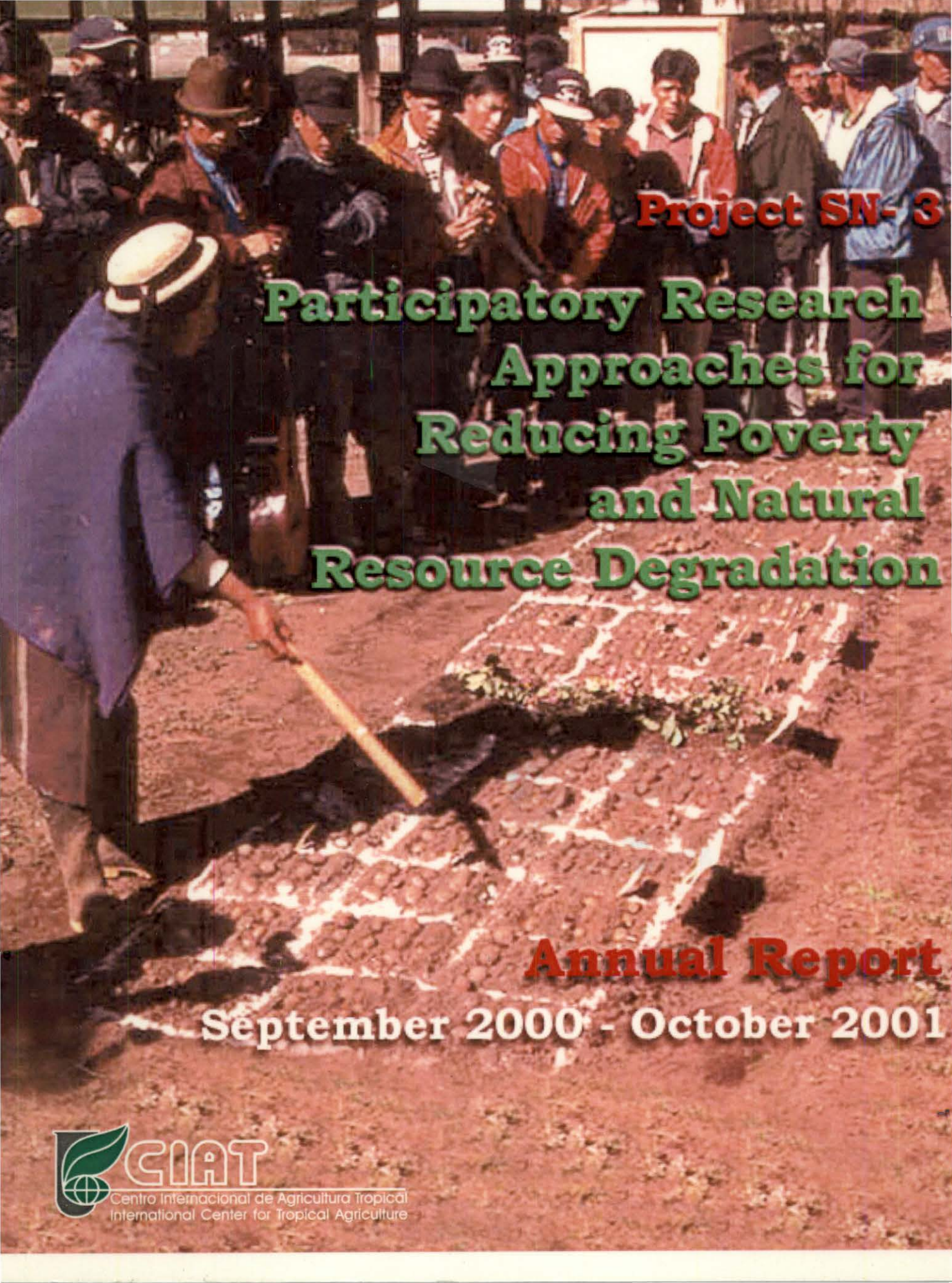

Project SN- 3

Participatory Research Approaches for Reducing Poverty and Natural Resource Degradation

Annual Report

September 2000 - October 2001

CIAT
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International Center for Tropical Agriculture

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CIAT PROJECT SN-3

Editor: Carlos A. Quirós
Translator: Trudy Brekelbaum

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PROJECT SN-3: PARTICIPATORY RESEARCH APPROACHES FOR REDUCING POVERTY AND NATURAL RESOURCE DEGRADATION

PROJECT OVERVIEW

Objective: To develop and disseminate participatory methodological approaches, analytical tools, new knowledge and organizational principles that strengthen the capacity of R&D institutions to respond to the demands of stakeholder groups that contribute to improving levels of well-being and integrated agroecosystem management and conservation (IAEM).

Description. Details of the Project 's seven major outputs for the years 1999-2002 are given in the logical framework. Specific activities on a per-output basis are shown in the following abbreviated work breakdown structure for this year.

Outputs

- Participatory methodological approaches, analytical tools and autochthonous knowledge that lead to the incorporation of farmers' and other end-users' needs in IAEM, developed for interested R&D institutions
- Organizational strategies and procedures for participatory research (PR), developed
- Professionals and others trained as facilitators of PR
- Material and information on participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles, developed
- Impact of IPRA Project activities, documented
- Internal projects and other institutions supported and strengthened in conducting PR
- Capacity of the IPRA team, strengthened

Gains

- Statistical software package for analyzing and systematizing qualitative data such as farmers' criteria, developed and applied.
- The increase in the number of scientists and projects applying participatory methods within CIAT research.
- More involvement of end users at earlier stages in the technology design.
- At least three universities in Latin America with capacity to teach PR
- methods.
- With the continued working with CIALs, there is a marked increase in the self-management and decision-making capacity in at least 100 communities, in 5 countries in Latin America.
- Increased focus on adding value to agricultural products through microenterprises created in mature CIALs
- Lessons learned, methodologies and materials disseminated globally through participation in the Farmer Participatory Research for IPM project of the Systemwide IPM Program (SP-IPM)
- Lessons in the institutionalization of CIAL methodology within a national agricultural research derived.
- A model for Participatory Monitoring and Evaluation (PM&E), identified and is being tested.

Milestones

2001	Statistical software package for analyzing and systematizing qualitative data such as farmers' criteria, developed and applied. Pilot testing of participatory methodologies for rural agroenterprise developed in at least one site. Documentation of lessons learned. Organizational models for second-level CIAL organizations being tested in at least two LAC countries. A model for participatory M&E being tested and evaluated. Participatory plant breeding approach(es) institutionalized in at least three NARS (in Africa, Asia, LAC) on a national scale. At least 15 CGIAR and NARS IPM project leaders trained in participatory methodologies. Lessons in the institutionalization of CIAL methodology within a national agricultural research derived.
2002	Participatory IPM projects established in at least 5 CGIAR and NARS centers. Methods for participatory research on NRM at the landscape scale applied in at least one site.
Users	This work will benefit poor farmers, processors, traders and consumers in rural areas, especially in fragile environments. Researchers will receive more accurate and timely feedback from users about acceptability of production technologies and conservation practices. Researchers and planners will profit from methods for conducting adaptive research and implementing policies on natural resource conservation at the micro level.
Collaborators	NARS, NGOs, universities, CGIAR SP-PRGA members, SP-IPM members
Linkages with CGIAR system	Convener of the SP-IPM project; PRGA and SWNM system-wide program
CIAT project linkages	Inputs to PE-1, PE-3; PE-4, PE-5, IP-1, IP-2, IP-3, IP-5, SN-1, BP-1; Outputs from PE-2, PE-3, PE-4, IP-3, BP-1, SN-1, SN-2 Participatory plant breeding with women and small farmers in Africa and Latin America. Telecenters: Partnerships for Agricultural Research and Electronic Delivery and Development Publishing Methods in Place. Pastures: Evaluation of forages for multipurpose use with farmer participation in Central America.

2001 - WORK BREAKDOWN STRUCTURE - PROJECT SN-3

Project Objective:

To develop and disseminate participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles that strengthen the capacity of R&D institutions to respond to the demands of stakeholder groups that contribute to improving levels of well being and integrated agroecosystem management (IAM)

OUTPUTS	1. Participatory methodological approaches, analytical tools & autochthonous knowledge that lead to the incorporation of farmers' & other end-users' needs in IAM, developed for interested R&D institutions	2. Organizational strategies & procedures for PR, developed	3. Professionals & others trained as facilitators of FPR
ACTIVITIES	✓ Implement institutional evaluation of logit analysis software tool for preference ranking ✓ Develop participatory diagnosis method & use of logit analysis software tool for preference ranking ✓ Develop & test FPR model for evaluating multipurpose forages ✓ Implement preliminary comparison of diagnostic methods (e.g., key informants, focal groups, survey) ✓ Initiate comparison of conventional breeding with PPB ✓ Develop a simple tool for the statistical analysis of results of small farmer experimentation ✓ Develop & test preliminary proposal on a methodology for a participatory M&E system ✓ Identify a process for evaluating the institutionalization of participatory	✓ Diagnose the situation of the CIAL Project/ country/institutions at the LAC level ✓ Create mechanisms for linking CIALs & the second-order organizations with key partners in order to develop strategies in NRM & research (organization of collective action in the micro-watershed setting) ✓ Develop logframe for strengthening CIAL sustainability (second-order associations) ✓ Hold workshop to analyze & discuss the next phase of the CIAL Project with the partners in the LAC countries ✓ Support the formation of second-order organizations for the CIALs ✓ Diagnose the needs for strengthening the CIALs existing in the study areas ✓ Develop strategies for identifying mechanisms of self-financing for CIALs & second-order organizations ✓ Test methodology for developing action plans for second-order organization of CIALs	✓ Follow up NARS & NGO professionals trained as trainer-facilitators of CIAL methodology ✓ Train professionals in information analysis & use of preference-ranking matrix in Honduras, Nicaragua & Costa Rica ✓ Hold workshop on participatory M&E in Honduras ✓ Give CIAL course in Nicaragua ✓ Give FPR course at CIAT ✓ Give FPR course with panela producers ✓ Hold workshop on strategies for institutionalizing CIAL methodology

	methodologies based on the CORPOICA experience.	✓ Develop proposal for extending the lessons of FPR approaches based on African & LAC experiences (for submission to the Rockefeller Foundation) ✓ Evaluate process of participatory M&E ✓ Build capacity in agroenterprise processes for CIALs & second-order organizations ✓ Develop strategies for promoting sustainable development (e.g., community telecenters)	
OUTPUTS	4. Materials & information on participatory methodological approaches, analytical tools, autochthonous knowledge & organizational principles, developed	5. Impact of SN-3 Project activities, documented	6. Internal projects & other institutions, supported & strengthened in conducting PR
ACTIVITIES	✓ Translate into English & publish CIAL Handbooks 1-7 ✓ Translate & edit CIAL book in Spanish ✓ Edit CD with training materials about CIALs & PR ✓ Restructure CIAL Web page ✓ Prepare publications on the use of the regression tool & the CIALs by other programs or institutions: – Case study on applying the CIAL methodology by an NGO in Honduras (IPCA) – Case study of National IPM Program in Vietnam ✓ Present SN-3 at meetings, congresses: IPCA case study, Vietnam case study, the CIALs (Nairobi, forages, live barriers), participatory M&E ✓ Systematize Training of Trainer-	✓ Document institutionalization of the CIAL methodology by CORPOICA ✓ Implement case study of the CIAL El Diviso (agroenterprise) ✓ Expand on impact study of CIALs in Cauca ✓ Determine impact of FPR in selection of cassava varieties (EMBRAPA/CNPMF, Brazil)	✓ Hold CIAL encounters in Honduras, FORTIPAPA-Ecuador & Colombia (Boyacá & North Cauca) & workshop for CIAL guides ✓ Carry out consultancies in Mexico, Honduras & El Salvador ✓ Collaborate with CORFOCIAL in holding CIAL encounter in Colombia ✓ Develop WKK proposal & report on results of Central American institutional workshops ✓ Provide support for Haiti Project ✓ Report results of SP-IPM Workshop ✓ Provide support for WKK projects ✓ Participate on Boards of the CIPASLA interinstitutional consortium & of ASOBESURCA, the community watershed association ✓ Backstop CORFOCIAL in organizing national CIAL meeting

	Facilitators workshop to produce revised training materials ✓ Update "CIALs at a glance" ✓ Write report for IDB on the extrapolation of participatory diagnoses & evaluations of agricultural technology with farmers		✓ Support CORFOCIAL in agroenterprise development ✓ Standardize inputs of information from CIAL results ✓ Evaluate & select multipurpose forages for crop/livestock systems with farmer participation ✓ Support telecenter project. ✓ Train Pathology Program members in preference ranking
OUTPUTS	7. Capacity of the SN-3 team, strengthened		
ACTIVITIES	✓ Update & expand internal database ✓ Create Web site for SN-3 ✓ Design appropriate model for information system ✓ Design manual for using the database ✓ Hold workshops for strengthening the team (thesis on live barriers, institutionalization, Vietnam case study) ✓ Train in participatory M&E ✓ Hold planning workshop for SN-3 ✓ Maintain functional structure for horizontal leadership (co-coordinators) ✓ Organize series of cross-Program seminars to interchange experiences & receive training in new approaches, methodologies & analytical tools		

PROJECT SN-3 LOGFRAME FOR 2000-2002

Narrative Summary	Measurable Indicators	Means of Verification	Important Assumptions
Goal: Develop and apply knowledge, tools, technologies, skills and organizational principles that contribute to improving the IAM[1] and the levels of well being	• Application of participatory methods, analytical tools and organizational principles by R&D organizations that lead to the incorporation of the farmers' and others end-users' IAM-related needs • Use of the Project products at additional reference sites in two agroecosystems (hillsides and forest margins) of CIAT's mandate in 5 years • Use of the Project products by a minimum of 3 institutions outside the LAC region by the end of the 5th year • Improvement in the well being of the end-users in the respective reference sites	• Projects, plans and reports of public sector entities, donors, the NGOS, grassroots organizations, second-order organizations at the reference sites and in the agroecosystems of CIAT's mandate, which refer to the use of the Project's products	• Institutions committed to the principles of PR • Stable institutional leadership • Committed communities • Favorable environmental and agrarian policies • Absence of social conflict at the reference sites • Data available from the reference sites
Project purpose: Develop and disseminate participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles that strengthen the capacity of the R&D institutions to respond to the demands of stakeholder groups that contribute to improving the levels of well being and IAM	• No. of R&D organizations applying participatory methods, analytical tools and organizational principles • No. of entities in the LAC region teaching participatory methods • No. of meetings held among stakeholder groups • No. of participatory projects implemented by the R&D institutions	• Impact study • Institutional reports • Publications • Proceedings	• Economic stability of institutions • Financing for training activities and publication/dissemination of materials • Institutions willing to prepare and support facilitators and to share information • End-users—above all the producers—willing to participate

[1] IAM = Integrated Management of the Agroecosystem

PROJECT SN-3 LOGFRAME FOR 2000-2002

Outcomes:			
1. Participatory methodological approaches, analytical tools and autochthonous knowledge that lead to the incorporation of the farmers' and others end-users' IAM-related needs, developed for interested R&D institutions	• No. of methodological approaches developed or adapted and of analytical tools developed for the IAM	• Project reports • Publications • Proposals presented	• Good coordination and integration among the collaborators • Minimal conflicts in meeting demands • Full participation of stakeholder groups • Field staff fulfilling their role as facilitators • Data available from the reference sites • Internet system functioning well
2. Organizational strategies and procedures for PR, developed	• WKK Project logframe • No. of strategies and organizational procedures for PR adopted and adapted	• Project reports • Publications	
3. Professionals and others trained as facilitators of FPR	• No. of professionals, technicians and farmer-researchers trained in the PR methodology	• Project reports	
4. Material and information on participatory methodological approaches, analytical tools, autochthonous knowledge and organizational principles, developed	• No. of visits to the Web sites • No. of requests for materials and information • No. of materials published	• Project reports • Publications	
5. Impact of the SN-3 Project activities, documented	• Depending on the nature of the study; e.g., in CIALs, no. of host countries, total no. of CIALs (active, inactive, mature), research capacity, self-management capacity, institutions participating, gender breakdown, diversity of research topics, no. of people benefited, no. of small agroenterprises benefited, no. of community-service actions, no. of	• Case studies, M&E reports and databases, impact studies	

PROJECT SN-3 LOGFRAME FOR 2000-2002

	facilitators and trainers prepared, no. of second-order organizations formed, no. of requests for publications and no. of training materials		
6. Internal projects and other institutions supported and strengthened in doing PR	• No. of internal projects supported • No. of external organizations strengthened • No. of participatory projects implemented by internal projects and other institutions	• Project reports • Publications of internal projects and other institutions	77
7. Capacity of the SN-3 Project team, strengthened	• No. of team meetings • No. of seminars and workshops organized and/or received by the team or its members	• Project reports	

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OUTPUT 1. PARTICIPATORY RESEARCH APPROACHES ANALYTICAL TOOLS AND INDIGENOUS KNOWLEDGE THAT LEAD TO THE INCORPORATION OF FARMERS' AND OTHER END-USERS' NEEDS IN INTEGRATED AGROECOSYSTEM MANAGEMENT, DEVELOPED FOR INTERESTED R&D INSTITUTIONS

MILESTONES

* Methodology for analyzing the institutionalization of participatory approaches, tested
* Comparative analysis of end-user groups, carried out
* Model of CIAL guides, tested
* Model for participatory monitoring and evaluation (PM&E), identified and evaluated
* New analytical tools for analyzing information, available

The framework

Researcher: *Harriet Menter, London School of Economics and Political Science*

The full potential impact of the participatory research tools developed by the SN-3 project is only achieved when these innovations are adopted and adapted by other organizations. To support these organizations it is necessary to understand this process. At present however, very little is known about how innovations are institutionalized, and little work has been done to study the process. A study was carried out of the process of institutionalization of CIAL methodology in CORPOICA in order to learn lessons from this experience and inform other institutions, as well as strengthen the process in CORPOICA.

In order to draw lessons about the institutionalization process that have a wider applicability and to contribute to the general understanding of the process, it is necessary to conduct the study systematically. For this reason, an evaluation framework is considered useful; however, no satisfactory framework was found. While a lot of work has been carried out recently on the scaling-up process, this has been mainly case-study based, and offers no framework with which to analyze this process and the factors that influence this practice–a necessary tool to learn lessons from case studies. Using ideas from the literature on scaling-up and institutionalization, as well as literature on policy analysis, a framework was developed to aid analysis of the institutionalization process. This framework can be adapted to study similar processes relating to different innovations in other institutions. The framework organizes the information in such a way that one output of the study is the development of concrete strategies for institutionalization, based on the lessons learned.

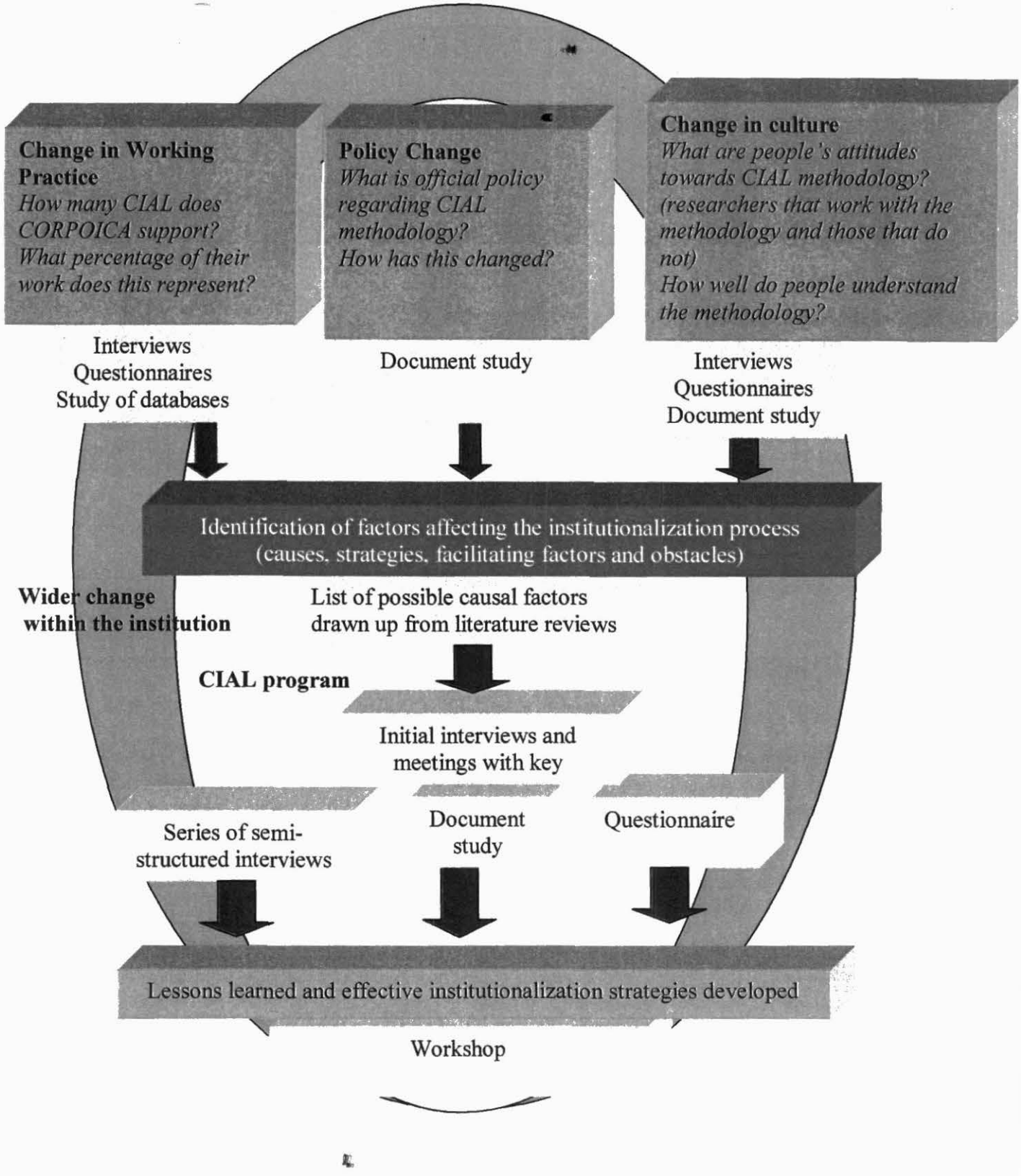

Figure 1. Framework for evaluating the process of institutionalization

The framework starts with the assertion that in order to understand the factors that affect this process, it is first necessary to characterize the changes that have occurred. The process of institutionalization can be understood as three different types of change:

- Change in working practice refers to changes in the activities carried out by staff within an institution. In this case it refers to the formation and support of CIALs.
- Change in policy refers to changes in the written rules of an institution.
- Change in culture refers to changes in people's attitudes and opinions about the innovation.

A study can focus specifically on the changes related to a particular methodology or on changes brought about by the innovation in the institution in general. All three types of change are obviously interrelated, but it is useful to separate them out as change in one area does not always imply change in another. For example, management may decide to change official policy, but those responsible for implementing that policy may chose to ignore it and thus there will be no change in working practice. This separation aids the use of appropriate research methods to examine different types of change.

Once change has been characterized, it is necessary to examine the factors that influence this change. These can be divided into four categories, causes, facilitating factors, obstacles and strategies. Again these are interrelated, but this division adds clarity to the study and has proved to lend itself to the task of using this information to develop effective strategies for the institutionalization of innovations. Based on experience from other case studies and knowledge about the case, a list of potentially important factors is drawn up. This list is discussed with key informants, and the most important factors are highlighted. This constitutes the focus of the subsequent study. The framework suggests a series of research methods to gather information about these factors although this will depend on which factors have been highlighted as important.

Once the information has been collected and the initial analysis has been carried out by the researcher, the preliminary results are presented to the key informants in a workshop. The aim of the workshop is to formulate concrete lessons from the study and develop effective strategies for institutionalization for the organization involved in the study and for other institutions that may be embarking upon the same process.

Identification, characterization and grouping of cassava end-users' preferences in the production-consumption chain in the Caribbean region

Researchers: *Luis Alfredo Hernández R., Hernán Ceballos[1], Antonio López[2]*

This study was financed by the Department for International Development (DfID) and contributes to Project Outputs 1 and 2 in terms of the identification of end-user groups and their preferences, comparison of methods of diagnosis and gender analysis. The overall project goal was to develop impact-oriented breeding methods that can deliver positive benefits in marginal areas to the rural poor, particularly to women farmers.

Study area

In northern Colombia cassava is a major staple crop and provides an important linkage for small farmers to urban and processing markets. Close to 70% of the root production is used for direct human consumption; therefore varieties need to meet stringent consumer preferences.

The study area included the provinces of Córdoba, Sucre, Bolívar and Atlántico in the Colombian Caribbean region. The townships Ciénaga de Oro (Córdoba) and Los Palmitos (Sucre) were selected as representative of cassava and starch production and the natural drying of the roots. The cities of Barranquilla (Atlántico), Cartagena (Bolívar), Magangué (Bolívar), Sincelejo (Sucre) and Montería (Córdoba) were defined as the most important end markets in the region. The activities corresponding to concentrated feeds, fresh consumption and middlemen (criteria and characterization) were carried out there (Fig. 1, adapted by L.A Hernández R.).

Methodology used

The study was divided into two phases:

- Identification of the different users involved in the production-consumption chain for cassava in the region
- Characterization and grouping of users and comparison of diagnostic methods, followed by gender analysis

Analysis of user groups to identify types and preferences

Phase I consisted of two activities:

- Revision of secondary sources of information: Corporación Colombia Internacional (1997), Municipio de Los Palmitos (1998), Municipio de Ciénaga de Oro (1994) and Janssen (1986).
- Verification in the field and in the end markets of the existence of different types of users through exploratory surveys (including visits to the Municipal Technical Assistance Units (UMATAS) and Provincial Offices of Agriculture in Córdoba, Sucre and Bolívar).

In Phase II the different types of users identified were grouped and characterized on the basis of preferences with respect to the traits of cassava and the criteria used to make decisions at their respective level in the chain. In the case of the producers, information was obtained regarding

[1] *Cassava Improvement, IP-3, CIAT*
[2] *CORPOICA Turipaná, Montería*

their preferences at six stages of the crop: (1) from planting material to planting time, (2) up to 60 days after planting (DAP), (3) 60-120 DAP, (4) 120-180 DAP, (5) 180 DAP to harvest, and (6) from harvesting to sale of the roots. For the chippers-dryers, starch manufacturers and manufacturers, the preferences were obtained for each of the stages of the process—from the purchase to the packing of the cassava.

Figure 1. **Representative areas of cassava, production processing and use in the Colombian Caribbean region**

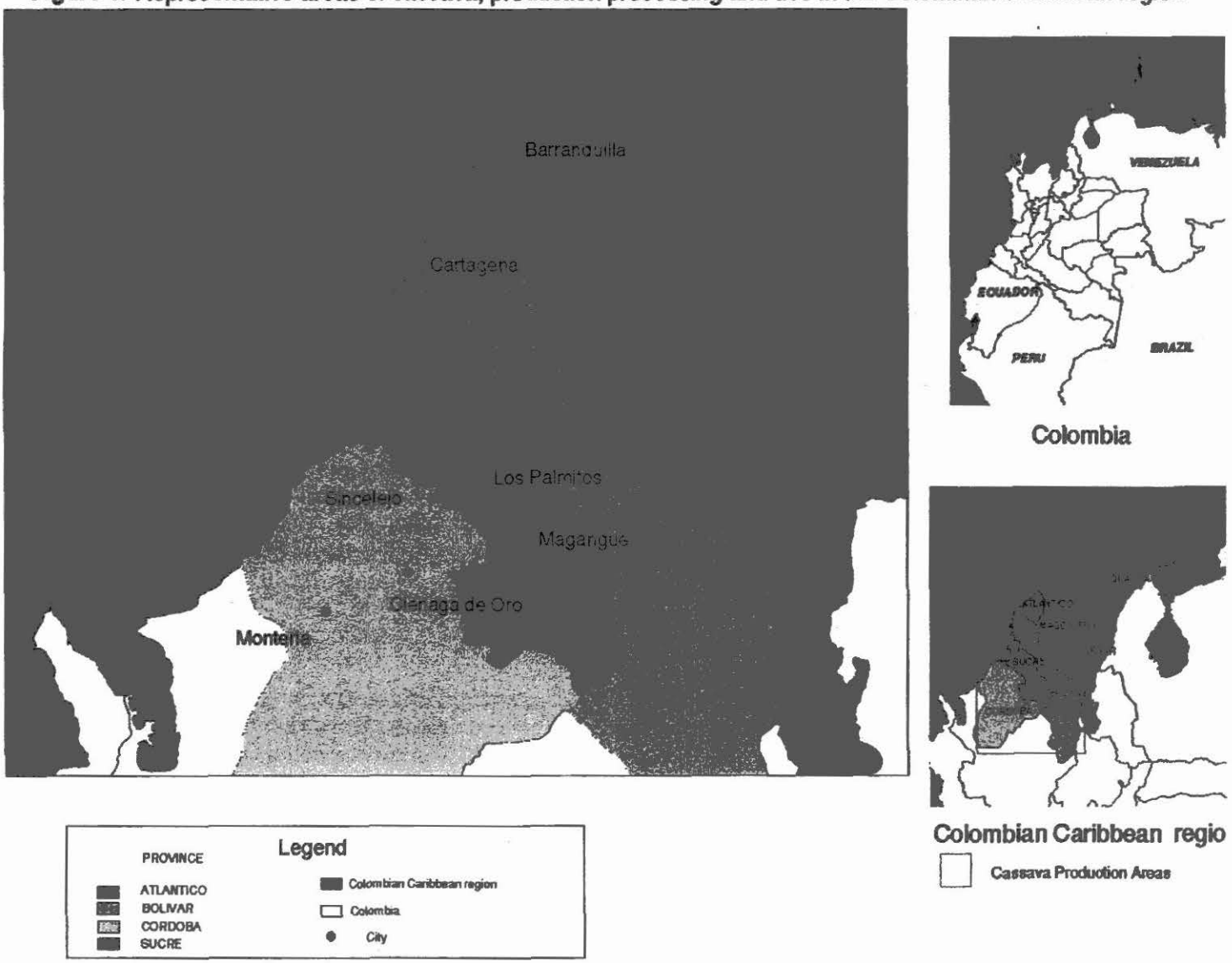

Figure 1. Representative areas of cassava, production, processing and use in the Colombian Caribbean region

Comparison of diagnostic methods

Four methodological tools were used: surveys, in-depth interviews, focus groups and interactive workshops.[3] The tools were compared on the basis of two indexes generated by the variables evaluated and multiple-correspondence analysis.

