

## OUTPUT 5. IMPACT OF SN-3 PROJECT ACTIVITIES DOCUMENTED

### Milestones

- \* Methodology for conducting impact assessment of PR methods on livelihoods
- \* Impact of CIAL methodology on rural livelihoods in 4 communities with CIALs in Cauca Province
- \* Project approved
- \* Selection of Agro entrepreneurial CIALs accomplished
- \* Secondary information recovery and primary information accessed

### Impact Assessment of Local Agricultural Research Committees (CIALs) in Colombia

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### Abstract

*For the last 13 years the IPRA Project at CIAT has promoted the formation of community-based research services called Local Agricultural Research Committees (CIALs). With this study the IPRA Project seeks to evaluate the changes in the livelihoods of the farmers and their communities attributable to the CIAL methodology. The CIAL methodology was developed at CIAT with the goal of increasing the efficiency of the agricultural research and technology development system by integrating farmers better into the process. The study will assess the effectiveness of the CIAL methodology, the extent to which the problems addressed by the CIAL are relevant to the community, the costs and benefits of the CIAL to its members as well as to the community in terms of the development of appropriate technologies and who benefits from the innovations. The extent to which CIALs affect the rate and level of adoption of agricultural technologies among socially differentiated user groups and the costs associated with forming and supporting a CIAL will also be studied. It will also examine how farmer participation in the agricultural research process affects the process itself, as well as the specific communities and individuals involved. Particular attention will be paid to how CIALs as institutional innovations affect the human, social and other capital assets available to*

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*individuals and communities, and what implications these impacts have for livelihood outcomes. This study involved 13 CIALs: focus group discussions were held in all of them, and in 6 formal interviews were conducted. In addition, four rural communities without CIALs (counterfactual communities) were also surveyed.*

## ***Introduction***

Over the past decades, agricultural research has contributed to significant increases in world food production. Maintaining this productivity increases, as well as making progress on additional goals of alleviating poverty and protecting the environment, presents a major challenge to the agricultural research system. In order to maintain and extend the benefits of agricultural research, new ways of doing research may be necessary. One such method, participatory research (PR), seeks to involve the intended beneficiaries of research in the research process itself, based on the idea that user participation will lead to more efficient and effective design and targeting of technologies, thereby reducing diffusion time and helping ensure that the intended beneficiaries are reached with technologies suited to their needs.

In principle, the concept of PR has been widely accepted. Few scientists would consider doing adaptive research on agricultural or natural resource management technology development without at least some input from users. There are many types and degrees of participation, however, with very different implications for the benefits and costs of research. For example, asking farmers opinions or inviting them to visit field trials is a type of participation; however it is very different from letting farmers make decisions about what kinds of technologies will be developed or training them to carry out research themselves. Because PR methods incorporate user perspectives in the research process, it is often claimed that they orient research more towards the needs of the poor and thus result in a greater impact on poverty alleviation than conventional research. It cannot be said a priori that participatory methods make research more pro-poor because this would depend on the extent to which the needs and priorities of the poor differ from those of the non-poor, and whether or not the poor are specifically targeted in the research process.

Whether PR makes research more pro-poor is essentially an empirical question. Therefore, in order to understand the relationship between PR and poverty alleviation better, empirical evidence is needed on what impacts participatory methods have had on poverty in the context of specific projects and participatory methodologies. This project seeks to begin to fill this gap. The study builds on results from an earlier study (Hincapié, 2003) and a survey done by the IPRA Project in 1998 (Ashby & García, 2000).

## ***Methodology***

This study examines the impact of one particular method of incorporating farmer participation, which is based on the establishment of local agricultural research committees (CIALs) in rural communities. This method was developed at CIAT in the 1990s and is currently used in approximately 250 communities of several Latin American countries. The CIAL methodology is based on the establishment of a research committee

with elected members. Each CIAL is supported by an agronomist or extension agent who trains the committee members in the research design (controls, replicates, systematic evaluation of results) and who visits their trials regularly to provide technical support. Support for the agronomist comes from the institution supporting the CIAL, usually an NGO, the national research or extension service, or some other institution involved in technology development and transfer. Costs of experimentation are covered by outside funds; however farmers are not paid for their participation or time. Research problems and priorities are set at the level of the community (by vote), but the experimentation is done by the CIAL on behalf of the community. Community members are able to visit the trials all along, and results of experiments are disseminated at the level of the community. If a series of experiments identifies a promising technology or practice, the CIAL will officially recommend it. In Cauca Province, men and women farmers have formed 39 CIALs over the last 13 years. A second-order association Corporation for the Development of the CIALs (CORFOCIAL) —While the IPRA Project at CIAT provides technical backstopping.

***Study objectives***

- Assess the effectiveness of the CIAL methodology
- Assess the costs and benefits of the CIAL to its members as well as the members of the community
- Use the results of this impact study actively for institutional learning and change.

***Research questions***

- How effective is the CIAL methodology?
- What are the benefits of being a CIAL member?
- How have the CIALs benefited their communities?
- What are the costs associated with CIALs?
- How can the results of this impact study be used for institutional learning and change?

***Sampling frame***

Table 1 presents the sampling frame for the entire study, which involved data collection using both individual household interviews and focus group discussions (FGDs) with 13 CIALs.

**Table 1: Sampling frame for the study.**

	CIAL Level		Community Level	
	Active CIALs	Inactive CIALs	With CIALs	Without CIALs (Counterfactual)
<b>Focus group discussions</b>	13 CIALs	4 CIALs		
Individual	Four CIAL		Household-level	Household level

household questionnaires	members from each of 13 CIALs		interviews conducted in 6 communities	interviews conducted in 4 communities
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### *CIAL level*

The sample was selected from all existing CIALs in Cauca that are more than 5 years old and where it is considered “safe” to travel. To ensure a representative sample, CIALs were also stratified by age and gender of membership. Thirteen CIALs in 12 communities in Cauca were selected (Table 2). At the CIAL level, individual household interviews were conducted, and FGDs were conducted at the CIAL group level. FGDs will be conducted with 13 CIALs in Cauca Province. The FGD will collect the CIAL-specific data needed for the analysis.

**Table 2: CIALs included in the study: Individual surveys and FGDs.**

Name of CIAL	Location	Age of CIAL	Households in community	No. of Members		Sample Size for Survey
				Men	Women	
Asopanela	Rosas	12	30	3	1	
Betania 1	Piendamó	12	33	6	2	
La Esperanza	Caldono	7	45	4	1	
El Turco	Santander	9	25	3	1	
Carpintero	Morales	8	181	20	10	46
El Jardín	Caldono	10	38	3	1	10
Las Cruces	Silvia	6	57	3	3	15
Pescador	Caldono	13	66	5		17
San Bosco (Female)	Santander de Quilichao	5	58		9	15
San Bosco (Male)	Santander de Quilichao	12	58	3		
San Isidro (Male)	Santander de Quilichao	7	66	5		
Cinco Días (Female)	Timbio	11	205	2	13	52
El Diviso	Rosas	12	83	4	2	

### *Community level*

In order to understand the impact of CIALs on individual members as well as on other community members, individual household interviews will be conducted in six CIAL communities and 4 communities without CIALs. In each of these communities both CIAL and non-CIAL members will be interviewed. In addition, both the male and female heads of household will be interviewed.

*CIAL communities.* Four of them (El Jardín, San Bosco, Tres Cruces and Cinco Días) were selected because they formed part of the study documenting the impact of the CIAL methodology (Hincapié, 2003), while the other two (Crucero de Pescador and Carpintero) had been in the impact study conducted in 1998. The information from these earlier studies formed the basis for the design of the surveys for this study.

To define the sample for individual household interviews, a 10% margin of error and a 95% level of confidence were used in a randomly stratified design, in which the rural communities constituted the subpopulations that form the strata. The distribution of the selected sample is presented in Table 3. The size of the sample for the rural communities without CIALs will be determined as was done for the rural communities with CIALs.

*Non-CIAL communities.* In order to control for changes in the communities attributable to the presence of CIALs, 4 counterfactual communities were also selected on the basis of not being neighbors and similarity in various characteristics (Table 4):

**Table 3. Distribution of the sample selected.**

CIAL Communities	No. of Households	Sample Size
El Jardín	38	8
Carpintero	182	37
Tres Cruces	57	12
Crucero de Pescador	66	14
San Bosco	58	12
Cinco Días	205	41
Total	606	124

**Table 4. CIAL communities and their corresponding non-CIAL communities.**

Communities with CIALs	Counterfactual Communities (without CIALs)	Location	No of Families	Sample Size
El Jardín and San Bosco	La Concepcion	Santander de Quilichao	87	17
Carpintero and Cinco Días	San José	Caldono	169	31
Tres Cruces	Santiago	Silvia	108	21
Crucero de Pescador	La Chapa	Santander de Quilichao	37	7

- Sociocultural characteristics: ethnicity, level of schooling and access to public services (energy, access to aqueduct, telephone and health services)
- Interaction with institutions
- Distance to large markets
- Agroecological zone
- Farming system

***Research questions/hypotheses, indicators, data needs and data collection method***

In order to develop a data collection strategy, we took each of the research questions and developed variables to be measured and identified specific indicators to measure the variable. Table 5 presents details about each of the broad research questions, as well as indicators used to measure the impacts, and data sources. This served as the basis for developing data collection and analysis methodology.

