, resulting on higher net incomes for producing families (2010).

*Product 1.5: Producing families have a portfolio of practices and technological options to comply with minimum environmental and social standards to access higher value markets, improving their net income.*

In 2007, technological exchange visits with “Innovation Groups” will be organized to get them acquainted of successful experiences with environmentally-sound vegetable production practices and technologies that let producing families comply with minimum environmental and social standards and prepare them to effectively access higher value market, at the same time that offer the possibility to improve their net incomes. In 2008 and 2009, “Innovation Groups” will experiment with selected practices and technologies and as they obtain promising results and diffuse them broadly to associated producing families, they will start implementing these options. This will contribute to improve producing families decision-making processes based on market and agro ecological criteria, and to develop innovation capacity for the production and marketing of differentiated vegetables that link producing families with sustainable vegetable chains (2010).

*Product 1.6: Service providers with improved capacity to offer technical, entrepreneurial and financial services, and with effective communication strategies*

During the inception phase, service providers working in the Trifinio region were identified and approached, and its characterization was initiated. In 2007, the project will continue to characterize service providers as part of a stakeholder analysis that is also assessing service providers’ interests, legitimacy, and power. Based on this analysis, service providers were selected to initiate activities and were approached to participate in “Innovation Groups”. Service providers may work with producers associations providing support for a given period of time via a project scheme, and with a clear exit strategy, or otherwise, may develop as private service providers filling specific demands for local services in a contractual manner.

In Honduras, selected service providers are: (1) Consultores Empresariales, Legales y Técnicos Agropecuarios (CELTA), which stands for “Entrepreneurial, Legal and Technical Consultants in Agriculture”, and are working with COPRAUL; and (2) Centro Empresarial de Negocios de Ocotepeque (CENOC) that is an emerging local provider of commercialization and market information services, which is supporting the Productive Enterprise “Santa Anita”.

In El Salvador, there are: (1) Centro Nacional de Tecnología Agropecuaria y Forestal (CENTA) that is a governmental organization with the mandate of fostering the upgrading of farmers and the development of agro business by making agriculture and forestry technology widely available. This organization support ACOPO; and the Rural Modernization and Reconstruction Program (PREMODER), which aims to improve small-scale producers capacity to access financial resources, business opportunities and markets, as well as local and national labor markets, which is providing services to ACAMSERTA. A strategic partnership between ACOPO and ACAMSERTA is also being promoted as the former will provide commercialization services to ACAMSERTA, and the later will sell organic fertilizers to ACOPO.

In Guatemala, selected services providers are:

- (1) Federation of Agricultural Associations of Guatemala (FASAGUA) that is providing technical and entrepreneurial services to CHORTI FRESCA with the aim of improving productivity and negotiation power;

- (1) Asociación Regional Campesina Ch'orti' (ASORECHI), a second level organization that represents municipal level producer organizations, working on productivity enhancement, natural resources protection, commercialization, and gender equity; and
- (2) Eastern University Center of Chiquimula (CUNORI) of the University of San Carlos in Guatemala

Once services providers were selected to initiate with project implementation, the project co-financed their participation in a training module at CATIE on “Basis for the Organization of Small-scale Producers in Rural Enterprises”, which is part of the Postgraduate Diploma on Rural Entrepreneurial Development offered by CeCoEco, in alliance with International Center for Tropical Agriculture (CIAT). Project staff, contributing to build the necessary trust for successful partnership, is also providing coaching and backstopping to support application of new knowledge acquired in the training course. In 2007, five service providers projects, implemented in partnership with producer organizations, each for US\$ 3000 will be supported.

In 2008, support will be provided to service providers (including input suppliers) for evaluating gaps and opportunities to strengthen their innovation capacity to offer quality services that respond to their client demands. This analysis will result in business plans for strengthening service providers to improve the effectiveness and efficiency of the services provided that have a real demand, or otherwise, to develop new services that have a demand, but are not offered. As a result of the application of these business plans, it is expected that service providers will improve their financial and technical capacity to offer quality technical, business and financial services, and with improved communication strategies to optimize the coverage of the service (2009-2010). This will be a crucial product of the project as there is not only a lack of important services that are required to improve competitiveness, but existing services need to be strengthened, mainly with respect to their quality and coverage. With this purpose, service providers will participate in innovation processes to secure their sustainable development.

***Result 2: Key multi-sector actors, based on negotiated and agreed interests, form four local innovation platforms to strengthen their joint capacity for innovation, and demonstrate influence in the design of local public and private policies, to promote sustainable vegetable value chains.***

During the project inception phase, local platforms started to take shape with the participation of the project direct partners (described in Result 1), including producer organizations and local service providers. Additionally, municipal governments (or associations of municipal governments) and local representatives of the Trifinio Commission joined these innovation platforms. The structure of these platforms may vary between municipalities (or countries) but the different actors will be bound by common tasks or objectives with a set of working rules that define and give them meaning. As such, these platforms will expand the “Innovation Groups” conformed in Result 1 to include other key stakeholders in the territories.

In addition, the project will also participate in existing local platforms that were identified and selected during the inception phase, and active participation of direct partners (partners for implementation of Result 1) will be promoted, facilitating innovation partnerships for sustainable vegetable chains development. These platforms include: (1) Round Tables for the Management of Local Risks, promoted by GTZ in El Salvador; (2) Municipal Development Committees in Guatemala; and (3) The Center for Entrepreneurial Development in Ocotepeque, Honduras. Working themes in these platforms, coordinated in their majority by local governments, are broad and diverse, but their members have expressed interest in the project agenda. During the rest of 2007, the project will focus on negotiating the incorporation of its agenda and approaches in these platforms, at the same time that deepens its analysis of these coordination platforms and its major stakeholders to optimize its contribution.