- Quality-Discriminatory Index of Variables (QDI) analyzes, within each tool used, some characteristics of the variables mentioned by different groups of people. The variables were traits related to the crop, harvesting date, varieties, etc., including, for example, tolerance to pests and diseases, the color or the root, starch content in the root. Thus the QDI is an indicator of (a) the representativeness of the variable in the groups (population), given that the number of its components was different (e.g., farmers=40, consumers=28, manufacturers=8), and (b) the quality of the information supplied by the variable and how discriminatory that variable was in the population (in some cases scales of 1-3 and in others, 1-5 were used for the same variable).

- Discriminatory Index among Tools (DIT) indicates the extent to which the value "D" of the variables was able to discriminate among tools when applied to more than one population (producers, consumers, etc.).

Data processing and analysis of the **information**

Cluster analysis based on the method of minimum variance within groups (Ward, 1963) and determination of the frequencies of the preference variables were used to characterize and group the users. The cluster procedure was used with the producers, consumers and wholesalers. Due to the fact that the sample size of the other users was low, it was not possible to apply this procedure for those groups.

Gender analysis

Based on the sample of producers to whom the different diagnostic tools were applied, it was possible to determine the situations and preferences of both women and youth in the township of Los Palmitos.

Results

Production chains that involve cassava in the Caribbean region

Figure 2 shows the three production chains that involve cassava in the Caribbean region: producer-consumers of fresh roots, producer-starch industry and producer-feed concentrate industry.

Marketing channels

In the fresh market chain there are two marketing channels between the producer and the household consumer:

- The producer sells to the local middleman, who sells to a final middleman in the main cities, who in turn sells to the urban wholesale assembly and distribution centers, the supermarkets and retailers in the end market.
- The producer sells to the local middleman who sells directly to retailers in the local and end markets in the cities.

The starch chain is characterized by three channels. In the chain of the feed concentrates industry, there are two channels:

- A shorter one with a middleman between the producers and the industry
- A local middleman between the drying plant and the producer

Characterization and grouping of producers according to their preferences

Four types of producers were selected (Table 1), based on pseudo F and pseudo t^2 statistics and an $R^2 = 0.88$, explaining 87% of the difference among groups. The preferences for each of the groups are presented in Table 2.

Table 1. Statistics for the cluster of producers.

No. of Groups	No. of Producers	R^2	Pseudo F	Pseudo t^{2*}
4	4	0.877	57.7	26.0
3	2	0.734	51.2	9.3
2	7	0.465	33.0	15.8
1	27	0.000	.	33.0

* If R2 and pseudo F are high and pseudo t2 is low, then the number of groups is appropriate.

Characterization and grouping of middlemen according to their preferences

The cluster analysis for the middlemen, the pseudo F and pseudo t^2 with an $R^2 = 0.79$ resulted in three types (Table 3). Groups 1 and 2 were quite similar, with an R^2 near 0.2. Group 3 was the most homogeneous, their members being joined at an early stage of the clustering process, with an R^2 of 0.6.

Table 3. Statistics for the cluster of middlemen.

No. of Groups	No. of Middlemen	R^2	Pseudo F	Pseudo t^2
4		0.855	23.7	9.5
3	1	0.785	23.8	5.3
2	3	0.600	21.4	9.8
1	12	0.000	.	21.4

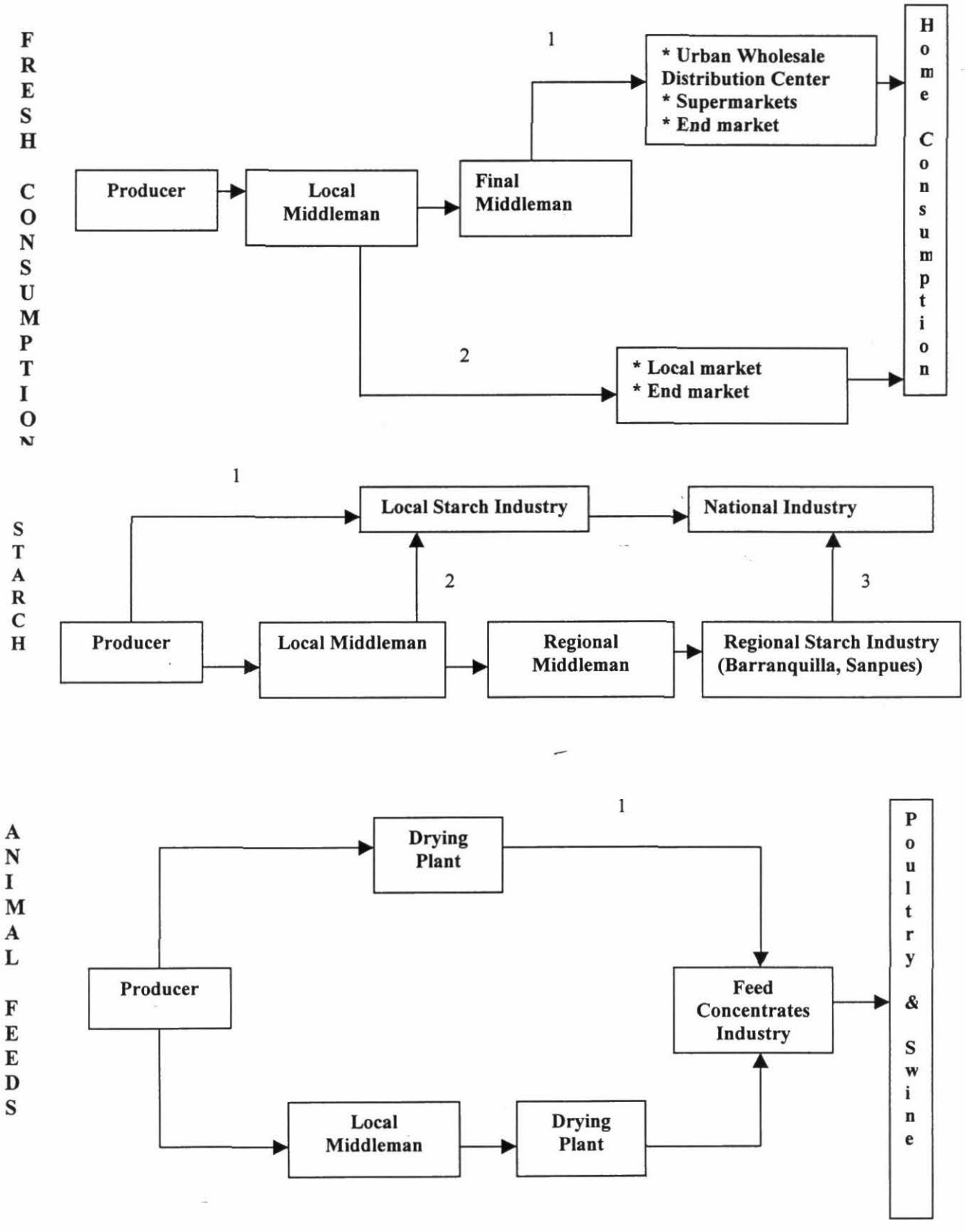

Figure 2. Cassava production chains in the Caribbean region.

Table 2. Producers' preferences with respect to cassava from the initial selection stage to harvesting based on group type.

Preferences Based on Type	Selection Planting Material/Planting	Up to 60 DAP	61-120 DAP	121-180 DAP	180 DAP/Harvest	Overall
I - 5-ha farms on avg.; mostly tenants, followed by owners & sharecroppers	9.5-mo-old plants for stem cuttings, 2-3 cm in diam. & that store well; abundant latex production[1]; resistance to termites, scales & root rots	Fast-growing var. to compete with weeds, without closing over alleys;[2] 50% prefer 95% germination rate, uniform growth; noncompetive var. for intercropping with maize	Resistance to pests & diseases, mainly bacterial blight; most prefer var. that grows fast & uniformly, & that competes favorably with maize	90-96% prefer var. that has closed over alleys for zero competition from weeds; resistance to pests & diseases, mainly bacterial blight; 75% want no competition from other crops	Resistance to root rots, plant type with 2-4 stems for good cutting production, little branching for easy management; roots easy to pull out, resistant to handling & no constrictions on surface	
II – Share-croppers, with 8-ha farms on avg.	Plants that produce planting material at 6 mo, 3-5 cm in diam. & that tolerate >60 days' storage; abundant latex[1]; resistance to termites & root rots	Fast-growing var. to compete with weeds & maize, without affecting latter; prefer cassava to close over alleys[2]; crop establishment expressed in > 95% germination & uniform growth	Early-maturing var. to compete with weeds; resistance to pests & diseases, mainly bacterial blight; vigorous var. with uniform growth that does not affect maize	Var. that have closed over alleys for zero competition from weeds; resistance to pests & diseases, mainly bacterial blight	Production of planting material from var. with 4 stems & little or no branching	
III – Share-croppers with 4-ha farms on avg.	Plants that produce stem cuttings from 5 mo. onward, 2-3 cm in diam.; resisting >60 days' storage; abundant latex[1]; resistance to termites & root rots	Fast-growing var. to compete with weeds, maize & yams, without affecting intercrops[2]; cassava should not close over alleys; 50% consider crop establishment as >95% germination & uniform growth	Var. that grows quickly to compete with weeds & close over alleys; resistant to pests & diseases, mainly bacterial blight; 50% want vigorous, uniform growth without affecting maize; 50%, yams	Var. that have closed over the alleys for zero competition from weeds, without affecting yams; resistance to pests & diseases, mainly bacterial blight	Production of planting material from var. with 4 stems, without branching; max. 5% root rot; high yielding	Medium sized & thick roots easy to pull out, resistant to physiological deterioration, no course fibers or woody center in fleshy pulp; resistant to handling; sweet flavor

Continues.....

Preferences Based on Type	Selection Planting Material/Planting	Up to 60 DAP	61-120 DAP	121-180 DAP	180 DAP/Harvest	Overall
IV – Mostly sharecroppers with 5-ha farms on avg.	Plants that serve for selecting planting material from 6.2 mo onward; 50% prefer stems 2-3 cm in diam.; abundant latex; resistance to termites & root rots; resist >60 days' storage	Var. that grow quickly to compete well with weeds without affecting intercropped maize; should not close over alleys[2]; most consider establishment as >95% germination & uniform growth	Var. that grows quickly to compete with weeds & close over alleys; resistant to pests & diseases, mainly bacterial blight; vigorous, uniform growth without affecting intercropped maize	Var. that has closed over alleys & does not permit competition from weeds; resistance to pests & diseases, mainly bacterial blight	Production of planting material from var. with 4 stems; high root yield; opinions split as to whether plant should have many branches or only a few	Roots easy to pull out, 5% max. root rot; resistance to physiological deterioration; no course fibers or woody center in fleshy pulp of roots; resistance to handling, no constrictions on surface, high starch content; sweet flavor; 75% prefers thick, intermediate-sized roots

[1] When stems have been stored, latex is fundamental when stems are cut to ensure good crop establishment.
[2] Because otherwise everything goes into "useless" growth, i.e., produces more stems and leaves than roots.

Characterization and grouping of consumers according to their preferences

The cluster analysis, the pseudo F and pseudo t^2 with an $R^2 = 0.76$ (Table 4) identified three types of consumers of fresh cassava. Groups 1 and 2 were very similar, forming one group with an R^2 of less than 0.2. They are quite different from Group 3 (R^2 of 0.6).

Table 4. Statistics for the cluster of consumers of fresh cassava.

No. of Groups	No. of Consumers	R^2	Pseudo F	Pseudo t^2
4		0.9491	161.6	15.1
3	1	0.9303	180.2	4.5
2	3	0.7558	86.6	67.6
1	12	0.000	.	86.6

Characterization and grouping of starch manufacturers according to their preferences

Two-thirds of the starch manufacturers produce both sweet and sour starch; the remaining third produce only sweet starch. In general all have low levels of technology for extracting the product, and there is high participation of family labor including children. The women participate only in the process of peeling the roots (contract basis). All the starch manufacturers surveyed are also farmers, but with higher levels of technology adoption than the average farmer in the zone; 100% are literate and 67% have secondary school and some type of training in the area of their business. The starch manufacturers are not organized, nor are they interested in doing so because they are managing fine on their own at present.

Two-thirds of the manufacturers purchase cassava directly from the farmers but also grow it for their own use. The remaining third purchase cassava from middlemen as well. When they purchase cassava directly from the farmers, it is because the raw material is cheaper and they know the farmers. When they themselves plant cassava, they do so to lower costs, turning to middlemen only when the supply in the zone is scarce and it is easier to negotiate with them, but only for the time that is necessary.

With respect to the starch manufacturers' preferences, it was not possible to work with group tools as meeting times could not be arranged despite the fact that the number of individual starch manufacturers studied was lower; thus in-depth interviews and surveys were used.

In the first stage of negotiation and purchase of roots, all do prior sampling, extracting the starch from a few roots. One-third prefer intermediate and large roots with a good starch content; another third focus more on the starch content, which should be high; and the remaining third prefer fresh roots that have not been left out in sun until transportation is found.

When receiving the product, 66% of the starch manufacturers look for cassava that is fresh, healthy and free of impurities such as stems, dirt, etc.

In the washing/peeling stage, one-third prefers roots with a white cuticle, cortex and pulp so that the starch is whiter. The remaining two-thirds prefer roots that peel easily because manual peeling—although it requires more labor than the mechanical method—guarantees better product

quality (whiter and better expansion properties, which means that this group also prefers roots with a light-colored cuticle, peel and pulp.

In the sedimentation stage, 33% of the starch manufacturers prefer a variety with high starch content and that settles quickly (<5 h). Two-thirds prefer a variety that produces a starchy by-product high in protein. This supernatant is used for feeding domestic animals. All agree that the starch-drying stage should be uniform, lasting from 6-7 h in the sun.

Characterization and grouping of the balanced feed manufacturers according to their preferences

Based on the information obtained in the survey, the manufacturers that responded were divided into two types: Those that produce balanced feeds for poultry and those that produce them for poultry, swine, cattle and fish.

Comparison of tools used for obtaining the information

Survey

This tool was used for all the user groups. It is necessary to prepare a very well-structured instrument beforehand in order to gather the necessary information, precisely and in a form that is easily analyzable. The advantages and disadvantages of this tool are shown in Table 5. The costs (in Col.. pesos – avg. exchange rate for US$1 in 1999 = $1756; in 2000 = $2088) were as follows:

Photocopies	$ 400
Travel and application	$ 10,000
Codification and systematization	$ 10,000
Total cost per survey.....	$ 20,400

These costs do not include the actual cost in working hours/professional, employed in the design of the instrument per se because this line item is covered by the consultation fees for their services. In total 107 surveys were conducted: 40 producers, 18 middlemen, 3 starch manufacturers, 8 chippers, 8 balanced feed manufacturers and 30 consumers.

In-depth interviews

The interviews were recorded. Starch manufacturers, chippers, wholesalers and manufacturers and, in some cases, producers and consumers were interviewed. The costs (in Col.. pesos were as follows:

Technical resources .....$	1,000
Travel for interviews ..... $	15,000
Telephone and stationery..... .....$	5,000
Snacks and unforeseen expenditures.....$	10,000
Total cost per interview .....$	31,000

All in all surveys were conducted with 20 producers, 12 middlemen, 3 starch manufacturers, 8 chippers, 8 balanced feed manufacturers and 30 consumers.

Table 5. The advantages and disadvantages inherent in the use of surveys, in-depth interviews, focus groups and interactive workshops.

Tool	Advantages	Disadvantages	Time Required
Survey	• Rapid, requiring little time to apply • Economical • Does not require expert in research to conduct interviews • Reasonable volumes of information managed because more precise & concrete answers are obtained • Systematization of information easy • Does not require many technical resources (instrument & pencil) • Can be used with illiterate interviewees	• Preparation of instrument requires time & knowledge • Schematic & pigeonholes data, making it the least flexible of the tools • Interviewer does need some knowledge of research & great skill in applying instrument; training often required. • In this specific case, difficulty in traveling to sites given the long distances, poor conditions of dirt roads & the social unrest reigning in zone • Least reliable of tools because interviewees can say anything & interviewers may not have capacity to confront them on the spot • Situation of social unrest in region makes it more difficult to obtain information through this instrument as interviewees are reluctant to give out information of any kind. • Knowledge of zone required to get to sites; otherwise need a guide	Avg. actual time for conducting survey was 25 min. (minimum 15, max. 50). Time counted from when interviewee is greeted to time when good-bys are said. All depends on interviewer's skills, time available & interviewee's state of mind.
In-depth interviews	• Establishes relationship of greater trust between interviewer & interviewee • Possible to obtain greater volume of information • More flexible than survey • Does not require many technical resources • More reliable than survey • More complicated to systematize & analyze the information, but provides sounder basis for same • Does not matter whether interviewee is literate • Facilitates gathering of interviewees' knowledge (facts & concepts), as well as their perceptions, feelings & opinions	• Requires more time • Slightly more costly than survey because fewer interviews can be done in same amount of time • Requires more time & willingness on part of interviewee; sometimes several visits have to be made • Requires previous knowledge of interviewee • Interviewer needs more preparation • Systematization of information more complicated • Requires atmosphere conducive to conducting interview	Avg. actual time of interviews, 60 min. (minimum 30, max. 120). Shorter interviews done with consumers; longer ones with feed manufacturers as data being requested from latter group was more complex; besides, consumers were interviewed in shops, open & supermarkets & the manufacturers in their office, with a more comfortable environment.

Tool	Advantages	Disadvantages	Time Required
Focus groups	• Opinions & perceptions of participants confronted so they can be discussed & socialized in group • Information obtained is more objective as it is subjected to discussion & confrontation; whereas in individual tools, information more subjective. • Provides opportunity to debate different opinions of participants • Level of participants' schooling does not matter because discussions are written down & taped by facilitators	• Requires extensive preparation time • More costly than surveys • Systematization of information more complex because more disperse information is gathered & adequate methodologies for systematization not available • More appropriate tool for homogeneous groups and/or with similar thematic, economic, social & cultural interests • To convene the groups, need backing of institutions in zone because it is not easy to bring people together, much less where there is social unrest • Implementation requires more than one person for orienting discussion, with great skills for taking notes, gathering information & keeping discussions on track.	Time is distributed among preparing the questions & materials, extending the invitation to participate & the actual meeting; can range from 2-4 h
Interactive workshops	• In contrast with other tools, these workshops permit active participation of everyone because they are not only subjects from whom information is extracted, but they also receive information from the workshop facilitators. • Participants free to decide on methodology, time & tools used in workshops • Overall, tool is the most participatory, reliable & flexible of the 4 used here. • Group does not have to be homogeneous with respect to economic, social or cultural interests.	• Requires most preparation. In addition to the workshop guide for extracting information, facilitators present technical talk on a topic related to the area of research, which sets stage for initiatng dialogue with participants. • Had the highest average costs per participant • Systematization of information complicated because it is more disperse & expressed in diverse forms, complicating its homogenization • To extend invitations to participate, have to have backing of institutions present in zone or people may not attend meetings, especially where there is so much social unrest. • Technical presentation of facilitators must be high quality in order not to lose credibility with participants	Time required to prepare technical presentation of the facilitators, the guide & accompanying materials, extending the invitations & 5-7 h for the workshop itself

Focus groups

The costs (in Col.. pesos were as follows:

Preparation of materials (guide questions).....	$ 12,000
Convocation of participants.....	$ 30,000
Transportation of participants.....	$160,000
Snacks and lunch for participants.....	$100,000
Rental of room for meetings.....	$ 50,000
Materials for facilitators.....	$ 30,000
(cassettes, tape recorder, batteries, pencils, paper, etc.)	
Per diems and travel expenses for facilitators.....	$150,000
Subtotal.....	$532,000
Contingencies (10%).....	$ 53,200
Total	$585,200
Cost based on 20 participants; avg. cost per participant	$ 29,260

Interactive workshops

This tool was used with producers, middlemen and chippers. The minutes from the workshop were transcribed from the tapes, materials prepared by participants were systematized, information was classified and categorized, and informal and descriptive analyses were made.

The costs (in Col.. pesos were as follows:

Preparation of materials	
Preparation of training talks.....	$120,000
Guide for workshop.....	$ 12,000
Course announcement.....	$ 30,000
Transportation for participants.....	$160,000
Snacks and lunch for participants.....	$100,000
Rental of meeting site.....	$ 50,000
Materials for participants.....	$ 50,000
(poster paper, pens, tape recorder, batteries, pencils, paper, etc).	
Travel and per diems (for workshop coordinators)	$150,000
Subtotal.....	$672,000
Contingencies (10%)	$ 67,200
Total	$739,200
Costs calculated for 20 participants; avg. cost per participant of	$ 36,960

This is perhaps the most valuable participatory tool for obtaining information from a group knowledgeable of the topic as the methodology permits the confrontation of opinions, concepts, ideas, perceptions, etc., where the explanations and/or justifications for each case abound. The tool also provides information efficiently, enriches the knowledge of everyone because they hear the different individual focuses, after which they are discussed in the group, reaching a consensus on the final conclusions.

Analysis of women's and children's participation

Cassava production

An interesting case was found in the village of El Piñal in the township of Los Palmitos, Province of Sucre, where there are some 220 families, of which 60 (27.3%) are widows, heads of household (most having lost their spouses in the situation of conflict prevailing in the region). They have had to assume the role of farmers to sustain their families. Those women who are not heads of household and the men themselves maintain that about 25% of the women who have a spouse *"clear a piece of land, one-fourth to half a hectare of cassava, tobacco or the crop that they perceive to be more profitable in order to have their own source of income to be used for buying the kids clothes in December. Many of them have even taken out credit from the Agrarian Bank, and many are behind in their payments, but that was not their fault because the credit was given too late and it was for planting variety P-12, which has a good demand on the market but is not very good for chipping if not planted on time."*

Another interesting case was found in the community of San Jaime in the same township (Los Palmitos), where the women also have ample participation as independent farmers although they do receive collaboration from their spouses. They grow cassava and are involved in other production activities in order to contribute to the family welfare. In this community the women are organized to implement different collective projects related to farming, raising animals or improving the quality of life of their community.

These two cases stand out, but in general the participation of women and family labor are very important at the level of small and average-sized cassava producers on the Caribbean Coast of Colombia. The activities in which the women have the greatest participation are the selection and cutting of planting material, planting and, above all, weeding, for which a good percentage of the family labor, including boys and girls, is used. The men are responsible for preparing the land and harvesting the roots. The women and the older daughters are also responsible for preparing the meals for the workers.

When the women cultivate a crop apart from their spouses, they make the most important decisions although they get advice and other support from their spouses when necessary. When deciding about which variety to plant and when negotiating and selling their product—the same as the men—the women consider market requirements with respect to fresh consumption as a form of guaranteeing food security for the family.

Although the women carry out agricultural tasks as independent cassava growers or as collaborators who help their spouses, they do not have the same opportunities in terms of access to credit (except in exceptional cases as widows or women heads of household), technical assistance, training or research.

Marketing cassava on the fresh market

At the level of middlemen, the fresh cassava market seems to be almost exclusively a male activity. Of the 18 who participated in this study, only one was a woman (5.5%).

The women combine their role of housewife with that of selling cassava at harvest time, purchasing the roots directly from the farmers in surrounding zones (township of Los Palmitos) and selling them in Magangué. They rely on a group of men whom they hire to pack the selected

roots and load the trucks. Selecting the product to be purchased is their decision, and the negotiation is done directly with the producer, setting the price and form of payment.

Another interesting case was of a couple where the man was supposedly managing the business; but in reality it was his wife who was traveling and selecting the product to be bought, negotiating with the producers or warehouses. She also hired the trucks and made sure they were loaded, turning over the product to her husband at home so that he would arrange for the sale on the wholesale market in Barranquilla or Cartagena. She did her part of the work from 10:00 am to 6:00 pm, and he did his from 11:00 pm to 10:00 am.

The wholesalers (94.5% men) arrive daily at the market places in the different cities such as Montería, Sincelejo, Magangué, Cartagena and Barranquilla, with truckloads of the fresh roots for sale, mostly to male buyers although from 5-15% are women. A group of women who own a sales outlet in the market place buy from 1-3 sacks of cassava and then sell the roots by the piece to individuals who go to the market. A second group of women buy the cassava to sell it in small lots to shops in different parts of the cities. A few women sell the roots on the streets, directly from tricycles. Other women purchase 1-2 sacks of cassava and transport them on donkeys some 4-5 km to neighboring towns, where they also sell small amounts (by the lb) to homes or shops. A very important group is the women who sell fried fish and pork cracklings with fried cassava.

There is another group of women who use cassava, but it was very difficult to estimate quantities. They each purchase from 10-15 lb of cassava daily as a raw material for preparing cassava-based foods (e.g., *carimañolas, enyucado, casabe* and *bollos*). They themselves or their children and spouses sell these products in different parts of the cities (for greater detail see Hernández, 2000).

Some children 8 years of age and older help their parents or relatives in the purchase and sale of fresh cassava. They do not study because their parents cannot afford it. These cases are commoner among the vendors on tricycles.

Extracting starch from cassava

In the villages of Los Copeles and El Salado in the township of Ciénaga de Oro, there are three family enterprises dedicated to the extraction of starch. One of the plants is managed by a woman who inherited it after her husband died. She also grows cassava for the raw material in order to lower her production costs, but the amount she produces is not enough so she has to buy some cassava from other producers in nearby villages or in the cassava-growing townships in the Province of Sucre.

She is very much involved in the whole process—from the revision of the raw material that she is going to purchase to the manual peeling, washing, grating, sedimentation, decanting, drying and packing. She maintains that the starch from her plant is of better quality than the others, whiter, purer because of the manual peeling process to remove the cuticle (periderm) and the cortex (cortical parenchyma), leaving only the pulp to be grated. The other starch extraction plants peel the roots mechanically, leaving a residue with higher levels of ash and fiber, respectively, thereby affecting the quality of the end product. Other factors that distinguish her plant from the others are the hygiene in the drying process. The black plastic where the starch is placed to dry must be washed well to remove any residue. They also use a double packaging. According to her, food products made using her starch have greater volume (i.e. expansion properties).

Participation of children in the extraction of starch. No cases were found where child labor was being used. Nevertheless, the presence of children as unpaid family labor is very common, above

all when the children are on vacation. The children collect the decanted starch in the tanks for drying in the case of sweet starch or for fermenting in plastic tanks in the case of sour starch.

Overall conclusions

- From the producer of cassava to the end consumption of the fresh or processed roots, there is more than one marketing channel, which offers different options when the harvest is to be sold. Between the producer and the end consumer, there are other users who impose preferences established by the end consumers; moreover, they also establish other arbitrary standards (for their own benefit) at the moment of the purchase.

- In each group of users, there are different types with some preferences in common and others that are very specific to each one.

- The manufacturers that used cassava in a greater number of production lines had more requirements and preferences than those who specialized in the production of balanced feeds for poultry.

- The open-ended questions on the survey made it possible to obtain more information at a lower cost for both producers, middlemen and consumers; the in-depth interview was best for the chippers-dryers and starch manufacturers.

- The interactive workshop and the focus groups were the most costly, and the amount and quality of information obtained was less than for the other tools when applied to producers and chippers-dryers.

- The QDI of a variable is a good indicator for characterizing the variables mentioned by the groups, given the numeric variability among them. It is also a good parameter of the quality of the information and the discriminatory power of the variables.

- The DIT index constitutes a good measure of the amount and quality of the information obtained in a given diagnostic tool.

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The CIAL Guide Model

Researcher: *José I. Roa*
Collaborators: *Alfonso Truque, Nolberto Zambrano*[1]

Background

Until October 2001, CORFOCIAL, the Corporation for Promoting Local Agricultural Research Committees, had two farmer technicians who had to distribute their time in order to work with 56 CIALs in the Province of Cauca. Given the multiple activities and demands of the communities toward their institution and the need to maintain a two-way flow of information—communities and institution—an alternative model resulted, called "CIAL Guides." The CORFOCIAL Board of Directors selects these guides from among the members of the CIALs for their outstanding qualities in communication and knowledge of the methodology.

The CIAL Guide model

In this initial trial stage, the CIAL Guide model seeks to build upon the capacity of some members of the CIAL Committees, without changing their vocation as farmers. They will receive training to strengthen their knowledge of the methodology and thus be able to transmit it to their community and neighboring villages, having the dual functions of facilitator and disseminator.

The guides will work only two days a month, receiving wages equivalent to the minimum daily wage of the region. Their means of transportation will be whatever is commonly used in their zone. This model seeks to provide greater sustainability to the second order organization, CORFOCIAL as a greater number of communities can be attended and for a reasonable cost.

Objective of the Guides model

Create a local capacity for self-organization in the communities, which will complement the Corporation's farmer-technicians in all aspects related to the research and development that the CIAL carries out.

Who are the guides?