**Table 5: Impact study questions/hypotheses, indicators, data needs and data collection method.**

Hypothesis/Research Questions	Indicators	Data Needed	Data Collection Method		
			Survey	Focus Group	Case Study
<b>4. How effective is the CIAL methodology?</b>					
Who are the members? (Are they poor, rich, educated, innovators)	✓ Distribution of participation in CIALs across the different gender and wealth groups	✓ Characteristics of members: (well-being levels, educational level, gender) ✗ Community criteria for selecting members	X		
Are the farmers “effective” researchers? (productivity of research outputs, responding to community needs)	✓ Problems addressed relevant to the community (CIAL is responsive to community priorities and needs.)	✓ Farmers ranking of appropriateness of research themes to address community problems ✓ Community diagnosis results vs. topics of CIAL experimentation	X		
	✓ Appropriate technologies are developed	✓ Rate of output of research (no. of research topics covered by CIAL experimentation)	X		
“Scientific rigor”; are research results improving yields, environmental issues?	✓ “Improved” or better technologies are recommended	✓ Characterization of recommended technologies using scientist-defined criteria (yield, resistance, soil fertility management, biodiversity, etc.)			X
Integrating local and scientific knowledge	✓ Increased research in indigenous/local technologies	✓ Research outputs based on indigenous/local knowledge			X
Do CIALs improve the flow of information between farmers and R&D organizations?	✓ Enhanced capacity to demand technology and related support services	✓ No. of visits from other communities to CIAL experiments or no. of visits by CIAL members to other communities to explain their technologies	X		
What is the role of second-order organization CORFOCIAL?		✓ Assessment of services provided by CORFOCIAL to CIALs (from perspectives of both)		X	
What are some of the key actors in a CIAL failure?		✓ No. of inactive CIALs and reasons		X	

Hypothesis/Research Questions	Indicators	Data Needed	Data Collection Method		
			Survey	Focus Group	Case Study
<b>2. What are the benefits of being a CIAL member?</b>					
What are the benefits of being a member? (human and social capital)	✓ Enhanced leadership skills	✓ Degree of participation/leadership in other community events	X		
	✓ Enhanced capacity for experimentation	✓ No. and types of new non-CIAL related experimentation other ✓ New knowledge acquired and its application to new problems	X		
	✓ Capacity to convene and organize community meetings	✓ No. of meetings organized or capacity to initiate and organize farmer-to-farmer exchange	X		
	✓ Become agricultural experts in community (innovators)	✓ Representation of the community in agricultural events. ✓ Community members' opinion about who are the agriculture leaders in village	X	X	
	✓ Improved financial management skills	✓ Capacity to increase CIAL fund/capacity for raising funds	X		
Do improved skills lead to benefits? What is the impact of the increased human and social capital among the members and communities?	✓ Able to support community in addressing new challenges	✓ Member involvement in other community development activities	X		
	✓ Ability to formulate and present own projects based on community demand	✓ New projects started because of CIALs		X	
	✓ Acts as entry point for other R&D	✓ Same as above			X
	✓ Enhanced capacity for collective problem solving	✓ Major community problems solved in the past 5 years and how they were solved		X	



Hypothesis/Research Questions	Indicators	Data Needed	Data Collection Method		
			Survey	Focus Group	Case Study
<b>3. How have CIAL research outputs benefited members of their communities?</b>					
How have their research outputs benefited their communities?	✓ CIAL communities benefit from research outputs	✓ Assessment of benefits of CIAL to the community at large.		X	
	✓ Communities benefit from adoption: concrete results/changes/effects of these technologies	<ul style="list-style-type: none"> <li>✓ Increased/stabilized yields</li> <li>✓ Increased food security at household level</li> <li>✓ Increased income (and how it is used)</li> <li>✓ Better management of farm resources</li> </ul>	X		
Who benefits in different social groups, especially across gender and the poor?	✓ Access of benefits to different households categories (women and the poorest)	✓ Characterization of households adopting and benefiting from technology	X		
Spillover benefits to other communities?	✓ Adoption of CIAL technologies in neighboring communities (spillover)	Same as above	X		
How do their marketing projects benefit the community?	✓ Benefits from CIALs marketing projects	✓ Types of marketing projects			X
Who has access to these benefits from marketing?	✓ Enhanced access of benefits to different categories of households (women and the poorest)	✓ Benefits and who has access: analysis of above broken down			X
Has methodology contributed to poverty alleviation? Who has access?	✓ Enhanced access to benefits by women, children and the poorest households	Same as above			
4. What are the costs associated with CIALs	<ul style="list-style-type: none"> <li>✓ Effectiveness increases with maturity</li> <li>✓ Reduction in the operational budget over time</li> </ul>	<ul style="list-style-type: none"> <li>✓ Cost of creating and supporting a CIAL</li> <li>✓ How much time members spend on CIAL-related activities and the value of that time (similarly other resources and their value)</li> </ul>			

### ***Progress to date***

From June to September, 2003, the surveys were administered to a sample of 124 household heads and to a second person in each respective household (wife/husband, son/daughter), for a total population of 606 household heads from six rural communities with CIAs in Cauca Province: Crucero de Pescador, Cinco Días, Carpintero, San Bosco, El Jardín and Tres Cruces.

### ***Implementing the study***

Ten enumerators were selected and trained (5 university students and 5 people from the study region) to conduct the household interviews. The training focused on developing communication skills and techniques for conducting the surveys and to create a local capacity for gathering information and for identifying the regional problems.

### ***Selection and application of surveys in communities with CIAs***

- All surveys were conducted with the selected CIAs in the six rural communities: 124 surveys to household heads and 106 to the second person.
- A format in the OMNIFORM program was developed to input the data from the surveys and the statistical analyses.
- All the data from the surveys were typed into the OMNIFORM program and are ready to be analyzed.



**Figure 1. Interviewing the wife of a farmer in Cauca.**

### ***Selection and application of surveys in communities without CIAs***

The four non-CIAL communities were selected by grouping four CIAL communities with similar characteristics. For example, El Jardín and San Bosco; or Carpintero and Cinco Días were grouped together as they have similar characteristics with respect to sociocultural characteristics: ethnicity, level of schooling and access to public services (energy, aqueduct, telephone and health services), interaction with institutions, distance to large markets, agroecological zone and system of agriculture. In this instance, one

counterfactual community was selected for each pair. In the case of Tres Cruces and Crucero de Pescador, a counterfactual community was identified for each one because the communities were very different from each other.

The selection of counterfactual communities involved visiting the community and conducting interviews with key informants (teachers, presidents of the JACs or Communal Action Boards and the health promoters). In each community information was gathered on general characteristics and compared to communities with CIALs.

La Chapa and San José were surveyed, and the information was entered in the OMNIFORM program.

### ***Challenges of implementing the study and solutions***

The main difficulties encountered in the development of the study were related to the data gathering:

- Some farmers are distrustful and do not answer the surveys honestly; thus there was incongruence in the data. Explaining the objective of the study very clearly and explaining that the data would be treated confidentially and would not be used for any other purposes except for the study addressed this problem.
- Some farmers selected for the survey did not want to answer the questions unless they were given some economic remuneration. In this case, other farmers were selected at random to replace them.
- The indigenous communities are reserved about their information and do not permit their members to give out information without permission from the Governing Council to which they belong. This difficulty was encountered mostly in those communities located near a reservation. In the native communities surveyed, it was necessary to speak first with the local leaders and the Governing Council to explain the purposes of the survey and request their approval for the study.

### ***Lessons learned***

Thus far the following lessons have been identified, which contribute experiences for future studies:

- The training of the interviewers has resulted in good-quality information.
- The revision of the surveys by each interviewer before turning them in to the coordinator meant that they had fewer errors, and the process of final revision was much quicker.
- The rapid feedback by the coordinator of the group to the interviewers minimized the errors in gathering the data and made the work more efficient.

- The support of the local interviewers generated more trust in the farmers, facilitating their response to the surveys.
- A key factor for obtaining information on the rural communities was talking to the presidents of the JACs, the health promoters and the teachers.
- To be able to interact with indigenous communities, it is necessary to approach the local authorities previously in order to facilitate the execution of the work.

## References

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# Impact study of CIALs El Jardín, Las Cruces, San Bosco (men and women), Cinco Días

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**CIALs:** El Jardín, San Bosco, Tres Cruces, Cinco Días

## ***Highlights***

Impact of CIAL methodology on rural livelihoods in five communities in Cauca Province  
Identification of impact indicators from the perspective of rural communities

## ***Abstract***

*This study examined the impact of a particular method of incorporating farmer participation, based on the establishment of local agricultural research committees (CIALs), in rural communities. The methodology used is based on the Sustainable Livelihood Approach. The aim of a livelihoods impact assessment is to gain an understanding of the significance of the project to the livelihoods of project participants and other local residents. The study found four major topics of impact: technology, which includes better planning and organization of farms, new technology and its diffusion; food security which looks at nutrition; income generation from the standpoint of agroenterprises and production projects; and social and human capital which takes a look at leadership, empowerment and gender. Some of the major challenges involve better communication channels to facilitate the flow of information from farmers' communities to second-order organization and to research centers.*

## ***Background***

Over the past decades, agricultural research has contributed to significant increases in world food production. Maintaining these productivity increases, while making progress on additional goals of alleviating poverty and protecting the environment, presents a major challenge to the agricultural research system. In order to maintain and extend the benefits of agricultural research, new ways of doing research may be necessary. One such method, participatory research, seeks to involve the intended beneficiaries of research in the research process itself. The idea is that user participation will lead to more efficient and effective design and targeting of technologies, thereby reducing diffusion time, increasing adoption and helping to ensure that the intended beneficiaries are reached with technologies that are appropriate to their particular circumstances, needs and priorities.

This study examines the impact of one particular method of incorporating farmer participation, which is based on the establishment of local agricultural research

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committees (CIALs) in rural communities. This method, which was developed at CIAT in the 1990s, is currently in use in more than 250 communities in 8 Latin American countries. The CIAL methodology involves the establishment of a research committee with elected members. Each committee is supported by an agronomist/extension agent who trains the committee members in the research design issue (controls, replicates, systematic evaluation of results) and who visits their trials regularly to provide technical support. Support for the agronomist comes from the institution supporting the CIAL, usually an NGO, national extension service, or some other institution involved in technology development and transfer. Costs of inputs not available locally are covered by outside funds, and members are not paid for their participation or time. Research problems and priorities are set at the level of the community (by vote), however the selected members do experiments. Community members are able to visit the trials all along, and results of experiments are disseminated at the level of the community. If a series of experiments identifies a promising technology or practice, the CIAL will officially recommend it.

### ***Objectives***

The objective of this study is to evaluate the impact of the CIALs on poverty in rural communities. The CIAL methodology was developed at CIAT with the goal of increasing the efficiency of the agricultural research and technology development system by integrating farmers into the process. The study assesses the extent to which CIALs affect the rate and level of adoption of agricultural technologies among socially differentiated user groups. It also examines how farmer participation in the agricultural research process affects the process itself, as well as the specific communities and individuals involved. Particular attention is paid to how CIALs as institutional innovations affect the human, social and other capital assets available to individuals and communities, and the implications these impacts have for livelihood outcomes.