Interaction with these platforms, during the inception phase of the vegetable crops component, highlighted some areas of common interest between these platforms and the project that are included as products that contribute to the achievement of Result 2. However, the project will continue facilitating the identification of common interests, and the negotiation of articulating tasks that will be implemented and monitored with support of the project. This process will contribute to generate the needed trust to strengthen these platforms. Articulating tasks will be further explored, adjusted, expanded, as required, and implemented along project implementation (2008-2010), contributing to the consolidation of functional public-private local innovation platforms for the development of sustainable vegetable chains.

*Product 2.1: Advances and lessons from the project monitored and evaluated with partner organizations, service providers and local governments, contribute to social and environmental governance.*

The first step towards the achievement of this product in 2007 will be to continue sharing technical and market information with the local platform members, as initiated in the inception phase, and promote further interaction and information sharing among them, fostering information and knowledge management. Moreover, to facilitate learning processes in these platforms, joint planning, monitoring and evaluation of social, economic and environmental impacts of the projects activities in the different territories will be conducted with the stakeholders in the platforms. In 2007, efforts have started to develop environmental indicators to monitor the effect of agricultural activities (specifically vegetable crops production) in the landscape, mainly related to pesticide residues in water resources and food. For this purpose, four projects developed in these platforms will be supported initially to platforms with interest in started this process. Work will continue during the rest of the project period (2008-2010) to develop indicators and monitor environmental, social and economic impacts of vegetable crops production, contributing to socio-environmental governance processes (2008-2010). Towards the end of the project, evaluations of the social, economic and environmental impacts of the project will be analyzed with the participants in these platforms.

*Product 2.2: Functional market for technical, entrepreneurial and information services for the development of sustainable vegetable chains strengthened or established, and articulated to financial services, and with mechanisms for their sustainable provision.*

To achieve this product, activities started in 2007 but will be prioritized in the remaining of 2007, to assess opportunities and gaps for the strengthening or establishment of technical, entrepreneurial and information services, and its articulation with financial services, for the development of sustainable vegetable chains. This assessment will lead in 2008 to a proposal for strengthening existing services, or establishing new services as needed, including sustainable provision mechanisms. This proposal will start to be implemented, evaluated and adjusted in 2008, leading to strengthened (or established) and functional services provided to producer organizations by the end of 2009. By the end of the project (2010), a functional market for financial, technical, marketing, entrepreneurial and information services will be established with clear mechanisms for their sustainable provision.

*Product 2.3: Demand for ecologically produced vegetables developed through influence on mayor wholesaler and retailer buying policies*

As discussed above, one of the major challenges of the project will be to develop incentives for fostering the demand of ecologically produced vegetables. As such, an important articulating task for local innovation platforms will be to design and implement mechanisms to promote changes in major vegetable crops wholesalers and retailers buying policies to provide the necessary market incentives and information for product traceability and differentiation. With this purpose, major wholesalers and retailers buying policies will be assessed in 2007, and mechanisms will be developed at the beginning of 2008, initiating its jointly implemented. Results will be evaluated during 2008, and mechanisms adjusted accordingly. Adjusted mechanisms will be implemented and evaluated again in 2009, resulting in at least two learning cycles.

*Product 2.4: Supply of ecologically produced vegetables developed by developing capabilities on inputs retailers for improved knowledge and information flow within the input distribution system*

On the supply side, the major challenge will be to develop the necessary capacity to foster ecologically-produced vegetables supply. As such, an important articulating task for local innovation platforms will be to develop and implement a strategy to stimulate training of agriculture input suppliers and improved flow of knowledge and information within the input distribution system to promote the supply and traceability of differentiated vegetables. To contribute to supply development, actual capacity of input retailers to manage and diffuse knowledge and information within the input distribution system will be evaluated, and a strategy to improve this capacity will be developed at the beginning of 2008 and jointly implemented with platform partners. Results will be evaluated during 2008, and the strategy adjusted accordingly. The adjusted strategy will be implemented and evaluated again in 2009, resulting in at least two learning cycles.

***Result 3: National and regional actors have integrated the lessons from the project into their institutions, and have demonstrated influence in the design of public and private policies at the national and regional level, which facilitate the development of sustainable value chains for vegetables.***

Work to achieve this Result will concentrate on contributing to the development of appropriate institutions through the institutionalization of the learning process developed by the project in key public and private actors, including CATIE, and through influence in national and regional public and private policies. Key actors to target implementation activities for this Result will be prioritized based on the importance of the project for their mandate, their political willingness to learn and innovate, as well as their power and legitimacy to influence change and broader impact. Project participation (or coordination) of platforms, networks or alliances will be prioritized based on the participation of key multi-sector public and private actors in these platforms, networks, or alliances, as well as on their relevance to the vegetables component objective and working themes.

Mechanisms for institutionalization and engage policy development include the following. Firstly, close partnering with exiting projects and programs at the regional and national level described in the context section (PTCARL, SINREM, APTM, BPR, Drivers of Sustainable Rural Growth and Poverty Reduction in Central America, the Binational Program financed by the European Union, CENPROMYPE, PRODERT, ADP funded by USAID-El Salvador, FONAGRO in Guatemala, PRONADEL in Honduras, and PREMODER in El Salvador). Other identified forums where the project can participate to achieve this objective are the Central American Network for Action against Pesticides (RAPAC) and the Program for Integrated Pest Management of Central America (PROMIPAC) Network, promoted by Zamorano.

Secondly, the project will coordinate (or pro-actively participate) in prioritized learning alliances that help organizations avoid the trap of replicating ineffective approaches by facilitating critical thinking, using higher-order leverage points to generate incentives that pull change through the system. By the year 2010, the project aims to participate in consolidated and legitimized learning alliances that generate relevant knowledge and content to have influence in public and private policies, influencing the development of sustainable vegetable chains. Key to support these learning alliances will be the establishment of a M&E process that permits the integration of learning processes at the micro, meso and macro levels.