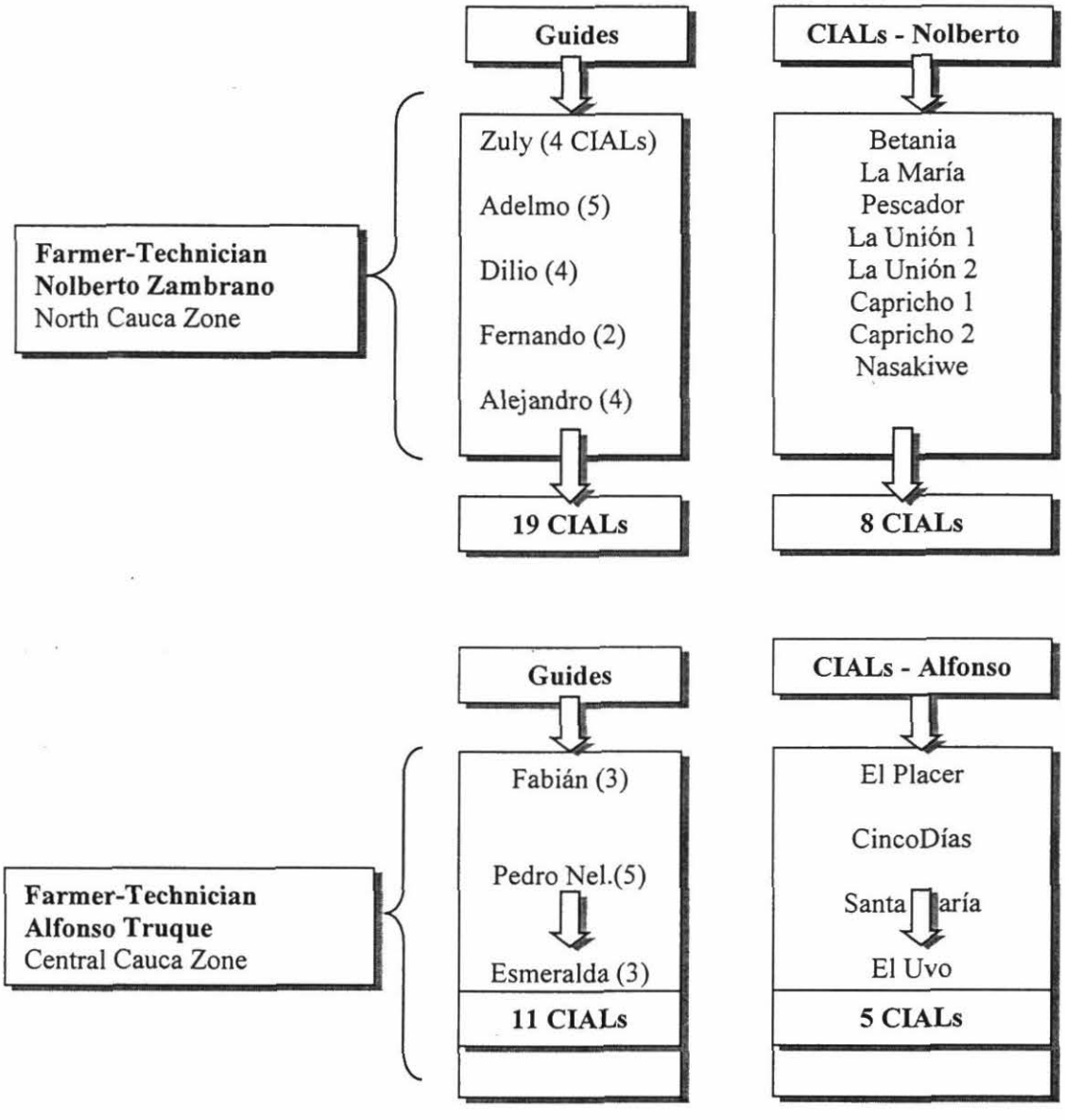
- Farmers (both men and women) who live in the zone
- People who have formed part of a CIAL for at least one year
- Natural leaders of the CIAL and their community
- Serious, responsible and honest people who have shown interest in research
- People who like to share their knowledge

[1] *CORFOCIAL*

Functions of the Guides

- Monitor the CIAL of their zone
- Gather information with respect to the CIAL's research projects
- Conduct participatory evaluations of the trials and of the group's functioning
- Train the CIAL members, using the CIAL handbooks
- Accompany the CIAL during the plantings and harvests
- Attend meetings with the Coordinator of the Guides or the Farmer-Technician for their zone
- Submit reports of their activities
- Form CIALs in their area of influence
- Prepare and maintain the diagnoses up to date
- Carry out the planning of the trials
- Serve as a point of contact between the CIAL and public and private entities
- Ensure that the CIAL provides feedback to the community

Coverage with the Guides



Model For Participatory Monitoring And Evaluation

Researcher: *Susan Kaaria*

Highlights

* Development of an appropriate Participatory and Monitoring and Evaluation, PM&E system at the community level that will allow local communities to analyze and interpret change, to learn from their own experiences and systematically evaluate progress. This system will be tested and evaluated in two countries in Latin America

We are establishing participatory monitoring and evaluation (PM&E) processes in existing community-based research services (CIALs) and in their second-order organizations, to strengthen self-learning and accountability, and to evaluate impacts.

As part of this process, a PhD student, Kirsten Probst, in collaboration with the NGO IPCA (Participatory Research in Central America), adapted and tested the concept of participatory impact monitoring (PIM), which was developed by Germann et al. (1996). A primary objective of PIM is to strengthen the self-help capacity and degree of autonomy of community-based groups, and it is specifically designed for participatory projects. The testing and evaluation phase was from 1999-2000, during which time PM&E processes were established in 10 CIALs in Yorito, Honduras.

A year later in July 2001, we conducted a quick appraisal of the PM&E activities to identify potential opportunities for building on these ongoing research activities.

Benefits of the PM&E System: Perspectives of CIAL members and IPCA

The following information was collected from an informal assessment survey conducted to evaluate PM&E processes from the perspective of both the CIALs and IPCA.

1. The CIALs considered the following as the benefits of the PM&E process:

    - Provided feedback and more communication within the group
    - Enhanced group members' responsibility to the CIAL because it clearly showed who was actively participating in group meetings and who was paying off their loans
    - Promoted transparency and accountability in the management of funds because the treasurer has to publicly present the records of group funds
    - The CIAL members felt that the PM&E was worthwhile because they had developed it, and they were collecting information relevant to them.

2. Perspectives from IPCA:

    - Facilitated the triangulation of information and identification of problems within the system, thereby providing more complete information
    - Helped in documenting project activities, thereby creating a habit of record keeping within the communities
    - Provided evidence of differences in access and control, such as the different levels of independence of the community-based groups
    - Allowed a more complete and objective picture of the groups' activities and processes.

Challenges and opportunities of the PM&E system

The evaluation also highlighted some critical issues that need to be addressed to improve the PM&E system:

1. **Time**. A key issue raised by all the CIALs visited was the amount of time taken to collect data, complete the forms and present results.
2. **Training**. The need to simplify the PM&E training process at the farmers' level so that they can understand the key issues and concepts. Additionally, building the capacity of technical personnel to improve their skills and capabilities in establishing and supporting PM&E was critical.

3. **Data quality and collection**. Creating the habit of documenting information within farmer groups; getting the entire group involved in the data-collection process and ensuring the indicators actually provide the correct information to let the community assess their groups' objectives.

4. **Data analyses and utilization**. This was a big problem because once the data were collected and presented to the group members, there was very little done with the information besides filing it. Therefore, it is important to think about:

    - How to resolve problems and conflicts identified by the PM&E system
    - Aggregating data collected periodically to identify and analyze trends
    - How to create a database of this information to help organize and aggregate these data in order to facilitate the understanding of how the groups are progressing.
    - How to link this information that is emerging from the grassroots level to other existing data sets including other M&E data

Future plans

Based on the positive results of the preliminary testing phase, we are planning to establish complementary PM&E systems at different levels (community and organizational) in five countries where we already have CIALs (Colombia, Honduras, Nicaragua, Bolivia and Ecuador). The objectives are to enhance the flow of information by developing a systematic process to link local communities effectively with both formal and informal research systems. The PM&E system would also empower exiting community-based organizations such as the CIALs to feedback community-diagnosis results into the formal R&D systems. Finally, by articulating and presenting the demands from the community, the PM&E data will give local communities a "voice" and allow them to influence decision-making at the R&D organization levels.

Activities

1. Organize a series of training and follow-up workshops to build the skills and capabilities of all key actors—from the local communities right through to senior management—in implementing and supporting PM&E processes. This capacity building would involve:

    - Developing an understanding of the concepts and methods
    - Understanding the critical steps in establishing a PM&E system
    - Building skills in facilitating the PM&E establishment process

- Developing training needs to address questions of behavior and attitudes
- Building communication skills

2. Establish an appropriate PM&E system at the community-organization level (CIALs and second-order associations) to allow local people to analyze and interpret change, learn from their own experiences, adjust strategies accordingly and evaluate progress systematically.
3. Establish complementary PM&E systems within the R&D organizations/foundations that support the CIALs. This would allow these organizations to assess progress and success from the local people's perspectives.

4. Develop a mechanism for establishing effective linkages among the different PM&E systems to allow for the agile flow of information between rural communities and R&D systems.

5. Develop a process for systematizing PM&E data from the community to provide feedback information to formal research systems.

6. Evaluate and adapt the PM&E methods developed continuously, document and disseminate lessons learned.

7. Design a database system and identify its role in organizing and aggregating the micro-data collected by PM&E processes to inform national research policy agendas.

8. Use the PM&E data to evaluate impacts and assess progress of R&D activities and projects, using a sustainable livelihoods (SL) approach

Research questions to guide the action research and to refine PM&E systems

- How do you build the skills and capabilities of the different key actors in establishing PM&E systems, and what are the key components of the capacity-building activities?
- How can we develop and build in both participatory and rigorous monitoring and evaluation, which can then be fed into the policy-making level, thereby getting findings of farmer-researchers to feedback to research and to influence policymaking and drive the research agenda?
- How will monitoring and evaluation contribute to enhancing the accountability of formal R&D organizations to local communities and community-based organizations (such as CIALs)?
- Has the PM&E process stimulated the inclusion of vulnerable groups such as women and ethnic minorities in the development process?
- What role will a database system play (a) in aggregating and articulating micro-level data, and (b) as a tool for local feedback and for informing national-level planning and monitoring?
- How can we institutionalize PM&E and integrate it into everyday activities?
- How can we encourage all the actors to document the lessons of the "process of carrying out PM&E" so as to build on these lessons?

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Randomized complete blocks design

Researcher: *Luis Alfredo Hernández Romero*

One of the experimental designs used most frequently in the research carried out by the CIAL farmers is the randomized complete blocks design (RCBD). In this design, the treatments are assigned in aleatoric fashion to a group of experimental units referred to as blocks or replications. The purpose is to maintain the variability among the experimental units within a given block as minor as possible and maximize the differences between the blocks. In order to facilitate the work of those who have to process the information from CIAL trials using the RCBD, the design of a matrix in EXCEL is being worked on so that these analyses can be done automatically. At the moment this preliminary matrix automatically calculates the total no. of blocks, their means, the overall mean; degrees of freedom (df), sums of squares (SS), mean square (MS) and the F observed and required at the levels of 5 and 1% .

The requisites for applying the matrix are to have access to Excel 7.0 and to be able to input the information in the respective cells according to the headings of each column. The columns are defined as treatment, block, subdivided into subcolumns for blocks from 1-4 and treatments, total and mean of the treatments.

Wherever possible, the differentiation of the means will be implemented in the automatic process and graphs will be included to facilitate the interpretation of the results. Finally, once the tool has been validated, a guide will be developed for its management and as a learning tool that includes the interpretation of the results.

Figure 1. Matrix for analyzing the RCBD (draft).

Block

Treatment	I	II	III	IV	Total	Mean	S D
Panameña	16,172.84	13,209.88	17,654.32	15,740.74	62,777.78	15,694.45	1,847.99
MCol 2061	29,444.44	25,308.64	22,716.05	38,703.70	116,172.83	29,043.21	7,011.09
SM524-1	21,543.21	36,111.11	18,271.60	25,000.00	100,925.92	25,231.48	7,755.93
CG402-11	40,432.10	35,925.93	36,666.67	66,604.94	179,629.64	44,907.41	14,598.95
SG427-87	14,629.63	6,604.94	14,197.53	7,160.49	42,592.59	10,648.15	4,357.43
LOCAL	38,641.98	31,358.02	25,432.10	26,543.21	121,975.31	30,493.83	6,010.20
Total Block	160,864.20	148,518.52	134,938.27	179,753.08	624,074.07		
Mean Block	26,810.70	24,753.09	22,489.71	29,958.85		26,003.09	

F of Variation	df	SS	MS	F OBSER	0.05	0.01
TOTAL	23.00	4,060,572,284.75				
BLOCKS	3.00	181,239,482.19	60,413,160.73	0.94		
TREATMENT	5.00	2,917,680,621.11	583,536,124.22	9.10		
ERROR	15.00	961,652,181.45	64,110,145.43			

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OUTPUT 2. STRATEGIES AND ORGANIZATIONAL PROCEDURES FOR PR, DEVELOPED

MILESTONES

* A workshop held to share and analyze experiences on the scaling-up of CIAL methodology and develop strategies for the new phase of the project
* SWOT analysis of the CIAL methodology, realized by the partners
* Criteria for forming second-order organizations identified
* Representative local structures developed in order to improve both the communication of local needs to external support agents and the bargaining power of local actors
* Alternative models for institutionalizing CIALs, identified
* Active CIALs carrying out research projects based on their communities' priorities
* Logframe for the project "Sustainability of the CIALs," developed
* Four functional second-order associations of CIALs, established in Honduras
* A plan of action for identifying and testing a "menu of options" of self-financing mechanisms, developed
* Action plan for forming a second-order organization of CIALs in Boyacá, prepared
* Participatory diagnosis of water use and management, carried out
* Survey conducted on the participation of the CIALs from San Dionisio in the management and conservation of natural resources
* Model for supporting local market intelligence, developed
* Proposal to extend the lessons and experiences of PR from Africa and Latin America, developed

Workshop on process of disseminating the CIAL methodology and the formation of second-order organizations

Researchers: *Carlos Arturo Quirós, José Ignacio Roa, Luis Alfredo Hernández & Susan Kaaria*
Collaborators: *Partners of the SN-3 Project in the countries*

At CIAT HQ in Palmira (Valle, Colombia) the technicians from the organizations that had been participating in the project "Disseminating the CIAL methodology" in Nicaragua, Honduras, Colombia, Venezuela, Ecuador and Bolivia came together from 19-23 February to analyze the situation of the methodology and agree upon future actions in the forthcoming phase of the project.

Objectives

The main objective of the workshop was to share and analyze the experiences about disseminating the CIAL methodology and establish strategies for strengthening sustainable models of R&D based on the community's interests. The specific objectives were to:

- Present experiences in disseminating the CIAL methodology
- Analyze the models used in the different countries either to disseminate the CIAL methodology or to expand the CIALs on a massive scale
- Present and analyze the experiences of the second-order organizations
- Define and analyze the functions and/or the preliminary responsibilities that the second-order organizations could have
- Explain and make joint plans for the new Kellogg proposal
- Define the criteria for identifying the regions where creating second-order organizations would have immediate potential
- Present and analyze experiences with respect to self-financing mechanisms identified in the dissemination of the CIAL methodology
- Present and analyze special topics of interest among the participants

Work methodology

- Each day there were two moderators—one in the morning and the other in the afternoon—and one rapporteur.
- The workshop was developed on the basis of the participants' experiences in Phase of disseminating the CIAL methodology.
- Presentations were made on the different experiences, organized by topics including dissemination of the method, formation of second-order organizations and mechanisms of self-financing.
- Following the participants' presentations, small groups were formed to analyze the experiences and present the results in a plenary session.
- All the written documents on the experiences and results obtained during the week were shared.
- In addition several presentations were made on special topics that could contribute to the future development of the new phase of the project.

Results

Table 1. Current state of the CIAL methodology based on a SWOT analysis done by the technicians who are working in the different countries of Latin America.

Strengths	Weaknesses
Extensive experience in the methodology.	Great need to make the methodology known to other institutions & technicians in the countries
Many CIALs with extensive experience.	Communities with CIALs very disperse
"Door" opened up in the local institutions.	Little follow-up of the groups for lack of time
Different actors now involved.	Scarce economic resources
Highly motivated technicians	No technical assistance.
Second-order organizations of CIALs functioning	Institution in the zone has no funds.
Access to agricultural & livestock technology	CIALs still depend on the technicians.
Institutional credibility	Lack of systematization of the information obtained
CIALs carry out diverse community activities	Lack of interdisciplinarity on team of facilitators
Research on diverse topics	Cannot intervene in institutional policies
Institutional backing	Disperse geographic coverage
Funds for research & production	Cannot do research on crops other than those of the institutional mission
Job stability for technician-facilitators	No systematic evaluation of the group members
CIALs have good community leaders.	Problems of self-reliance in the groups
New community leaders identified as result of these processes	Lack of knowledge in managing petty cash
Support for a third-order organization (ASOHCIAL)	Problem in recording data
Interinstitutional coordination	Technicians have gaps in their scientific knowledge
Vision of the CIAL toward the market	Some technicians do not work full time in the process
Local capacity for disseminating methodology to technicians of NGOs & universities (students)	Dependence on external resources for continuing
Gender focus in the CIALs (women, men & children)	Creation of CIALs because of institutional pressure
Personal growth of CIAL members	Insufficient personal for follow-up
Interaction with other focuses/methods (e.g., FFS)	Lack of communication media for disseminating results
Capacity for systematizing the information	Technician-promoters have little time for training.
Validation of methodology when they form their own CIALs	In some countries, Venezuela, El Salvador, very few CIALs created.
Professionals working full time based on the methodology	In some organizations, there is no specific CIAL project.
Institutionalization of methodology in several organizations (Annual operative plans, "POA").	Some researchers consider the CIALs to be a function of the extension agents.
In addition to doing research, technology is transferred.	There is a need to create "spaces" in the municipalities in order to have representatives & impact on the decision-making.
Some self-financing CIALs	
Community boards of directors	
Program on regional radio station	

Located in different regions of the country Use different methods of dissemination (e.g., workshops, short events) Coordination with GOs at local level The high number of leaders trained helps make process sustainable. The technicians are farmers. Some CIALs already have a small agroenterprise The number of researchers working in PR has increased.	Difficulties in interinstitutional work Lack of strategies for interinstitutional agreements Farmers depend on wage earnings as day laborers
Threats	**Opportunities**
Short-term financing Institutional restructuring & the subsequent reduction of personnel Instability of personnel Reduction of GOs Reduction of field work Economic problems of the country CIALs that have concluded their research decide not to continue. Hazardous to work in conflict zones Politization of the members of the CIAL can end in disintegration of the group. Public officials not interested in supporting the methodology CIAL objectives diverted due to interests of researchers or students. Termination of projects Staff not trained in CIAL methodology Arrival of institutions that do not satisfy the communities' expectations Government policies Townships center their activities on infrastructure development Rotation of personnel Institutional conflict arising from envy Some development organizations do not perceive PR as a valid local development strategy. Processes of migration from the rural communities Paternalism of other organizations that work in the zone Failure to find funds for the project	New phase of the CIALs The UMATAs (Municipal Agriculture & Livestock Technical Assistance Units) can develop & implement the CIAL methodology. Take advantage of the local capacity for strengthening self-reliance State policies orient research toward solving problems. Agreements with extension institutions have been strengthened when the methodology has been used. There is interest in the neighboring communities. Strategic institutional alliances Training paratechnicians & technicians. Take advantage of second & 3rd order organizations Promote local saving Strengthen the local organizations Adaapt & adjust technology transfer Appreciation of local knowledge Privatization of the GOs Interest in forming second-order organizations Students & community promoters are familiar with the methodology Institutional demand for training in PR Interaction with universities

Table 2. Criteria for identifying communities and functions to be developed for creating second-order organizations.

Criteria	Functions
More than 6 active CIALs in one region CIALs that have completed at least 3 experimentation cycles CIALS relatively concentrated in geographic region (not too disperse) No similar second-order organizations Members willing to form this type of group Interest in forming an association should take priority over the number of existing groups. The CIALs should demonstrate that they are taking into account their affinities & common objectives. There should be institutional support for the process. Availability of resources	Develop the human capacities & skills of the CIAL members Strengthen the CIAL in aspects related to PR Promote activities leading to the socioeconomic sustainability of the CIAL Channel the demands, supplies & needs of the CIALs through public & private institutions related to the CIAL objectives Establish channels of feedback with the R&D services Coordinate the PR activities in the zone Negotiate projects Administer acquired funds Represent the CIAL in relationships with national entities Sustainability and dissemination of the methodology. Monitor & evaluate the process Establish norms for the smooth functioning of second-order or regional organizations

Table 3. Positive & negative lessons identified in the CORFOCIAL experience, the first second-order organization of CIALs, created in Cauca Colombia.

Positive Lessons	Negative Lessons.
The organization arose from a felt need. Evolution should be step by step. Led by farmer-technicians CIAL has capacity for executing research projects. A duly legalized organization has a greater capacity to function & negotiate. Skills for communicating with farmers are important. Organization of the technicians is basic. The mystique of the technical team is fundamental. CIALs must have experience & motivation for forming a second-order organization. To be successful it is necessary to have institutional support. The CIALs require tangible products that come from the	Establish goals that are too ambitious. The CIALs do not contribute funds to CORFOCIAL. There is no M&E of the ASOCIAL process. Deficient linkages for acquiring useful information for research Does not have legal status.

ASOCIAL. It is necessary to provide sustainability for the CIAL. The formation of paratechnicians should be promoted. To form a second-order organization, there is a need for motivation & then function on the basis of the CIALs' needs. To form a second-order organization, it is necessary to have a minimum operating fund. Legal & technical advice is necessary.	

Dissemination of the CIAL methodology

Researchers: *Luis Alfredo Hernández, Carlos Arturo Quirós., José Ignacio Roa*

Case: INIAP-Ecuador

In 1993 two technicians-researchers from the National Agricultural and Livestock Research Institute (INIAP) were trained by the SN-3 Project in tools, participatory techniques and the CIAL methodology. These technicians began to implement participatory processes with producers in their research projects. The Potato Breeding Program, FORTIPAPA, was one of the ones that adopted the methodology, forming technicians-evaluators of clones, GEC.

Based on the capacity of the FORTIPAPA Project (1996), INIAP trained and implemented the methodology in collaborative projects with other entities and projects such as the GTZ, CIP and NGOs. The FORTIPAPA Project established CIALs by means of Validation and Technology Transfer Units (UVTT) in the provinces of Carchi, Cotopaxi, Chimborazo, Bolívar and Cañar. They also established monitoring processes in the implementation of the INIAP methodology, which has involved chains of producers, merchants, suppliers, students, agroindustry and consumers (CADENA); participatory breeding programs (PPB) and training GEC technicians and Farmers' Field Schools (FFS).

At present they have formed some CIALs but have yet to begin the process of expanding the CIALs on a massive scale.

Criteria for selecting the regions and communities

When selecting the communities the following criteria were considered: easy access, experience in agriculture, interest in research, representativeness of the region's socioeconomic conditions, and existence of organizations in the communities.

Future activities

- The number of CIALs will be gradually increased in the province of Chimborazo.
- In an intermediate term, plans are to form an association of CIALs, but mechanisms of financing have to be strengthened.

Case: IIRR-Ecuador

In Ecuador the IIRR has employed two different strategies for forming CIALs, based on the knowledge of the methodology (initially the idea was to validate the methodology):

- Offer courses open to technicians and development institutions financed by each institution in order to establish CIALs in their work zones (1996-1997). This strategy had little success.
- Offer special courses financed by institutions that had seen the CIALs operating and considered the methodology a viable alternative for their development projects. In these two years, 19 new CIALs were implemented.

Criteria for selecting the regions and communities

The regions or communities were always selected on the basis of interest on the part of the counterparts. Internally, however, the IIRR decided to work with communities located in the northern sierra and central zones of Ecuador in order to facilitate their mobilization from Quito.

Future activities

- The CIALs will be expanded, integrating them in Participatory Research and Extension Units as part of the Farmer-to-Farmer Extension Program in Modern Agroecology. This means promoting CIALs in 6 indigenous organizations. The CIALs will be linked to the conservation of natural resources in alliance with the NGO "Project Antizana."

- The formation of CIAL associations in the Antizana Paramo and possibly in the zone of the province of El Carchi in northern Ecuador, where there is a CIAL fund, which will provide the communities with the resources required for acquiring the external technological alternatives required for their research.

Scheme proposed by the IIRR

Small farmer promoters. IIRR coordinates research and extension activities

IIRR → Small farmer promoters →

Establishment of Participatory Research and Extension Units (communities).

Case: CIAL-Colombia (CORFOCIAL)

The CIAL concept was developed by the FPR team (Project SN-3) at CIAT HQ in Palmira (Colombia). The CIAL is a local research service consisting of four farmers elected by their communities and various collaborators who seek alternative solutions for an agricultural or livestock problem considered priority by the community. Based on these principles, some communities in the province of Cauca formed committees of farmers interested in conducting research and in improving their agriculture through meetings to motivate and train them in the methodology. Over time, the technicians formed a second-order organization known as CORFOCIAL.

The process with the CIALs in Cauca has undergone the following phases:

- The FPR Project began research on the methodology in 1990, organizing 5 CIAL technicians in Cauca. Two years later the method had been tested, and the farmers were conducting research, the results of which they shared with their communities.

- In 1992 the dissemination of the methodology was carried out through different organizations and NGOs from Cauca, who had expressed their desire to implement the methodology in their areas of work.

- In 1993 the first international course on FPR was held, in which the CIAL methodology was emphasized.

- In 1995 the Project "Dissemination of the CIAL methodology" was approved by the WKK Foundation and was initiated in 5 Latin American countries. Parallel to this project, the CORFOCIAL was created in the same year. This second-order organization of the CIALs underwent the following phases: Technicians from CORFOCIAL were trained in the methodology by the FPR project, and they in turn trained the staff of NGOs and government entities interested in forming their own CIALs. These processes were accompanied, monitored and feedback was provided to the Board of Directors of CORFOCIAL and to the FPR-CIAT team.

Future activities

The number of CIALs will be increased, based on the formation of a new figure, "Guides."

Case: CIAL-Colombia (CORPOICA)

In this model the FPR team (Project SN-3) initially trained staff from CORPOICA's National Program: Innovation and Technological Communication, corresponding to their Regional Office 1 (provinces of Cundinamarca and Boyacá), in a one-week course held in 1995. Some CIALs were formed in 1995, the results of which served to motivate them to hold a 2-week course on the CIAL methodology in 1996 for technicians from their Regional Office 1 and from several UMATAS in Boyacá and Cundinamarca. Through their own resources and collaborative projects with entities such as Servicio Nacional de Aprendizaje, SENA, Programa Nacional de Transferencia de Tecnología Agropecuaria, PRONATA and Departamento Administrativo del Medio Ambiente, DAMA that were interested in the CIAL methodology, training of other technicians and paratechnicians was financed. These trainees became facilitators of the CIALs in the Centro Regional de Estudios de Capacitación, Educación y Desarrollo, CRECED and Unidad Municipal de Asistencia Técnica Agropecuaria, UMATA, disseminating the methodology in the COROPICA's Regional Offices 3, 7 y 6, establishing a policy of officialization of the methodology in CORPOICA. As a result of this process, they have managed to form some 55 CIALs in 4 regional offices in 8 provinces. In 1999, the Regional Office 1 held a course on the CIAL methodology for technicians from their institution, all of which was organized and taught by them.

Criteria for selecting the regions and communities

The following criteria are mentioned: where they have worked before and have obtained good results, knowledge of the community by the technician, potential for developing the production systems, existence of production systems contemplated in the institution's policies, easy access, closeness to the institution, receptive communities, common problems shared in the communities, and existing farmer-technicians who can help get the process started.

Future activities

- **CORPOICA has divided the country into 10 regions. At present there are CIALs in 6 of them. The goal is to cover all 10.**

- They also plan to look at the process of forming second-order organizations, validating and documenting mechanisms of self-financing, establishing participatory monitoring and evaluation processes and promoting the formation of small agroenterprises.

- The process of expanding the CIALs on a massive scale has been proposed; but for lack of funding, this has not been accomplished.

Case: PROINPA Project - Bolivia

In the course held in 1993 some staff from PROINPA were trained. The people who were trained formed CIALs, but as the FPR Project had no follow-up plan, this process did not advance. In 1995 a staff member of PROINPA came to CIAT for a one-week in-service training with the FPR Project. Thus the conformation of CIALs was reinitiated; and given the favorable results obtained in PROINPA, they were invited to participate in the project "CIAL Methodology Dissemination" and institutional agreements were established so that they became the Project's principal contact in the zone.

In 1996 a workshop on Participatory Evaluation was held in Cochabamba. That same year, intense dissemination of the CIAL methodology was begun with the training of personnel from PROINPA, CEDEAGRO, CARE, CIAT-Santa Cruz, UNSS (University of San Simón) in a 2-week course held in Cochabamba by the FPR team (Project SN-3). Each of the organizations established CIALs, and follow-up was carried out by the CIAT FPR team and/or PROINPA. At present both PROINPA and CEDEAGRO have increased the number of their technicians and today the methodology forms an integral part of these institutions.

Once PROINPA adopted the procedure, they implemented the following steps:

- Information communicated to the local authorities to explain the committees' work and the role of their technicians with respect to the community.
- Process of motivation all the members of the community with respect to the methodology
- Presentation of experiences of work done by existing committees
- Training of agricultural development organisms
- Integration of PR in PROINPA projects
- Integration the participatory evaluation component of the research materials with the project for breeding potatoes
- Participatory breeding project for potatoes

As part of its dissemination strategy PROINPA selected two pilot areas where they work closely with the townships, involving NGOs and the communities under the Law of Community Participation, decreed recently by the national government. The idea is that DILPE (Local Board of Economic Promotion) generates CIALs and the other CALs (local agricultural and livestock committees). Other means of dissemination are the universities, NGOs, CIAT- Santa Cruz, based on the demands of the interested parties.

Criteria for selecting the regions and communities

The following criteria were taken into account: demand on the part of the community, reliable (economically and logistically speaking) supporting institution, solid grassroots organization, especially with respect to spirit of communal union, located in the area of work of the supporting institution.

Case: FONAIAP - Venezuela

Early in 1997 two FONAIAP staff members attended a course on the FPR method, where the CIAL methodology was discussed. Upon their return to Venezuela, these two people were motivated by the

CIAL concept and were able to get funds for programming the CIAL course in Barquisimeto towards the end of the same year. The course was taught by the CIAT FPR team.

The process of disseminating the CIAL methodology arose from their initiative and inviting the FPR team to give training courses to their personnel and from other local organizations interested in the topic. This initiative of the CIAE-Lara was initiated in 1997. A total of 8 CIALs were formed, and a sequence of follow-up activities and courses at other sites of the institution was begun. FONAIAP obtained resources to hold another course at the end of 1998. It was taught by the FPR team in association with the people trained in the first FONAIAP course. By 1999 FONAIAP gave a course taught only by their technicians. In 1998 they proposed the formation of an international PR support commission. In 1999 the technical follow-up continued, and joint training proposals were formulated, as web as the incorporation of the methodology within the institution.

FONAIAP's follow-up of their CIALs has been their weakest part. The SN-3 Project does not have resources for this purpose because it is not a "focus site"; thus the process of expanding the CIALs on a massive scale is weak (Lesson learned: If we give a course and there is no follow-up, it is basically a waste of time).

Case: PRR (Program of Rural Reconstruction -Honduras)

The process of dissemination in the PRR began after the international course taught by the FPR, in which two staff members from IPCA (PR in Central America) came to Cali, Colombia in 1993. With the support of the PRR administration, they carried out training of their paratechnicians and these in turn trained community leaders. From 1994 the formation of CIALs was begun. Later in a course taught by SN-3 in San Pedro Sula (Honduras) in 1996, the coordinator of the PRR paratechnicians attended along with other local organizations. Then after four years of implementing the methodology and constituting various CIALs, a second-order association called ASOCIALAYO (Association of CIALs from the Lago Yojoa) was founded, forming the basis of what would be called ASOHCIAL (Association Honduran of CIALs). The activities carried out include CIAL encounters, educational tours, monthly meetings of ASOCIALAYO, national encounters of CIALs and providing support to the CIAL projects.

Criteria for selecting the regions and communities

The selection criteria were interest in the community, location of the communities in the rural sector, easy access, located within the area covered by the project and have a level of organization.