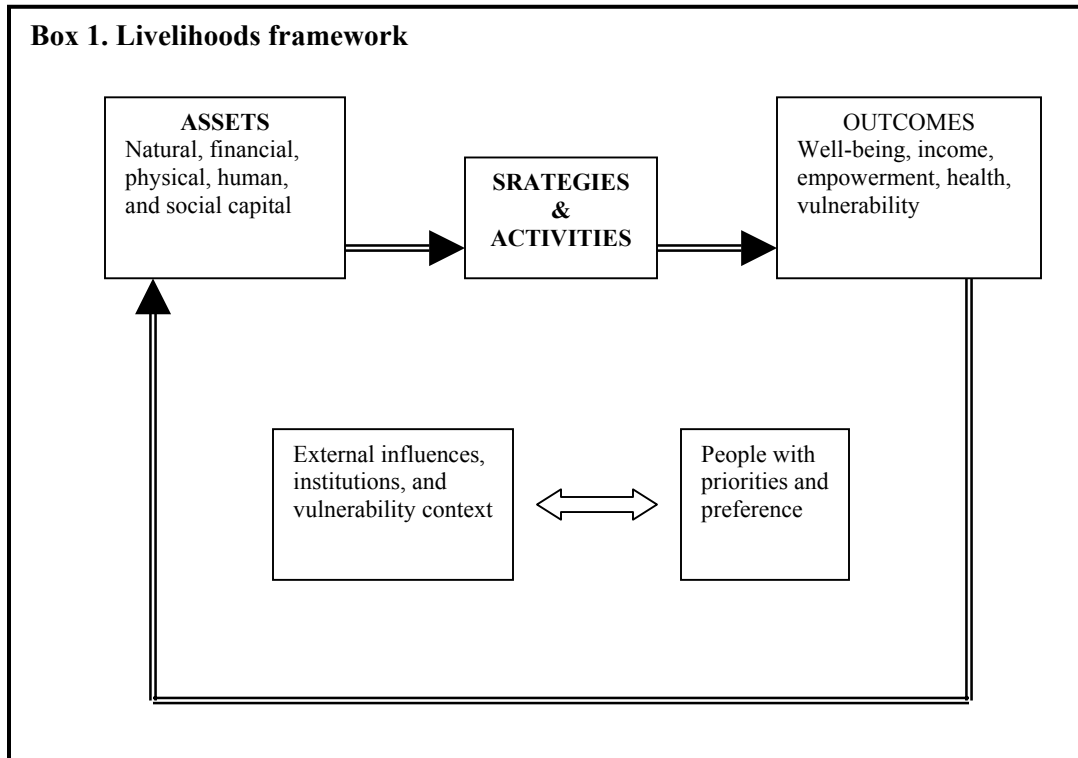
### ***Methodology***

#### ***Conceptual framework***

The impact of research outputs such as technologies and methodologies goes beyond the production process and to the well-being of the people involved directly and indirectly in the project carried out in a given community; therefore, an alternative methodology to conventional impact assessment is required. The methodology is based on the Sustainable Livelihood Approach. Figure 1 diagrammatically presents the components and linkages within this Approach. The aim of a livelihoods impact assessment is to gain an understanding of the significance of the project with respect to the livelihoods of project participants and other local residents. Such an assessment is based on the premise that the project and project participants share a core aim: the enhancement of local people's livelihoods.

It is important to note that a benefit inherent in this methodology is that as it is the community that identifies problems and needs, they are in a better position to make

decisions and act upon the major issues affecting them. Thus research-action becomes a motivation tool for the future development of projects by communities.



**Source: Ashley & Hussein (2000)**

### *Study area*

Five CIALs were selected: El Jardín, San Bosco (men and women CIALs), Tres Cruces, Cinco Días. Table 1 lists the CIALs, their research topics and years of experience.

**Table 1. CIALs studied, their research topics and years of experience.**

<b>CIAL</b>	<b>Initial Diagnosis</b>	<b>Research Topic</b>	<b>Experience/ Starting Date</b>
San Bosco (men)	Maize Potatoes	Experimentation on varietal adaptation to area	12 years 1990
San Bosco (women)	Soya Rice Barriers Beans Cassava Maize Organic fertilizer Soil conservation	Experimentation on varietal adaptation to area  Soil improvement	4 years 1998
Tres Cruces (indigenous)	Maize Beans Quinoa Wheat	Experimentation on varietal adaptation to area	5 years 1997
El Jardín	Onions Beans	Experimentation on varietal adaptation to area	6 years 1996
Cinco Días (women)	Blackberries Soybeans	Experimentation on varietal adaptation to area	10 years 1992

### *Participatory Rural Appraisal (PRA) Tools*

PRA is used here to refer to a more extended process that involves not only the collection of information but also its eventual use by the community as it plans further activities. The emphasis of PRA is often not so much on the information as it is on the process and seeking ways to involve the community in planning and decision-making.



**Table 2: PRA tools and type of Information that can be collected.**

<b>Diagnostic Tool Used</b>	<b>Type of Information Obtained</b>	<b>Types of Indicator for Measuring Change</b>
Participatory mapping	<ul style="list-style-type: none"> <li>✓ Village landmark, infrastructure and social structure</li> <li>✓ Spatial land use patterns</li> <li>✓ Settlement patterns</li> <li>✓ Information on livelihoods and places important to livelihoods</li> <li>✓ Markets</li> <li>✓ Relations with other villages</li> </ul>	<ul style="list-style-type: none"> <li>✓ Adoption of technology across village and neighbors</li> <li>✓ Access to markets</li> <li>✓ Change in production systems techniques</li> <li>✓ Change in farm planning and organization</li> </ul>
Vern Diagram	<ul style="list-style-type: none"> <li>✓ Existing organizations in the community and their linkages within and externally</li> <li>✓ Role of external forces in the community: government and NGOs</li> <li>✓ Relationship with other villages</li> </ul>	<ul style="list-style-type: none"> <li>✓ Role of CIAL in local organizational systems</li> </ul>
Calendars	<ul style="list-style-type: none"> <li>✓ Patterns within the community: Income, labor and consumption</li> <li>✓ Seasonal agricultural calendar</li> <li>✓ Forest product availability</li> <li>✓ Migration patterns</li> <li>✓ Livestock management</li> </ul>	<ul style="list-style-type: none"> <li>✓ Change in food availability</li> <li>✓ Change in migration patterns</li> <li>✓ Change in labor intensity</li> <li>✓ Gender-labor intensity</li> <li>✓ Change in production</li> <li>✓ Empowerment</li> </ul>
Wealth Ranking	<ul style="list-style-type: none"> <li>✓ Levels of well-being;</li> <li>✓ Access to services and assets</li> <li>✓ Leadership/wealth correlation</li> </ul>	<ul style="list-style-type: none"> <li>✓ Well-being and participation in activities</li> <li>✓ Distribution of project benefits</li> <li>✓ Change in access to assets</li> <li>✓ Change in assets</li> <li>✓ Changing composition of wealth</li> </ul>

## ***Results***

*The study found four major topics of impact: technology, food security, income generation and social and human capital.*

### ***Technology***

*Better planning and organization of the farm:* As a result of new knowledge on the crop production management, as in the case of San Bosco, new techniques for hillside land and crop management resulted in increased production of maize, beans and cassava.

*New technology and its diffusion:* The recovery of an ancient crop, quinoa, in CIAL Tres Cruces has resulted in a program led by the indigenous Council to include this crop in all gardens.

### ***Food security***

The main impact in food security is the reduction in the scarcity periods of grains, beans and maize, which are the staples of most communities' diets.

When comparing the production of the four communities over time, beans and maize showed a remarkable improvement and also show a potential for further increment in production due to the research carried out by the CIALs. Production figures and the food-availability calendar support this claim. Food scarcity was reduced from 6 months to 3-4 months in the case of beans and maize in the villages of El Jardín and San Bosco. The only reason why they have not been able to close the gap is because of grain storage problems.

Beans, being one of the commonest research topic of CIALs, has come a long way from production for consumption to its present level, which allows for seed production and, to a lesser extent, income generation. The CIAL El Jardín works with beans and its production figures have gone from consumption only 5 years ago to 2500 kg/ha at present. Research on new varieties and training on crop management and seed production account for the success this CIALs research.

Maize has also shown an increment in production, and its behavior has been similar to that of beans. Most of the grain was kept to feed the family, but this increase in production also allows for seed production and to feed minor species on the farm. The CIAL San Bosco has been working with maize for around 10 years. Their production has doubled in the last five years, going from 2500 kg/ha to 5000 kg at present. Similar to El Jardín, the CIAL San Bosco has also gained knowledge on new management practices and seed production, which is a source of income generation for this group. Another source of income and a major impact for this CIAL was the acquisition of a maize milling machine, which is used by village farmers and neighbors, representing not only a source of income but also savings in time and money.

Greater maize production has also allowed producers to keep as many as 200 chickens on their farms some for their meat and others as egg producers as an alternative source of food and income.

### ***Income generation***

Most CIALs generate income from their production of beans and maize seed; however, CIAL Cinco Días has acquired bakery equipment to produce soy bread (soybeans are the topic of research of this CIAL). A new group of soybean producers will supply the raw material for the bakery; soybeans are also sold to feed small animals.

### ***Social and human capital***

Another major impact the CIAL has had on its members is the development of leaders and empowerment of the communities where they are located. Appendix 1 shows clear areas of impact or indicators such as understanding of experimentation, social organization, leadership, empowerment, land, crop and farm management, decision-making, better planning and organization of farm, new knowledge, new technology, diffusion and income generation.

It also shows that although a CIAL may have only one research topic, impact is also produced by other technologies introduced by the CIAL. This technology may come from the technician, farmer-to-farmer, tours, the yearly CIAL meeting. It is then tried by the CIAL and is eventually adopted in the village and neighboring communities. Results from these technologies should also be included in the CIAL research records and reported to CORFOCIAL and the research entity.

Impact on livelihood goes beyond production and income generation, which are only some of the components of well-being; leadership, organization, communication, empowerment and decision-making complete the picture.

Research on maize and beans has not only had a real impact on food availability in the communities through increased production and a better knowledge of land, crop and pest management; but it has also helped improve nutrition levels in villages such as San Bosco, El Jardín and Tres Cruces, helping get closer to their objective of food security.

Other technologies introduced by the CIAL to villages (e.g., forages in El Jardín) represent an extra income for the farm in terms of cash when sold for cattle feed or in kind when exchanged for milk.

In the case of Tres Cruces, quinoa has put the CIAL at the front of a major project by the local indigenous Council to incorporate quinoa plants in their gardens. Already 80 out of 175 families have included quinoa in their diets and are also learning about its medicinal uses.

As the result of its research on soybeans, the CIAL Cinco Días has established a small bakery based on soy flour, generating income not only for the families of the members of the small business but also for a group of farmers who see the opportunity of supplying soybeans to the bakery. Training in small business management will also improve and have an impact on the livelihoods of the village by opening up new opportunities and generating employment for the village.

San Bosco is also looking at the establishment of a small business in the form of a collection centralized facility for collecting and marketing local products which would not only benefit the village but also its neighbors, and would generate employment.

The development in some communities of a do-it-yourself mentality has had a major impact on its own, considering that not long ago their conditions and self-esteem were at a very low point. One of the commonest discussions in the five CIALs visited was the preparation of proposals for local projects, which shows a vision, a plan or strategy for improving the well-being of the village.

Human capital is also another major area of impact. The CIAL is also a school for leaders, and its members often work with other organizations in the communities such as the indigenous Councils, the Communal Action Boards (JAC), water boards, etc. The community often consults CIAL members on farming issues; and the CIALs also have the responsibility of reporting research and feedback to the community, not only on their findings but also on the accounts.