*Product 3.1: Direct project partners in vegetable value chains incorporate lessons learned and new knowledge generated via project implementation, in their institutional agenda and strategies*

To achieve this product, work with direct partners in vegetable value chains to institutionalize the project learning process will start in 2007 by providing bilateral coaching and mentorship to generate the needed trust for effective collaboration, reach decision-making levels, and jointly implement articulating tasks. At the beginning of 2008, project implementation strategies will be adjusted with direct partners and collaborative projects will be developed and negotiated, generating belonging on the process. As such, direct partners will visualize from the beginning a systematic process for the institutionalization of the learning process. Direct partners include not only producer families, their organizations and

service providers, but also all the actors that participate in the vegetables value chain, including health, education and environmental organizations. As implementation of collaborative projects initiates in 2008 and continues in 2009, a participatory monitoring and evaluation process will be established to contribute to the collective learning process, the generation of relevant new knowledge and its integration in the project partners' institutional agenda and strategies.

*Product 3.2: Direct and indirect project partners actively participate in prioritized innovation platforms with other organizations that are implementing similar initiatives to promote the market for ecologically produced vegetables, having influence in national and tri-national agendas and strategies for the development of sustainable vegetable chains*

As explained in the context section above, there is a diversity of governmental and non-governmental organizations working in different projects and programs in the Trifinio Region given their institutional mandates and objectives, but an important group of them is promoting the production and marketing of ecologically produced vegetables at the national and tri-national level. In addition, there are public policies and norms in place that regulate vegetable production and commercialization at the national and tri-national levels. These policies and norms are not necessarily well known by involved actors; neither there are effective control mechanisms in place.

As project direct and indirect partners participate, and could exert influence on similar initiatives that are promoting the production and marketing of ecologically produced vegetables and decision-making processes for policy design at the national and tri-national levels, CATIE will support them to negotiate the incorporation of the project agenda (and strategies). Through this mechanism, the project aims to have influence in public and private decision-making processes for the design of policies that influence the possibility to develop sustainable vegetable chains. Thus, through the participation in local platforms, direct partners with CATIE will identify different forums or alliances where they can participate (related with rural development, water resources management, protection of other natural resources, public health, and education among others) for up-scaling the project learning process.

Two concrete articulating tasks, which will be negotiated by the project and its direct partners to implement in these platforms, and that will initiate their implementation in 2008 are the development of:

- (1) Consumer conscience on the health, social and environmental consequences of their consumption decisions to complement efforts developed to stimulate demand for ecologically produced vegetables (Result 2).;
- (2) Content and mechanisms for the adjustment of public and private policies for effective promotion of the market for ecologically produced vegetables, and the development of sustainable value chains.

Thus, in 2008 a strategy to develop consumer conscience on the health, social and environmental consequences of their consumption decisions will be developed and its implementation will start. In addition, strengths and limitations of existing public policies and norms that regulate vegetable production and commercialization at the national and tri-national levels, and influence the possibilities to develop sustainable vegetable chains will be

analyzed. These articulation tasks for innovation platforms where the different involved actors and key policy makers will participate, will contribute to generate trust and belonging in the initiated process.

In 2009, consumer conscience on the health, social and environmental consequences of their consumption decisions will continue to be developed, adjusting the design strategy as required. On the other hand, based on the results of the analysis of existing public and private policies that influence the possibilities to develop sustainable vegetable chains, a proposal for the improvement of existing public and private policies, norms and control mechanisms for the production and commercialization of ecologically produced vegetables will be developed in 2008. This proposal will also include a strategy for engagement and a M&E process that will be implemented in partnership with the Trifinio Commission. The strategy will be implemented starting in 2008, and the results and process will be monitored and evaluated along 2009 and 2010, making the necessary adjustments as needed as learning cycles are develop along the duration of the project.

*Product 3.3 Lessons from the project are incorporated into the Mesosamerican Agro-environmental Program (MAP) of CATIE, and in its overall research agenda and teaching curriculum*

During 2007 and 2008, the project will give priority to its participation in the development of the new MAP proposal, exchanging information and concepts with other projects and thematic groups. We aim to ensure that the lessons from the project are incorporated into the design of the value chain development component of the MAP proposal, but also that the project starts to incorporate the concepts of MAP into its' implementation strategy. Moreover, specialists from CATIE of the Agro ecological Thematic Group and CeCoEco will continue to participate in a long-term learning alliance in the project to provide continuous support and extract lessons learned from it, incorporating them in other CATIE projects, its research agenda and its education and training curricula.

***Result 4: Project partners, including CATIE, have developed strategies for information and knowledge management that integrates learning processes across local, national and international actors.***

As communication is an important mechanism for information and knowledge management, and therefore, plays a key role in the innovation process, the analysis of internal and external communication and information flows and patterns will constitute the starting point to achieve this Result. Information flows and patterns will be analyzed at different levels of complexity:

- (1) in vegetable producer organizations (within its members and with external actors and organizations);
- (2) among direct and indirect vegetable market chain actors;
- (3) among public and private organization in platforms that include the vegetables value chain actors, their service providers, and public and private decision-makers.

This analysis will complement the value chain approach that defines the socioeconomic activities around a selected product and identifies the direct and indirect stakeholders involved, with a network perspective. This will contribute to a better understanding of the different kinds of links or ties (strong and weak) among vegetables market chain direct

actors, and with other key actors at the local and national levels, and its effects on learning and innovation.

Based on this analysis and the negotiation process among direct and indirect vegetable market chain actors, a strategy to strengthen internal and external communication and information flows, to access, generate and integrate knowledge, will be designed, implemented, evaluated and adjusted at the local, national and regional levels, and the experience will be fully systematized. In addition, concrete information products will be established and functioning. This will include an information system with alternative technologies and processes for the ecological production and commercialization of differentiated vegetables; and a market information system on opportunities and contacts to commercialize differentiated vegetables. Moreover, a demand-led priority setting process to define the vegetables research agenda will be established in research organizations to respond more effectively to the changing innovation needs of the vegetable sector of Central America.