Future activities

A process of expanding the CIALs on a massive scale and mechanisms of financing in the next phase of the project are planned

Case: FEPROH - Honduras

FEPROH's involvement with the CIAL methodology began in 1996 as a result of the course taught by the CIAT FPR team (SN-3 Project) in San Pedro Sula, in which some 14 local organizations participated. Then with the support of the executive director of FEPROH and the people trained initially, a replication of the CIAL course was offered by the technicians to other technicians of their institution working in the region of Vallecillos, Francisco Morazán. These trainers were placed in charge of motivating the communities and forming CIALs with the constant follow-up and feedback from the FPR team and the other Honduran organizations involved in the process. This organization

facilitated the creation of a regional or second-order organization called ASOCIAL Vallecillos, which is in the process of obtaining legal status. As for the other regional organizations of ASOCIAL, this one is affiliated to ASOHCIAL. Recently, FEPROH has disappeared, and two of their technicians created the SCD, the Christian Society for Development on Hillsides, which has continued with the process and in the facilitation of the CIAL.

Future activities

Nothing has been planned with respect to expanding the CIALs on a massive scale or mechanisms of financing.

Case: EAP-Zamorano

The process of dissemination in the case of EAP-Zamorano (Pan-American Agricultural School) began when a technician from the province of Desarrollo attended a course on the CIAL methodology dictated by the CIAT FPR team (Project SN-3) in San Pedro Sula in 1996. In the communities found in the hillsides near the Zamorano Valley the first two CIALs were formed. After one year of testing, they decided to increase the number of CIAL technicians, a decision that coincided with the opening of the recently created Project UNIR. In addition to strengthening the capacity of the two original technicians, eight more were formed. Various technicians who were to participate in this process were trained, and the participation of the students in both the theory on PR and field practices began. The CIAL work made it possible for them to do their thesis research, and the trained technicians formed new CIALs. They are also involved in the creation of the ASOCIAGUARE, Association of CIALs from the Yaguare River watershed. With the participation of Zamorano projects, the association is also working on production projects and training to strengthen them.

The activities that the technicians have been carrying out since their training include local meetings to facilitate the research being done by the CIAL, tours to exchange experiences, feedback and regional and national encounters.

Future activities

Nothing has been planned with respect to expanding the CIALs on a massive scale or mechanisms of financing.

Case: CIAT Hillsides - Nicaragua

The dissemination of the CIAL methodology in the CIAT Hillside Program began with CIAL Course I, held in Honduras in 1996, attended by one technician. Then in 1997 another staff member from the Hillside Program was trained in a course held in El Salvador. That same year 4 technicians from the Calico River watershed were trained. Since then, there are three ways the dissemination process has worked:

- CIAT - Nicaragua trains NGOs and other institutions so that they form CIALs
- CIAT - Nicaragua directly interacts with the communities and motivates them to form CIALs. In this process paratechnicians are formed in the CIAL methodology
- The CIAT Hillsides Project in Nicaragua trains farmer-technicians, they form CIALs with the farmer-technicians, NGOs in different communities.

All three ways are backstopped and monitored by the CIAT-FPR team. At present there are 11 technicians trained, carrying out their research projects.

Future activities

Expanding the CIAL methodology on a massive scale will be done through INTA, the National Institute of Agricultural and Livestock Technology, Centro de Promoción para el Sector Agropecuario, PRODESSA and CDDCAP in other zones of the country.

Case: UNICAM - Nicaragua

The process began when a technician from UNICAM (Nicaraguan University for Small Farmers) attended a CIAL course taught by the FPR team (Project SN-3) in Managua in 1996. UNICAM motivated the communities, which formed CPECs (Collectives of Communal Farmer-Experimenters). Then the CPECs were backstopped by UNICAM, and a process of feedback to the community was established. UNICAM also participates in study tours, encounters, workshops with producers and technicians of other organizations and countries.

Future activities

Nothing has been planned with respect to the expansion of the CPECs, but they are considered fundamental pillars in the small farmers' research. At present they have created Centers for Assembly and Distribution of Agricultural Produce and Seed Banks, which function as mechanisms of financing the technicians in their communities.

Case: INPRHU Somoto - Nicaragua

The process began when two technicians from Instituto de Promoción Humana, INPRHU attended the CIAL course in Managua, which was taught by the FPR team (Project SN-3) in 1996. Then these technicians motivated the communities to form CIALs. The communities carry out their research work through CIALs. They have established a process of feedback among the communities with respect to the their experiences. A strategy of dissemination was established by radio, training, promoters, paratechnicians and tours.

Criteria for selecting the regions and communities

The criteria that were taken into account were interest on the part of the communities, response to a need and to a problem, sustainable and low cost.

Future activities

Nothing has been planned with respect to the expansion of the CIALs or mechanisms of financing.

Active CIALs carrying out research projects based on their communities' priorities in 2001.

Highlight:

* Farmers in L.A. use a participatory methodology that facilitates organization and operational flow to develop research projects to solve agricultural problems that have been identified and prioritized by their community.

Table 1. Developed research projects, community families number and cooperating institutions in CIAL groups

Country	Institution	No. CIALs	No. of Women's CIALs	No. of Families in Communities	Research Topics
Bolivia	PROINPA (Foundation for Research on Andean Products)	10 ♀ 8 ♂ 48	1	628	✓ IPM of the Andean weevil (*Rhigopsidius tucumaus)* ✓ Planting systems in quinoa ✓ Organic fertilization in potatoes ✓ Evaluation of potato varieties for resistance to blight ✓ Management of live barriers for controlling erosion ✓ Evaluation of potatoes varieties tolerant to frost ✓ Evaluation of varieties resistant to nematodes ✓ Adaptation of native potato varieties to different heights ✓ Production of quality seed in potatoes
	CEDEAGRO (Center for Agricultural & Livestock Production)	8 ♀ 2 ♂ 37	-	372	✓ Control of cicadas in potatoes ✓ Production of potato seed in protected seedbeds ✓ Chemical control of pink root *(Pyrenochaeta terrestras)* in garlic ✓ Evaluation of varieties of coarse grains ✓ Resistance to palmarado in maize ✓ Chemical control of the black disease (*Guignardia bidwellii*) in onions
	CARE	2 ♀ 1 ♂ 7	0	81	✓ Resistance of potato varieties to blight ✓ Weed control in potatoes
	CIAT - Santa Cruz	3 ♀ 0 ♂ 20	0	127	✓ Resistance of potato varieties to blight

✓ Continues.....

Country	Institution	No. CIALs	No. of Women's CIALs	No. of Families in Communities	Research Topics
Colombia	CORFOCIAL (Corporation for the Promotion of Local Agricultural Research Committees)	44 ♀ 120 ♂ 387	4	4600	✓ Evaluation of pea varieties ✓ Evaluation of maize varieties ✓ Evaluation of cane varieties for making panela ✓ Evaluation of common bean varieties ✓ Evaluation of wheat varieties ✓ Evaluation of potato varieties ✓ Evaluation of rice varieties ✓ Evaluation of blackberry varieties ✓ Evaluation of soybean varieties ✓ Planting systems in peas (staked) ✓ Diets for guinea pigs ✓ Control of nematodes in lulos ✓ Production of maize seed ✓ Evaluation of green manure ✓ Cultural practices for "Granadilla de Quijo"
	CORPOICA (Colombian Corporation of Agricultural & Livestock Research)	29 ♀ 18 ♂ 150	0	761	✓ Production of potato seed ✓ Adaptation of alfalfa varieties ✓ Renovation of native pastures (grasses) ✓ Control of pests in potatoes (Guatemalan moth) ✓ Control of pests in peas ✓ Adaptation of new grasses ✓ Cultural practices in blackberries ✓ Cropping systems in peas (staked) ✓ Diets for broiler chickens ✓ Evaluation of green onion varieties ✓ Fertilization in grasses ✓ Evaluation of lulo varieties & control of fruit drop ✓ Resistance of melon varieties to pests & diseases ✓ Evaluation of maize varieties & cultural practices ✓ Control of pests & diseases in chili peppers ✓ Control of stemborer in cassava ✓ Evaluation of varieties of plantain at different planting densities ✓ Evaluation of cassava varieties ✓ Control of leafeaters in black tobacco ✓ Resistance of common bean varieties to pests & diseases ✓ Control of black sigatoca in plantains ✓ Evaluation of onion varieties ✓ Cultural practices of "Granadilla de Quijo" Continues.....

Country	Institution	No. CIALs	No. of Women's CIALs	No. of Families in Communities	Research Topics
Ecuador	✓ FUNAN (Antisana Foundation)	17 ♀ 63 ♂ 35	2	481	✓ Diets & races of guinea pigs ✓ Adaptation of snails ✓ Evaluation of tomato varieties ✓ Adaptation of fruit crops (tamarillos, blackberries, strawberries) ✓ Diets for rabbits ✓ Grasses for increasing milk and beef production ✓ Diets for swine ✓ Resistance to diseases in potatoes ✓ Evaluation of faba bean varieties ✓ Adaptation of pea varieties ✓ Adaptation of onions
	✓ MANRECUR (Natural Resource Management Project)	4 ♀ 22 ♂ 18	1	130	✓ Adaptation of snails ✓ Diets & races of guinea pigs ✓ Adaptation of blackberries
	✓ MAG (Ministry of Agriculture & Livestock)	3 ♀ 6 ♂ 15	0	52	✓ Resistance to diseases in potatoes ✓ Diets & races of guinea pigs
	✓ IIRR (International Institute of Rural Reconstruction)	2 ♀ 18 ♂ 10	1	50	✓ Resistance to diseases in potatoes ✓ Diets & races of guinea pigs
	✓ DIPEIB (Provincial Board of Intercultural Bilingual Education of Cotopaxi)	2 ♀ 9 ♂ 4	0	50	✓ Resistance to diseases in potatoes
	✓ INIAP (Institute of Agricultural & Livestock Research) – FORTIPAPA (Strengthening Research & Seed Production in Potatoes)	7 ♀ 30 ♂ 34	0	645	✓ Evaluation of potato varieties ✓ Evaluation of barley varieties ✓ Resistance to pests & diseases in potatoes ✓ Evaluation of arracacha varieties
	Continues.....				

Country	Institution	No. CIALs	No. of Women's CIALs	No. of Families in Communities	Research Topics
Honduras	✓ IPCA (Participatory Research in Central America)	7 ♀ 143 ♂ 130	4	2273	✓ PPB in maize ✓ Evaluation of tropical maize ✓ Burning/nonburning in maize ✓ Tolerance to high temperatures ✓ Control of pests in cabbage ✓ Evaluation of chili pepper varieties ✓ Evaluation of common bean varieties Evaluation of late-maturing maize ✓ Diets for broiler chickens ✓ Evaluation of subtropical maize varieties ✓ PPB in native bean varieties ✓ Fertilization in maize ✓ Evaluation of native taro varieties ✓ Types of fertilization in carrots ✓ Evaluation of soybean varieties ✓ Evaluation of rice, upland rice ✓ Planting systems for common bean/maize associations
	✓ PRR (Rural Reconstruction Program)	6 ♀ 9 ♂ 36*	3	288*	✓ Evaluation of maize varieties ✓ Evaluation of common bean varieties ✓ Phases of the moon in cassava
	✓ SCD (Christian Development Services)	15 ♀ 30 ♂ 90*	0	900*	✓ Evaluation of common bean varieties ✓ Evaluation of maize varieties
	✓ EAP (Pan-American School of Agriculture at Zamorano)	9 ♀ 18 ♂ 54*	0	495*	✓ Evaluation of cassava varieties ✓ Evaluation of maize varieties ✓ Evaluation of common bean varieties ✓ Evaluation of plantain varieties ✓ Evaluation of banana varieties ✓ Evaluation of potato varieties
	Continues.....				

Country	Institution	No. CIALs	No. of Women's CIALs	No. of Families in Communities	Research Topics
✓ Nicaragua	✓ CIAT Hillsides	11 ♀ 13 ♂ 27	4	972	✓ Evaluation of maize varieties ✓ Evaluation of common bean varieties ✓ Evaluation of rice varieties ✓ Evaluation of soybean varieties ✓ Lots in common bean production ✓ Lots in soybean production
	✓ Continues.....				
	✓ UNPRHU (Institute of Human Development)	4 ♀ 13 ♂ 27	-	240*	✓ Individual terraces in coffee ✓ Diversification with fruit crops ✓ Installation of irrigation systems ✓ Use of organic manures in ornamental plants ✓ Use of botanical insecticides in cabbage & squash ✓ Use of organic manures (earthworm humus) ✓ Use of minimum tillage & dry mulches in lettuce
✓ Venezuela	✓ MARNR (Ministry of the Environment & Natural Resources)/FONAIAP (National Fund for Agricultural & Livestock Research)	4 ♀ 8 ♂ 24*	-	240*	✓ Use of organic manures in coffee ✓ Evaluation of common black bean varieties

* Approximate data.

LOGFRAME – Sustainability of the CIALs

Narrative Summary	Measurable Indicators	Means of Verification	Critical Assumptions
Goal: Promote sustainable rural development by expanding the capacities of the Latin American rural communities with scarce resources in order to solve their agricultural & environmental problems, take advantage of economic opportunities & integrate them within the broader activities of community development.	✓ **Sustainable** organizational principles for research & community development, determined ✓ Agricultural innovations developed ✓ Strategies for integrating the CIALs and/or ASOCIALs with NRM, developed ✓ PR institutionalized in at least three national research institutions	✓ Community organizations, NGOs & GOs applying organizational principles for R&D	✓ Institutions & communities committed to the principles of PR ✓ Stability of institutions & agreements ✓ Stability of interinstitutional relationships ✓ Absence of social conflicts in the study sites ✓ Information available at the study sites
Project purpose: Ensure the sustainability of the community research services (CIALs) through their consolidation in second-order associations, which are integrated into broader community development activities with solid linkages to the formal research sector	✓ Self-financing mechanisms that will permit the sustainability of the CIALs & the ASOCIALs, identified ✓ No. of second-order organizations working closely with the formal R&D sector	✓ Impact study ✓ Institutional reports ✓ Publications ✓ Organizations legally constituted	✓ Availability of information base for identifying self-financing mechanisms ✓ Economic stability of institutions ✓ Communities interested & committed
Results: Develop & strengthen second-order organizations of CIALs that are responsible & sustainable	✓ ✓ At least three ASOCIAL organizations formally established	✓ ✓ Act of constitution ✓ By-laws approved ✓ Book of minutes of meetings	✓ ✓ Critical mass of CIALs ✓ Support for member institutions during the execution of the project
Validate & document self-financing mechanisms for the CIALS & their ASOCIALS	✓ List of self-financing mechanisms ✓ At least three mechanisms tested, evaluated & documented	✓ Monitoring of the self-financing mechanisms	✓ Availability of self-financing mechanisms
Establish PM&E processes for the ASOCIALs	✓ At least one method & two tools for PM&E established	✓ Identification of internal (in the ASOCIALs) PM&E mechanisms through meetings & interviews	✓ ASOCIALs willing to implement the method & the tools for follow-up & monitoring
Lessons from the implementation of the CIAL methodologies & experiences of the second-order organizational processes systematized & disseminated	✓ At least two case studies on successful CIALs ✓ One case study on the implementation of an ASOCIAL ✓ At least two seminars presented on these aspects	✓ Publications of case studies ✓ Reports	
Lessons on replicating the CIAL	✓ Process of institutionalization	✓ Publications	

Narrative Summary	Measurable Indicators	Means of Verification	Critical Assumptions
methodologies by national-level organizations	documented & published ✓ Literature review on experiences of institutionalization of PR methods, documented	✓ Reports	
Local capacity for leading research & community development processes through the CIALs & ASOCIALs, established	✓ 120 new CIALs formed & 250 from the first phase with capacity for leading R&D processes	✓ Proceedings of CIAL encounters ✓ Information stored in database	
Inter- & intra-institutional information system that guarantees two-way flow of information, established	✓ Database model established ✓ A system with two-way flow of information, functioning	✓ Software adapted for the CIAL database	
Greater food security, increased income & greater influence on the decisions related to local development in the areas of impact of the ASOCIAL	✓ Report on indicators for evaluating the level of influence in decision-making for local development in areas where ASOCIAL & CIALs are formed ✓ Comparative impact assessment report to evaluate effect of CIALs on food security & income of the community, including the poor & disadvantaged ✓ Comparative impact assessment report to evaluate effect of ASOCIAL on food security & income in the region, including the poor & disadvantaged	✓ Impact evaluation study	
9. Greater capacity for agricultural innovation in the areas of impact of the ASOCIAL	✓ Report analyzing criteria for evaluating the "innovative capacity" of an institution (see the SN-3 Follow-up Study) ✓ Evaluation report on the impact of capacity building on the effectiveness of CIALs & ASOCIALs in developing & generating technologies	✓ Impact study	
10. Greater capacity for innovation in NRM in the area of impact of the ASOCIAL	✓ Report on how to integrate NRM strategies within the CIAL model ✓ A graduate-level thesis evaluating the impact of the NRM strategies	✓ Publications ✓ Thesis ✓ Handbook	

Narrative Summary	Measurable Indicators	Means of Verification	Critical Assumptions
	implemented by CIALs & ASOCIALs on the natural resource base ✓ Handbook on "Role of CIALS in Sustainable NRM"		
11. Greater capacity for establishing small agroenterprises in the area of impact of the ASOCIAL	✓ At least 20 agroenterprise development projects facilitated or backstopped by CIAL associations ✓ At least two case studies of successful CIAL agroenterprise projects ✓ Report on methods for conducting participatory evaluation of promising agroenterprises with CIALs & ASOCIALs	✓ Agroenterprises ✓ Publications of case studies ✓ Reports	

Sustaining the CIAL process for increased food security

Researchers: *Susan Kaaria & Carlos Arturo Quirós*

Results

Objective 1. Establish second-order associations to sustain the CIAL process, thereby enabling them to have increased representation and bargaining power by establishing alliances.

- We have established 4 second-order regional associations and 1 third-order national association in Honduras, and 1 second-order association in Colombia, this with support from CORPOICA. We are in the process of legalizing these associations. The objectives of these associations are to consolidate CIAL activities and provide support.

- These associations have prepared plans of action to achieve their objectives.

- The POA includes the establishment of microcredit to motivate CIALs to develop production projects, with the purpose of stimulating CIAL research activities. Each association is developing rules to negotiate and access these resources.

- We are in the process of investigating the different roles of each of these national/regional associations to understand their usefulness.

Objective 2. Integrating CIALs within existing institutional framework

- In Bolivia new associations will not be created; instead CIALs will be integrated within the "*Sindicato*," which is a grassroots organization that is government recognized and represents the concerns of different communities.

- In this model the CIALs become completely linked with development activities within the municipality. This model has several levels: the community, the CIAL, the Sindicato and the Municipality.

- The Municipality recognizes that in the communities where there are CIALs, the community is more proactive and participates more fully in looking for solutions to address their problems.

- We are investigating how to integrate CIALs within the existing institutional and national political framework (see Box 1).[1]

Lessons learned

- We have found that for the second-order associations to function and to create a sense of ownership of the process, all POAs must be developed with the active participation of the CIAL members themselves. The institutions should only facilitate this process.

- Developing an informal network of technicians from different institutions working with CIALs has proved critical in promoting the sharing of experiences and knowledge,

[1] Bolivia has recently implemented a law of popular participation at the national level.

identifying common objectives, analyzing and resolving problems, and sustaining the process.[2]

CIAL model for municipal governments in Bolivia

At present there are numerous demands from rural communities for improvements. With respect to agriculture and livestock production, for example, there are many limiting factors with respect to production, commercialization, markets, etc. There are also insufficient opportunities such as agroindustries for processing the different products supplied by farmers, mainly from the highland zones; those few that exist are often restricted.

Under the new reform the township is now an executing body. As such, they are to have a productive role; in other words, they have to coordinate activities with all the communities in their jurisdiction. It did not have mechanisms for coordinating and negotiating, to take action from the standpoint of economic promotion at the Municipal level.

With the Law of People's Participation (instrument for community development) and the Law of Dialogue (alleviation of poverty), the Municipal Government has to attend the demands of the communities with important consensual projects that effectively improve the living conditions of the communities.

Given the strategic importance that these actions take on, it is important to involve the farmers to participate in the preparation of the Municipal Development Plan and the POAs of the township of Colomi and coordinate with the economic organizations for creating conditions favorable for the development of the communities, given that at present there are no mechanisms that can fulfill such a situation. In the case of the township of Colomi, the conditions are right for constituting a Local Board of Economic Promotion (DILPE). This Board is responsible for negotiating, coordinating, articulating actions between actors from the public and private sectors, with the purpose of responding and guaranteeing the full participation of all the actors involved in the DILPE.

One alternative for this process is supporting the local agricultural committees (CALs) in Colomi so that in this way the farmers—both men and women—can participate in the identification of their principal needs and initiate actions to generate projects and have the opportunity of coordinating actions with DILPE. The CALs are organizations within the Sindicatos, formed by 5-7 people who are elected by their community, which delegates to them the responsibility of carrying out work in the areas of agriculture, commerce and processing. For that reason, it was decided to organize the demand from the communities of Colomi by forming groups of farmers who will coordinate actions for formulating projects and negotiating among the communities, the DILPE from Colomi and other townships.

Product

- Formation of CALs in Colomi, oriented toward solving local problems, generating, validating, adapting technologies for the different crops.
- Form associations of CALs that have greater breadth of action with respect to the identification of their demands and needs.

[2] In Honduras we now have an informal network of technicians (TecniCIAL) from five institutions: IPCA, PRR, SCD, Procuenca Zamorano and World Neighbors, which meets every three months.

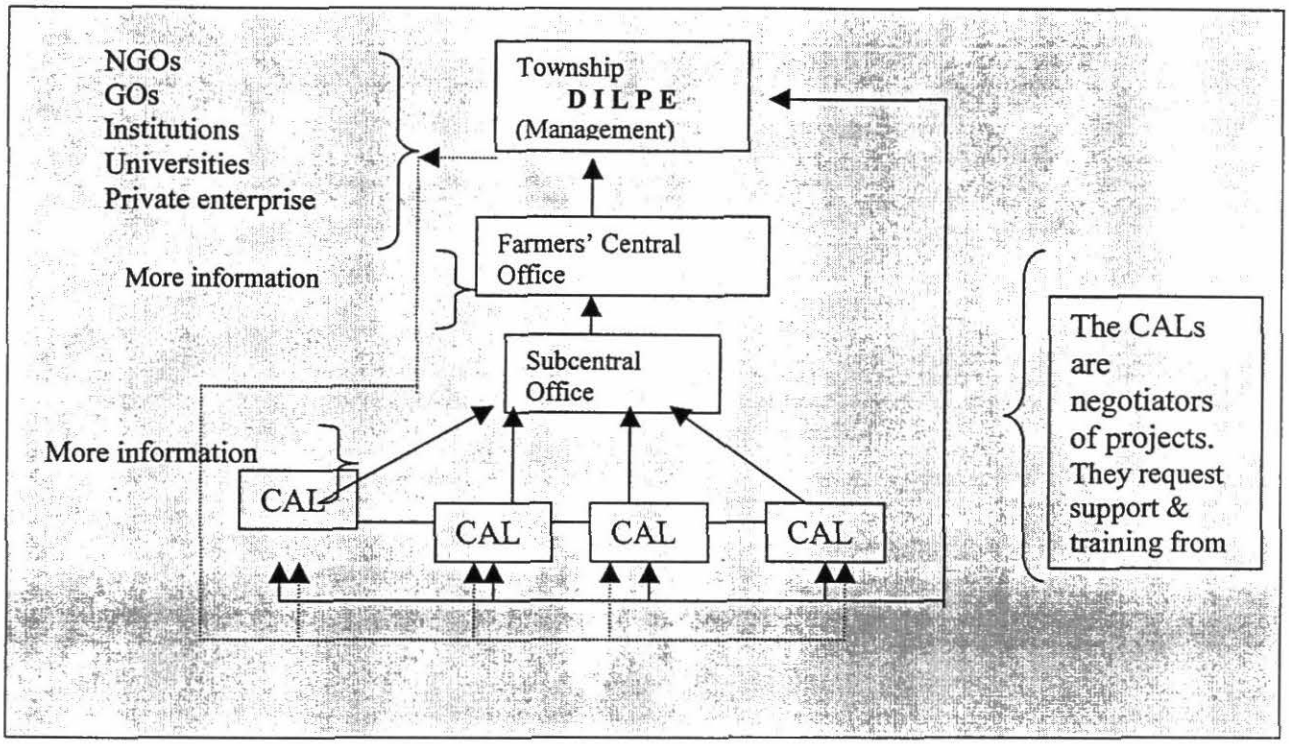

Figure 1. Scheme CIAL model for municipal governments in Bolivia

Evaluating mechanisms for self-financing

We are focusing on three areas:

- Providing support to CIALs to develop production projects for income generation, which would be managed in parallel with their own research activities. Key goals of these production projects would be to:
    - Maintain motivation high within the CIALs.
    - Increment the CIAL fund to finance CIAL activities and future income-generating projects
    - Develop research results into production enterprises, which is crucial for the sustainability of the research process
    - Derive lessons from CIAL production projects, based on research results in Cauca. The aim is to use these lessons to develop options for production projects for CIALs in other regions.

- Identifying external self-financing mechanisms that can be tested by the CIALs and their associations. The focus is on the following elements:
    - Description of the kinds of alternative self-financing mechanisms available, including key features for their design for farmer research committees in low-income rural communities in developing countries; identify which of these mechanisms have been successfully applied by rural communities living in resource-poor areas of the tropics

- Identification of the types of self-financing mechanisms that have been tried and with what results, to support client participation in agricultural or other sectors; e.g., health, microfinancing; cooperatives and small-scale business development
- Definition of factors that determine the enabling environment for NGOs or CBOs that wish to establish alternative funding mechanisms; identify internal changes NGOs have to make when adopting them
- Menu of options of available self-financing mechanisms that can be tested in resource-poor areas, including strategies for implementing them

Lessons learned

- We have found that farmers want short-term results, which usually do not occur in many research projects. Therefore, we have had to study the possibility of generating alternative projects that achieve short-term results to meet farmers' immediate needs and thus keep them motivated. For example, production projects, training courses and other activities were implemented so the farmers would not feel that they were wasting their time.
- Additionally, it was necessary to seek a balance between short- and long-term goals. If research results are in relation to long-term goals and we are working with very poor farmers who have immediate needs, it is difficult to maintain their motivation for research results that take a long time to bear fruits.
- Our goal is to create production projects parallel with research projects in order to generate resources for maintaining research and stimulating group members.

Principles and practices

- Creating second-order associations to sustain and provide support to CIALs. The associations will give CIALs a voice so that they are in a position to make demands and provide links to R&D systems. The associations would provide support to CIALs, allowing them to function without external facilitators.
- Strengthen the relationship between the community and the CIAL
  - This is to ensure that the CIAL works on the community's priorities, not their own. We are conducting a diagnosis at the level of the groups to understand their weaknesses, so as strengthen and build the capacity of these groups in areas where they need support.
  - We are in the process of establishing PM&E processes at the CIAL level. These processes will also be useful in identifying problems and issues early on so as to improve the functioning of the CIALs and strengthen their relationships with the community.

Meeting with CIALs from Boyacá to analyze & discuss the feasibility of creating a second-order organization of CIALs

Researchers: *Carlos Arturo Quirós*[3], *José Ignacio Roa*[3] *Manuel Arévalo*[4], *Luis Humberto Fierro*[4] *& Beatriz Franco*[4]

Introduction

In 1995 CORPOICA initiated the implementation of the CIAL methodology in several communities in the areas of influence of the CRECEDs (Regional Centers of Training, Extension & Dissemination) in Cundinamarca & Boyacá. At present they have 18 CIALs, which have been implementing various research projects successfully, responding to the participatory diagnoses made in meetings with their communities.

It is well known that most of our institutions face great economic difficulties, which have to be surpassed in order to give continuity to the projects & maintain their presence in the farmers' fields. For this reason the SN-3 Project invited the Regional Office 1 of CORPOICA to explore the possibility of creating a second-order organization of CIALs with some members of the Boyacá CIALs. Such organizations must be supported & strengthened in order to reach a level of self-reliance that will permit them to execute their own projects & establish their linkages with those organizations that they consider favorable for their own interests.

Objectives

In accordance with the foregoing, it was proposed to:

- Exchange experiences on the research carried out by the CIALs
- Examine the experiences of CORFOCIAL, Cauca
- Analyze, discuss & take decisions regarding the possibility of forming a second-order organization of CIALs in Boyacá
- Carry out commitments & activities according to the decisions made

Methodology

The procedure used is based on some of the steps of the methodology "Methodological proposal for the participatory component of the municipal territorial ordinance, based on the development of a common vision," developed by Beaulieu et al. (2000).[5] Some adaptations were made so that it could be applied in order to accomplish the objectives proposed in this study.

Results

After the initial presentations, the expectations were clarified, & the farmer-technicians from CORFOCIAL then talked about their experiences. A synthesis of the questions & answers from the plenary session follows.

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[3] *Project SN-3*

[4] *CORPOICA Regional 1*

[5] *Beaulieu, N.; Jaramillo, J.; Leclerc, G. 2000. Propuesta metodológica para el componente participativo del ordenamiento territorial municipal, basada en el desarrollo de una visión común. Documento de trabajo. Versión preliminar. Centro Internacional de Agricultura Tropical, CIAT, Cali, CO. 15 p.*

The farmers from the Boyacá CIALs expressed their opinions about the formation of a second-order organization:

"It's a very good idea, but we people from Boyacá are very individualistic."
"We should make an effort & form a large & strong group"
"It is very important to meet in groups in order to work on bigger things."
"If there is more union & more coordination, we can get ahead."
"United we stand; alone it is very difficult to accomplish anything. We can get ahead, but if we work together we can take bigger steps. With an organization we can 'knock on the doors' of the best organizations."
"I think that we need to receive more instruction to accomplish this; besides with individualism we won't get anywhere."

"***As long as we are not united, we aren't anybody. Hopefully we can form a larger group & be much more.***"

Perceived advantages of a future organization of CIALs in Boyacá

"It will be converted into a legally recognized organization."
"It will be able to knock on any door, here or abroad."
"This will help us to get resources & be able to function well."
"The experiences of similar organizations, such as CORFOCIAL in Cauca, serve as a lesson from which we can gain experience so as not to make the same errors."
"We should initially think on a small scale & gradually grow as we learn to manage things on a larger scale."
"Strengthen existing CIALs & create new ones in the region, developing the PR methodology."
"If there is a sense of responsibility & this is shared, the association can grow more easily & receive support from experts & thus be able to access national or international resources."
"We can have small businesses & request support for them."
"The day that CORPOICA cannot continue supporting us, the CIALs will have grown to the point where they can continue on their own."
"To the extent that the group is interested & has good cohesion, it can achieve whatever it wants."