Gender is an area that needs more attention. CIAL research represents extra work for women who have to carry on with their day-to-day numerous activities and find time to do CIAL work. A common attitude towards women working in CIAL is that they have nothing better to do or that it is a waste of time. This attitude means that in order to spend time away from home in the CIAL, women must work harder at home. This attitude changes as the CIAL begins to show positive results, particularly in their families. Good feedback of results to the community will improve the attitude towards women groups

Another barrier women encounter is that their husbands oppose their spending a long time away from home, and this produces conflict at home. This is less noticeable in villages where there is a CIAL already established or where there is knowledge of the CIAL work and results.

### ***Wealth ranking***

**Table 3. Summary of wealth ranking characteristics by group.**

	<b>El Jardín</b>	<b>San Bosco</b>	<b>Tres Cruces</b>	<b>Cinco Días</b>
<b>Top level</b>	<ul style="list-style-type: none"> <li>✓ Income from employment</li> <li>✓ Small families</li> <li>✓ Employment generation</li> <li>✓ Large farm</li> </ul>	<ul style="list-style-type: none"> <li>✓ Large farm</li> <li>✓ Income from employment</li> <li>✓ Better diet</li> </ul>	<ul style="list-style-type: none"> <li>✓ Cattle</li> <li>✓ Income from employment</li> <li>✓ High academic level</li> <li>✓ Own transport</li> <li>✓ Leadership</li> </ul>	<ul style="list-style-type: none"> <li>✓ Income from employment</li> <li>✓ Large farms</li> <li>✓ Inheritance</li> <li>✓ Family help</li> <li>✓ Very active</li> </ul>
<b>Intermediate level</b>	<ul style="list-style-type: none"> <li>✓ Extra income from goods or services</li> <li>✓ Seasonal labor</li> <li>✓ Farm products</li> </ul>	<ul style="list-style-type: none"> <li>✓ Own home</li> <li>✓ Seasonal labor</li> <li>✓ Large family</li> <li>✓ Little land</li> <li>✓ Farm products</li> </ul>	<ul style="list-style-type: none"> <li>✓ Large families</li> <li>✓ Single men</li> <li>✓ Seasonal labor</li> <li>✓ Farm products</li> </ul>	<ul style="list-style-type: none"> <li>✓ Self-sufficient farm</li> <li>✓ Single head of household</li> <li>✓ Seasonal labor</li> </ul>
<b>Low level</b>	<ul style="list-style-type: none"> <li>✓ Illness</li> <li>✓ Old age</li> <li>✓ No help</li> </ul>	<ul style="list-style-type: none"> <li>✓ Do not own home</li> <li>✓ Large family</li> <li>✓ No water or electricity</li> </ul>	<ul style="list-style-type: none"> <li>✓ Large families</li> <li>✓ Single mothers</li> <li>✓ Illness</li> <li>✓ Widows</li> <li>✓ Old age</li> <li>✓ No help</li> </ul>	<ul style="list-style-type: none"> <li>✓ No land</li> <li>✓ Old age</li> <li>✓ Illness</li> <li>✓ No help</li> <li>✓ No water or electricity</li> </ul>

Wealth ranking in the four communities shows some characteristics common to the different levels studied: At the top level are fixed income from full-time employment by members of the family in addition to farm products, larger and already established productive farms which in some cases generate income for members of the communities. At the intermediate level, farm products, supplemented by seasonal labor, are the common characteristics that identify this group. The lower level is characterized by illness, old age, no collaboration from family relatives and lack of water and energy.

When asking the question what is necessary to move from one group to another, better management of assets and access to credit for investment are the commonest answers, followed by participation in-group activities.

Better management of assets and teamwork are areas where CIAL methodology can contribute to the progress of communities. In the future, it may be possible that second-order organizations of CIALs can facilitate access to credit for its members.

### ***Challenges***

Some of the major challenges ahead are to improve reporting of results to research centers and other organizations, the quality and relevance of research, and feedback to communities.

Better communication among CIALs, CORFOCIAL, CIAT and other R&D organizations is essential for improving the quality and relevance of research and also for validating CIAL research before these organizations. In order to obtain funding for research, it should not be done only on the basis of interest in the communities alone but also reflect the interest of donors and R&D centers.

To a certain extent, that is what this impact evaluation methodology offers an understanding of community needs and interests in order to match donor and organization requirements. As CIAL Tres Cruces put it, “we are tired of organizations bringing in projects that solve none of our problems, and when they are gone, we are worse off than when we began...we have lots of product no one wants...”

### **References**

Ashley, C.; Hussein, K. 2000. ODA.

*Appendix 1*

**Table 4. Summary of impacts by CIAL**

<b>Impact</b>	<b>El Jardín</b>	<b>San Bosco (men)</b>	<b>San Bosco (women)</b>	<b>Tres Cruces</b>	<b>Cinco Días</b>
<b>Technology</b>					
Better planning and organization of farm	New knowledge of cassava management has improved crop production.	New techniques of hillsides land and crop management has permitted increased production of maize, beans and cassava.	Research on organic fertilizer has solved problem of lack of funds to fertilize land.	<ul style="list-style-type: none"> <li>✓ Reduction in maize harvest cycle from 12 to 7 mo</li> <li>✓ Recovery of ancient crop (quinoa)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Diversification of crops</li> <li>✓ New knowledge on crop management and preparation</li> </ul>
New technology and diffusion	<ul style="list-style-type: none"> <li>✓ Forages used as live barriers to control erosion and exchanged for milk</li> <li>✓ Increased maize production permits production of chickens.</li> <li>✓ Greater bean production permits seed production.</li> <li>✓ Neighboring villages adopting technology researched by CIAL</li> </ul>	<ul style="list-style-type: none"> <li>✓ Increased maize production permits seed production.</li> <li>✓ New knowledge of pest management has led to better production.</li> </ul>	Greater maize production allows CIAL to work with laying hens (egg production)	<ul style="list-style-type: none"> <li>✓ Quinoa research led to the local indigenous Council's implementing a program of quinoa in gardens</li> <li>✓ CIAL members and collaborators live in neighboring villages, facilitating adoption and diffusion of technologies.</li> </ul>	Training of community in over 40 recipes prepared with soybeans, including milk and meat alternatives

<b>Food security</b>	<b>El Jardín</b>	<b>San Bosco (men)</b>	<b>San Bosco (women)</b>	<b>Tres Cruces</b>	<b>Cinco Días</b>
Nutrition	<ul style="list-style-type: none"> <li>✓ Improved quality of crops, particularly beans, shift from local variety to an improved variety</li> <li>✓ Better bean and maize production has reduced food-scarcity period</li> </ul>	Better bean and maize production reduced food-security period	Better bean and maize production reduced food-security period	Research on nutrition and medicinal benefits of quinoa	Soybeans are an alternative to many products including milk and meat, which represents a savings in the purchase of these products.
<b>Income generation</b>					
Agro-enterprises	CIAL and community will present project for cane mill to increase panela production and generate savings in its processing.	Maize seed production	Production of feed concentrate for minor species		<ul style="list-style-type: none"> <li>✓ Bakery</li> <li>✓ New group formed to supply soybeans to bakery, generating income for producers</li> </ul>
Production projects	Bean hulling machine used by local residents, neighbors and local indigenous Council	Maize milling machine used by local residents and neighbors represents savings to farmers as they can process harvest in village.	<ul style="list-style-type: none"> <li>✓ Use maize milling machine to prepare feed concentrate for animals</li> <li>✓ Generate savings by producing fertilizer in village</li> </ul>	Production of organic fertilizers to improve soil	<ul style="list-style-type: none"> <li>✓ Bakery equipment to initiate small business and purchase soybeans from local producers</li> <li>✓ Soybean production also sold to feed smaller animals</li> </ul>



<b>Social &amp; human capital</b>	<b>El Jardín</b>	<b>San Bosco (men)</b>	<b>San Bosco (women)</b>	<b>Tres Cruces</b>	<b>Cinco Días</b>
Leadership & empowerment	CIAL members role as agricultural experts in village	Local indigenous Council delegated management of farm to CIAL leader	Local indigenous Council allocated 15 ha for research and work led by CIAL	Local indigenous Council quinoa program led by CIAL	Small business will generate extra income for the community.
Gender	Gender awareness promoted by local indigenous Council motivated formation of women's group to work with soybeans.	Gender awareness, collaboration and motivation to women's CIAL	<ul style="list-style-type: none"> <li>✓ Gender awareness to change stereotype role of women</li> <li>✓ Community attitude to CIAL has changed a little as they see results.</li> </ul>	Change in family attitude regarding sharing of activities at home	Change in family attitude regarding collaboration at home when women are working with CIAL

# **CIAL experiences with agro enterprises: Linking research to development in Cauca – Project progress report**

**Researcher:** *Fanory Cobo P.*<sup>8</sup>

## ***Abstract***

*Many actors in the rural context offer a large cadre of training opportunities to local communities. Nevertheless, such training is not always enough to promote development due to the fact that knowledge application is not possible due to scarcity of financial resources. Local groups are in search of economic resources to carry out their projects. Some have been successful in accomplish this task. Thus it was considered important to learn from the experiences of the process of forming rural agro enterprises in 5 CIALs. The objective was to identify and analyze what aspects promote the formation of these organizations within the context of the CIAL methodology and groups, providing a vision specific to farmers interested in incorporating an entrepreneurial focus to production activities.*

## ***Problem Identification***

The experience of forming rural agro enterprises (RAEs) in some community-based research services (CIALs) that have been conducting research for several years has not been assessed. This study proposed to identify and analyze the organizational and production principles and practices of five CIALs with RAEs in Cauca - Colombia. This study covers (a) the analysis of their formation, from the initial research period to the creation of the RAE, (b) the diagnosis of the organizational and production characteristics that contributes to their maintenance and (c) the identification of the possible effects of a socio-economic nature, generated in the Committees and in their communities. The study will not only report back to the communities on these experiences, but will also generate information to orient other organizations in the national and/or international setting that wish to form other RAEs in the field.

## ***Background***

Since the seventies, the methodology of participatory research has not only influenced the methods of social inquiry, but also allowed rural communities to establish priority criteria based on an informal analysis of their context. Until 1998 the CIAL methodology had contributed to the formation of 249 Committees in 8 countries of Central and South America (Ashby, 2001)

In Cauca Province, Colombia, the CIAL methodology was first developed in 1990 as a result of the direct intervention of the community and facilitators from the Participatory Research Project with Farmers (IPRA) at CIAT. The CIAL, which is created at the instigation of the community, is an organization directed by and for farmers. This

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structure is designed to meet the needs of the community (mostly related to food security), which are then prioritised through a participatory diagnosis that leads to the planning of the research process. Basically, farming methods and technologies that are not known locally and have not been tested in the region are compared with the traditional practice, but sometimes this is not sufficient to accomplish the desired results (Ashby, 2001). Their relative success affects the strengthening and development of the community at the local and regional levels.