*Product 4.1: Vegetable producer organizations have improved their communication processes within the organization (among their member), and with relevant external actors and organizations, strengthening their organizational processes and entrepreneurial initiatives.*

The project inception phase have shown that communication, information and knowledge management, and its transparency, are crucial factors to strengthen organizational processes, especially among smallholders, as lack of information (or misinformation) affects not only the organizational processes but the success of collective entrepreneurial initiatives. Moreover, producer organizations, and its members, require key and opportune information about markets, technological options, costs, financing opportunities and requirements, input suppliers, and available technical and entrepreneurial services, among others. To improve access conditions to this information, at least two strategies are needed: (1) the development of mechanisms to rescue and generate local information and knowledge, and (2) the strengthening of information networks to improve access to external information and knowledge.

Thus, improving these processes will be an opportunity to improve the chances of success of these initiatives. In 2007 and the beginning of 2008, producer organization communication processes and information needs will be assessed and a strategy will be designed to improve producer organizations communication processes. In 2008, the strategy will be implemented, evaluated and adjusted, starting with new learning cycles in 2009 and 2010, when the project expects to see improvements in the communication and information management processes, within the organization, and between the organization and relevant external actors and organizations. Thus, the implementation of this strategy will contribute to the strengthening of small-scales organizational processes and improving their chances of developing and consolidating entrepreneurial initiatives.

*Product 4.2: Actors related to vegetable market chains access, generate and integrate information and knowledge for innovation and upgrading of smallholders, improving their participation in sustainable vegetable chains.*

The development of sustainable vegetable chains requires to complement the value chain approach with a network perspective that contributes to a better understanding of the different links or ties (strong and weak) among the vegetable market chain to advance the understanding of the complex process of knowledge creation and learning for innovation and change in the value chain. This analysis will also be differentiated according to the business models that operate to address different end markets (i.e. mainstream, ecological, organic, high quality). This analysis will start in 2008 with the conformation of a working team that could be part of the innovation groups conformed to achieve Result 1. Special attention will be given to analyze the transparency in information flows, and how it influences the capacity of:

- (1) producers to anticipate market opportunities and demand accurately;
- (2) intermediate actors to plan their capacity accurately;
- (3) quality control actors to quickly take action when defects surface so that the origin is traced and spreading of the problem can be curtailed; and
- (4) customers to assess where their purchase comes from, its quality and the value-related attributes it possesses.

Based on this analysis, information and knowledge needs by differentiated chain actors will be assessed and negotiated with them, as well mechanisms to improve the system. Results will then be shared with local innovation platforms.

In 2008, based on the analysis of information and knowledge needs and flows, and the negotiation process among vegetable market chain actors, a strategy to link farmers' knowledge systems with market demands, emphasizing an improved flow of information and knowledge between chain actors, will be designed and initiated. Emphasis will be given to the types of knowledge needed for:

- (1) process upgrading - transforming inputs into Results more efficiently by re-organizing the production and commercialization system;
- (2) product upgrading - a movement into healthier and environmentally-friendly lines of products; and
- (3) functional upgrading - the acquisition of new functions, such input suppliers improved information services, off-farm processing and/or collection of farm produce, development of knowledge systems and skills for negotiation/cooperation with downstream chain partners, branding and consumer marketing.

In 2009, the implementation of the strategy will be evaluated, feed backing its design, continuing with the implementation and evaluation of the adjusted strategy.

*Product 4.3: Information and knowledge for the development of sustainable vegetable chains broadly diffused among multiple public and private sectors with CATIE national offices and headquarters, and incorporated in CATIE postgraduate and training programs.*

Implementation will start with the analysis of existing learning mechanisms in relevant local, national and tri-national platforms, and the capacity of organizations that participate in these platforms to learn and facilitate innovation processes for the development of sustainable vegetable chains. This analysis will also assess existing networks and mechanisms to access

relevant information and knowledge and the quality of these networks (2008). Based on this analysis, and through negotiation with project direct partners and other organizations that participate in these platforms, the project will support the implementation of proposals for improving information and knowledge management in these platforms and its influence on public and private decision-making processes. Through partnering and coaching in the implementation and evaluation of these proposals, the project will develop and adjust a coherent strategy to improve information and knowledge management for influence in public and private policies (2009-2010). To complement these efforts, a research project will be conducted to develop a monitoring and evaluation methodology to assess learning processes and its influence in strengthening innovation systems and public and private policy design in 2008.

*Product 4.4: Information and knowledge for the development of sustainable vegetable chains generated broadly diffused among multiple public and private sectors with CATIE national offices and headquarters.*

Achieving this product requires a thoughtfully systematization of project results and the process (methodologies, approaches, strategies) used to reach these results. With this purpose, the project team will incorporate in their working routine workshops and write-shops for monitoring, evaluation and process systematization. Based on the results of this process, and the assessment of information and knowledge needs of all project stakeholders, a plan to present and disseminate the information and knowledge generated by the project will be developed. This plan will include the preparation of different type of publications for differentiated target groups and its broad diffusion. For this purpose, a publications plan will be developed with specialists of participating CATIE thematic groups, national CATIE offices, and of partnering organizations.

In addition, the project with CATIE national technical offices and headquarters, will promote strategies to increase the recognition of CATIE projects, as a generator and conduit of information and knowledge for the development of sustainable vegetable chains, through improved communication of its capabilities and impacts, and the participation on relevant forum and alliances at the national level. This also includes increased collaboration and exchange of lessons between projects and thematic groups, and their incorporation in the new Mesoamerican Agro-environmental Program.

Generated information and knowledge will also be integrated into the CATIE Post-graduate and training programs. During 2008 and 2009, the project expects to be producing new training and teaching contents, and adjusting and updating those already developed, contributing to CATIE Education Program, but also to National Universities and Technical Schools. By the end of the project, the adjusted and finished training and teaching content as well as materials will be fully integrated in teaching and training programs of CATIE and other national educational organizations. This will strengthen the link of the project with CATIE and will be crucial for a broad diffusion of new knowledge and experiences generated by the project.