Disadvantages of forming a second-order organization according to farmers from 8 CIALs in Boyacá & Cundinamarca

"There is a lot of paper work to get the legal status of the organization approved."
"It requires the commitment of everyone, but there are always those who do not keep it. We truly require everyone to fulfill their commitment"
"The distances between sites can be a limiting factor for attending meetings."
"Think about negative aspects."
"There are risks in depositing money with the government."
"Without water, we won't get very far."
"To sustain a team of technicians is very difficult because we are very poor. Boyacá is very large so this would be costly."

Are we ready & sufficiently committed to face this task of forming the organization?

Then after the participants had made the decision to form their organization & assume the responsibility of the same, an exercise was done to visualize the conditions desired for the future association (Table 1).

Table 1. General description of the conditions desired by the farmers who participated.

Economic Resources	Research	Organization
✓ Manage our own resources ✓ Make contracts for direct execution by the CIALs ✓ The resources should be given directly to the association. ✓ Present projects to get funds for reforestation & rural housing ✓ Have a bank for moving money or models of credit ✓ Have a rotating fund for credit ✓ Have a fund to maintain the group ✓ Generate products for sustainability	✓ Generate technological recommendations ✓ Create a rural university for R&D ✓ Work on organic agriculture ✓ Avoid using growth hormones for animals or plants ✓ Have seed banks ✓ CIAL work should continue & keep on improving ✓ Have some 50 CIALs ✓ Learn about technologies from other countries	✓ Name a provisional Board ✓ Become legally recognized ✓ Have honest leaders ✓ Have good levels of participation ✓ Work together ✓ Have small agroenterprises ✓ Know entities for presenting projects ✓ Have a cooperative to get cheap inputs ✓ Have national & international support ✓ Motivate other communities to expand the organization ✓ Have communication with national & international entities for commercial contacts, joint work ✓ Have access to laboratories to diagnose diseases, analyze soils ✓ Have insurance against harvest losses
Training	**Marketing**	**Infrastructure**
✓ Types of organizations ✓ Generate training systems ✓ What makes a good organization ✓ Business development, administration, bookkeeping & human relationships ✓ Learn techniques for producing organic fertilizers ✓ Learn to combat & control pests & diseases ✓ Personal growth for continuing work	✓ Create center of assembly & distribution to avoid intermediaries ✓ Produce good-quality products ✓ Have seed banks ✓ Have national or international market	✓ Have good system of irrigation, water reservoirs ✓ Have good roads for transporting products ✓ Have bus transport company ✓ Create an irrigation district ✓ Have warehouses for industrializing potatoes ✓ Have a farm for producing for common work

with communities ✓ Management & care of watersheds – reforestqtion ✓ Recover lands ✓ How to avoid using tractors & mechanical planting ✓ Conscientization on the care of the environment		✓ Have own site ✓ Have own car or truck for transporting the products
Health & Nutrition	**Technological Development**	**Small Businesses**
✓ Have good health for working ✓ Recover the use of traditional foodstuffs	✓ Have knowledge or results applied by children ✓ Produce organic crops ✓ Give technical assistance	✓ Be managers of small businesses ✓ Produce own fertilizers & inputs

The following is the result of prioritizing the identified topics:

1. Economic resources 24
2. Research 22
3. Organization 21
4. Training 21
5. Marketing 9
6. Infrastructure 8
7. Health & nutrition 5
8. Small businesses 4

Participatory diagnosis of water use and management and determination of technical and local indicators of water quality in the Wibuse microwatershed (Matagalpa Nicaragua)

Researchers: *Lina Andrea García*[1] , *Edmundo Barrios*[1] , *Richard Thomas*[1]
Collaborators: *José Ignacio Roa,*[2] *Carlos Arturo Quirós,*[2] *Jorge Alonso Beltrán,*[3] *Miguel Ayarza*[3] *& José Ignacio Sanz*[3]

Background

CIAT has developed a set of tools that were created through the integration of local and technical knowledge so that the communities can improve their agricultural productivity while at the same time, conserve the natural resources and their quality of life. Such tools help diagnose the state of health of the soil on farms, which permits decision-making that is beneficial for all (Turcios et al., 1998).

Similarly, at the CIAT-Nicaragua reference site (Calico River Microwatershed), a tool for diagnosing water quality will be developed to help the community to determine what is the use, management and state of quality of the water in alternate sources (rivers, streams) of the zone and at the same time diagnose how the management of the soil is at the scale of the microwatershed.

These activities will be carried out in order to offer alternatives and solutions to one of the principal problems in the area today: the decrease in the quality of the water, the low recharge rate of the aquifers, the increased surface runoff, the decline in harvesting and infiltration of rainwater in the land (Barreto & Duorak, 1995). This basic knowledge is seen as the first step in the process of providing the communities with training and techniques to manage their natural resources.

This study is a new line of work that will be developed in an area lacking this type of methodology. It will be a pilot experience, serving to test tools for gathering data, diagnosing the quality of the water, and strategies for communicating results.

General objectives

- Carry out a participatory diagnosis of water use and management of the natural sources in the Wibuse microwatershed

- Develop a tool for diagnosing water quality that integrates local and technical knowledge, that helps the community to determine how the use, management and state of the water available from the alternate sources (rivers, streams) of the zone are, and at the same time diagnose how the management of the soil is at the scale of microwatershed

Specific objectives

- Contribute to sound water and soil management through PR that integrates groups of farmers in the process of identifying, evaluating and validating alternatives aimed at improving their decision-making

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[1] *PE-2 Project*
[2] *SN-3 Project*
[3] *PE-3 Project*

- Determine the use and management of alternate water sources (rivers and streams), locate contaminating sources and their impact on the Wibuse microwatershed
- Continue, motivate and create action plans that offer solucions to the problems detected in the participatory study

- Identify, together with the land and water users, the indicators that they themselves are accustomed to using to determine the state of quality of the water

- Weigh, rank and agree upon the indicators identified through the direct participation of each farmer

- Identify the areas with different degrees of human influence based on the integration of the local and technical knowledge

- Extrapolate the results to other microwatersheds

Materials and methods

The activities include holding four workshops and individual interviews. The methodology applied during the first workshop, the individual interviews and the second workshop will be the one established by Ravnborg et al. (1999). The activities will have the following objectives:

- *Workshop 1*
  - Explore the interest of the community in the project
  - Stimulate the participants by showing them the importance of collective action for managing water from natural sources
  - Do a group analysis of water use and management in the microwatershed
  - Analyze the situation of the changes that the resource "water" has undergone over time

- *Individual interviews*
  - Identify conflicts related to water use and management in the microwatershed
  - Obtain additional information about the water use and management in the zone
  - Complement the information on water that was obtained in the interview conducted by Jonson and Baltodano (1999)

- *Workshop 2*
  - Provide feedback to the community, the purpose of which is to disseminate the interpretation made by the experts about the use, management and conflicts generated by water use

  - Refine and produce a final interpretation, where the inhabitants of the microwatershed have participated. This shared constructive interpretation can be developed for improving the concerted management of water in the microwatershed.

  - Determine the level of commitment and actions to follow. The purpose is to define the activities that make it possible to move on to the action phase. In other words it is necessary to find the elements necessary for developing an action plan related to the already identified problems related to water use. Such elements that can arise are:
    - ✓ Measurement of the state of the water, with local indicators of water quality
    - ✓ Information from outside the microwatershed on possible solutions for the problems

- At this point it is likely that the following workshops will be planned in order to determine the local indicators of water quality.

- *Workshop 3.* Determination of local indicators of water quality. This will be done with each community in the high, intermediate and low-elevation zones of the Wibuse microwatershed. The objective is to identify and execute the initial prioritization of the indicators that are used locally to evaluate the quality of the water (Trejo et al., 1999).

- *Workshop 4* has as its objective to implement the general consensus of the list of indicators prioritized as a result of the third workshop (Trejo et al., 1999). The farmers will resume the work of the previous workshops and discuss the potential use and the benefits of these tools for themselves and their communities.

  At the end of this session, the activities to be carried out in the field for validating the methodology will be determined; at the same time the establishment of the sampling stations where the list of indicators will be applied. The evaluation will make it possible to characterize the different water sources as healthy, passable, unhealthy or with some other connotation.

- *Workshop 5* will discuss the validation of the methodology and the indicators established and applied in the field by the interested group and the technical facilitators. The information obtained from the monitoring stations will also be discussed during the workshop.

  This validation session is of utmost importance because it will determine whether the method is efficient and whether it can be used at the local level. The resulting technique should be made readily accessible to the communities; otherwise it is likely that they will not apply it in their decision-making processes.

  The results of these events will be transmitted to the inhabitants of the neighboring microwatersheds, and a guide will be prepared for use as a mechanism of dissemination for the other institutions.

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The role of CIALs in natural resource management and conservation

In a meeting with 12 participants from 3 CIALs of San Dionisio, Nicaragua, a survey was conducted on the feasibility of CIAL participation in activities related to natural resources (NR) with the following objectives:

- Learn about the participants' perceptions with respect to NR
- Identify how the participation of the CIAL and the community would be in campaigns for NRM and conservation

Results

With the active participation of the producers and the moderation of technicians from the CIAT Hillsides and FPR projects, the following answers were obtained to the following questions:

What do natural resources mean to you?

Trees, forestation
Water, reservoirs
Land, conservation of the land, the mountains
Protection of the animals
Green manures
Live or dead barriers
Conservation of animals
By conserving the natural reserves, we improve our lives because we have better crops

What does conservation of the natural resources mean?

Do not cut down trees
Do not burn
Respect animals, plants, water, reforestation
Set up nurseries
Keep the land from eroding
Use live and dead barriers
Think about the future

How can the CIAL and the community integrate their efforts to work for natural resources?

- It is the CIAL that should seek solutions to the problems that the community wants.
- The CIAL should show the community what can be done with respect to NR.
- The CIAL should convene the communities and give them messages about the need to protect the NR.
- We should see about recovering what has been lost.

The problem

- Those farmers with the least resources need to organize themselves, but they require support from other organizations that work in NR and can show them others' experiences.
- No one ever used to talk about NR.
- For lack of knowledge about the usefulness of plants, people do not take care of them.

What should be done?

- Train and teach the people about the importance of conserving the NR.
- Make people aware of the environmental laws and respect them.
- Carry out conscientization in the homes, with adults, children and in meetings with the support of the organizations through training workshops.
- Establish nurseries of trees and medicinal plants.
- Organize campaigns for planting trees with the community to conserve the water because some wells have gone dry.
- Make educational videos to present to the community about conservation of NR and the damage that can be done if we do no protect them (they will become deserts).

What is the situation with respect to the water?

- There are sources of water that belong to people who do not live in the community.
- The owners of wells do not permit work to be done where there are springs.
- Attempts were made through the indigenous community to make agreements/ arrangements with the owners of land where the springs originate, but nothing has been accomplished so far.
- As the tank is damaged, the water is contaminated with industrial wastewaters and sewage; samples were taken by the Farmer-to-Farmer Program (Las Mesas).

Based on the results of this survey and the participatory diagnoses on the use-management of the water by communities of San Dionisio, it is expected to coordinate actions through the CIAL and the Water Committees.

Development of a model for supporting local capacity for market intelligence (LCMI)

Researcher: *Carlos Ostertag, RAED Project* [1]
Collaborators: *Carlos Arturo Quirós*[2], *Luis Alfredo Hernández*[2]

The RAED, Rural Agroenterprise Development Project and SN-3, CIAT's farmer participatory research project, are implementing this project jointly. LCMI activities started with two interproject meetings in which the final product concept was discussed. It was decided that the final client or beneficiary of the product should participate in this conceptualization. The LCMI system being visualized is simple, permanent and participatory, and will be implemented by first- or second-order small farmer organizations.

To determine demands relative to the LCMI system, a survey was planned and a questionnaire designed. The survey will be applied to 36 small farmers in 23 first- and second-order organizations, including several local agricultural research committees (CIALs) in Honduras, Colombia, Nicaragua, Bolivia and Ecuador in October and November 2001. The questionnaire focuses on defining the appropriate type of market information for the LCMI, the best ways of distributing this information, and the willingness to pay for it.

Business training for participatory second-order organizations

Funded by the Kellogg Foundation, SN-3 and the RAED Project have planned a business training process targeted for technical staff of support organizations and leaders of RAED participatory second-order small farmer organizations. The objective of the process is to train participants in the following:

- Basic business concepts such as business and market orientation, marketing basics, costs and finance, administration
- Conducting business diagnoses
- Executing a rapid market study, Market Opportunity Identification (MOI)
- Designing integrated production projects
- Strategic planning

Participants will come from Andean countries such as Colombia, Ecuador, Peru and Bolivia. Three workshops are anticipated:

- Business concepts, business diagnoses and the MOI methodology, to be held in Riobamba, Ecuador, November 2001
- IAP, Integrated Agroenterprise Project design, 2002
- Strategic planning in individual countries

[1] *SN-1 Agroenterprises*
[2] *SN-3 Project*

Community telecenters: A strategy for promoting sustainable development

Researcher: *Luis Alfredo Hernández*[3]
Collaborators: *Olga Patricia Paz*[4], *Nathan Russell*[4], *Eduardo Figueroa*[4], *Alvaro del Campo*[5], *and grassroots groups in Cauca*

Project goal

InforCauca is a communication-for-development project, whose goal is to implement three community telecenters in a marginal region of southwestern Colombia. Models appropriate for strengthening the local capacity for obtaining and using information related to the economy and sustainable NRM are being tested.

Project Description

This three-year project is financed by the International Development Research Centre (IDRC) and is being implemented by CIAT and the Western Autonomous University (CUAO), in an agreement with the Association of Indigenous Councils from Northern Cauca (ACIN), the Carvajal Foundation and CIPASLA, a consortium formed by seven organizations that work for rural development in Central Cauca. The project is now in its second year.

Progress made in the development of the telecenters

After forming alliances with local organizations for setting up of the three telecenters and providing training, the process has focused on consolidating the existing alliances and in developing the three telecenters.

The ACIN telecenter

This telecenter has made it possible to strengthen the ACIN's communication and capacity for disseminating information. In fact the telecenter has assumed the role of a small communications unit. It produces bulletins, letters, press releases and other information, which are sent to the media, NGOs and GOs. It also produces documents, handbooks, reports and projects that are sent to national and international organizations that specifically support indigenous people, rural people who have been displaced, and the relatives of those who have disappeared. Institutional support is in the form of the production, dispatch and receipt of press releases and other information, as well as the search for and negotiation of diverse forms of aid. They also provide assistance for community events such as protest marches, assemblies and congresses in which the Association participates.

In an effort to link other local communication media with the telecenter, the local coordinators who are in charge of providing the services and orienting the users in the management of these tools have provided nonformal training for young Amer-Indians from the School of Zonal Communication. Similarly, an agreement was made with Radio Nasa, the local station in Toribio, with the purpose of offering them information pertinent to the indigenous communities so that they can transmit it. The information from Internet searches is selected in accordance with the criteria established among the promoters of the radio station and the telecenter. Thus far priority

[3] *SN-3 Project*
[4] *SN-2 Project*
[5] *CUAO*

has been given to information on human rights, local happenings, women and experiences of other indigenous groups. This information is sent to the radio station, either in printed form or on a diskette, via the local *chiva*, the traditional form of public transportation in the region. It is hoped to socialize the telecenter even more among the members of the indigenous community, consolidating a network of information between the telecenter and the local radio. The design of the ACIN Web page remains to be finished, and efforts continue to be made to strengthen the communication among the indigenous organization and both national and international entities.

Central Cauca telecenter

In Central Cauca the telecenter was closed for several months due to technical difficulties and administrative orientation. Then its members decided to transfer it to the House of Culture in Tunía, where activities reinitiated with a strategic proposal to sell certain services such as access to and use of Internet and tools of the telecenter, design and administration of Web sites. They also take into account the processing, sending and receipt of diverse data and the training of potential users. At this point most of these activities are being implemented. They have also promoted the telecenter through workshops, meetings and visits to homes.

Among the processes that are being carried out are developing information systems and the virtual school network. The former is being done in conjunction with the Rural Agroindustries Committee (AIR), brought together by CIPASLA. The members of this Committee have very specific information needs with respect to five PPI (Integrated Production Projects) products. The idea is that the AIR and the telecenter join forces on the initial development of these information systems within the framework of the collaborative work between InforCauca and the AIR Project at CIAT. Support is also received from the Colombia International Corporation (CCI), which has experience in setting up and implementing information systems on prices and agricultural markets at the national level.

Work is also going on to form a local communication network in order to disseminate the information that the telecenter circulates to the most distant rural communities.

The second process is oriented toward the CUAO school network, designed to offer and exchange pedagogical tools and information on different topics with an integrated approach to education. This service is being targeted toward students and professors of the agricultural schools in Central Cauca. Data pertinent to the rural context can also be fed into the system.

The Aguablanca telecenter

The Aguablanca telecenter was moved to the Community Services Center of the Carvajal Foundation in the district of El Poblado II in Cali. During this process, which took several months, the local coordinators made progress in the search for and systematization of information on the District of Aguablanca, with the idea of developing a gateway for the zone. The telecenter is also being promoted among organizations and community leaders.

In addition to access to and use of the telecenter's tools, a job service will be offered. For this purpose an agreement is being made between the Carvajal Foundation and the National Apprenticeship Service (SENA) for developing an Information Center for Employment Services, supported by the telecenter and the two local coordinators.

Research

The research at InforCauca focuses, on the one hand, on strengthening the usage and critical appropriation of the telecenter and, on the other, on evaluating the impact, positive or negative, that these technological tools have on people's lives. The researchers from the CIAT SN-3 Project have been accompanying these activities.

Communication strategies

Work is being done to characterize the information needs in the organizations that make up InforCauca or in their target communities. Based on this information a strategy that permits taking advantage of these tools will be designed for the benefit of the community. In the case of the ACIN telecenter, this research now has the inputs for initiating the proposal for the communication strategy. In the case of the Cauca and Aguablanca telecenters, several workshops have been held to identify how this component can support concrete processes such as the development of the information systems or the formation of local information networks.

Evaluation of impact

After several workshops where the proposal integrating the visions that each actor had with respect to the topic was discussed and socialized, a friendly and pertinent methodology was identified for monitoring and evaluating the impact of InforCauca.

At present a survey of the telecenter users is being applied for identifying information such as access to and use of diverse communication media and their appraisal of the telecenters' services. The surveys for community members have already been designed and will be applied in the near future. Manuals are being prepared for orienting the interviewers, who should preferably be from the communities.

Lessons learned

- The importance of establishing alliances with local, national and regional partners is highlighted once again because they make it possible to enrich processes, build new knowledge and learn from others' experiences.

- At the suggestion of the organizations, the training of the local coordinators has been more in the form of in-service backstopping and consultancies, based on concrete processes and products.

- One of the positive outcomes for InforCauca has been cultural change. According to the actors themselves, they talk more about electronic forms of communication and Web pages in their organizations; thus the Project has contributed to positioning this topic. On the other hand, the member organizations have acquired competencies with respect to the critical use and application of the new information and communication technologies (NICT). Visualizing the way of making full use of the NICT in accordance with the needs and conditions of the zones has been gradually positioned. It is now necessary to promote the construction of a vision of the possible uses of the NICT and what role they can play in the grassroots organizations and their target populations.

- Once more it stands out that the content of the telecenter per se does not give it a technological platform (that is, a tool); rather the organizations and the community can measured it by its vision, projects, processes, activities and communication practices.

- The sustainability of the telecenters—understood not only from a financial standpoint but also their social, cultural and political sustainability—is a critical issue that merits further consideration.

- It is important to have interlocutors committed to the development of the telecenters. The future, sustainability and utility of the telecenters depend on the steps taken and processes promoted by InforCauca and the coordinators.

- The research methodologies and tools should be applied in accordance with the organizational culture, forms of working and, in general, with the particular conditions of the telecenter, the promoting organization and its sociocultural context.

- The time dedicated to exchanging views on topics such as research or the destiny of the telecenters is always beneficial. On the one hand, the levels of participation and communication among the actors are strengthened. On the other hand, it has been noted that once certain operational and functional difficulties are overcome, there is greater dedication to thinking about proposals oriented toward potentializing the services and strategic uses of the telecenters.

- The visit of the researcher Sheri Dankevi from IDRC was very opportune and useful for making the group more aware of gender issues. In addition, it facilitated the revision of the notion that each member of InforCauca had about this concept. Gender was discussed not simply as an issue of women vs. men but as a topic that implies equitable conditions for all marginal groups (e.g., women, youth, children, ethnic groups).

- Coordinating and participating in the First National Workshops of Telecenters and in the Regional Workshop of Centers of Access to Internet, held in Ecuador, provided the opportunity not only to exchange experiences and learn about other ideas and contexts, but also to make contacts with others in the field and participate more actively in the world movement of telecenters.

Strengthening the institutional change process by intensifying the participation of farmers in the R&D process

Researcher: *Susan Kaaria*

This project proposal was submitted to the Rockefeller Foundation in July 2001. The following is a summary of the most important points of this three-year project.

Goal

To strengthen the institutional change process by empowering resource-poor farmers to participate more effectively in the technology development process, to make more effective demands on the research services, and develop effective linkages between farmers and formal research systems by enhancing the flow of information

Purpose

To ensure the sustainability of community-based research services through strengthening ongoing PR activities by consolidating lessons (principles and guidelines) and applying them on a wider scale to strengthen the innovative capacity of rural communities in Latin America and Africa.

Geographic focus

The proposed research will cover Kenya and Uganda, specifically Western Kenya and one of the pilot districts of NARO's Outreach Partnership Initiative–Kabale District. The goal of linking the two NARS initiatives is to generate an integrated development strategy that exploits the synergy and diversity of experience offered by different countries and partners.

Strategy

The project will work towards this goal by developing, strengthening and networking local research organizations that are locally led, managed and accountable to their communities and that mobilize volunteerism, including the disadvantaged, integrating with and creating linkages to other community development efforts.

Partners

Local communities, NARS and NGOs in Kenya and Uganda

Beneficiaries

Disadvantaged poor rural communities in at least 200 rural communities of Kenya and Uganda

Outputs

- A systematic process for organizing for adaptive research at the grassroots level, established in Uganda
- A systematic process for developing effective linkages for information flow—methods, processes, technologies—among the different stakeholders [farmer research groups (FRGs),

agricultural CBOs and NGOs], with sources of technology and information (NARs and IARCs, among others), designed.

- The role of emerging second-order associations in sustaining and providing continuity to community-based groups by facilitating a two-way flow of information/technologies/ methods, access to input-output markets and credit markets, defined.

- Mechanisms for M&E that serve to analyze critically and understand the institutional change process, increase self-learning and cross learning, and evaluate impacts, established.

OUTPUT 3. PROFESSIONALS AND OTHERS TRAINED AS FACILITATORS OF THE PARTICIPATORY RESEARCH APPROACH

MILESTONES

* Prefessionals trained in the use of PR tools and methods
* CIAT research associates and assistants trained in methods and techniques of participatory research
* Professionals trained in the establishment and monitoring of a PM&E process
* Professionals motivated to establish a PM&E system
* Factors affecting the process of institutionalization of the CIAL methodology analyzed and effective strategies developed
* Technicians trained to apply PR tools and methods

Professionals trained in the use of PR tools and methods

Table 1. Participation in training events related to PR.

Dates	City & Country	Event	Participating Institutions	No. of Participants
19-23 Feb.	Cali, Colombia	Process of disseminating the CIAL methodology & the formation of second-order organizations	- PRR, Honduras - SCD en Laderas, Honduras - IPCA, Honduras - PROINPA, Bolivia - IIRR, Ecuador - FORTIPAPA, Ecuador - CIAT-Hillsides, Nicaragua - UNICAM, Nicaragua - INPRHU, Nicaragua - CORPOICA, Reg. 1, Colombia - CORFOCIAL, Colombia - FONAIAP, Venezuela	15
23-27 April	Sebaco, Nicaragua	The Local Agricultural Research Committees, CIALs	- PRODESSA, Nicaragua - INTA, Nicaragua - ADDAC, Nicaragua - CIAT-Hillsides, Nicaragua - CIAT-SN-3, Colombia	19
26-29 June	Cali, Colombia	Methods & techniques of	- Ministerio de Agricultura, Cuba	24

Dates	City & Country	Event	Participating Institutions	No. of Participants
		farmer participatory research (FPR)	- Ministerio de Agricultura y Ganadería, Costa Rica - INIA, Chile - FIDAR, Colombia - CIAT Projects: Bean Entomology Rice Breeding Soils Cassava Entomology Geographic Information Systems SN-3 SW-PRGA - REDECO, Colombia	
12-13 Sept.	Santander de Quilichao, Colombia	Methods & techniques of FPR	- CETEC, Colombia - CORPOTUNIA, Colombia - UMATAs from: - Caldono - Suárez - Santander de Quilichao - Asociación de Paneleros de Santander - Agroenterprises Project/CIAT	11
1-5 Oct.	Yoro, Honduras	First International Workshop on Participatory Monitoring & Evaluation (PM&E)	- IPCA, Honduras - IIRR, Ecuador - PRR, Honduras - Young Researchers Project, Instituto San Pedro, Honduras - CLODEST, Honduras - CORFOCIAL, Colombia - CIAT - Hillsides Project, Nicaragua & Honduras - Forages, Honduras & Nicaragua	19
TOTALS		**5**	**44**	**77**

Course on PR methods and techniques

Trainers: *Carlos Arturo Quirós* [1], *José Ignacio Roa*[1], *Luis Alfredo Hernández*[1], *Susan Kaaria*[1]
Collaborators: *Elizabeth Alvarez*[2], *Roosevelt Escobar*[2], *Michael Peters*[3] & *Edmundo Barrios*[4]

Learning objectives

At the end of the course, the participants will be able to apply the PR research methods and techniques to improve the efficiency in the development of their projects. With respect to the specific objectives, after the course the participants will be able to:

- Identify production problems from the standpoint of the producers
- Identify and interpret local knowledge
- Involve the producers in the evaluation of the technologies being tested
- Analyze the feedback given by the farmers in the generation of new technology
- Design participatory strategies as components in research projects

Results

- First official training on PR methods and techniques in our research center
- 17 research assistants and/or associates from 8 CIAT projects were trained
- At the request of several international institutions, it was decided to open the course to them.
- There were 7 technicians from Cuba, Costa Rica and Chile.
- It was decided to hold this course yearly at CIAT in conjunction with the CIAT Training Unit.

[1] *SN-3 Project*
[2] *PE-1 Project*
[3] *IP-5*
[4] *P2-2*

First International Workshop on Participatory Monitoring and Evaluation (PM&E)

Researchers: *Susan Kaaria*[5], *Luis Alfredo Hernández*[5], *Elías Claros*[5], *Vicente Zapata*[6]
Collaborators: *Fredy Sierra*[7], *Nilda Martínez*[7], *José Jiménez*[7], *Dominga Tijerino*[8]

This workshop was held in the city of Yoro, Honduras from 1-5 October of 2001. There were 21 participants from 6 organizations working with small farmers in 4 countries from the region.

Introduction

The work on Participatory Monitoring And Evaluation (PM&E) of Projects is a process that has been gradually growing due to the interest of entities such as CIAT, in association with other governmental and nongovernmental organizations in countries such as Colombia, Bolivia, Honduras, Ecuador and Nicaragua, among others. The purpose of this workshop was to strengthen these processes, contributing more tools and experiences to the organizations or persons in charge of development work with farmers.

Objectives

The overall objective was that after the participants had received the training, they would be capable of supporting the establishment of M&E processes at the level of grassroots groups and community organizations and monitoring these processes.

The specific objectives were to:

- Explain the basic concepts inherent in PM&E
- Facilitate the conscientization of grassroots groups about the importance of the PM&E in development processes
- Explain the steps involved in implementing a PM&E system
- Hold a workshop with members of a community group in order to design an M&E system that would be useful for this group
- Develop abilities and skills for working with grassroots groups
- Prepare a proposal (based on a case study) for monitoring the M&E processes.

Work methodology

- There were two moderators and a rapporteur daily.
- A monitoring committee was constituted daily with workshop participants.
- All the documents written about the experiences and the results obtained during the week were shared during the event.
- A field day was held, during which a workshop was held with members of a community group for designing an M&E system, and the experiences learned during the course of the workshop were shared with the farmers.
- After the presentations were made, the participants met in small groups to analyze their experiences and present the results in the plenary session (Fig. 1).

[5] *SN-3 Project*
[6] *PE-3 Project*
[7] *IPCA Project, Honduras*
[8] *SN-3 Project in Nicaragua*

- Some presentations were made on special topics that can contribute to the future development of this phase of the project.
- Each institution presented its action plans.

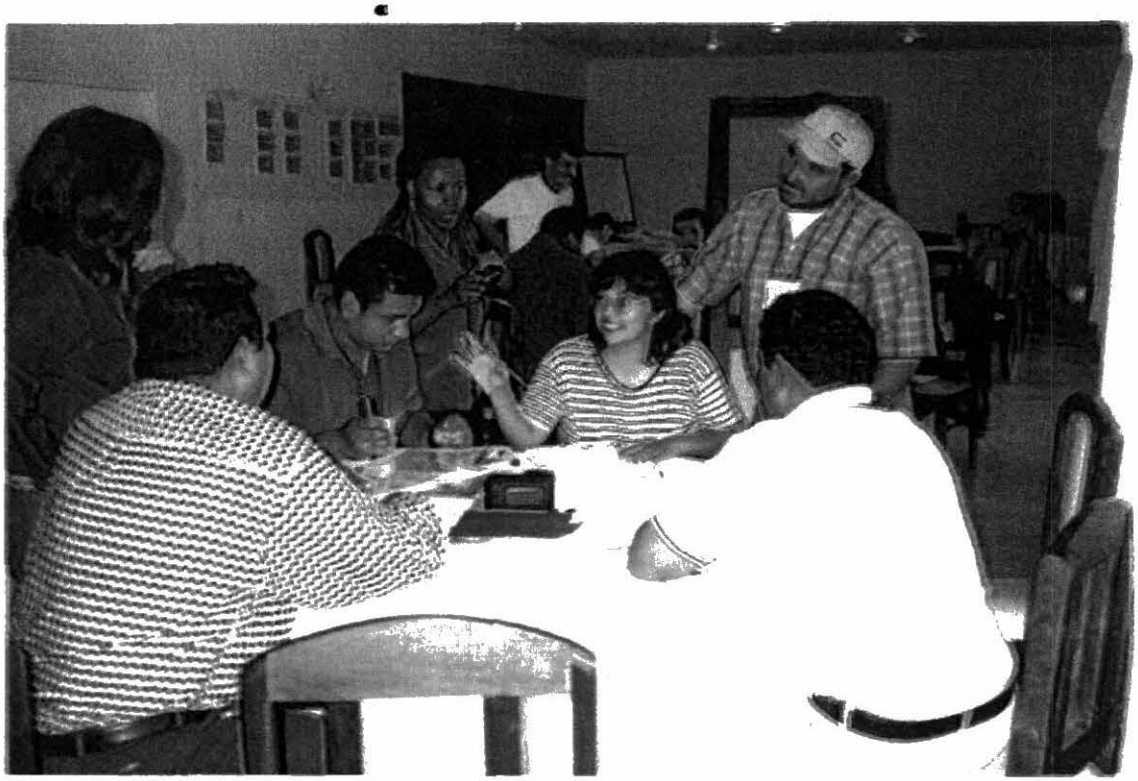

Figure 1. PM&E workshop participants doing group work.