The influence or impact generated within the communities can be determined by evaluating the participatory processes of the individuals, the distribution of the benefits generated by the research, and the consolidation of the RAEs. Then the advantages, successes or failures are identified, and recommendations are made accordingly in order to enrich both the functioning of each Committee and the CIAL methodology.

Independent of the impact that the research may generate in the community, some CIALs have interacted as a result of training or experiences in neighboring communities or in the village itself with alternative production systems that give an aggregate value to the agricultural product. Thus the idea arose of forming a small-scale agro entrepreneurial system, which is influenced by the way in which the farmers are associated and organized.

In 1998 the Rural Agro enterprise Development Project at CIAT identified key factors for success based on eight RAEs in Colombia, Ecuador, Bolivia, Peru and Chile, oriented toward promoting the exportation of agricultural products. The analysis was based on the physical, social and economic environment, the business organization, analysis of the product and competitive capacity. Among the key factors identified were business-oriented leadership, a drive toward self-management, availability of support services, links to the alternative market, development of marketing strategies and business schemes with vertical integration (Lasso & Ostertag, 1998).

In 2000, part of the small business experiences of 11 CIALs (Cinco Días Mujeres, ASOPANELA, El Placer, San Bosco Hombres, San Isidro Mujeres, El Diviso, Carpintero, Pescador, El Jardín, Santa Barbara and Betania) in Cauca was documented. Analysis of the results of that study, centered on the conceptualization of successful RAEs, and on recommendations or strategies for achieving them (Roa & Lundy, 2000). At present there are 10 groups (except for the last two and including the CIAL Santa Isabel) dedicated initially to research and then to the small-scale production of maize seed, common beans and peas, organic by-products from sugarcane, and bakery products from soy products.

### ***Research questions***

Based on the foregoing issues, the study centers on the experiences of 5 CIALs with RAEs. The following framework of questions is used to determine the information requirements:

- What factors motivated the formation of the RAE within the CIAL? ¿How did this process evolve? ¿What are the organizational aspects that have favored that formation?
- What production and marketing factors have contributed to the permanence of these RAEs?
- What have been the main constraints to the normal functioning of the RAE?
- What are the effects of this process on the CIALs with RAEs, on their members and the community?

The information gathered during the study will be important for the farmers involved in CIALs, both with and without RAEs, in the planning, analysis of the production work and in the formulation of projects.

### ***Methodology***

In this research, which is explanatory in nature (i.e., why and how), social research strategies such as surveys, analysis of files, histories and case studies will be used (Yin, 1994) The research will not include experimental or quasi-experimental designs (rigid in their methodological structure), because the emphasis is on exploring the specific perspectives of the participants with respect to the CIAL experience, which are important for constructing the meaning and implications of the Committee for the community. Information related to production and marketing data of the Committee will also be gathered.

Both primary and secondary data are being gathered. The design is based on an approach that integrates qualitative, participatory and quantitative methods: The process of forming an RAE in a CIAL will be described through formal, semi-structured individual interviews, group analysis and time-line. Then the organizational and production aspects of the 5 CIALs under study will be characterized (Gottret et al., 2000) (description of producers, the production process, the product and its marketing, among others), using participatory techniques (flowchart of activities) and formal surveys and semi structured interviews.

The analysis of the information will not only be done in the final stage of the study. It will also be a key factor during the execution of the study, for which successive activities of ranking, analysis and recording of information will be done to revise the results, identify gaps and check the reliability of the same.

### ***Results***

#### ***Selection of CIALs with RAEs***

The research hypothesis is that there are organizational and production principles and practices that are key to success in the processes of forming RAEs in the CIALs and their sustainability over time. To test this hypothesis, the study sought to document the

participatory and interactive experiences of farmer members of 5 CIALs that decided to form an RAE.

Rural agroindustry is an “activity that permits increasing the value of the production of the rural economies through the execution of post harvest processes (e.g., selection, washing, classification, storage, conservation, transformation, packing, transportation and marketing) in products from agro-silvo-pastoral systems, fisheries and fish ponds” (Riveros, 1998). This concept makes it possible to differentiate those nonagricultural production activities from others that could easily be confused. Therefore, the following CIALs situated in Cauca were identified according to their RAE experience relative for some.

**Table 1. CIAL with RAE in Cauca Province, Colombia<sup>1</sup>**

<b>CIAL with RAEs</b>	<b>Founded/ Municipality</b>
<b>San Bosco Hombres:</b> Small-scale production of maize seed	Feb 1 1991 Santander de Quilichao
<b>Pescador:</b> Small-scale production of common bean seed	March 1 1991 Caldono
<b>El Diviso:</b> Small-scale production of maize seed	Sept. 24 1991 Rosas
<b>Cinco Días Mujeres:</b> Production of bakery products from soybeans	March 12 1992 Timbío
<b>ASOPANELA:</b> Production of panela <sup>2</sup>	April 28 1992 Rosas
<b>El Jardín:</b> Small-scale production of common bean seed	Sept. 15 1993 Caldono
<b>Carpintero:</b> Small-scale production of common bean seed	Oct. 6 1995 Morales
<b>El Placer:</b> Small-scale production of maize seed	Aug. 22 1996 El Tambo
<b>San Isidro Mujeres:</b> Production of food from soy products	Oct. 1 1996 Santander de Quilichao
<b>Santa Isabel:</b> Small-scale production of pea seed	Oct. 1 1997 Totoró

<sup>1</sup> From IPRA Project database.

<sup>2</sup> Uncentrifuged brown sugar patty.

As there was insufficient information on the existing types of RAE, it was assumed that they could be subsistence agro enterprises or in the initial stages of development, which do not generate sufficient economic surpluses to be capitalized and that differ in the use of family labor.

Prior to the selection, excluding criteria were identified: armed conflict (CIALs El Placer and Santa Isabel) and the amount of documentation (CIAL El Diviso). A rapid poll was

conducted in the remaining 7 CIALs with RAEs, using a semi-structured interview, designed according to criteria that integrate organizational and production factors, without becoming isolated from the context of the process of forming the RAE in the CIAL and its implications on the lives of the farmers and on the community. The criteria were conditions of poverty in the zone, gender, type of product and its influence in the diet, organization, complexity of the operations and research. San Bosco Hombres, Carpintero, San Isidro Mujeres and ASOPANELA were selected. Upon discussing the information from the poll of the selected CIALs, it was decided to include the CIAL Cinco Días Mujeres because studying the organizational problems that they are facing was considered to be illustrative (Table 2).






In addition, two groups of committees differentiated as to the continuity of their research (e.g., the second group in addition to the RAE carries out farming activities that are not related to the research):

CIALs with RAEs:	Carpintero and ASOPANELA
CIALs that are RAEs:	San Isidro Mujeres, San Bosco Hombres and Cinco Días Mujeres

The CIALs San Bosco Hombres, San Isidro Mujeres, Carpintero and Cinco Días Mujeres are located in different parts of the county seat and have basic services, primary schools, health centers and unpaved access roads. The CIAL ASOPANELA also has the basic services but is located along the Pan American highway, which has facilitated the effective marketing of their product.

The final selection of CIALs also makes it possible to relate the contrasting conditions of poverty in the zones and their influence on the functioning of the RAEs. The research was distributed in the North (San Isidro Mujeres, and San Bosco Hombres in Santander de Quilichao), Center (Carpintero in Morales) and South (Cinco Días Mujeres in Timbio and ASOPANELA in Rosas) of Cauca Province.

**Table 2. CIALs with AERs selected.**

San Bosco Hombres	San Isidro Mujeres	Carpintero	Cinco Días Mujeres	ASOPANELA
<b>RAE Founded</b>				
1996	2001	1997	2002	1983
<b>Municipality –Cauca Province</b>				
Santander de Quilichao	Santander de Quilichao	Morales	Timbío	Rosas
				
<b>Production Characteristics</b>				
Small-scale production of maize seed. They process surplus grain in threshed maize, bran and meal, adding value to the “fresh” product at two levels: the selection of the grain for seed and its physical transformation.	Small-scale production of common bean seed. They do not carry out complex operations or have much infrastructure, but they dedicate a good part of their time to the production.	They make bread from wheat flour, supplemented with soy flour. They have a production site and the equipment required for the production.	They produce bakery products from wheat flour. They have a production site and the equipment required for baking bread.	They produce panela in several forms. The level of complexity of their activities has been increasing as they advance in the process. Their marketing is successful, given the closeness of the production site to the Pan American highway.

<b>San Bosco Hombres</b>	<b>San Isidro Mujeres</b>	<b>Carpintero</b>	<b>Cinco Días Mujeres</b>	<b>ASOPANELA</b>
<b>Organization</b>				
The organizational structure of the CIAL does not function (constituted by 3 people) although they do work as a group. In addition to the time dedicated to the RAE, they also do other farm work (crops) that contributes to the functioning of the RAE.	The organizational structure of the CIAL does function (5 people), and they work as a group during the production and marketing of the product.	The organizational structure is the CIALs (5 people); at present they work as a team. They combine the time dedicated to the RAE, with farm work that contributes to the purchase of ingredients. They are in the process of getting a tax no, and resources through the UMATA.	They have the organizational structure of a CIAL (5 people). They form part of the group that makes bread.	They work in a group, but the organizational structure of the CIAL is incomplete (3 people - relatives and another who does extension work). They are also trying to obtain resources for modifying the area where they produce the cane juice.
<b>Research</b>				
At present they are not doing any research, but are motivated to begin on upland rice.	They are doing research to improve maize production.	At present they are not doing any research for fear of losing the investment in the trials (as has occurred before). In the future they want to do research on green beans.	They are in the stage of evaluating trials with the soybean crop.	They are doing research on two cane varieties and on alternatives for fertilization.
<b>Constraints</b>				
At present the generation of income is not better because they have not been able to meet the clients'	The long dry season and the high cost of inputs are affecting the volume of production. At the same time,	Marketing and standardization of production.	At present it shows organizational problems due to lack of commitment among participants. This	At present they have problems marketing their products in North Cauca because FEDEPANELA



<b>San Bosco Hombres</b>	<b>San Isidro Mujeres</b>	<b>Carpintero</b>	<b>Cinco Días Mujeres</b>	<b>ASOPANELA</b>
orders, caused mainly by the climate, which has been unfavorable for production.	marketing is affected by the low frequency and high cost of the transportation and by their low supply capacity.		generates fights for leadership, which in turn affect production activities.	requires a sanitary register that certifies good manufacturing practices.
<b>Future</b>				
In the future they want to have their own site (bigger) for the RAE activities, as well as a shop for selling inputs and a warehouse for storing products. They want the RAE to provide services to the community and generate employment.	Improve the quantity and quality of common bean and maize seed.	Adapt the production site and contribute to improving the nutrition of the children in schools and family welfare homes; generate income.	Improve income and product quality.	Adapt the panela processing area to provide milling services to the community.