*4.5 Monitoring and evaluation system with indicators designed and initiated, and base-line status of indicators established*

An integral part of the management of knowledge and information is the ability to monitor implementation and evaluate impacts of activities. During 2007 indicators for the project purposes and results will be defined, and the status of these indicators will be quantified from the base-line study in 2003 and the inception phase in 2006. During the implementation of the project specific studies of project impact will be developed and methods prepared for the evaluation of the final impact of the project (see section 2.7 Supporting the Learning Process: A Robust Planning, Monitoring, Evaluation and Reflection Process).

## 6. Budget for the duration of the project

	Budgeted <sup>1</sup>	Adjusted Budget <sup>1</sup>	Budget <sup>2</sup>	New Budget	Original Budget	Budget	Budget	Budget	Revised Budget	Original Budget
Budget line	Jan-June 06	Jul06-Apr07	May-Dec 07	2006-2007	2006-2007	2008	2009	2010	2006-2010	2006-2010
Pilot innovation		118,000	238,000	356,000	299,000.00	270,000	270,000	120,000	1,016,000	1,006,000
Platforms	2000	10,500	20,000	32,500	30,500.00	50,000	50,000	50,000	182,500	158,000
Policy	10,000	22,000	14,500	46,500	96,000.00	65,000	65,000	65,000	241,500	324,000
Information	0	25,500	68,500	94,000	116,500.00	120,000	120,000	160,000	494,000	475,000
International Staff	100,000	110,000	130,000	340,000	412,000.00	243,000	243,000	220,000	1,046,000	1,050,000
Nacional Staff	50,000	93,000	150,000	293,000	353,000.00	258,000	258,000	226,000	1,035,000	1,003,000
Support Staff	26,000	30,000	40,000	96,000	116,000.00	60,000	60,000	60,000	276,000	302,000
Vehicles	60,000	40,000	20,000	120,000	120,000.00	0	0	0	120,000	120,000
Computers	10,000	10,000	5,000	25,000	25,000.00	5,000	0	0	30,000	30,000
Local Travel	14,000	24,000	40,000	78,000	88,000.00	50,000	50,000	50,000	228,000	238,000
Regional Travel	7,000	27,000	37,000	71,000	54,000.00	40,000	40,000	40,000	191,000	150,000
Office costs	10,000	18,000	22,000	50,000	54,000.00	30,000	30,000	30,000	140,000	144,000
<b>Total</b>	<b>289,000</b>	<b>528,000</b>	<b>785,000</b>	<b>1,602,000</b>	<b>1,764,000.00</b>	<b>1,191,000</b>	<b>1,186,000</b>	<b>1,021,000</b>	<b>5,000,000</b>	<b>5,000,000</b>

1. From work plan and budget presented in November of 2006
2. From 2007 Plan of Activities
3. International and National staff costs for 2008 and 2009 increase due to 2008 being the first year with a full complement of staff and the participation of a larger number of headquarters based staff, totalling eight people from the Agroecology, Coffee and CeCoEco thematic groups representing 10% each of the international and national staff budgets (see team composition).

Nevertheless, the total 5 year staff budget is within the originally proposed budget for international staff and only slightly above for national staff.

4. Local travel costs include staff per diem 30%, fuel 50 % and vehicle maintenance 20%.
5. Regional travel costs are also above originally budgeted costs due to the greater participation of staff members from CATIE headquarters (See team composition). Every effort is made to reduce regional travel costs, we consider that the budget for a typical week-long trip is modest at less than \$1000, staying in hotels that cost less than \$25 per night in our field zones (see table below). Furthermore, in the case of we have agreed with staff that although the work involves travel between countries, which according to CATIE rules gives them right to an international per diem, this travel within the countries of each component (i.e. Honduras and Nicaragua for Coffee Component, and Guatemala, El Salvador and Honduras for the Vegetable Component) would only be paid at local per diem rates. The number of planned trips are estimated in accordance with the annual plan of activities.

	<b>Costa Rica</b>	<b>Honduras</b>	<b>Trifinio</b>
Airfare	280		342
Ground transport	140	100	220
Airport tax	26		35
Hotel 4 nights	180	85	60
Per diem	187	221	223
Visa for Costa Rica	20		
<b>Total</b>	<b>833</b>	<b>406</b>	<b>880</b>

## 7. Annexes

### 7.1 Annex 1: Results and products 2007-2010 for sustainable value chains in coffee highlands

<b>Result 1: 500 farming households in coffee producing areas and their organizations, innovate in partnership with other market chain actors and service providers to improve capacity for ecological production and entrepreneurial management, gaining greater participation and negotiation power in value chains, and effectively responding to economic and ecological uncertainty.</b>			
<b>Products</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
1.1 Farming families use agro ecological criteria for the management of coffee plantations and quality criteria in milling	Farming families and service providers experiment on ecological and quality management practices to access prioritized markets.	Farming families with better planning and decision making capabilities about production and markets, and their economic and environmental benefits	Farming families with profitable production systems resilient to fluctuations in price and climate variations
1.2 Livelihood strategies of farming families in coffee regions described	Farming families have improved criteria for the production and marketing of alternative products		
	1.3 Informal producer groups identify and analyze alternative income sources and develop a business organizational process	Producer groups with basic business capacity negotiate alliances with buyers for alternative products	Producer groups with equitable market access to alternative income sources
1.4 Farming families have access to financing for reviving of production systems and improve quality		Producer organizations are in process of capitalization with diverse sources of financial support	
1.5 Producer organizations improve their organizational structures, and administrative and accounting procedures	Producer organizations with improved business capacity and financial management	Producer organizations with management and negotiation capacity	Producer organizations have improved their entrepreneurial (organizational, management, financial administration, commercialization, marketing) and technical capacity
1.6 Producer organizations have improved information and knowledge of quality control, certification and traceability			Producer organizations have improved their information and knowledge management systems for quality control, certification