Participating organizations

A total of 19 people from the following organizations were trained in PM&E: Participatory Research Project in Central America - IPCA (Honduras), Rural Reconstruction Program (Honduras), Young Researchers Project (Honduras), International Institute of Rural Reconstruction - IIRR (Ecuador), the Corporation for Promoting CIALs - CORFOCIAL (Colombia), the CIAT Hillsides, Forages and SN-3 projects (Honduras, Nicaragua y Colombia) and the Local Committee for Sustainable Development of the Tascalapa River Watershed - CLODEST (Honduras).

Results

- This is an ongoing process of developing a model for training grassroots groups in PM&E.
- Together with the workshop participants, the model developed for establishing a system of PM&E for grassroots groups was studied.
- Institutional commitments for setting up and monitoring PM&E systems were established.

Workshop: Learning Lessons about the Institutionalization of the CIAL Methodology

Researchers: *Harriet Menter*[9], *Elías Claros*[10]
Collaborators: *Group of Researchers from CORPOICA*[11]

In order to increase the understanding of the process of institutionalizing the CIAL methodology, a study was undertaken with CORPOICA, the Colombian National Agricultural Research Corporation. After data had been collected and preliminary conclusions drawn, these results were presented at a workshop with key actors involved in the CIAL program. This workshop had three objectives:

- Check the accuracy and reliability of the results
- Feedback the results of the study to some of the people that had been most involved
- Use the participants' knowledge and experience in order to draw lessons and develop effective strategies for institutionalizing the CIAL methodology, which can be used both by CORPOICA and other institutions wishing to initiate a similar process

The workshop started with a presentation of the preliminary results of the study. The workshop participants then engaged in various activities to gain deeper insight into the process of institutionalization. A timeline of the process drawn by the principal researcher was presented to participants, who modified the initial plan and added events that they considered to be important.

Participants drew up lists of the factors that led to the process of institutionalization, the strategies that had been used to institutionalize the methodology, and the factors that had facilitated or impeded this process. Participants color-coded these factors according to their importance and explained their decisions to the group. In the final activity participants used the data collected by the principal researcher, the results of the workshop activities and their own knowledge and experience, to draw up a list of lessons learned and effective institutionalization strategies. These strategies, which were incorporated into the final paper written on the study, included:

- Creating/joining electronic discussion forums so researchers can keep informed about other types of FPR methods and contact other researchers working with the CIAL methodology to share experiences or ask for advice
- Decrease the number of visits made to CIALs by researchers, by establishing a chronogram of visits, according to the maturity of the CIAL
- Increase interactions between researchers in Regional Training and Development Centres (CRECEDs) and those in research centers by encouraging visits in both directions
- Establish an M&E process for the CIALs

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[9] *London School of Economics and Political Science*
[10] *SN-3 Project*
[11] *CORPOICA*

The CIALs of San Dionisio, Nicaragua

Researcher: *Trinidad Hoyos*[12],
Collaborators: *Jorge Alonso Beltrán*[12], *Dominga Tijerino*[13]

Highlights

* Strengthening, consolidating and empowering the CIALs located in the Calico River watershed, San Dionisio, Nicaragua, through the identification and evaluation of innovative technologies

Background/justification

The CIAL is a local research service that belongs to a rural community and is administered by them. It is a very important mechanism in adaptive research and in the validation of technological innovations that SOL (Supermarkets with Options for Hillsides) is researching, either as basic or strategic research.

Objective

Strengthen the capacity of the rural communities to take decisions and seek alternative solutions to their agricultural and livestock problems, conducting research on food security and NRM.

Methodology

The different CIAL groups—through field tours, interactions with other institutions, farmer-experimenters and participatory evaluations of technologies by SOL—identify promising options, which are then analyzed and discussed with the community at the time of planning the experiments. Planning is one of the stages of the methodology discussed in the 1999 PE-3 Annual Report (CIAT, 1999); Braun and Hocdé (1999) and Tijerino et al. (1997).

Results

Planting cycles

In 1998 when SOL initiated activities, some groups of CIALs in the region began to evaluate technological options for the diversification of annual crops and NRM.

At present there are 15 CIALs in the township of San Dionisio, of which 4 were started in 1997, 4 in 1998, 4 in 2000 and 3 in 2001. The number of trials with basic grains (Table 1) reflects the importance that the producers give to these crops. Nevertheless, since 1999, six of the groups are making use of the promising options from SOL.

Of the new options evaluated, soybeans and rice are related to food security. Similarly, there has been an increase in women's groups interested in these technological options. The materials for rice, soybeans and common beans were selected in participatory evaluations conducted by the CIALs, which then established their respective trials.

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[12] *PE-3 Project*
[13] *SN-3 in Nicaragua*

Currently, SOL is conducting participatory evaluations and selection of new materials for beans, maize, rice, sweet potatoes, legumes, grasses and other technological options for soil management and conservation, which will be used at the time of planning the CIAL trials. It is expected that by the year 2002, some 60% of the CIALs will be using promising options from SOL in their respective trials.

Table 1. Cycles of evaluation and research on crops by the CIALs, based on technological options selected by SOL, San Dionisio, Matagalpa, Nicaragua.

Name of the CIAL	Community	1999		2000		2001
		First	Last	First	Last	First
Wibuse	Wibuse			Rice (trial)		Rice (confirmation)
Women	Jicaro 1	Soybeans (trial)	Soybeans (confirmation)	Soybeans (production)		Rice (trial)
El Progreso	El Zapote			Rice (trial)		
Women	El Zapote					**Soybeans** (trial)
19 de Abril	Jicaro 2			Rice (trial)	Soybeans (trial)	
Women	El Chile					Soybeans (trial)
	El Carrizal					Common beans (trial)

Conclusions

- The majority of the CIALs (76%) are basically conducting trials on basic grains (common beans and maize); nevertheless, they are now taking the first steps toward investigating other topics (e.g., rice, soybeans, control of pests).
- The participation of women has been increasing significantly. There are 3 CIALs of women and 5 mixed. This is due to the importance of identifying options for food security.
- Along with the research process, the women are learning to prepare by-products such as in the case of soybeans.
- The CIALs have established linkages with local institutions, whereby they learn about new technological alternatives that are used during the planning of their experiments.

Figure 1. The CIAL group from Wibuse, checking one of their plots with a trial on soybeans.

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OUTPUT 4. MATERIALS AND INFORMATION ON PARTICIPATORY RESEARCH APPROACHES, ANALYTICAL TOOLS, INDIGENOUS KNOWLEDGE AND ORGANIZATIONAL PRINCIPLES, DEVELOPED

MILESTONES

* Logistic regression with multiple-correspondence analysis, validated
* Case study of the CIAL methodology application by IPCA, carried out
* Methods, tools and proceedings of PR, presented and disseminated

Validation of logistic regression with multiple-correspondence analysis

Researcher: *Luis Alfredo Hernández*[1].

Highlight

* In collaboration with national partners, CIAT developed an evaluation framework for examining the process of the institutionalization of participatory research approaches within a national agricultural research corporation. The findings of this study will be adapted and applied to support individuals within other partner organizations who are seeking to institutionalize participatory research approaches.

Various multiple-correspondence analyses were run between selection criteria and the best cassava clones selected by men, women, breeders, traits of 10 clones scored by consumers from 5 sites, and all the user-evaluators and the traits evaluated (DfID project).

Some statistical concepts

The classification of the criteria and clones using factorial analysis of correspondence (multiple correspondence) is a classic method used to analyze large tables or matrixes of data that include qualitative variables (Guinochet, 1973; Dahdouh et al., 1978; Duranton & Lecoq, 1980). This is the case for matrixes of numbers of coexistence between sets: the set of clones, the set of criteria given (in this case, by diverse producer groups), and the sets of rankings in ranges of good, fair and poor. The analysis consists in calculating the distance between elements of each one of the sets, taken as pairs (clones and related criteria with their respective rankings). The distance between two elements of one set is the function of the difference between the distributional profiles of the frequencies that they represent and the elements of other sets (Chi square metrics). In a geometric representation the clones appear as dots located in a given space, with as many dimensions as there are independent clones or classes of variables. Finally, the clones and criteria

[1] *SN-3 Project*

form clusters with dots represented as pairs, as complete expressions of affinities between the elements and the set. The form and the structure of these clusters, their extension along the axes or planes, and their poles or densities represent the heterogeneity of the unions of the elements (this is given by statistics that show the different degrees of similarity of the variables; e.g., r2) (see Escobar & Berdegué, 1990).

Highlights of the analyses

Taking as an example the results of the multiple-correspondence analysis between selection criteria and the best clones ranked by the male farmers, three clusters were found, characterized by their degrees of similarity; that is, groups of clones and criteria with high, intermediate and low acceptance (considering the distance to the axes, densities, poles, frequency of high acceptance of the clusters, etc.).

In this analysis clones CMB 8472-3, SM 2275-10 and CMB 9021-2 formed the cluster with greatest acceptance (based on the frequency of responses scored with 1, the number of variables that determine the position, which contribute with greater inertia of the acceptance axis; observe the criteria and the frequencies of general evaluation, branching, thickening, etc.). With these elements of analysis, clones such as CMB 8472-5 and Venezolana formed a cluster of intermediate acceptance; while clones ICA Costeña, SM 2277-4 and SMB 2447-2 formed a cluster that can be interpreted as low acceptance (See Fig. 1).

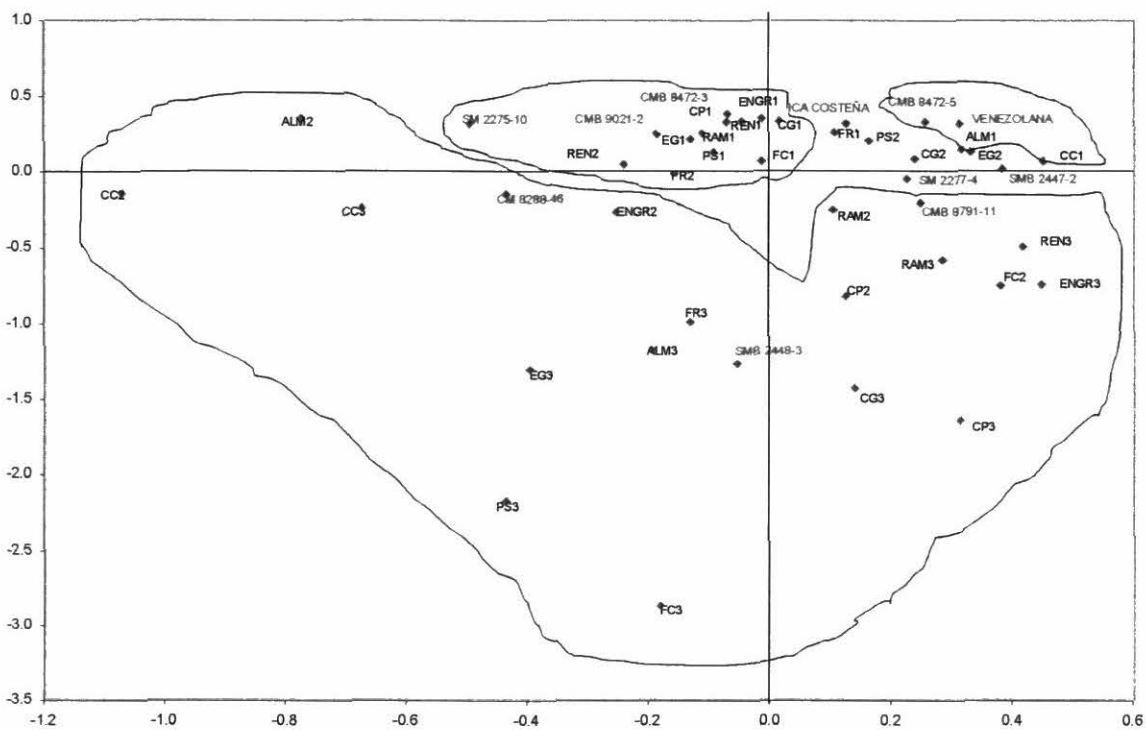

Figure 1. Multiple correspondence between selection criteria and the clones ranked best by the men.

When these results were compared with those obtained in the analysis of preference ranking using the logistic analysis tool (Hernández, 2000), there was a close congruence in the results (Fig. 2).

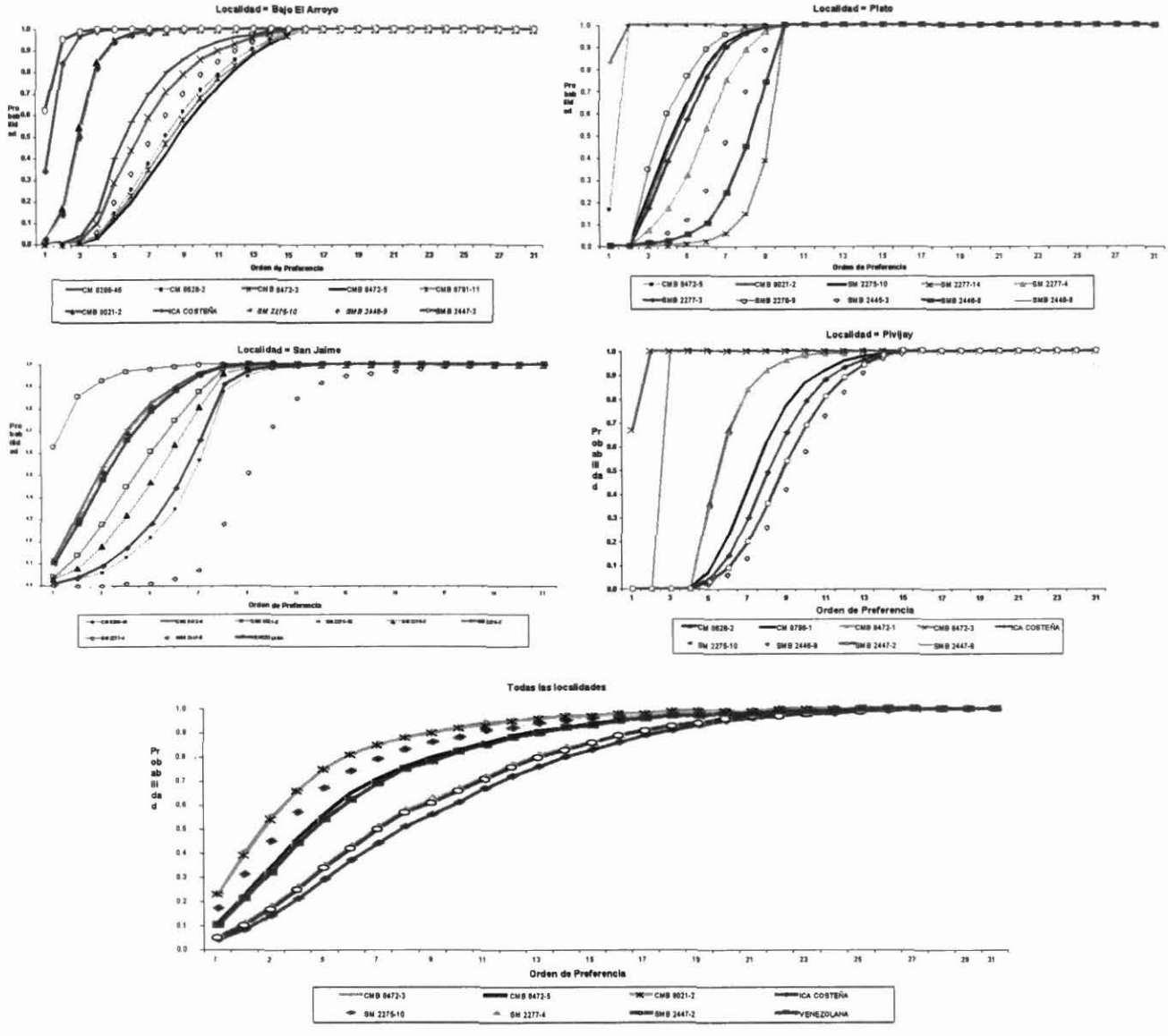

Figure 2. Order of preference of male farmers at four sites and overall (all 5 sites).

The analysis showed that clones CMB 8472-3,CMB 9021-2 and SMB 2275-10 occupy positions 1-3, respectively. CMB 8472-5 and Venezolana occupy an intermediate position, while SMB 2447-2, SM 2277-4 and ICA Costeña have little acceptance. These results are similar to those obtained in the multiple-correspondence analysis, which means that we have two analytical procedures—multiple correspondence as a SAS routine and the Excel procedure. We also have a way to validate the tool, which indicates it is a rapid, efficient and reliable analytical tool (preliminary positive results that confirm those found in the Poverty Project by A. Braun et al,

2000). We also have a procedure that does not require statistical support for implementation of the same.

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Participatory procedure for learning producers' criteria for selecting clones of the root vegetable *Ullucus tuberosus*

Researchers: *Elizabeth Yánez N., Xavier Cuesta S. & Efrén Carrera D.*[1]

Through a process of participatory selection of clones of the root vegetable *Ullucus tuberosus*, it was possible to determine the producers' criteria and opinions with respect to some introduced materials. The producers, previously selected by their community, were organized in clone evaluation groups (CEGs).

The selection criteria obtained from the CEGs were for the stages of flowering and harvest. In addition, there was a test of cooking quality. The criteria were prioritized and transferred to a matrix format. With this information the probability of acceptance of the materials was calculated, using a nonparametric statistical analysis method (see Hernández, 2000).

During flowering the criteria of plant health and uniformity of the plant stood out; at harvest the criteria of yield was most important. With respect to cooking quality, the preference was for a sweet, smooth clone without mucilage.

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[1] *INIAP-Caramelo, EC*

The IPCA Project: A case study of the participatory research project in Central America

The Participatory Research Project began in Honduras in 1993, as part of the new CIAT Hillsides Project initiative in Central America. Initially, IPCA's objective was to validate and adapt participatory research (PR) methodologies that had had good results in Colombia. Positive results from community participation led to the conviction that this could be an alternative methodology for technology generation and development. CIAT therefore helped create IPCA in July 1995 as an autonomous, nonprofit, private R&D organization that received financial support from the International Development Research Center (IDRC) in Canada. Currently, it is supported by USC-Canada, an NGO. IPCA currently operates under a collaborative agreement drawn up between CIAT, the Program for Rural Reconstruction - Honduras (PRR) and the University of Guelph, Canada.

The Project has three agronomists, all experienced in research, who were then trained in PR tools and methodology by CIAT's FPR Project SN-3. A rural sociologist from the University of Guelph coordinates the IPCA Project.

I. Objectives

The IPCA Project aims to support hillside farmers to generate and develop alternatives that will break the vicious cycle of poverty and environmental degradation through CIALs.

Specific objectives

- To develop a participatory agricultural research program for Honduras through the education of research teams composed of independent farmers (i.e., the CIALs) to generate and develop appropriate technologies for their communities.
- To train agricultural and forestry technical personnel to collaborate with farmers in executing participatory R&D.
- To train students to carry out fieldwork in collaboration with farmers, extension workers and agricultural researchers.

Study area

The IPCA Project works in three distinct agroecological zones in Honduras:

- The humid hillsides of the northern coast, where farmers produce food crops primarily for household consumption and land is available for grazing
- The hillsides of the dry northern-central zone, where small-scale crops predominate, mostly maize, common beans, and coffee
- The humid lacustrine area around Lake Yojoa in the Department of Santa Barbara.

Despite the environmental differences, the farmers of these zones have in common very limited economic resources (Humphries et al., 2000).

To obtain baseline data, interviews with farmers were carried out in the study area during the

Project's first years. Results showed that annual incomes ranged from US$500-900 for families who grew only staple grains for household consumption and cash. Those who had plots of coffee (a cash crop) receive from US$1000-$2000 per year.
An additional study was conducted by CIAT researchers on well-being levels in three watersheds in Honduras including that of the Tascalapa River, where the IPCA Project operates. Ravnborg (1999) reported that the populations of these watersheds were generally poor: 38% lived in extreme poverty, 36% less so, and 26% the least poor.

An analysis of land tenure among the Project's participants indicated that only 7% did not own land, while 48% owned five *manzanas* (1 *manzana* = 6400 m^2) or less and 45% had more than five *manzanas*. About 60% of the household heads were literate.

Methodology used

The methodology, which has eight steps, is structured to follow the principles of the scientific method in a highly practical way. At the start of the process, CIALs and their groups of farmer-collaborators are elected by the community to generate or adapt appropriate technologies to local conditions. All activities are evaluated and monitored, both internally and externally.

The methodological steps are as follows:

- *Motivation.* IPCA identifies potentially viable localities/areas for developing a program and then holds meetings to explain the advantages and disadvantages that this program would offer to the respective communities. In the end each community is responsible for deciding whether to accept this program.

- *Electing the Committee.* Once a community decides to adopt the program, it chooses four people who will make up the Committee: the Secretary, Treasurer, Promoter and Leader. A group of farmer-collaborators are also selected.

- *Diagnosing research priorities.* The elected Committee and IPCA's technical team then convene another meeting when the community is asked about those agricultural and livestock problems of communal importance that they would like to see resolved, and/or research projects that they would like to be investigated as potential employment opportunities. A research topic is finally selected through consensus.

- *Planning.* In a meeting of the Committee, experts on the research topic and the technical team, an experiment is proposed and planned according to the questions: What? How? Where? and When? Both external and local alternatives are offered.

- *Establishing the experiment.* Once everything is ready and the appropriate sowing time has arrived, the alternatives selected for research are tested in at least three sites within the community.

- *Evaluation*: At appropriate times, already identified in the planning, the technological alternatives under trial are evaluated. The tools and methods used should identify farmers' criteria for accepting or rejecting a technology.

Figure 1. Women's CIAL preparing their experimentation plot

- *Analyzing results.* Farmers, together with the technical team, analyze results of the participatory evaluations, crop yields and other information collected and compiled. Decisions are made as to whether to continue with the different options, information (presented in local measures) is prepared, and a community meeting is planned for presenting the results.

- *Feedback.* The Committee invites the whole community so that they learn of the research results. Placards, sample products and other elements may be used in their presentation.

During the early stages of the CIAL methodology, meetings between the CIAL, its farmer-collaborator group and the technician-facilitator are continuous and periodic. Over time and according to the facilitator's quality of performance, the number of visits per cropping cycle should drop. As the farmers gain confidence with the method, they are able to increase their own self-management for resolving their local agricultural and livestock problems.

II. Current situation

The IPCA Project is currently working with 41 CIALs and directly with 428 farmers (Appendix 1). These CIALs are distributed across the three agroecological zones of the study area; 29% are composed of women-only groups, 32% of men-only groups and 39% are mixed. On the average, each community is comprised of 84 families, so that the number of families directly or indirectly involved total 3444 families. This does not take into account neighboring communities who also benefit from the Committees' activities and results.

These groups are developing research projects related to topics such as evaluating germplasm of staple grains, cassava, soybeans, chili peppers and other crops; fertilizer applications, organic fertilizers, green manures; use of natural options for pest control; participatory plant breeding for common beans and maize; burning vs. not burning; and chicken feed.

III. Evaluation of CIAL Projects

The community concerned, donors and support institutions evaluate the local research project and its results during the different phases.

- The communities contribute by responding, on an individual and group basis, to evaluations carried out by external actors in the study area. At the annual CIAL encounters, which bring together all CIALs to share their results and exchange of material, the technician-facilitators for the different CIALs also present their evaluations.

- Donors and support teams also carry out evaluations. Every year they visit the country to interview CIAL members to learn about the work being carried out in greater depth. Their conclusions and results are fed back to the IPCA Project's technical team.

- Another system of M&E that is being implemented is participatory. In this process the farmers themselves participate in the design and preparation of indicators that permit the Committee to evaluate themselves and the technical team to identify problems and possible solutions.

Impact of the IPCA Project's activities in terms of established modifications.

Lessons Learned by the IPCA Project	Impact on...		
	Farmers	**CIALs & the Community**	**Institutions**
1. For best results, there is a need for capacity building in the CIAL methodology.	Farmers better able to comprehend & integrate activities of the CIAL method With time, these farmers' capacity as researchers recognized by community	Community strengthened in the development of its research projects Greater confidence in results Greater assurance in decision-making	IPCA technicians' capacity in PR strengthened at the team level, permitting a more efficient dissemination of the CIAL method to farmers & technicians Institutions play role of colleagues who collaborate with the CIALs. Recognition for their capacity to conduct the CIAL method
2. Working with many farmers reduces the load on the CIALs & permits direct communication between technicians and more farmers.	Level of community's direct participation broadened New leaders identified	CIAL strengthened & its credibility improved Greater opportunities for interactions between the CIAL & its community Greater opportunities for developing new ideas Broader distribution of CIAL responsibilities	Belief that CIAL method was elitist was overcome. Greater number of people became involved, probably reflecting increased dissemination & therefore increased impact
3. Including PR methods & tools in university curricula will favor FPR in R&D projects.	Students & professionals gain more and better quality information of farmers' reality in the field. Mutual knowledge leads to improved relationships between professionals & farmers in terms of respect & equity.	Professionals involve farmers in technology generation Increased number of technologies tested & evaluated by farmers Reduced time for new technologies to reach farmers Research contributes more significantly to progress in the CIAL projects.	Technicians & farmers working as team to solve problems according to demand Teamwork could ensure more rapid technology generation & dissemination. Technicians capable of integrating PR teams were identified. Capacity for carrying out more research projects simultaneously at relatively minor cost
4. National & international	Including farmers in early	Community can break away	IPCA technical team can

research programs must become more aware of the importance & value of farmer participation in early stages of research.	steps of technology development results in development of appropriate technologies. The final beneficiary can participate in the dissemination of the technologies.	from traditional seed delivery system. Can select & evaluate what it really needs according to its objectives Can establish institutional relationships	create strategies to convince NARS that PR is an efficient alternative of doing research. Technicians have direct knowledge of farmers' problems. Researchers can learn the most important farmers' criteria for evaluating technology directly.
5. Establishment of a second-order association of CIALs will enable them to have increased representation & power to establish alliances that would achieve faster results for the benefit of farmers.	Farmers feel more supported by an organization that is managed & led by them.	Community can facilitate attainment of its own resources. Carries out its own plan of action for institutional strengthening & community development Establishes ties or liaisons with other organizations & collaborators. Makes faster progress toward capacity for self-management By fulfilling its responsibilities & functions, the association earns the respect and backing of other community CIALs.	IPCA technical team can expand its area of action. Works on the basis of community demands Second-order organizations can sustain activities that the project itself had previously developed.
6. Model for paratechnicians to increase local capacity & sustainability should be implemented.	Farmers expand their knowledge of PR methodology. Receive recognition from their farmer colleagues. Have opportunities to collaborate with their community in developing research projects	Community has critical mass of people trained in project development. The CIAL constantly communicates with the implementers of its projects. Paratechnicians acquire facility in coordinating activities.	Technical team can rely on local personnel for implementing projects. Lower execution costs Growing number of communities participating in the IPCA Project

Conclusions

Challenges in achieving objectives

Among the difficulties encountered during Project implementation were the following:

- Clear criteria were not available for selecting potential communities. As a result several CIALs did not continue with the Project. Reasons for leaving originated from both the communities and the IPCA technical team itself. Thus there was a need to clarify specific criteria for forming CIALs with the greatest probability of success; e.g., the willingness of the community to have its own committee or the presence of a small number of other institutions working in the area.

- Paternalism existing in other organizations hampered work in some areas that had been identified as having potential for implementing the IPCA Project. This was corrected by clarifying with the farmers who attended the initial meetings that the project was not going to give "free handouts," and would offer knowledge only and work with them on the basis of their priorities.

- Farmers were accustomed to a system of extension and development, which contrasted with IPCA's philosophy, which assumes that farmers are knowledgeable, able to contribute and be responsible for decision-making. Additionally, the process emphasizes that technicians should learn from farmers and should only facilitate the process, making their technical contributions in a timely fashion. Because the methodology was new in the area, farmers needed a process of reflection and training before finally understanding it, which they finally did, to the point where in some places they demanded it.

- The team did not have the necessary experience for working directly with farmers nor had it conducted fieldwork in hillside farming areas, which meant learning on the job. This situation was similar for the farmers, who had to change to or adopt the new system.

- Farmers wanted short-term results, which usually do not occur in research projects. This forced the technical team to study the possibility of generating alternative projects that would achieve results to meet some of the farmers' short terms needs. Production projects, training courses and other activities in demand were implemented so that the farmers would not feel they were wasting their time and would remain interested in participating in the Project.

How interactions with IPCA impacted on farmers

- Farmers are more self-confident in their decision-making:
  - For external proposals farmers suggested that they test the technology first, to ascertain its advantages and disadvantages.
  - Women participated more in research projects.
  - Farmers have become more empowered and are participating in other development projects within their communities.
  - Because of their active participation, the community was able to attract other R&D organizations

- Specific impacts on the farming systems include:
  - Adaptive research, validation and dissemination of the bean cv. Tío Canela
  - Seed selection for planting has improved.
  - Planting is now done in furrows and along contours.
  - The practice of burning for land preparation has been reduced.
  - Production systems have broader crop diversity.
  - Farmers have become more aware of the need to create adequate reserves of harvested products to ensure food security for their families in times of scarcity.
  - Many farmers now use the minimum tillage system.

- Enhanced technical skills and knowledge
  - Farmers are now able to compliment their traditional research systems by establishing research that compares technologies in different sites in their communities.
  - The habit of documenting information has been created. Farmers are now able to design, implement and analyze their PM&E systems.
  - Farmers now begin testing on a small scale before testing on a large scale, thereby minimizing risks.