In addition to the foregoing selection process, another alternative of analysis was considered: statistical. Logistic regression (Hernández, 2000) establishes the relationship between the criteria and the degree of adjustment for each CIAL.

To obtain the 10x10quadratic matrix required for this tool, it was necessary to include additional information from three CIALs: El Diviso, Santa Isabel and El Placer (Table 3). This matrix is a step prior to graphic analysis.

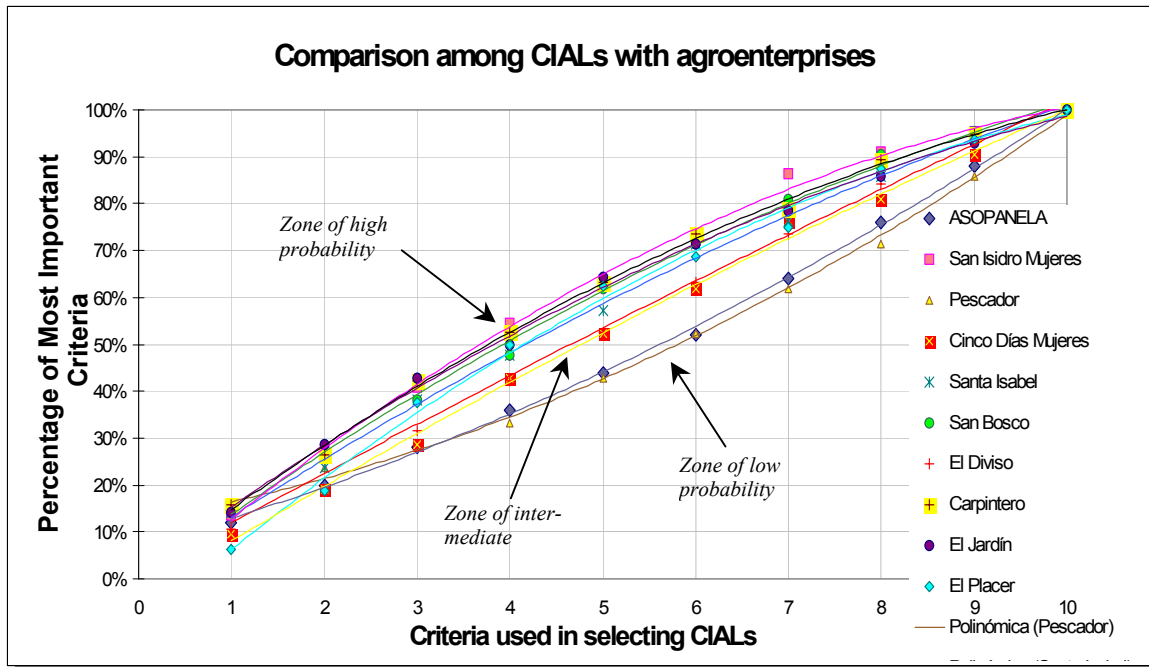
**Table 3. Data matrix: Criteria against CIAL with RAE.**

<b>Data Matrix</b>											
<b>Distribution of Frequencies of Acceptance</b>											
<b>CIAL with RAE</b>	<b>Criteria</b>										<b>Total</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	
<b>1. ASOPANELA</b>	3	2	2	2	2	3	2	3	3	3	25
<b>2. San Isidro Mujeres</b>	3	3	3	3	2	3	2	1	1	1	22
<b>3. Santa Isabel</b>	3	2	3	2	2	1	3	2	2	1	21
<b>4. San Bosco</b>	3	3	2	2	3	2	2	2	1	1	21
<b>5. Pescador</b>	3	2	1	1	2	2	2	2	3	3	21
<b>6. Cinco Días Mujeres</b>	2	2	2	3	2	3	2	1	2	2	21
<b>7. Carpintero</b>	3	2	3	2	2	1	2	2	1	1	19
<b>8. El Diviso</b>	2	3	1	2	2	2	2	2	2	1	19
<b>9. El Placer</b>	1	2	3	2	2	1	1	2	1	1	16
<b>10. El Jardín</b>	2	2	2	1	2	1	1	1	1	1	14
<b>Total</b>	25	23	22	20	21	19	19	18	17	15	185
<b>Selection Criteria:</b>											
1. Time dedicated to the RAE											
2. Contribution to food security											
3. Organization of the RAE											
4. Capacity for self-management of the RAE members											
5. RAE-community interactions											
6. RAE production conditions											
7. Reaching RAE objectives											
8. Age of the RAE											
9. Marketing											
10. Conditions of the zone											

In the regression analysis, the criteria for selecting the CIALs were predetermined (Table 4). The criteria were assigned values on a scale of 1-3. A 1 indicates that the CIAL has little relation to that criterion vs. 3 for a high relation. In this way, each CIAL was graded for each criterion, generating a matrix, which was then analyzed using logistic regression.

In Figure 1 the CIALs are represented by curves. The most related to the criteria have the highest percentages on the Y axis; the contrary corresponds to the lowest percentages.

The results of the matrix express cumulative percentages of the criteria used in selecting the CIALs. Three probability zones (high, intermediate, low) were distinguished, depending on the concave, convex and approximate line of each curve, respectively. CIALs with RAEs in each zone were selected. In the zone of greatest concordance, were the CIALs San Isidro Mujeres, Carpintero and San Bosco Hombres; from the zone of lowest concordance, ASOPANELA; and from the zone of intermediate concordance, the CIAL Cinco Días Mujeres.



**Figure 1. Comparison among CIALs with RAEs.**

Upon comparing the results of the selection by qualitative and quantitative methods, a great similarity was found in the results although the sample of CIALs with RAEs was not large.

### *Executing the research*

#### *Progress made*

Progress has been made in obtaining primary information on the background, through the application of semi-structured interviews in the CIALs Carpintero, Cinco Días Women and San Isidro Women. In San Isidro Women and Carpintero, group interviews were held in order to characterize the RAE.

### ***Difficulties***

Although there were delays in executing the study because of the coffee harvest, the people were willing to collaborate. As of the second semester, both the men and women farmers had more time to dedicate to activities outside their routine work.

The initial Log Frame for the research proposal did not consider the assumption of other parallel research such as a study of evaluation of impact, which is being developed in three CIALs. It was proposed to make an effort to decrease the time of fieldwork so that the methods used had to be as efficient as possible in gathering the required information.

The farmers do not keep records or secondary information to provide details on important situations in their development process as agro enterprises. Thus it was necessary to rely on participants' memory, delaying the fieldwork and perhaps introducing imprecision due to the passing of time.

### ***Lessons learned***

The dialogue and group interviews are tools that have allowed the recording of information to evaluate priority aspects considered in the semi-structured interview and in the formats.

It is necessary to adapt the proposed methods to studying each CIAL, given the fact that they operate in totally different contexts. Apparent similarities do not necessarily give way to generalizations.

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# Poverty and rural livelihoods in Uganda, Malawi and Tanzania: A baseline study of BAPPA project sites

Researcher: *Soniia David*<sup>9</sup>

## *Introduction*

In 2001 the International Center for Tropical Agriculture (CIAT) embarked on a new project entitled, “Beyond Agricultural Productivity to Poverty Alleviation” (BAPPA). CIAT, one of the Future Harvest Centers of the CGIAR (Consultative Group on International Agricultural Research), has worked in eastern and southern Africa since the early 1980s, primarily focusing on increasing bean productivity among small-scale farmers in partnership with national R&D partners. CIAT’s mission is to reduce hunger and poverty in the tropics through collaborative research that improves agricultural productivity and natural resource management. To achieve this goal, CIAT must go beyond improving food supply to address the underlying causes of poverty. The BAPPA project represents a greater emphasis on CIAT’s work on integrated community development, building on gains in bean productivity but going beyond productivity issues.

While increasing food supply is often a necessary condition for improving food security, increases in food supply and rural incomes do not guarantee improved rural livelihoods and food security at the household level. Farmers’ financial benefits from agriculture are often reduced by their limited opportunities for adding value to their agricultural produce, poor marketing information and low bargaining power with middlemen. Unless resolved at the household level, factors such as chronic disease, lack of clean drinking water, gender bias, poor knowledge of nutrition and sociocultural practices may undermine the adequate utilization of available food.

The BAPPA project aims to address the bottlenecks that hinder farmers from benefiting fully from research-generated agricultural technologies. Recognizing that none of this is new territory to many NGOs, the project’s strategy to achieve this objective by forming strong, holistic, interdisciplinary partnerships with development organizations. The project has 5 outputs:

- Catalyze improved organizational capacity in pilot communities
- Support farmers' experimentation and application of technical skills
- Develop an approach to strengthen community capacity to invest their potentially higher income in alleviating poverty
- Assist farming communities to protect their environmental resources
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- Support women's empowerment and leadership at the community level

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The BAPPA project works in 3 pilot sites in eastern and southern Africa: Kabale District in southwestern Uganda, Dedza District in central Malawi and Lushoto District in northern Tanzania. These sites were selected on the basis of two main criteria: impact achieved from bean technologies and presence of a willing NGO collaborator. In Kabale the project operates in 2 villages in Rubaya Subcounty and is implemented in collaboration with Africare, a US-based NGO. The project began work in May 2001. Concern Universal, a UK-based NGO implemented the project in two villages in Linthipe EPA for one year starting in July 2001, but pulled out in 2002. In Lushoto District, the project has been operating in a village in Soni Ward since January 2002 and is implemented by TIP (Traditional Irrigation Project), a local NGO. Project activities were initiated.

To monitor the impact of the project and assess change, a baseline study was carried out during the first year of the BAPPA project. This report presents the results of that study, which was loosely based on the sustainable livelihoods framework (Carney, 1998) which focuses on a comprehensive view of the livelihood circumstances of the poor including ownership of assets, livelihood activities, factors contributing to their vulnerability and the relationship between relevant factors at micro, intermediate and macro levels.

This paper explores the following dimensions of rural livelihoods in relation to the five project outputs (Table 1 lists indicators used to measure key variables related to major project outputs):

- Household resources
- Poverty and vulnerability
- Social capital, participation and conflict
- Agricultural production and food security
- Land use and management
- Gender relations

### ***Methodology***

Both participatory rural appraisals (PRAs) and formal surveys were used to collect baseline data in the three study sites. PRAs were conducted over 1-2 days and involved activities such as visioning and group discussions on the gender division of labor, wealth ranking, prices and crop calendar. Formal surveys took place during the first season of project activities: November 2001 in Rubaya, November-December 2001 in Linthipe, and June 2002 in Soni. Key informants from each study village were involved in wealth ranking, and the results were used to assign surveyed households to wealth groups. As wealth categories identified in the three sites are not necessary comparable (i.e., wealthy in Soni is not the same as in Linthipe), descriptions of each wealth are provided in the appendix.