<b>Result 1: 500 farming households in coffee producing areas and their organizations, innovate in partnership with other market chain actors and service providers to improve capacity for ecological production and entrepreneurial management, gaining greater participation and negotiation power in value chains, and effectively responding to economic and ecological uncertainty.</b>			
<b>Products</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
			and traceability
1.7 Producer organizations evaluate actual and new market opportunities prioritizing profitability with social and environmental responsibility	Producer organizations revise internal policies to compete in collection of coffee for prioritized markets	Producer organizations with capacity to negotiate and comply with markets that recognize quality and certification	Producer organizations with access to markets with differential prices that recognize social and environmental responsibility
1.8 Producer organizations with improved processes of communication with their members		Producer organizations with improved processes of communication with their buyers and allied organizations	Producer organizations internal and external communication capacity fostered
1.9 Producer organizations with CATIE conduct joint planning, monitoring and evaluation of activities	Producer organizations synthesize the lessons and changes in their organization and their members, to present in local platforms	Producer organizations with strategic alliances based on their needs and abilities	Producer organizations evaluate the impacts of the activities with CATIE
1.10 Service providers have qualified technical staff to give quality assistance to farmers and organizations		Service providers with improved strategies for communication and provision of services	Service providers with improved capacity (financial, quality and coverage) in technical, business and financial services, and with effective communication strategies

<b>Result 2: Key multi-sector actors consolidate alliances in local innovation platforms to strengthen their capacity for innovation, improve the positioning of the territory in value chains and develop influence in local public and private policies</b>			
<b>Product</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
2.1 CATIE and partners share information and contribute to planning of activities in local platforms identifying tasks of common interest	CATIE and partners synthesize and share lessons on production, organization and marketing in local platforms	Organizations in the platforms form alliances to learn and share lessons and experiences between them	Organizations from the platforms implement lessons developed with CATIE partners
	2.2 Platform members analyze the social, economic and environmental changes in their territories as a result implementation of activities and projects		Platforms synthesize the impacts in their territories and define strategic plan for future actions
		Organizations with strategic alliances to access new information, services, and local public and private policy-making processes that influence the competitiveness and sustainability of local value chains	Organizations formulate proposals to promote innovation in sustainable value chains and rural business development, have influence on local public and private policies that affect the competitiveness and sustainability of the value chain
2.3 Platforms develop activities for promotion of coffee from territories	Platforms characterize coffee production and quality from their territory	Platforms promote coffee of origin from their territories	Participants in the platforms adjust local policies to promote social and environmental benefits from sustainable value chains
2.4 Platforms analyze impacts of climate change on the region	Organizations in platforms identify elements for adaptation to climate change	Organizations test adaptations to climate change	Platforms share lessons on adaptation to climate change and incorporate strategies into their organizations
2.5 Business development services for producer organizations are evaluated	Proposal for strengthening business services designed and initiated	Effectiveness and efficiency of local financial, entrepreneurial and technical services for the development of sustainable value chains strengthened	Established and functioning market for business services with mechanisms for sustainable provision

<b>Result 3: National and regional actors have integrated the lessons from the project into their institutions, and participate in the design of appropriate private and public policies to facilitate national capacity for innovation and participation in value chains</b>			
<b>Products</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
3.1 Opportunities to participate in learning alliances for rural business development and value chains selected and initial learning themes prioritized	Synthesis of methods and impacts for rural business development and sustainable value chains supports national and regional multi-institutional learning processes		Learning alliances influence public and private policy formulation for rural markets and development
3.2 Participation achieved in national coffee sector forums and rural development and environment programs	CATIE and partners share lessons with decision-makers in coffee sector and rural development and environment programs		Policies and programs of coffee sector and rural development, and environment incorporate lessons from CATIE and partners
3.3 Strategy for improved communication of CATIE ´s capabilities developed in conjunction with OTN and HQ		Improved recognition of CATIE in decision-making forums in Nicaragua and Honduras based on presentation of methods and impacts generated	
3.4 Lessons form the project are incorporated into new Agro-environmental program developed by CATIE (MAP)	Lessons on sustainable value chains, livelihood analysis and climate change share with theme groups of CATIE participating in MAP	Integrated activities with other theme groups developed within Mesoamerican Agro-environmental Program	New proposals developed by theme groups incorporate concepts related to value chains for sustainable livelihoods in landscapes affected by climate change

<b>Result 4: Project partners, including CATIE, develop strategies to access, generate and integrate information and knowledge among local, national and international actors.</b>			
<b>Product</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
4.1 Local information and knowledge management for innovation evaluated.	Strategy for strengthening communication flows to access, generate and integrate information and knowledge for innovation and upgrading of smallholders designed and its local implementation initiated	Strategies to facilitate the flow of information and its integration between different actors implemented and evaluated	Flow of information and knowledge institutionalized between different actors contributing to a continued process of innovation
4.2 Synthesis and publication of lessons on agro ecological production of coffee	Synthesis and publication of lessons and methods for sustainable value chains, strengthening rural business capacity and management of certified quality coffee in producer organizations		Synthesis and publication of lessons on strengthening livelihood strategies, adaptation to climate change and landscape impacts
4.3 CATIE with strategic partners (CAFENICA, IHCAFE) have geographically characterized coffee quality		Strategy for the promotion of coffee with desired cup characteristics for prioritized markets designed and implemented	
4.4 National and international researchers systematize research results on sustainable management of coffee	National researchers and technical staff analyze the state of knowledge of organic coffee production	National research and producer organizations develop a technical proposal for the production of ecological coffee	National and international centers implement research that responds to demands for innovation in sustainable coffee production.
4.5 Presentation of potential impacts of climate change on coffee sector in national and international forums	Methods for study of livelihood strategies to confront climate change developed with international research organizations	Analysis of impact of climate change conducted with national and international research organizations	Lessons from studies of adaptation to climate change shared in policy development forums
4.6 Lessons from project incorporated into MSc and training courses of CATIE, and formation of professionals in national universities and technical colleges			National technical capacity updated and responding to new demands
4.7 Monitoring and evaluation system with indicators designed and initiated, and base-line status of indicators established	Tools for specific studies of changes among project beneficiaries and partners design and implemented	Synthesis of lessons and changes among project beneficiaries and partners shared with stakeholders	Impacts evaluated using project indicators and results presented to multiple stakeholders