CIALs and integrated pest management (IPM)

For different reasons the CIALs facilitated by IPCA have not implemented IPM-related research projects. IPCA generally conducts theoretical-practical training courses based on the demand indicated by diagnostic studies. IPCA's philosophy has always been to promote IPM and offer farmers training in this area. Additionally, all research activities promote activities that call for appropriate resource conservation and integrated management. Local and external knowledge is therefore incorporated into the integrated management of local systems.

Based on the lessons drawn from previous experiences with PR and from farmer empowerment, the starting points for a community IPM project with CIAL methodology could be:

- Find a community that has identified IPM as a priority issue and where pest problems are widespread
- Develop an agreement with the community
- Familiarize the community with the research project from its conception
- Encourage community members to conduct their own research on specific topics of their interest to generate new forms of technology components

Because a CIAL is a research committee elected by the community with proven leadership and capabilities, the application of the CIAL methodology in IPM projects could ensure:

- Collective action
- Evaluation, adaptation and validation of local and external technologies to solve problems
- Reciprocal feedback (farmer-institution) on research project results
- Contributions on individual research carried out by community members
- Increased knowledge and local leadership
- Adaptation and integration of technology components to local conditions

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Ravnborg, H.M.; Escolán R, R.M.; Guerrero, M.P.; Méndez C., M.A.; Mendoza, F.; McAdam de Páez, E.; Motta, F. Developing regional poverty profiles based on local perceptions. Cali, Colombia: Centro Internacional de Agricultura Tropical, 1999. CIAT Publication no. 291. 56 p.

Talks prepared by the SN-3 (IPRA) team and presented at events

- The Local Agricultural Research Committees (CIALs), presented at the III International Seminar of the PRGA: *Uniting science and participation in research*, Nairobi, 6-9 Nov. 2000
- El Proyecto IPRA. Internal CIAT Seminar for staff from CATIE, CIAT, Cali, Colombia, Feb. 2001
- Monitoreo y evaluación participativos (M&EP), presented at workshop Proceso de difusión de la metolología CIAL y la formación de organizaciones de segundo orden. CIAT, Cali, Colombia, 19-23 Feb. 2001.
- Scaling up the impact of participatory research, presented at the workshop Proceso de difusión de la metolología CIAL y la formación de organizaciones de segundo orden, CIAT, Cali, Colombia, 19-23 Feb. 2001.
- Sostenibilidad de los CIAL: Ampliación de las lecciones aprendidas en los servicios
- comunitarios de investigación agrícola de América Latina. Presented at Workshop: Proceso de difusión de la metodología CIAL y la formación de organizaciones de segundo orden. CIAT, Cali, Colombia, 19-23 Feb. 2001
- Experiences with participatory research: *Local Agricultural Research Committees* (CIALs) in Latin America. Internal CIAT seminar for African research directors. CIAT, Cali, Colombia, 26 Feb.-2 Mar. 2001
- Experiences with participatory research: *Local Agricultural Research Committees* (CIALs) in Latin America. Presented to visiting Asian research directors, CIAT, Cali, Colombia, 28-30 Aug. 2001
- IPCA case study, FPR/IPM Study Tour and Learning Workshop, Chiang Mai, Thailand, 4-8 Sept. 2001
- Vietnam case study. FPR/IPM Study Tour and Learning Workshop, Chiang Mai, Thailand, 4-8 Sept. 2001
- Changing institutions: The institutionalisation of CIALs in CORPOICA. Presented at Internal CIAT Seminar, CIAT, Cali, Colombia, 20 Sept. 2001
- Lecciones aprendidas sobre la difusión de la Metodología CIAL en CORPOICA. Presented at CORPOICA, Tibaitatá, Cundinamarca, 21 June 2001 and at internal seminar of the FPR (SN-3) team, CIAT, Cali, Colombia, 27 Sept. 2001
- Evaluación participativa sobre uso y manejo de barreras vivas en la Subcuenca del Río Cabuyal, Municipio de Caldono, Departamento del Cauca, Colombia." Presented at Curso sobre métodos y técnicas de participación de productores en la investigación". CIAT, Cali, Colombia, 26-29 June 2001
- Importancia del seguimiento de los procesos de monitoreo y evaluación participativo. Presentado at Primer taller internacional de monitoreo y evaluación participativa (M&EP)." Yoro, Honduras, 1-5 Oct. 2001
- Monitoreo y evaluación participativos (M&EP), presented at Primer taller international sobre Monitoreo y evaluación participativos. Yoro, Honduras, 1-5 Oct. 2001
- Marco conceptual de investigación participativa y el método IPRA. Forum on Capital
- Social del Pacífico Colombiano patrocinados por PRONATTA . Cali, Colombia 17 Oct. 2001

Collaboration with Colombian universities

The SN-3 Project has been collaborating with universities (e.g., Nacional de Colombia, School of Agronomy-Palmira and the Pontificia Bolivariana de Medellín) in order to impact on the training of future professionals in the field of agriculture. This year there were two aspects:

- Concepts and methodologies in participatory research (conference)
- Students internships in the Project

REQUEST FOR PUBLICATIONS FROM THE SN-3 PROJECT
OCTOBER 2000 – SEPTEMBER 2001

Date	Person Requesting	Publication	Institution/Country
2000			
10-10	David Berroa	CIAL handbooks in Spanish	IDIAP – Panama
23-10	Wania María Fukuda	Logistic preference ranking analysis	Brazil
01-11	Luis Peralta	The IPRA method video	
		Murmurings of water video	Univ. of Temuco – Chile
03-11	Carlos A. Quirós	Logistic preference ranking analysis (35)	
		Logistic preference ranking analysis in Spanish (5)	Nairobi workshop – Kenya
07-11	Daniel Adotu	The IPRA method video	Uganda
07-11	Y.B.K. Msiska	Didactic video on CIALs	Malawi
30-11	Pablo Sidersky	CIAL book	Netherlands
04-12	Michel Laforge	CIAL book	BNP – Panama
05-12	Nina Lilja	Logistic preference ranking analysis	PRGA
07-12	Eladio Salas	CIAL book	CENAP - Costa Rica
2001			
09-1	Dean Holland	CIAL book (5)	Pucallpa, Peru
15-2	Steven Franzel	Logistic preference ranking analysis	ICRAF - Nairobi, Kenya
15-2	Daniel Dauro	Logistic preference ranking analysis	AWASA - Ethiopia
15-2	Malika A. Martini	Logistic preference ranking analysis	ICARDA – Syria
16-2	Mamadou Lamine Diedhiou	Logistic preference ranking analysis	ILRI - Ethiopia
08-3	Jamie Fairbairn	IPRA manual	PROMETA - Tarija, Bolivia
22-3	Jill Belsky	IPRA & PRGA manuals, CIAL book, IPRA working papers	USA
20-4	B.A. Sarma	CIAL book	Vijayawada, India
25-4	Adem Aw-Hassan	Logistic preference ranking analysis	ICARDA – Syria
25-4	Heong Kong Luen	Logistic preference ranking analysis	Philippines
25-4	Richard Coe	Logistic preference ranking analysis	ICRAF – Kenya
26-4	Carolyn Brown	CIAL book & Hillsides publication, "New methodology & institutional models for participatory research in agriculture & NRM"	Cornell Univ. - USA
10-5	David Rohrbach	Logistic preference ranking analysis	ICRISAT – Zimbabwe

Date	Person Requesting	Publication	Institution/Country
04-7	Maria Esther Sierra	Levels of well-being manual	Montería – Colombia
31-8	Ty Phommasack	CIAL book, The IPRA manual, Instructional Units 1 & 2	NAFI - Vientiane, Laos PDR
31-8	Nguyen Van Bo	CIAL book, The IPRA method manual, Instructional Units 1 & 2	MARD – Vietnam
31-8	Chen Quibo	CIAL book, The IPRA method manual, Instructional Units 1 & 2	Chinese Academy of Tropical Agricultural Science Danzhou - Hainan - China
31-8	Orapan Nabangchang	CIAL book, The IPRA method manual, Instructional Units 1 & 2	Sukhothai Thammatirat Open Univ. – Thailand

Other requests for the CIAL book and The IPRA method manual

9-10-00 to 10-9-01	CIAL Book	The IPRA Method Manual
Colombia	5	
Switzerland	2	
Bolivia	3	
United Kingdom	1	
Nepal	1	
Philippines	2	
China	1	
Asia	15	12
Africa	13	2
Thailand	1	
Mexico	1	
Costa Rica	2	
USA	4	
The Netherlands	1	
India	1	
Total	**53**	**14**

223:02

OUTPUT 5. IMPACT OF SN-3 PROJECT ACTIVITIES DOCUMENTED

MILESTONES

* Institutionalizing CIAL methodology analyzed process in CORPOICA
* Case study of the CIAL El Diviso, contracted
* Professionals and technicians attended by the Project

Methodology for analyzing the institutionalization of participatory approaches

Researcher: *Harriet Menter*[1]
Collaborators: *Manuel Arévalo*[2], *Luis Humberto Fierro*[2], *Beatriz Franco*[2]

Highlight

* In collaboration with national partners, CIAT developed an evaluation framework for examining the process of the institutionalization of participatory research approaches within a national agricultural research corporation. The findings of this study will be adapted and applied to support individuals within other partner organizations who are seeking to institutionalize participatory research approaches.

The full potential impact of research outputs such as new technologies and methodologies are realized only when these innovations are adopted and adapted by other institutions. In order to increase the impact of research, it is necessary to understand and support the process of institutionalization of new technologies and methodologies. Despite the importance of this subject, very little is known about how this process occurs. Research was carried out into the process of institutionalization of a participatory research methodology (CIAL - Local Agricultural Research Committees) within the Colombian Agricultural and Livestock Research Corporation, CORPOICA.

By examining the process of institutionalization systematically, key actors in CORPOICA were provided with an opportunity to gain a better understanding of the process and identify opportunities to support them in their work to institutionalize the methodology. The lessons learned from the study were used to develop concrete strategies for institutionalizing the CIAL methodology, which it is hoped will be useful for CORPOICA in their continuation of this process, as well as for other institutions wishing to adopt the methodology.

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[1] *London School of Economics and Political Science*
[2] *CORPOICA*

An evaluation framework was developed for examining the process of institutionalization, which can be adapted to study similar processes in other institutions. The study started by characterizing the change that has occurred and then examined the principal factors that have influenced this process. These factors were established in initial interviews and meetings with key informants. They were then studied in greater depth using a questionnaire, a series of semistructured interviews—both designed with key informants—group discussions with the CIALs and local communities and document study. Once preliminary results had been drawn, these were presented in a workshop where participants analyzed the results, drew lessons from them and developed strategies for supporting the institutionalization process.

The methodology used for the study was designed to allow for participation of actors who had been involved in the process of institutionalization. By participating in defining the focus of the study, developing the methods used and then drawing the conclusions, key actors shared ownership of the process to a certain extent and became more than just sources of information. This had two main advantages:

- Their contribution to defining the focus of the study should make it more effective.
- Actors were able to learn about institutional change through the process of the study, which can inform their actions as they attempt to influence this process.

The results showed that among the principal causes of change was the process of institutional reform, which presented researchers with new challenges and created a space where individuals could start to experiment with the new methodology. In CORPOICA a small number of key actors have been the main force behind the institutionalization process. These researchers started by implementing the CIAL methodology within their jurisdiction and then used the results of these CIALs to advocate their adoption on a wider scale, using a variety of media to attempt to change the opinions of senior management and researchers who would apply the methodology.

The attitudes of senior management and researchers were found to be another key factor affecting the process. Those who support the methodology are prepared to devote a large amount of their time to advocating the methodology and supporting others in their use of it. Despite the official adoption of the methodology, some researchers remain skeptical of participatory research approaches and resist change in this direction.

The skepticism of some researchers has not yet proved to be a significant barrier as the availability of funds does not allow for training all researchers; therefore those in charge of the CIAL program can provide training for those researchers who do support participatory approaches. It does however represent a potential obstacle in the future. The training program itself is an essential factor in the institutionalization process. At present however it works on a top-down basis with researchers being summoned for training, which means that many researchers never really "own" the methodology as their own.

The creation of strategic alliances both within and outside the institution has proved to be one of the most effective strategies used to support the institutionalization process. For example, building alliances with biophysical scientists within CORPOICA was a deliberate strategy to give the project credibility in the eyes of other biophysical scientists.

Another important factor was the availability of funds. Support for participatory research approaches manifested by potential donors facilitated the institutionalization process. However, the difficulty in accessing these funds when they were most needed was a major obstacle. Projects involving participatory approaches are by their nature long term and therefore long-term,

reliable funds are essential for institutionalizing these approaches so that advances made one year are not lost in the following year for lack of funds.

One of the most interesting outcomes of the study was the assertion that information flow is the motor behind the institutionalization process. In CORPOICA information about the results achieved through using the CIAL methodology is an essential advocacy tool for changing opinions and gaining support for its adoption. The medium through which this information is conveyed greatly influences its ability to convince people of the benefits of the CIAL methodology; e.g., decision-makers tend to be convinced through direct observation of the methodology in action rather than by written documents.

The type of information that is used was also found to be important. Traditional tools for evaluating impact fail to highlight the process impacts of this methodology such as the learning that occurs and the creation of effective community-based organizations. In order to convince others of the methodology's benefits, it is necessary to present both the product impacts such as higher yields and these process impacts such as community empowerment.

Researchers also complained of difficulty in accessing information and advice on work with the CIALs, especially considering the heavy demands on the time of those in charge of the CIAL program.

Based on the results of the initial study, more effective strategies to institutionalize the CIAL methodology were developed by both the researcher and the workshop participants. Some of these are listed in the box below.

Strategies for institutionalizing the CIAL methodology:

- **Identify natural allies** – build a support base before attempting to convert skeptics
- **Use information more effectively** – think about the mode of communication
- **Create a demand for training** – use information effectively to create a demand among researchers to increase their ownership of the methodology
- **Set up a participatory evaluation process** – focus on process impacts as well as product impacts
- **Decrease the demands made on the time of the researchers working with CIALs** - establish a timetable of visits according to the maturity of the CIAL
- **Use the knowledge base of experienced researchers to support continuation of the process** – set up an effective communication network to utilize this knowledge and decrease demands made on the time of those officially responsible for the CIAL program
- **Build/get involved in electronic information networks** – make use of other people's experience and find out about new methodologies

Prizes or special mention granted to other institutions or individuals for using SN-3 products:

As a result of her MSc thesis, "Changing institutions: Examining change in agricultural research policy in Colombia," undertaken with the support of the Participatory Research Approaches Project at CIAT, Harriet Menter received a distinction in the MSc Environmental Assessment and Evaluation (2000/1) from the London School of Economics and Political Science, Dept. of Geography.

CIAL "El Diviso": "A Dream Come True"[3]

Responsible: *Fanory Cobo*[4]
Collaborators: *CIAL El Diviso, Fredy Escobar*[5]

Description of the problem

The village of El Diviso, located in the township of Rosas, Cauca Province, is a region in which a large part of its human resources are dedicated to agricultural and livestock activities. They are capable of adapting both technical and organizational tools that are advantageous for both the individual and collective milieu in the village. This community has had different problems related to the availability of financial resources, technical assistance and, above all, food security, consequences of centralization and deprivation of technical knowledge. The most critical problem is related to the food security of the zone because their cultivars—especially maize—are susceptible to agronomic problems, resulting in low yields and therefore scarcity of foodstuffs in other seasons of the year. In addition, this situation generates economic and nutritional problems, affecting the people's productive capacity. The Association of Farmers from El Diviso ASADI, learned of the existence of an NGO dedicated to agricultural research—CIAT. The FPR Project at CIAT had designed a mechanism based on PR that would guide them through a series of agronomic research steps that would benefit both ASADI and the community in general in the long run.

At this point in time, the CIAL of El Diviso has been operating in the community for 10 years. The well being of the community is evident; however no formal evaluation has been made that would determine the social, cultural and economic impacts that the group has generated so that their results could be made known to other national and international entities. Therefore, the experience of this CIAL will be documented so that it can be used as a strategic precedent, articulating the experiences, problems and benefits that the community has received.

Objectives

Carry out a case study where the social, economic and cultural impacts resulting from the execution and adoption of PR in the community of El Diviso are documented in order to analyze the influence, contribution and consolidation of methodologies aimed at creating a CIAL that established an agroenterprise for processing maize in the zone, thereby contributing to solving the current problem of food security.

The specific objectives are as follows:

- Analyze and evaluate the social, economic and cultural milieu of the community of El Diviso, before and after the creation of the CIAL

- Determine, through the documentation of testimonials, the effects of the formation and consolidation of the CIAL on the development of both the farmers and the community of El Diviso

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[3] *Martín Criollo, member of the CIAL "El Diviso," 1993.*
[4] *Student, U. Nacional*
[5] *SN-3 Project*

- Study or analyze the level reached by the methodology applied for creating and forming the CIAL and verifying its influence on the social, economic and cultural environment of the community El Diviso

- Carry out research and consultative actions that will permit the community of El Diviso to make the study their own

- Identify and contribute to the strengthening of the levels of production and processing of maize in order to promote the establishment of agroenterprises that help solve the problems of food security found in the village El Diviso.

- Analyze how the communication between the diverse research entities and the farmers has improved through the adoption of methodologies in the creation and formation of the CIAL

Methodology

The study will focus its research on three key periods of time for purposes of evaluating the CIAL: before, the present and the future.

The methodology in general is divided into two alternate phases:

- Compile all the information existing on the project; that is, records, surveys, taped testimonials, documents and articles, among others; that imply the comparison and situational analysis of the CIAL and of the village.
- Carry out field activities combining different participatory tools that facilitate the gathering of historical and current information existing in the village.

It is expected that in the systematization of the information collected, it will be possible to establish comparisons to evaluate the FPR methodology, how and what has happened with respect to the creation, formation and consolidation of the CIAL, as well as its positive and/or negative influences on the economics, social and cultural milieu of the village.

VISITORS ATTENDED BY STAFF FROM THE SN-3 FPR TEAM
September 2000 – September 2001

Date	Name	Position	Country	In Charge
2000				
Sept. 28	Saúl San Martín	Manager, SERTEDESO	Yoro, Honduras	CA Quirós
Nov. 1	Thomas P. Tomich	Principal Economist &Global Coordinator, Alternatives to Slash-and-Burn Programme (ASB)	Nairobi, Kenya	CA Quirós
Nov. 14	Jean Philippe Tonneau Denis Sautier	Deputy Director, CIRAD-Tera		LA Hernández
Nov. 29	Miguel Moneta	Director of Scientific Interchange	INIFAP, Mexico	CA Quirós
Dec. 1	Dr. Rodrigo Aveldaño	Director General, Agricultural Division	INIFAP, Mexico	CA Quirós
Dec. 1	Markku Kanninen	Director of Research Program	CATIE, Costa Rica	CA Quirós
Dec. 1	Antony Esilaba Robert Delve Kwasi Ampofo	CIAT-Africa CIAT-Africa CIAT-Africa	Kampala, Uganda Kampala, Uganda Arusha, Tanzania	CA Quirós
2001				
Jan. 8	Pedro Bidergaray	Professor, EARTH Univ.	Costa Rica	CA Quirós S Kaaria
Jan. 18	Michael Swift	Director General, TBSF	Nairobi, Kenya	CA Quirós
Jan. 23	Jorge Peña Waldemar Klassen	Univ. of Florida	USA	CA Quirós
Jan. 23	Bernado Rivera Josue Posner Elías Mujica Ana María Ponce	CONDESAN/CIP	Lima, Peru	CA Quirós
Jan. 30	Grupo Campesinos	ASMET SALUD	Tambo, Colombia	LA Hernández
Jan. 31	Oscar Chaparro	National Univ.	Palmira, Colombia	CA Quirós
Feb. 8	Oscar Chaparro Luis E. Ordóñez Pedro Vanegas	National Univ.	Palmira, Colombia	CA Quirós
Feb. 9	Heide Christen Heinrich Frei	Ambassador Consul	Switzerland	CA Quirós
Mar. 1	Alfred Mtukuso Rafael Uaiene	African Research Directors	Lilongwe, Malawi Maputo, Mozambique	CA Quirós S Kaaria

Date	Name	Position	Country	In Charge
	William Otim-Nape		Kampala, Uganda	
Mar. 5 & 7	Jana Arriagada R. Heliodoro Diaz-Cisneros	Directors of the Kellogg Foundation's Programs for Latin America	Central America	CA Quirós JI Roa
Mar. 7	John Beer Reinhold Muschler Tannia Ammour Mario Piedra Eddie Salazar Edgar Viquez	Head, Area of Watersheds & Systems of Agroforestry Head, Area of Ecological Agriculture Planning Office Head, Area of Environmental Socioeconomics Head, Computation Unit Head, Technical Unit for Research Resources	CATIE, Costa Rica	CA Quirós JI Roa
April 5	Antonio Ruíz García	Subsecretary of Rural Development Secretariat of Agriculture, Rural Development, Fisheries & Food	Mexico	JI Roa
April 6	Juan Lucas Restrepo	Director, Agrarian Development Unit of the National Planning Dept.		LA Hernández
May 4	Martha Lucia Betancourt	Social Communication, Pontifical Bolivar Univ.	Medellín, cOLOMBIA	CA Quirós
May 24	M. Finnigan M. Maglore L. Eugene	ORE ORE CIAT/IICA	 Costa Rica	LA Hernández
July 11	John Dodds David Kryder	Attorney at Law, Cornell Strategic World Initiative for Technology Transfer	USA	CA Quirós
Aug. 8	Jamil Macedo Marcio Porto	ACI – EMBRAPA	Brazil	CA Quirós
Aug. 27	Ty Phommasack Nguyen Van Bo Chen Quibo Orapan Nabangchang	Director General, National Agriculture & Forestry Institute, Ministry of Agriculture & Forestry Director, Dept. of Science Technology & Product Quality Voce-President, Chinese Academy of Tropical Agriculture Science Advisor to Ministry of Agriculture & Cooperatives and Natural Resources & Biodiversity Institute	Vientiane, Lao, PDR Vietnam Danzhou, Hainan, PR, China Thailand	S Kaaria

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OUTPUT 6. INTERNAL PROJECTS AND OTHER INSTITUTIONS SUPPORTED AND STRENGTHENED IN CONDUCTING PR

MILESTONES

* Knowledge and experience of six innovative integrated pest management programs using different types of participatory approaches exchanged, summarized and synthesized.

*. Diagnosis within CIPASLA carried out

* Diagnosis within ASOBESURCA carried out

* Proposals for improving the performance of CIPSALA & ASOBESURCA, presented

* Organizations of Nicaragua, El Salvador and Guatemala interacting and drawing lessons from organizations from Cauca with participatory approaches, to be applied in their countries

* Project for holding interactive workshops with community organizations in the Province of Cauca, Colombia, approved

* Central American organizations supported by the Kellogg Foundation, informed about the creation of Centers for Research and Demonstration in the region

* International workshop on small farmers' methodologies of experimentation held in Haiti to exchange experiences on the institutionalization of FPR methodologies

Innovative integrated pest management programs using different types of participatory approaches

During 2001 SN-3 coordinated a project called Farmer Participatory Research for IPM (FPR-IPM) on behalf of a consortium of partners including the CGIAR Systemwide Program on Integrated Pest Management (SP-IPM), FAO's Global IPM Facility (GIPMF), the CGIAR Systemwide Program on Participatory Research and Gender Analysis (PRGA), and CABI-Bioscience's Technical Support Group to the GIPMF.

The FPR-IPM project aims to create a learning community among IPM projects with different types of participatory approaches, to document successful experiences and lessons learned in the areas of FPR and Participatory Learning, and to disseminate these to a wider audience.

The learning mechanisms include three reciprocal, mentored study tour exchanges among six projects that are applying different FPR and Participatory Learning approaches in the context of IPM, followed by a Learning Workshop.

The objectives of the Learning Workshop were to:

Synthesize and integrate FPR and learning concepts in IPM projects

- Develop methodologies, partnership modes and linkages, and institutional arrangements for supporting this integration
- Develop strategies for institutionalisation of participatory approaches in IPM research and extension
- Enhance collaboration between national and international institutions promoting IPM
- Develop an approach for enhancing experiential learning across projects and institutions

The Learning Workshop had a flexible structure with three major components: Plenary sessions, small group work sessions and "open space" sessions.

On the first day of the workshop, a case study about the project or program visited was presented (see table below). Each presentation included a basic description of the project visited; a description of the process steps and cycles; the learning that occurred at each level (farmer/host project team etc.) and at each process step or cycle. Emphasis was on what was modified, what was learned and what challenges are faced by the host project.

Project/Program	**Presenting on the work of:**
1. PROINPA	UPWARD, the Philippines
2. UPWARD	PROINPA, Bolivia
3. CIP-ICM	CABI-IPPM, Tanzania & Kenya
4. CABI-IPPM	CIP-ICM, Indonesia
5. FAO-CIPM	CIP-ICM, Indonesia
6. IPCA	FAO-CIPM, Vietnam
7. CIAT-IPRA	IPCA, Honduras

Then small group work sessions were held to analyze and discuss the projects involved in the study tour exchanges.

In order to broaden and enrich the discussion, Learning Workshop participants were invited to share their knowledge and experience during voluntary "open space" sessions in the evenings. Topics included burning issues, interesting tools or methods to share or debate, or other subjects of relevance. Participants were also invited to display and distribute publications.

Overview of the workshop

The workshop was attended by 43 participants from 24 different countries. Participants' roles in their home projects and institutions were also very diverse, encompassing program/project managers as well as field-based trainers and facilitators. English was the second language of most participants. Translation support was provided for Spanish and Vietnamese speakers who were not English speakers.

At a meeting on the day before the workshop, the Process Steering Group agreed upon the following anticipated outputs and main steps towards these outcomes.

Anticipated outputs

1. An agreed-upon framework for an integrated participatory approach to research and diffusion/extension in IPM in the context of a broader innovation process
2. Common elements and principles of FPR processes, differences in various approaches, and possible institutional arrangements
3. Strategies to influence policies and institutions for mainstreaming and operationalization of FPR/IPM policies and practices.
4. Exposure/sharing of a variety of technical options and practices and practical methods
5. Insights and lessons from the cross-country sharing and exposure visits.
6. Ideas on how to improve one's own project back home, incorporating new knowledge and aspects and possible follow-up action.

Main steps towards the desired outcomes ...

1. What are the experiences and challenges emerging from the analysis of cases?
2. How would an ideal situation and impact look like?
3. What are the success factors required to reach this situation?
4. What are the cornerstones, guiding principles and values of such interventions?
5. How can this be implemented in a practical process?
6. What new aspects does this imply for our cases?
7. How effective has this learning program been?
8. What should be our future steps?

Based on feedback from the Process Steering Group, daily adjustments to the workshop process were designed. The achievements of the workshop are summarized below.

Workshop achievements

- ✔ Synthesis of learning from case studies/exchange visits
- ✔ Visions of outcomes of FPR/Learning interventions for different players
- ✔ Some cornerstones of a common framework defined
- ✔ Practical experiences shared and documented
- ✔ Reflection on the learning process
- ✔ Plans for follow-up by individual programs

Outputs and implications for the future

The study tour and learning workshop process has yielded a rich array of resources. Some of the products desired by participants will emerge from another round of analysis and synthesis to add value to the set of resource materials now available. The elements generated to date by the FPR-IPM project will be distributed to the participants who have been involved.

Analysis of CIPASLA and ASOBESURCA by their representatives

Responsible: *CIPASLA & ASOBESURCA*[1]
Collaborator: *José Ignacio Roa*[2]

The Interinstitutional Consortium for Sustainable Agriculture on Hillsides, CIPASLA, was created in November 1992. From the onset, they established collaborative activities and an organized, participatory system for coordinating the efforts of the different participating entities. They have also sought to ensure broad community and organizational representation and active participation in the planning, organization and management of the activities that are being carried out in the region and that lead to the improvement in the inhabitants' quality of life.

CIPASLA's community base is formed by the Association of Beneficiaries of the Cabuyal River Watershed, ASOBESURCA, which brings together the different community organizations that work in the Cabuyal watershed. As in many organizations CIPASLA and ASOBESURCA have had to overcome internal crises, which have permitted their gradual growth. The CIAT SN-3 Project has been supporting this process through participatory methods and tools that permit them to identify their problems and propose solutions to their conflicts.

This work had the following objectives:

- Have the members and representatives of these organizations identify their weaknesses and strengths through participatory analyses
- Offer alternative solutions to be discussed and implemented
- Continue with institution building activities

Methodology

In order to fulfill these objectives several independent meetings were held and written surveys administered to representatives of each organization. In the plenary meetings brainstorming was used to identify the strengths and weaknesses from the standpoint of each person. Afterwards the participants were asked to think of alternative solutions or ideas to improve the performance of their organization. The CIAT FPR team acted as moderators of the meeting to stimulate the participants' ideas.

Results

The following tables summarize the results of these exercises.

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[1] *NGOs in the Cauca Province*
[2] *SN-3 Project*

Analysis of the strengths and weaknesses of CIPASLA from the standpoint of the institutional representatives.

Entities	Strengths	Weaknesses
Office of the Mayor (Municipal Promoter of Community Action Boards, JAC) ASOBESURCA Office of the Mayor in Caldono. CORPOTUNIA Provincial Secretariat of Agricultural & Livestock Development CORPOICA (Popayán) ICA (Popayán) CETEC FIDAR CIAT (SN-3, FPR Project)	Organization, identity Institutional & scientific support Sustainable development Coordinator who is familiar with the model & motivated Space for coordination & for planning, operational Interest in supporting integrated development of the area of influence Persistence in sustaining activities despite difficulties Work experience in the zone High degree of cohesion among the entities Representativeness, synergy Entities willing to continue with the Consortium Supports community Experience gained in the history of CIPASLA Infrastructure Knowledge of the CIPASLA community Credibility of the organizations Recovery of cultural values & tradition. Presence in 23 villages of the region Institutional strategies for participating with human & economic resources Process documented and should be strengthened	Lack of institutional commitment & interest on the part of some entities Lack of identification as a consortium (CIPASLA is just another entity) Initial agreement does not define institutional roles in the zone. No macro project or global proposal for development for the region Supporting committee should be more active. Weak linkages with municipal & provincial entities Not all communities are reached No feedback about projects to communities Public unrest in work zone Low levels of management Insufficient budget Lack of regional work Little articulation with development plans Lack of confidence in CIPASLA on the part of the indigenous groups

Proposals for improving CIPASLA's performance, developed.