**Table 1: Indicators used to measure livelihood variables.**

<b>Variable</b>	<b>Indicators</b>	<b>Comments</b>
Livelihood assets	Sex and age of head of household, household size, educational and literacy level of the head of household and partner, no. of school age children out of school, household labor, dependency ratio, annual agricultural income, sources and importance of nonfarm income, ownership of livestock	Successful asset accumulation “often involves trading-up assets in sequence”; e.g., chickens to goats to cattle to land (Ellis et al., 2002); no information was collected on overall household income
Social capital	Group membership, technology/knowledge diffusion pathways, participation in NGO activities	The existence of indigenous groups and technology and information diffusion pathways are indicators of the bonds of social trust and social networks; participation in NGO activities is a measure of linking social capital
Poverty and vulnerability	Household wealth status, borrowing and saving behavior, investment priorities, coping strategies in emergencies	Rising prosperity depends on having multiple opportunities for asset accumulation. Respondents were asked what they would invest in if their income were to double.
Agricultural production	Crops produced and purpose, multiplication rate of major crops, adoption of modern crop varieties, use of inputs, seed sources, proportion of crops sold, marketing constraints	
Food security	Food shortages and reasons for them, how long the harvest lasts, no. of meals eaten during the hunger period	
Land use and management	Location of farm land, erosion control measures, measures for improving soil fertility, tree planting behavior	
Participation and conflict	Optimism about the ability to bring about positive change locally, participation in collective action, social divisions and conflict, changes in the level of theft, willingness for children to become small-scale farmers	The extent to which people are willing to act collectively to solve social problems is a good indication of the level of social cohesion
Gender relations	Areas of conflict between married couples and decision-making patterns and differences in perceptions by husbands and wives, school attendance by boys and girls	



The formal survey covered a random sample of households from project villages plus a third nearby nonproject village. Table 2 shows the sample size and breakdown by location. Interviews were divided into two parts: the first general section addressed the farm couples, where applicable; the second part was conducted individually with male and female farmers. The interview schedule covered the following topics: household characteristics and resources, agricultural enterprises, use of inputs, marketing, environmental issues, tree planting, household well-being, savings and credit behavior, group membership, intrahousehold decision making and conflict, social participation and conflict. All quantitative information related to income, savings, borrowing and crops yields were based on farmer recall. Due to the unreliability of income data collected through recall, farmers were only asked to report on agricultural income.

The first part of the interviewed covered household-related topics, while the second part was conducted separately with husbands and wives. In Rubaya, 52% of the first part of the interview was conducted with women, 40% with farm couples and 8% with men alone. In Linthipe, 43% of the interviews were held with couples, 37% with women alone and 20% with men alone. In Soni, 78% of the interviews were conducted with couples, 19% with women alone and 2% with men alone.

**Table 2. Sample size (no. of households).**

	Rubaya, Uganda		Linthipe, Malawi		Soni, Tanzania	
	Sample	Population	Sample	Population	Sample	Population
Project villages	Muguli B: 32 Kalambo: 30	63 53	Mnthala : 49 Yazini: 31	160 36	Shashui	107
Nonproject village	Rukole: 30	53	Chikonde: 41	79	Vuga:	469
Total sample size	92	169	121	275	83	576

Data analysis relied on descriptive statistics; namely, frequencies, means, t test and ANOVA to compare means. To assess and compare men's and women's investment priorities, frequencies and ranked data were converted to scores for more accurate comparison. Variation within study communities was analyzed along three dimensions: wealth, gender and location (village and country) with the objective of exploring how social differentiation affects people's experience of poverty.

***Results and discussion: Cross-site comparison and recommendations***

When poverty is measured by factors such as income, ownership of assets and access to resources such as credit, land etc. and vulnerability, the picture that emerges from the three sites is one of varying levels of poverty across and within them. Of the three sites, farmers in Soni (Tanzania) were relatively better off, enjoying the highest annual agricultural income (\$149). Poverty was most acute in Linthipe (Malawi), while Rubaya (Uganda) represented a situation of moderate poverty. The following section analyzes

poverty within and across the three communities in the context of four dimensions: agricultural production, livelihood activities, ownership of assets and vulnerability.

### *Agricultural production and livelihood activities*

In all three sites agriculture was the predominant economic activity. Farmers in Soni had the most diverse portfolio of crops, including at least 7 cash crops. In contrast, farmers in Rubaya and Linthipe grew some crops mainly for subsistence, many for both consumption and sale, and relied on only one or two crops exclusively for cash. There was, however, in these two sites, evidence of diversification of cash crops: Soybeans, potatoes and paprika in Linthipe and coffee, wheat and pyrethrum in Rubaya. Additionally, in Linthipe there was evidence of food crop diversification, away from the traditional dependence on maize to increased production of cassava and sweet potatoes. As this and other studies (David, 1999) show, the absence of traditional cash crops contributes to food insecurity, with farmers falling into a cycle of selling large parts of their food crop harvests when prices are low and buying those same foods when prices are high. Significantly, although farmers in Soni bought maize and beans when they experienced food shortages, unlike farmers in the other two sites, they did not attribute shortages to food crop sales.

This study investigated the uptake of crop varieties and land management technologies. On the whole, the adoption of introduced crop varieties at the study sites was moderate to high, but yield estimates for some crops such as potatoes and maize suggest that farmers had not benefited fully from the yield advantages of introduced varieties because of their failure or inability to carry out good agronomic practices (e.g., fertilizers or use of “clean” seed in the case of potatoes). In addition, in areas where NGOs were involved in seed dissemination, the low adoption of some bean varieties (climbing beans in Rubaya, Bush beans in Linthipe) was unexpected. One possible explanation may be related to the practice of one-time seed dissemination by NGOs and farmers’ difficulties in retaining seed of new varieties (David & Sperling, 1999), especially in communities where informal social networks are weak, which is not conducive to rapid seed diffusion.

Uptake of land management technologies provides insight into the types of support farmers and communities need to facilitate adoption. As the Linthipe data suggest, Concern Universal’s input in terms of training and follow-up was largely responsible for the high adoption of land management technologies. The significant increase in the digging of trenches in Rubaya at the start of the BAPPA project highlights two basic ingredients needed for effective NRM and community development generally. Prior to 2001, few households in Rubaya had dug trenches to control erosion and reclaim gullies despite farmers’ awareness of the technology. The BAPPA project organized farmers into groups to dig trenches across plots belonging to several households and provided digging tools. This intervention subsequently led village leaders to establish bylaws requiring all households to dig trenches.

At all sites the combination of low agricultural productivity and limited market opportunities has increased household dependence on nonfarm activities. The high

proportion of Linthipe farmers involved in nonfarm activities, for example, is a reflection of poor agricultural performance and chronic food insecurity in Malawi due to drought, low soil fertility and the inability of most households to achieve self-sufficiency in maize. Farmers' attempts to minimize risk by opting for a dualistic strategy of intensifying agricultural production while seeking off-farm employment as a short-term survival strategy are clearly evident in their investment priorities. Farmers in Linthipe and Soni attached a high premium to purchasing chemical fertilizer, while farmers at all three sites showed a strong interest in business.

While nonfarm activities offer a potential pathway out of poverty for rural African households (Ellis et al., 2002: 17), the types of opportunities available to farmers are limited; and some may even contribute to low agricultural performance. Four areas of off-farm income-generating activities were common to the three sites: casual labor, petty trade, brewing and salaried employment. A recent study in Malawi (McDonagh, 2002) shows that, while casual labor is an effective survival strategy, it forces many farmers—the poor in particular—to neglect their own fields at key periods during the farming season. The study concludes that the overall effect of casual labor on farm-based livelihoods is negative. Due to high start-up costs and limited credit opportunities, relatively few farmers in the three communities were involved in remunerative off-farm self-employment activities such as maize milling, carpentry and poultry, which could serve as pathways out of poverty. Indeed, farmers' investment aspirations highlight the need to expose farmers to new business ideas. Across sites, men were more likely than women to engage in off-farm income-generating activities and had a more diverse portfolio of activities, including more skilled activities such as salaried employment. Male migration for casual employment was found only in Rubaya, an area of low male involvement in agriculture. Aside from petty trade, women tended to engage in relatively low-paying activities such as casual labor, brewing and handicraft production.

### ***Asset ownership***

The key assets of rural African households are land, livestock, labor, education, implements and tools, networks that increase trust, ability to work together, access to opportunities and informal safety nets. Access to enough productive land for crop cultivation and livestock is crucial for the rural households to generate a viable living. In Rubaya there was evidence that the poorest households had least access to land in the wetlands, the most suitable land for potato and vegetable production. In Linthipe better-off farmers cultivated significantly larger land holdings in both the uplands and *dambos* (*river beds*).

Ownership of agricultural tools and use of agricultural inputs are also associated with improved well-being as they enhance agricultural productivity and the latter in turn permits further investment in inputs. Farmers' inability to dig trenches in Rubaya for lack of appropriate tools illustrates the association between ownership of agricultural tools and poverty. A key reason why farmers in Rubaya did not dig trenches to control soil erosion was lack of tools. At all sites wealth was strongly correlated with livestock ownership; however, the importance of livestock lies in substituting lower value livestock (e.g.,

chickens, small ruminants) for higher value livestock (cattle, pigs, donkeys), the type and number of livestock owned is key to achieving rising assets over time. While most households surveyed owned chickens, only the wealthiest households owned cattle, pigs or donkeys. In Soni a third or more of the livestock owners kept cattle and small ruminants, whereas in Rubaya and Linthipe few households owned cattle. In those two sites, aside from chickens, most households had an average of 2-3 goats or sheep, not enough to make a significant contribution to poverty alleviation. Not surprisingly, farmers in Rubaya and Soni attached high importance to livestock as an investment priority. Livestock received lower priority in Linthipe because of the high risk associated with theft.

Survey data confirm that the amount of available household labor contributes to household well-being. Households in Soni had the highest number of productive workers; and notably in Rubaya and Soni, but not Linthipe, wealthier households had a significantly higher number of productive workers. Rubaya had the lowest number of productive workers due to the high number of men and women engaged part time in agriculture and the resulting high dependency ratio. The lack of correlation between wealth and household labor in Linthipe may be related to the observations by a recent study that except for livestock holding, there were few significant differences in the assets profiles (defined as household size, education, ownership of tools, land and livestock) of different income groups in Malawi (Ellis et al., 2002).