## 7.2 Annex 2: Results and products 2007-2010 for the sustainable vegetable chains component

<b>Result 1: 250 vegetable producing families and their organizations, in partnership with private and public actors, innovate in their capabilities for ecological production and entrepreneurial management, providing incentives to increase the demand and supply of ecologically grown high-value vegetable crops</b>			
<b>Products</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
1.1 Vegetable crops production systems characterized and indicators related to the impact of production systems on water resources and health at the landscape level developed, establishing a baseline on land management and a M&E system to assess improvements towards sustainable land management.	M&E system of vegetable production systems (at the farm level) and its effect on water resources and health (at the landscape level) developed and being used in participatory M&E processes with direct partners.	An established and functional M&E system for sustainable land management, that includes indicators at the farm and landscape levels, permits a continuous PM&E process with direct project partners.	Producing families decision-making capacity, based on market and agro-ecological criteria, for sustainable land management
1.2 Producer organizations entrepreneurial capacity evaluated, including its capacity to provide technical and financial services, establishing a baseline and a M&E system to assess producer organizations capacity development.	An established and functional M&E system for the assessment of entrepreneurial capacity of producer organizations, including its capacity to provide technical and financial services, permits a continuous PM&E process with partner producer organizations, supporting their decision-making processes for adjusting their organization and managerial structures and procedures to respond effectively to business opportunities and uncertainty.		Producer organizations have strengthened their entrepreneurial capacity and organizational processes, improving their linkages with their market chain and increasing their negotiation power, which results in improved net incomes and reduced risk.
1.3 Partner producer organizations, with selected service providers, have conformed "Innovation Groups", who have analyzed their market chain at the market chain level, developed action plans and diffused their results to participating producing families.	"Innovation Groups" have designed, negotiated and implemented collaborative projects with service providers and CATIE to implement their action plans and conduct a first learning cycle, generating buy-in from participants and developing producer organizations' capacity to manage collaborative projects.	"Innovation Groups" have assessed results of their first and second learning cycle, and have designed and implemented second and third learning cycles with gradually higher degree of complexity, accordingly with the developed capacity.	

<b>Result 1: 250 vegetable producing families and their organizations, in partnership with private and public actors, innovate in their capabilities for ecological production and entrepreneurial management, providing incentives to increase the demand and supply of ecologically grown high-value vegetable crops</b>			
<b>Products</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
1.4 “Innovation Groups” have identified and analyzed tendencies in local and national vegetable markets, assessed new market opportunities for their produce, and evaluated them with producing families.	Producer organizations have contacted selected buyers and negotiated in advance their produce (or part of it) to access prioritized market opportunities, and have evaluated their results, improving their negotiation power in the market chain.		Producer organizations participate in sustainable vegetable chains with differentiated products, and have influence on buying policies of vegetable wholesaling and retailing market chain actors, which results on higher net incomes and reduced risk for producing families.
1.5 “Innovation Groups” have identified a portfolio of practices and technological alternatives to comply with minimum environmental and social standards that prepare them to effectively access higher value market, that at the same time offer the possibility to improve their net incomes, and reduce their risk.	“Innovation Groups” have experimented with selected practices and technologies, and have diffused their results broadly to participating producer families.	Producing families implement actions to comply with minimum environmental and social standards that prepare them to effectively access higher value markets, at the same time that offer the possibility to improve their net incomes.	Producing families, with improved decision-making processes based on market and agro ecological criteria, have improved their innovation capacity for the profitable production and marketing of differentiated vegetables that linked them with sustainable vegetable chains.
1.6 Service providers (including input suppliers) identified and characterized, and selected providers, trained in strategic areas, and receiving coaching, developing trust for successful partnership.	Service providers (including input suppliers) evaluate gaps and opportunities to strengthen their innovation capacity to offer quality services that respond to their client demands.	Service providers improved their capacity (financial, quality and coverage) to provide technical, entrepreneurial and financial services, and use effective communication strategies.	Effectiveness and efficiency of local financial, entrepreneurial and technical services for the development of sustainable vegetable chains improved

<b>Result 2: Key multi-sector actors, based on negotiated and agreed interests, form four local innovation platforms to strengthen their joint capacity for innovation, and demonstrate influence in the design of local public and private policies, to promote sustainable vegetable value chains.</b>			
<b>Products</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
2.1 Local innovation platforms for the development of sustainable vegetable chains established, sharing information, contributing to project planning, and identifying task of common interest that incorporate the project agenda	Planning, monitoring and evaluation system with partner organizations, services providers, and local governments, established and functioning	Advances and lessons from the project monitored and evaluated with partner organizations, service providers, and local governments, improving access to local public and private policy-making processes that influence the sustainability of vegetable value chains	Local innovation platforms for the development of sustainable vegetable chains are functional, have influence on local public and private policy design, and contribute to social and environmental governance
2.2 Local innovation platforms initiate assessment of technical, entrepreneurial, and information services for vegetable production and commercialization, and its articulation with financial services	Proposal developed for strengthening (or establishing) technical, entrepreneurial, and information services, and its articulation with financial services, for the development of sustainable vegetable chains; and its implementation initiated	Strengthened (or established) and functional technical, entrepreneurial, and information services, and well articulated with financial services, for sustainable vegetable chain development; available, opportune and of good quality	Functional market for financial, technical, entrepreneurial and information services established and with clear mechanisms for their sustainable provision
2.3 Wholesalers and retailers buying policies and the incentives (disincentives) for product traceability and differentiation assessed	Mechanisms to influence mayor wholesalers and retailers buying policies to promote the market for ecologically produced vegetables designed and implementation started	Results of the implementation of designed mechanisms to influence mayor wholesalers and retailers buying policies to promote the market for ecologically produced vegetables, assessed, and mechanisms adjusted accordingly	Adjusted mechanisms to influence mayor wholesalers and retailers buying policies to promote the market for ecologically produced vegetables implemented, having developed the demand for differentiated vegetables
2.4 Capacity of agricultural input retailers to manage and diffuse knowledge and information within the input distribution system evaluated	Strategy to stimulate training of agricultural input retailers and improved flow of knowledge and information within the input distribution system developed and implementation initiated	Results of the implementation of the strategy developed to stimulate training of agricultural input retailers and improved flow of knowledge and information within the input distribution system, evaluated and adjusted accordingly	Adjusted strategy to stimulate training of agricultural input retailers and improved flow of knowledge and information within the input distribution system implemented, having developed the supply of differentiated vegetables

<b>Result 3: National and regional actors have integrated the lessons from the project into their institutions, and have demonstrated influence in the design of public and private policies at the national and regional level, which facilitate the development of sustainable value chains for vegetables.</b>			
<b>Products</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
3.1 Bi-lateral coaching and mentorship started with direct partners, generating trust for partnering, reaching decision-making levels, and jointly implementing articulating tasks.	Project implementation strategies adjusted with direct partners, and collaborative projects designed, negotiated and jointly implemented.	Collaborative projects implemented, monitored and evaluated jointly, contribute to the learning process generating relevant new knowledge.	Direct project partners in vegetables value chains, have incorporated lessons learned and new knowledge generated via project implementation, in their institutional agenda and strategies.
3.2 Direct project partners participate in prioritized national, tri-national, and regional platforms, networks or alliances that have interest or are promoting the development of sustainable vegetable chains.	Direct project partners, with the support of the project, negotiate the incorporation of the project agenda (and strategies) in the prioritized platforms, networks or alliances, initiating with the implementation of at least two articulating tasks to: (1) develop consumer conscience on the health, social and environmental consequences of their consumption decisions; and (2) analysis of existing public and private policies and norms, and its influence in the possibilities to develop sustainable vegetable chains.	Direct and indirect project partners, in prioritized national, tri-national and regional platforms, networks or alliances, continue implementing at least the two articulating tasks initiated in 2008, and based on their results, design and implement mechanisms and strategies to influence in: (1) further develop consumer conscience; and (2) adjust public and private policies to effectively promote the market for ecologically produced vegetables.	Direct and indirect project partners actively participate in prioritized innovation platforms with other organizations that are implementing similar initiatives to promote the market for ecologically produced vegetables, having influence in national and tri-national agendas and strategies for the development of sustainable vegetable chains
3.3 Project personnel participate in the development of the new Mesoamerican Agro-environmental Program (MAP) of CATIE, exchanging information and concepts with other projects and thematic groups.	Lessons from the project implementation are incorporated in the design of the value chain component of the MAP proposal, and the project incorporates and applies MAP concepts in its implementation strategy, developing learning alliances with specialists from CATIE Thematic Groups.	A dynamic learning process among the project team with CATIE Thematic Groups, has been established.	Lessons from the project are incorporated in the Mesoamerican Agro-environmental Program (MAP) of CATIE, and in its overall research agenda and teaching curriculum.

<b>Result 4: Project partners, including CATIE, have developed strategies for information and knowledge management that integrates learning processes across local, national and international actors.</b>			
<b>Products</b>			
<b>Year 2007</b>	<b>Year 2008</b>	<b>Year 2009</b>	<b>Year 2010</b>
4.1 Vegetable producer organizations communication processes and information needs assessed.	A strategy to improve vegetable producer organizations communication and information management processes designed, implementation and evaluated.	Strategy to improve vegetable producer organizations communication and information management processes adjusted in a second implementation and evaluation cycle.	Vegetable producer organizations have improved their communication and information management processes, within the organization and with relevant external actors and organizations, strengthening their organizational processes and entrepreneurial initiatives.
4.2 Working teams to analyze information and knowledge flows and needs among vegetable market chain actors, conformed and linked to Innovation Groups conformed for Result 1, have negotiated their information and knowledge needs differentiated by its end market.	A differentiated strategy to improve information and knowledge flows among vegetable market chain actors by its end markets, developed and its implementation initiated.	A differentiated strategy to improve information and knowledge flows among vegetable market chain actors by its end markets evaluated and adjusted.	Actors related to vegetable market chains access, generate and integrate information and knowledge for innovation and upgrading of smallholders, to improve their participation in sustainable vegetable chains.
4.3 Analysis of existing learning mechanisms in relevant local, national, and tri-national platforms, and the capacities of participating organizations to learn and innovation assessed.	Proposals for the improvement of learning mechanisms and capacities in relevant innovation platforms, and its influence on public and private decision-making processes, designed and its implementation initiated.	Project partnering and coaching in the implementation and evaluation of these proposals permits the development and adjustment of a coherent strategy to improve information and knowledge management for influence in public and private policies.	Strategies to improve information and knowledge management developed and implemented with project direct partners in coordination with relevant local, national and tri-national platforms, supporting a more effective innovation process that improves the project influence in public and private policy making.

**Result 4: Project partners, including CATIE, have developed strategies for information and knowledge management that integrates learning processes across local, national and international actors.**

Products			
Year 2007	Year 2008	Year 2009	Year 2010
4.4 The project team has incorporated in the working routines regular workshops and write-shops for monitoring, evaluation and process systematization.	Plan to present and disseminate the information and knowledge generated by the project for different target groups developed, and implementation initiated.	Plan to present and disseminate the information and knowledge generated by the project for different target groups adjusted and increased recognition of CATIE as a generator and conduit of information and knowledge for the development of sustainable vegetable chains.	Publications developed for differentiated project stakeholders that systemized the information and knowledge developed by the project broadly diffused among multiple public and private sectors with CATIE national offices and headquarters, and incorporated in CATIE postgraduate and training programs, and in project design and implementation
4.5 Monitoring and evaluation system with indicators designed and initiated, and base-line status of indicators established	Tools for specific studies of changes among project beneficiaries and partners designed and implemented	Synthesis of lessons and changes among project beneficiaries and partners shared with stakeholders	Impacts evaluated using project indicators and results presented to multiple stakeholders