At the community level, Soni had the highest proportion of formally educated farmers, both male and female; while farmers in Linthipe were the least educated. At the household level, however, there was a correlation between wealth and educational level only among men in Linthipe. Education contributes to poverty alleviation through various direct and indirect mechanisms—an area not explored in this study.

Significant differences existed among the communities in terms of membership in indigenous groups, with Rubaya having the highest number of groups and proportion of households belonging to groups. Soni had the next highest number of local groups and number of households belonging to groups, while there were few indigenous groups in Linthipe. Local groups played various functions including providing informal safety nets for burial assistance, transportation to hospital and obtaining credit, facilitating savings and the exchange of new technologies and information, providing services such as labor exchange and generally strengthening social cohesion among kin-based groups. Wealthier households in Rubaya and Soni had more members involved in groups, presumably because of their larger size and better access to resources (e.g., time, money, skills). Surprisingly, there was no difference in the number of men and women belonging to groups. In Linthipe and Soni, government and NGO- created groups were carrying out development activities. The basis on which these groups were formed and the subsequent implications for their sustainability after development projects end, are issues of concern and require further research.

### *Vulnerability and gender considerations*

Rural households in the three study sites and throughout Africa are subject to calamity trends, external shocks (such as drought) and seasonality in health, prices, agricultural production, employment opportunities and resource availability—factors that are outside their control. Ill health, particularly malaria and HIV/AIDS, was an important shock not investigated here. As noted by a recent study in Malawi and Tanzania, rural households are unable to plan ahead and therefore cope with illnesses with short-term survival strategies, resulting in net welfare, cash and capacity loss, which weakens the capacity of households to generate work (Koestle, 2002). Across sites, drought, crop failure, food shortages, insufficient capital, low prices and lack of markets were common shocks. In a number of instances, farmers showed great innovation, often without external assistance, in tackling major shocks. For example, in Rubaya, farmers responded to the devastating effects of bean root rots by spontaneously adopting more tolerant climbing beans. In line with government policy to combat the effects of drought, farmers in Linthipe had diversified their food crops and were growing more drought-tolerant crops such as cassava. Crop diversification was a general response to vulnerability observed at all three sites, but was most successful in Soni due to several factors including favorable climatic conditions, proximity to urban markets and strong institutional support for horticultural production dating back to the late 1960s (pers. comm., R. Kirkby).

Coping strategies were similar across sites, with most households reducing the number of meals eaten during the “hungry season,” borrowing money from friends and relatives, working for food or money, and borrowing or buying food. To cover educational and health expenses, farmers were often forced to sell crops, land or livestock, contributing to the poverty cycle. Local groups played an important safety net role by providing credit in Rubaya, but farmers everywhere tended to seek assistance from friends. Vulnerability may be exacerbated at community level by a high level of social division that prevents communities from engaging in collective action to address common problems. The major social divisions identified in the study communities were asset related (access to land, including wetlands, wealth, ownership of livestock, education). Interestingly, a high proportion of farmers in the poorest communities (Linthipe and Rubaya) perceived an increase in the level of theft, suggesting an association between poverty, theft and social divisions.

Although Rubaya was the only site where survey respondents highlighted poor relationships between men and women as a social problem, the study consistently documented women’s disadvantaged position and greater poverty in the three communities. Generally, women were less educated, saved and borrowed smaller amounts of money compared to men, had less decision-making power than men, and owned fewer productive assets (livestock, land). While analysis of conjugal decision-making data was problematic, the findings across sites suggest that women rarely make agricultural or personal-level decisions on their own. Cultivation on personal plots, which allows married women more economic freedom, was only found in Soni, the most market-oriented location. Typically, women had greater control over smaller amounts of

income. At all sites, the dominant male decision-making pattern gives rise to marital conflict.

Women had higher workloads compared to men, largely due to their domestic responsibilities; but in the case of Rubaya, also as a result of male migration and men's lower input in agriculture over all. The proportion of female-headed households was high across sites, particularly in Rubaya; and everywhere those households formed a disproportional number of the poorest group. Surprisingly, the study did not reveal strong educational discrimination against girls, possibly because most children in surveyed households were at the primary level, where girls face less discrimination. Still, this finding represents an important advance in the education of girls. Across sites, women complained of similar marital problems: conflicts over money and decision-making, failure of men to work and provide for their families, drinking and domestic violence. Marital problems shared by men in the three communities included conflict over money and decision-making and wives' disobedience.

### ***Conclusions***

Although this study presents a rather dismal snapshot view of the three communities, farmers at all sites—but especially in Soni, where living standards were better—were relatively optimistic about the future, with half or more wanting their children to become small-scale farmers. Growing evidence indicates that the key to developing pathways out of poverty in rural Africa “is a cumulative process that requires the ability to build assets and diversity across farm and non-farm activities” (Ellis et al., 2002). Farmers in the BAPPA project sites, in conjunction with development partners, have started this process. The BAPPA project, a unique partnership between an agricultural R&D institution and NGOs, can build on progress made and make unique contributions to poverty alleviation.

### ***Recommendations***

Based on the study's findings, some specific recommendations for project interventions that complement on-going activities include:

- Developing creative, workable mechanisms for credit provision and identifying strategic partners who can develop credit programs that cater to the needs of both men and women of different wealth categories
- Helping men and women farmers build assets, particularly livestock holdings
- Training farmers to identify market opportunities and working with them to carry out diverse nonfarm economic activities
- Improving farmer access to agricultural inputs through credit and more creative programs
- Strengthening farmers' capacity to form and manage both social and entrepreneurial groups based on a sound understanding of social ties and existing groups
- Identify partners that can improve farmers' literacy levels
- Develop sustainable technology-dissemination mechanisms

- Redress gender inequalities in workload, decision-making and income levels by raising awareness among adults and especially children, introducing labor- saving technologies for women and diversifying women's nonfarm economic activities.

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### Visitors attended by staff from the SN-3 FPR team, Oct. 2002 - Sept. 2003

<b>Date</b>	<b>Name/Position</b>	<b>Institution</b>	<b>Country</b>	<b>In Charge</b>
<b>2002</b>				
Oct 24/02	Efraín Rodríguez	Director Fundación Amazónica Los Churumbelos	Colombia, Putumayo.	José Ignacio Roa
Oct 31/02	Otoniel Villegas y Elizabeth Muñoz.	Universidad Autónoma Centro de Información	Colombia, Cali.	José Ignacio Roa
Oct 31/02	German Bashemheimer	Universidad Autónoma, comunicación.	Colombia, Cali.	José Ignacio Roa
Oct 31/02	Andres Perafán	Universidad Javeriana, Macroproyectos	Colombia, Cali.	José Ignacio Roa
Oct 31/02	Leonardo Duque	Universidad Javeriana, Director Postgrados	Colombia, Cali.	José Ignacio Roa
Nov 12/02	Edson Gandarillas	Fundación PROINPA	Bolivia.	Susan Kaaria, Carlos A. Quirós
Nov 12/02	Pilar Lizarraga y Carlos Vacaflorez	Fundación JAINA, Coordinadores	Bolivia	Susan Kaaria, Carlos A. Quirós
Nov. 22/2002	Mr. And Mrs. Jean Marc Duval Mr. Andre Hoovert  Mr. Luis Vargas Mrs. Anne Sophie Berche	Canadian Ambassador and Wife Aggregate Humanitarian Issues. Embassy of Switzerland Advisor, Embassy of Japan Policy, Culture and Cooperation Advisor. Embassy of Belgium	CIAT, Cali	Susan Kaaria Anna Knox Rupert Best
Dic 9/02	Marino Valderrama profesor del Instituto técnico de Roldanillo y 8 ganaderos de la región..	Profesor del instituto e integrantes de un proyecto con la Universidad Nacional. Se hizo una gira a la estación del CIAT en Quilichao.	Colombia, Valle.	Carlos A. Quirós José I. Roa
Dic 19/02	Wessel Eyman	Director RED CAPA	Chile	Susan Kaaria
Dic 19/02	Nora Presno	Coordinadora RED CAPA	Chile.	Susan Kaaria
<b>2003</b>				
Enero 24/03	Reinaldo Vélez	Coordinador Medio Ambiente y Territorio del CRIVA.	Colombia, Vaupés.	José Ignacio Roa
March 10, 2003	Edgar Guardia	Director Ejecutivo FDTA-Valles	Cochabamba, Bolivia	Carlos Arturo Quirós Vicente Zapata Luis A. Hernández Eliás Claros Fernando Hincapié
May 19, 2003	Dr. Hari Har Ram	Professor Vegetable Breeding and Head, Vegetable Science and Nodal Officer, Pantnagar Centre for Plant Genetic Resources	India	Susan Kaaria



<b>Date</b> <b>2002</b>	<b>Name/Position</b>	<b>Institution</b>	<b>Country</b>	<b>In Charge</b>
	Dr. R. K. Pant	Technical Coordinator, Diversified Agriculture Support Project, Uttaranchal, Dehradun, Vasant Vihar	India	
May 30/03	Nic Hogenboom Jeffery Bentley	Consultores PREDUZA	Ecuador	Carlos A. Quirós
June 11, 2003	Dr. Gary Toenniessen	Director, Food Security Division, The Rockefeller Foundation, New York	USA	Susan Kaaria
July 7/03	Jesús Antonio Tumiña/Responsable de los Recursos Naturales	Cabildo indígena de Silvia.	Colombia, Cauca	José Ignacio Roa
Julio 14/03	Patricio Ponce y Jimena Tapia.	Fundación MANRECUR	Ecuador, El Ángel Carchi	José Ignacio Roa
July 14- 15/03	Cecilia Cabascango Teresa Carlosama Ximena Tapia Aldemar Nejer Luis Ponce, Mauricio Lara Patricio Ponce Edwin Revelo	Técnicos de MANRECUR	ECUADOR.	José I. Roa
July 29/03	Juan Pablo Higuera	CORPOICA, Medellín	Colombia	Elías Claros T. Jorge L. Cabrera Fernando Hincapié
Agosto 6/03	Bernardo Rivera / director maestría Sistemas de Producción	Universidad de Caldas	Colombia, Caldas	José Ignacio Roa
August 26/03	Erika Eliana Mosquera	AGROEMPRESAS RURALES, SIDER, Cali	Colombia	Jorge Luis Cabrera
August 29/03	Mariela Quintero	Innovación Rural, Cali	Colombia	Jorge Luis Cabrera
Sept 25/03	Fabio Trujillo Benavides Fabio Gomez	Secretario de agricultura Director Ejecutivo, FAS	Nariño, Colombia Valle, Colombia	Carlos A. Quirós
Sep 28/03	Efraín Rodríguez	Fundación OIKOS	Colombia, Mocoa	José Ignacio Roa