Entities	Proposals
ASOBESURCA JAC Promoter, Office of the Mayor in Caldono CORPOTUNIA CIAT-IPRA Provincial Secretariat of Agricultural & Livestock Development CORPOICA ICA CETEC FIDAR	CIPASLA with opportunity for meeting with communities (needs), institutions (supply), donors (resources). Willingness to participate more at the personal than institutional level ASOBESURCA could collaborate in socialization of programs & community organization. Socialize the work Listen to the community: What does the community of institutions want? An organization that leads the processes of technical & administrative management that permits their positioning & sustainability over time through the formulation of diagnoses, projects & talents Re-think CIPASLA based on the communities' dreams & expectations for a fourth phase Specify commitments & tasks to be carried out by each entity Identify the community's expectations with respect to CIPASLA The municipal bodies should take more interest in the CIPASLA process Carry out the evaluation of CIPASLA & its projects and socialize the successful experiences Give report on the projects executed & the actions of each entity. Convene an assembly of the institutions with the presence of the mayor in order to communicate the objectives & progress made by CIPASLA

Analysis of the strengths and weaknesses of CIPASLA, and suggestions for improving the performance of the consortium by representatives of grassroots organizations.

Participating Organizations	Strengths	Weaknesses	How Can Their Organization Contribute To CIPASLA's Performance?	What Is Expected of CIPASLA's Member Institutions?
ASOBELLA Irrigation District, El Cidral ASORECRO APROBECA José Ignacio Morales, JAC, Porvenir Vilachi. Hector Pito & Venancio Medina (students) ASFODECAV ASOBRISAS SENA UMATA -Caldono CESSI ASPROCAN	Interprets the local demand Representativeness Execution with participatory approach ensured Motivated to train Director with managerial capacity Grouping of villages for their development. Interest in interinstitutional coordination Research on crops Works around natural resources Contributes technology Recognition at the national level of the organizations that form part of CIPASLA Experience in community work International recognition Location of HQ on the Pan American highway Personnel linked to the region Adequate equipment & infrastructure Permits exchanging experiences related to agricultural production Has attracted institutions, NGOs & personalities from different parts of the country & abroad Direct relationship with the farmers The organization as an institution (Board of Directors, ASOBESURCA)	Limited economic resources for responding to the demand Villages at the headwaters of the river not taken into account for implementing projects Lacks projects that really impact on improving quality of life & coverage limited Lacks support in some communities Limited dissemination of activities Deficient training for the communities Lacks technical staff for expanding training in the communities Lacks dissemination of research accomplishments to the institutions Lacks uniform methodology for rural development Needs project that integrates activities of diverse organizations Executed projects should go from demonstration phase to production, to small & large scale No coordination with the indigenous council, the township & the universities Radio program where people are taught to use the natural resources better	Accept the invitation of this entity to its diverse workshops and offer workshops of interest to the communities Help co-finance different projects with community labor Reforest Participate actively Attend meetings Support their coordination Provide information Make known the community's needs Have voice & vote in the differences organizations. Disseminate the lessons learned to promote the development of the region Work in an organized fashion & in coordination with the Consortium	More support in training for the farmers. Technical backstopping Taking into account all the villages & organizations in the township Continue working for the community with the original interest and never give in to obstacles that might arise If study tour groups arrive, they will be attended well as has been done in the past. Try to globalize the radius of action in the township Accord among all the entities that form it so that they contribute with their knowledge & resources to the community organizations. Compliance & commitment True coordination in benefit of the community, with the purpose of joining forces More practice & less theory

Proposals for achieving greater efficiency of the Consortium developed by the members of ASOBESURCA.

Organizations	Proposals
JAC, Pan American Highway	Analyze priorities for helping manage projects with the community
PEDECAIP	Continue working on theme of the environment, conserving the Cabuyal River microwatershed
JAC, Ventanas.	Present projects for strengthening the environment: reforestations, isolation of water sources
Guillermo León Valencia School	Circulate joint CIPASLA-ASOBESURCA bulletin with news, techniques & forthcoming events;
ASOPRANT	ASOBESURCA & the teachers in the region will collaborate in its dissemination
JAC, El Tablón	Begin meetings at 8:00
Irrigation District, El Cidral	Seek funding for housing projects
JAC, La Laguna	Management should negotiate project on irrigation systems for different communities to improve their production
JAC Promoter, Office of the Mayor in Caldono	
ASUASIB	Write projects for organizations where there have not been any
ACOPITAL	Create a rotating fund for the ASOBESURCA delegates
ASPROAQUIN	Motivate groups that do not attend to participate
JAC, Potrerillo	Present talks at meetings using posters to explain the ongoing trials & projects of the committees & the entities
ASPROCAM	
JAC, Crucero de Pescador	Request delegates to transmit to the members of their community the information that is given to them in the meetings
	Supervise delegates in their villages to find out whether they are fulfilling their functions
	Ensure that each village benefits from certain projects
	Hold meetings on farms or in Siberia
	Have demonstration projects that are affordable
	Propose the improvement and implementation of a water-treatment plant

Interactive workshops with community organizations in the Province of Cauca, Colombia

Researchers: *José Ignacio Roa*[3], *Carlos Arturo Quirós*[3]

Proposal for interactive seminars

In order to integrate the projects financed by the WKK Foundation, the SN-3 Project was invited to participate in the Second encounter of projects in the human nutrition initiative in the LAC region, held in San Salvador, El Salvador, from 3-9 December, 2000. The CIAL methodology was presented as an alternative of possible application, not only in agriculture but also in other fields related to health and education, among others.

Afterwards the coordinators of the different projects of the WKK Foundation in the LAC countries visited CIAT and had the opportunity of interviewing members of some CIALs in Cauca and learned about the interinstitutional consortium model, CIPASLA. They met with the actors of the local organizations who informed them of their accomplishments and their organization's projections.

Given the foregoing, the SN-3 Project proposed the development of a process of interaction among the CIAL and CIPASLA organizations with the four projects associated with the Central American institutions (León, Blufield and Chinandega in Nicaragua; San Salvador, El Salvador, and San Pedro Carcha, Guatemala). The interaction will occur around four course-workshops that include visits to the communities where CIAL and CIPASLA activities are being implemented in Colombia.

Afterwards and in accordance with the mission that the SN-3 Project has of promoting organizational models that permit farmers-community and farmer-technicians interactions, the FPR team proposed learning about and evaluating the adaptations that the visiting organizations will make after they have visited these models. SN-3, CIPASLA and CIAL will also benefit from the feedback.

Workshop objectives

- Learn about the process of creating the CIPASLA model in the Cabuyal River watershed, Cauca
- Learn about the CIAL methodology and experiences
- Visit and interview the farmers and technicians that have participated in the development of these processes
- Learn more about community participation in the process
- Analyze, discuss and systematize the lessons learned from the two methodologies—CIPASLA and CIAL
- Identify strategies for extrapolating and adapting the lessons learned to the conditions of the Central American countries
- Analyze how to strengthen the participation of the youth in these models

[3] *SN-3 Project*

Methodology

Workshops and field visits

It is expected that the different groups will visit CIAT on four occasions (one week each) over a six-month period. They will participate in meetings with the farmers, visit the research, production and environmental projects in the field, and exchange information with the technicians-facilitators of the processes.

With the information from the field and the interaction with the participants, the group will have the opportunity to analyze the experiences, extract the lessons learned, systematize the information and define the possible strategies for their application in their respective work places. The workshops will be held using a participatory methodology in the form of group work and the presentation of results in plenary sessions for the final discussion.

Two consultants—one who knows CIAT and the CIAL and CIPASLA models and the other who is familiar with the majority of the visiting organizations of Central America—will accompany the groups and facilitate the small group and plenary discussions.

Evaluation visits

A visit will be made to the groups of the organizations of two of the participating countries in order to conduct a participatory evaluation with the visitors in their places of work. The following are the evaluation questions:

- Which elements of the lessons learned in their visit to CIPASLA and CIAL have they tried to apply in their respective sites?
- With whom have they shared the lessons learned? Communities, organizations, politicians or other agents?
- What adaptations of the lessons identified have evolved under local conditions?
- What difficulties have they found and how have they solved them?
- What results have they obtained thus far?
- Are there innovations in the local process due to the visit that could be fed back into and introduced to CIPASLA and the CIALs?
- What recommendations would they make for facilitating the processes of identifying lessons of other projects or groups and their dissemination?

Important outcomes of the first workshop

The first workshop was held from 3-7 September with the participation of 17 representatives from the recently formed Network for Sustainable Development in association with youth in León and Chinandega, Nicaragua. The participating organizations are shown in the following table:

Acronym	Institution	No. of Participants
INTA	Instituto Nicaragüense de Tecnología Agropecuaria	1
UNAM	Universidad Nacional Autónoma de Nicaragua	1
SETAGRO	Servicios Técnicos Agropecuarios	2
FUNCOD	Fundación Nicaragüense para la Conservación y el Desarrollo	1
CISAS	Centro de Información y Servicios de Asesoría en Salud	2
AMNLAE	Asociación de Mujeres Nicaragüenses Luisa Fernanda Espinoza	1
IMAL	Secondary school	1
	Movimiento Nacional Nicaragüense	3
	Alcaldía Municipal de Chinandega	1
	Alcaldía municipal El Viejo	1
SELVA	Asociación Somos Ecologistas en Lucha por la Vida y el Ambiente	1
APEDSAF	Asociación para el Desarrollo Sostenible Agropecuario y Forestal	1
	Ana Lucila Figueroa del CID (Consultant for the Kellogg Foundation),.Honduras.	
CIAT	José Ignacio Roa V., SN-3 Project Colombia.	

The meetings, the discussions, the study tours and the group work constituted important instruments for forming and strengthening the network members who participated in this event. Although the medium- and long-term results are not yet perceivable, it is important to highlight some of the more immediate outcomes of the workshop, taking into account the presentations, discussions and evaluation of the group during these five days.

1. *The organization*. The participants had the opportunity to observe and interact with different organizations from the community level to the regional and provincial levels. These examples highlight certain key points about the functional organization. The participants mentioned that based on what they had observed, sound organizations are created with basic principles of co-existence, formulate their bylaws and respect them. Moreover, their members attend the meetings regularly and participate responsibly.

2. *Leadership*. The participants placed emphasis on the discussions with several community leaders that showed them to be exceptional natural leaders. They perceived them as persons with vision and determination, who put into practice principles of help and selfless service to their community. It was commented that in every community there are people like them who many times need only an opportunity and support to become leaders of movements that influence community and regional development.

3. *Alternatives for research and/or production*. The projects and CIAL committees visited served to demonstrate that many times the real needs of the region are the ones that most influenced the decision to seek economic alternatives and diversification of traditional production. Nevertheless, the participants placed emphasis on their observation that the projects arose from needs identified by the members of the communities and were not imposed. At the same time, the participants in the projects were supported with the necessary technical knowledge on technological and/or production alternatives, which was key at the moment of taking research-related decisions and the need to diversify once they had tested the best options on a small scale.

4. *Sustainability*. Aspects that the participants considered important for the sustainability of the organizations and their projects were good organization, discipline, perseverance, solidarity and fluid communication.

5. *Participation of youth and women*. The participants expressed their concerns several times regarding the participation of the youth and women. They felt this was scarce in most of the projects visited and that equal opportunities should be emphasized in these projects, without affecting the adults adversely or losing the wealth of their experience and knowledge.

6. *Strategic areas prioritized*. In the coming year the network should emphasize the following strategies: institution building, communication and community action with PR. A written document was prepared, including a chronogram of activities and commitments for the next six months.

Conclusions

One of the most important commitments was defining the need of employing an executive coordinator to execute the planned activities impartially, diminishing possible rivalries in the management of funds and power in decision-making.

Support for creating research and demonstration centers for farmers (consultancy for the Kellogg Foundation)

Researchers: *José Ignacio Roa,*[4] *Milton Flores*[5] *& Margarita Barney*[6]

There are many technologies that are not adopted by the small farmers. These technologies are developed by researchers at research centers under very different environmental conditions from those of low-resource farmers.

At the "Second encounter of projects in the human nutrition initiative in the LAC region," held in San Salvador, El Salvador, from 3-9 December, 2000, it was proposed that farmers have their own research center, where they could conduct research on topics prioritized by them, with a design proposed by them, and where they could also show their indigenous practices. These centers could also be used by the entities to show their different technologies, which can be evaluated by the farmers.

At this meeting of WKK-financed projects, the Coordinators of the WKK proposed holding a first workshop in Honduras to explore in greater depth the idea of creating the research and demonstration centers.

As an outcome of the workshop held in January 2001 in Gracia, Lempira (Honduras), the WKK Coordinators Heliodorp Diaz, Blas Santos and Jana Arriagada proposed visiting the following Centers:

- Mexico: Group for Promoting Education and Sustainable Development, GRUPEDSAC
- El Salvador: Salvadorian Foundation for Integral support, FUSAI
- Honduras: EAP- Zamorano; Center for Education in Agroforestry and Soils, CEAS; International Information Centro on Cover Crops, CIDICCO
- Colombia: CIPASLA; CIALs; Daniel Gillard Civic Corporation, CECAN

For these visits the Coordinators of the WKK contracted three consultants; Margarita Barney of GRUPEDSAC, Milton Flores of CIDICCO, and José Ignacio Roa of CIAT/SN-3 Project.

Objectives

- Incorporate conceptual aspects of infrastructure design, training, practices in appropriate technologies in future training-demonstration centers to be established for supporting the development and consolidation of the new strategy in microregions where the projects are linked in southeastern Mexico, Central America, the Caribbean and the upper Andean region.

[4] *SN-3 Project*
[5] *CIDICCO, Honduras*
[6] *GRUPEDSAC, Mexico*

- Determine the minimum physical structure that each center should have to ensure its efficient performance (e.g., dormitories, bathrooms with tanks for harvesting water, system for treating sewage and wastewater, areas for crops, areas for raising animals and area for training)

- Ensure that each training center has full-time personnel in order to provide practice as part of the training and to administer the resources that each center obtains for its operations

Results of visits to training centers

The following similarities were identified:

- Common objectives, training and strengthening of leadership
- Evolutionary processes required to adapt to the economy, sociopolitical context and sustainability
- None has achieved 100% financial sustainability
- Multiple activities carried out to generate income and cover part of their costs
- Form part of larger entities that provide technical support for institutions
- Microfinancing used as strategy for self-development
- Visionary leadership
- Motivated staff, committed to the cause
- A few people do a lot; i.e., multidisciplinary staff
- Manage alternative technologies that are diverse in nature
- Have some type of nonformal education
- All except one work with small producers

International workshop on small farmers' methodologies of experimentation to exchange experiences on the institutionalization of participatory research methodologies

Researcher: *Luis Alfredo Hernández*

The activities of the Germplasm Improvement Project, carried out by CIAT in Haiti under the HGRP, Hurricane Georges Recovery Program, focused on two main areas during the April–June quarter:

- The establishment of trials during the March-April the principal season in the Southeast hillside areas

- The organization of the course on Production of Tropical Crops as part of the overall activities of the CIAT-HGRP Project. The opening ceremony of this course was enhanced by the presence of several dignitaries including the Director of the USAID Mission in Haiti, the Director of the HGRP Program, one of CIAT's Directors, CIAT's Training Officer and the General Coordinator of the CIAT-HGRP Project.

National Course on the Production of Tropical Crops

CIAT plays a key role in facilitating training activities for staff working with institutions or national programs in the Central American and Caribbean countries. In the context of this project, training activities were oriented toward the senior staff (agronomists) working with partner institutions of the HGRP Program and other entities with a potential for collaborating with CIAT.

This nationwide course, which brought together senior staff from several geographic regions of the country, was held at the American University of the Caribbean (AUC) in Les Cayes from 17-29 June inclusively. Table 1 gives more information on the participants in this course.

Objectives

- Disseminate information about the SN-3 Project, its philosophy, goals, methodological approaches, tools, first- and second-order organizations, the participatory procedure for evaluating forages proposed for Honduras Nicaragua and Costa Rica.

- Propose ideas for establishing a strategy of participatory research in forages

Results

Objective 1

Perceptions about the presentation. The audience, to which the presentation was made, consisted mainly of agronomists from national research institutions. According to their perceptions, the organizations that work with the producers, including both their staff and the farmers themselves, require training in participatory processes. They recommended participatory evaluations of technologies (varieties) that show rapid results, using simple methods that are easy for the producers to handle. They also suggested establishing follow-up procedures for all participatory processes that are instituted.

Objective 2

Potential of applying participatory research for evaluating forages in Haiti. One of the first steps of a participatory strategy is the training of the technicians from the selected entities in participatory processes. This implies the selection of experienced, interested producers in order to involve them in the process from the beginning. One of the first objectives established would be to strengthen institutional relationships and motivate the communities to form organic structures (Fig. 1, Steps 1 & 2) and establish participatory activities that identify and seek solutions together with the producers (participatory diagnoses, Fig. 1, Step 3). The next step (4) is the participatory evaluation of technological options in small experimental plots (grasses and introduced and/or native legumes such as the case of *Leucaena* sp.), taking advantage of the information available in Haiti and the experiences in other countries such as Nicaragua, Honduras and Costa Rica. With the information obtained from the small plots, it is possible to introduce the technological options (Step 5), identified with the greatest potential for being established in the producers' systems. An alternative would be rows of forage species for feeding the cattle, intercropped among traditional crops such as maize, common beans, sorghum and cassava. With the producers the best arrangements within their production systems were identified. Similarly, participatory evaluations will be made of technological options such as herbaceous legumes for improving soils (organic fertilizers), control of erosion, especially on hillsides, with grasses and bushy species (source of firewood for preparing food).

With this strategy sustainable production in terms of animal production and NRM can probably be established. Figure 1 is a proposal for the strategy in terms of participatory research (draft for discussion). The Project is interested in participating in the discussions that are generated for accomplishing these objectives.

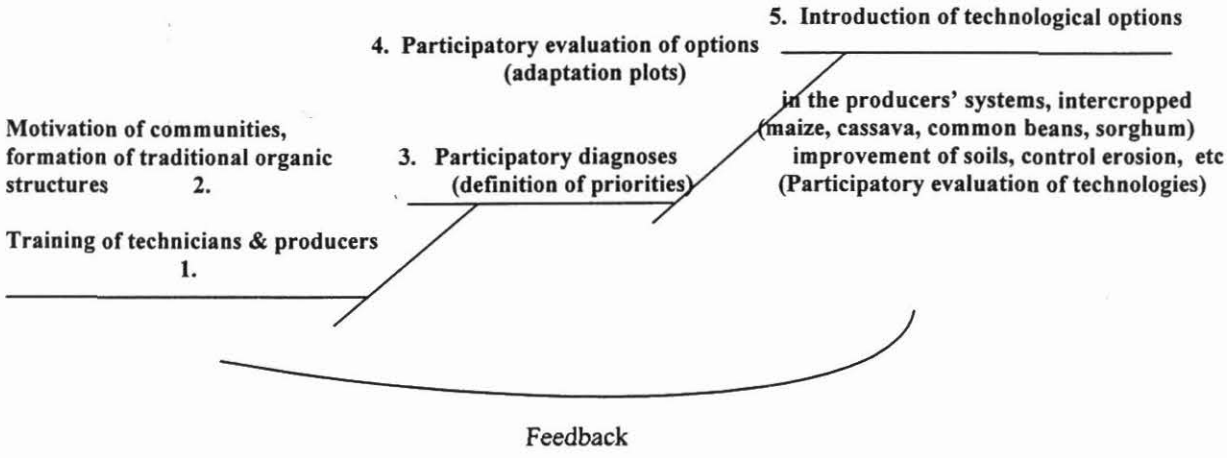

Figure 1. Strategy of participatory research (proposed for discussion in Haiti, June 2001)

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OUTPUT 7. CAPACITY OF THE SN-3 TEAM, STRENGTHENED

MILESTONES

* Access to relevant information, improved
* Team capacity and skills, enhanced
* CIAL database improved and available to project partners
* Creation of the Project's Web site based on the parameters and designs that identify it with CIAT
* CIAL database restructured
* Documentation and information center, library, database and database of photographs and talks, implemented

FPR team attendance at training events during the working year 2000-2001

In an effort to strengthen the SN-3 team members with respect to their knowledge and skills, training opportunities were offered. This year members of the team participated in the events shown in Table 1.

Table 1. Information on courses in which SN-3 team members participated.

Date	Name of Course or Event	Length	Place	SN-3 Team Member Trained
23-25/01	Scaling-up strategies for pilot research experiences	24 h	England	Susan Kaaria
23/04	Course in Spanish-to-English translation	18 h	CIAT	Ligia García
27/04	Formation of CIAT Web group	8 h	CIAT	Jorge Luis Cabrera
15-29/05	M&E in development projects	90 h	Feldafing, Germany	Susan Kaaria
26-29/06	Course on FPR methods & techniques	32 h	CIAT	Elías Claros
18/09	Skills development workshop on writing & editing in Spanish	18 h	CIAT	Ligia García
1-5/10	First international workshop on PM&E	40 h	Yoro, Honduras	Elías Claros Luis Alfredo Hernández

STAFF

Carlos Arturo Quirós	Acting Project Manager, Research (100%)
Luis Alfredo Hernández	Associate I, Research (100%)
José Ignacio Roa	Professional Specialist (100%)
Jorge Luis Cabrera	Technician I (100%)
Ligia García	Secretary IV (100%)
Freddy Escobar	Technician II (70%, jointly with SP-PRGA)
Fanory Cobo	Thesis student, Agroindustrial Engineering, National Univ.-Palmira (50%)
Elías Claros	Assistant III, Research (100%)
Susan Kaaria	Senior Research Fellow (80%, jointly with SP-PRGA)
Harriet Menter	Consultant

DONORS SN-3

* BMZ - Der Bundesminister für Wirstschafliche Zusammenarbeit, Germany
* DfID - Department for International Development, United Kingdom
* SDC - Swiss Development Center, Switzerland
* WK Kellogg Foundation, Michigan

CIAL database

Responsible: *Jorge Luis Cabrera*[1] *& James García*[2]
Collaborators: *Carlos Arturo Quirós*[1], *José Ignacio Roa*[1] *& Luis Alfredo Hernández*[1]

This tool stores and presents the information generated by the different CIALs that are supported by the partners of the SN-3 Project in Latin America in an efficient form. The information that is being gathered is based on the results of the CIALs formed, diagnoses, farmers' evaluations of the technological alternatives being tested, results of the trials, population records, geographic location, farmers collaborating with each CIAL, and facilitating institutions among others. All this information is being collected by the technician-facilitators through the use of a simple format that was previously revised with them and improved upon.

The database has undergone some substantial changes in its presentation and in the form of storing information. Another change has been the expansion of variables to cover new topics of interest. This new version seeks to be more user friendly and flexible with respect to future changes. It has a series of preestablished changes or queries that can be processed by any user. In addition, it can be accessed directly from the SN-3 Web page. Information and/or documents in Word, Excel, Power Point, photographs and videos can be stored. This version will be installed in the different countries where there are CIALs, and local staff will be duly trained on how to input and manage the information.

[1] *SN-3 Project*
[2] *BP-1 Project*

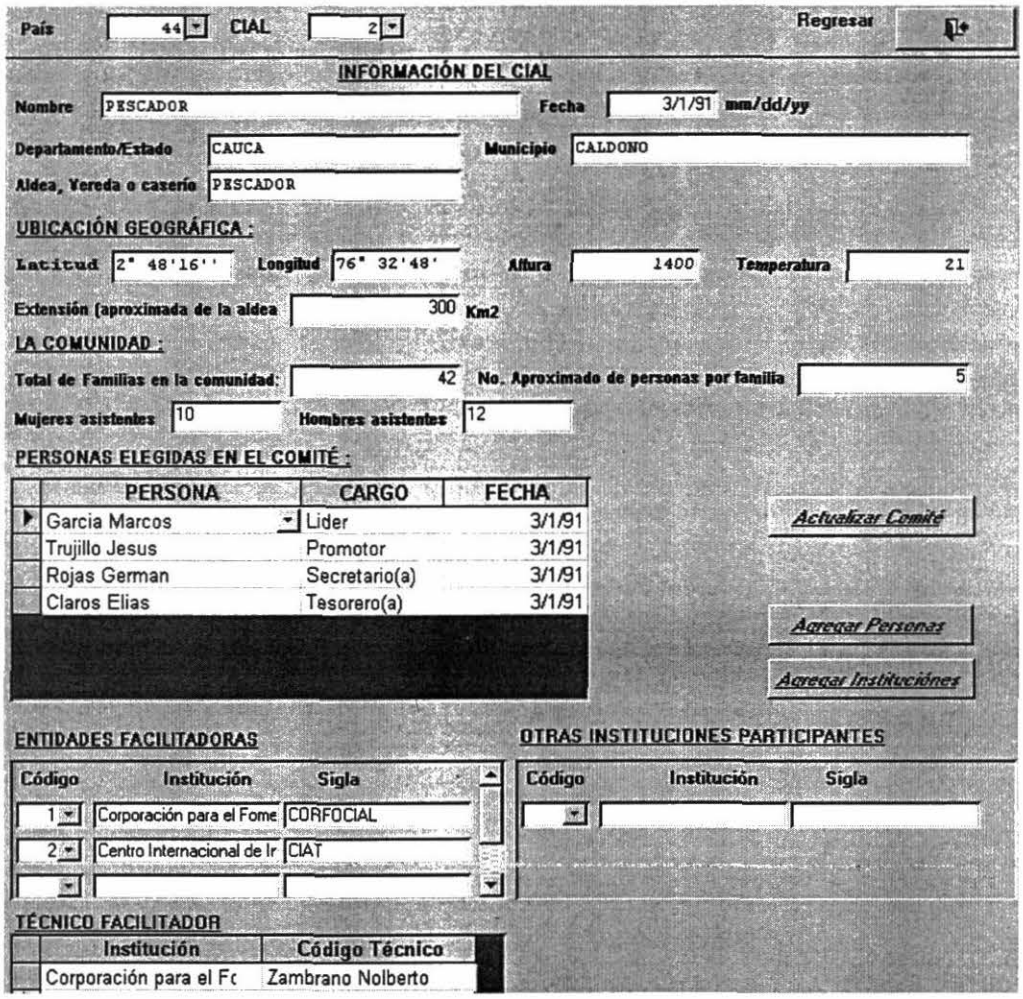

Figure 1. View of one of the tables where information on the formation of the CIALs is recorded in the database.

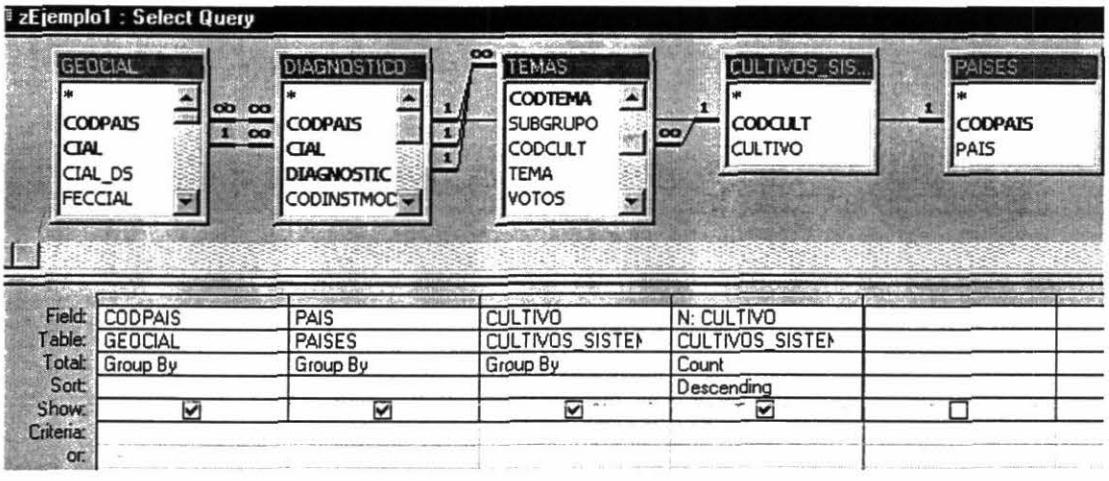

Figure 2. Design of a query or consultation.

All the CIALs, by country and different crop cycles, were asked: "On which crops and how many times have you carried out research projects?"

zEjemplo1 : Select Query

CODPAIS	PAIS	CULTIVO	N
44	COLOMBIA	MAIZ	52
44	COLOMBIA	FRIJOL	45
44	COLOMBIA	ARVEJA	32
44	COLOMBIA	PAPA	28
44	COLOMBIA	YUCA	17
44	COLOMBIA	HABICHUELA	16
95	HONDURAS	MAIZ	16
44	COLOMBIA	TOMATE	15
44	COLOMBIA	MANI	14
44	COLOMBIA	SOYA	14
44	COLOMBIA	LULO	13
44	COLOMBIA	MORA	13
44	COLOMBIA	PLATANO	13
44	COLOMBIA	ARROZ	10
44	COLOMBIA	CEBOLLA JUNCA	10
95	HONDURAS	FRIJOL	10
44	COLOMBIA	PASTOS	7
44	COLOMBIA	CAÑA PANELERA	6
44	COLOMBIA	FRIJOL DE VARA	5
44	COLOMBIA	MARACUYA	5
44	COLOMBIA	PIMENTON	5

Figure 3. Output or response to the consultation or query.

Photograph database

The software tool ACDSee 32 V.2.4 was used to store scanned or digital camera photographs. This program makes it possible to manipulate them, do quick searches and view complete albums of photos on the computer screen for easier visualization. This software is complemented with other software for handling high-quality images, where the scanned or digital camera photographs can be corrected and enhanced, as well as reduced in file size for more efficient insertion in talks and other files.

Project library

CDIPRA, the Documentation Center of the SN-3 Project, is a file where all the references of the documents, books, journals, reports, videos generated by the Project or information from Project members or donations from partners that contain topics of interest in PR.

This is a medium that permits the organization of our library by author, year, title, institution or keywords. A consecutive numbering system is being used for the file as well as for locating the documents on the shelves. This tool facilitates quick searches of any type of document.

Author	Year	Title
Geilfus	1997	80 Herramientas para el Desarrollo Participativo
Quiros	1998	Abonos Verdes
	1996	Acciones Conjuntas para el desarrollo sostenible de la subregion de Yoro Cuenca Rio Ta...
Quiros	1993	Adaptación y evaluación de la tecnología de semillero en tomate para el manejo de la mo...
Bentley	1998	"Adaptive research in Sara and Ichilo Project"
Yeguare		Agricultores intercambian experiencias con Profesores y tecnocos de zamorano
Peck	1991	Agricultura Sostenida de Ladera en la Subregión de Yoro, Sostenibilidad
Rippstein	2001	Agroecología y Biodiversidad de las Sabanas en los Llanos Orientales de Colombia
Karremans	1994	Análisis de género Conceptos y Métodos
Maiz	1989-1993	Análisis de los ensayos 1989-1993
Howeler	1983	Análisis del tejido vegetal en el diagnóstico de problemas nutricionales
Trejo	1999	Analisis Fototopografico de tendencias en el uso del suelo en Zonas de Laderas No. 2
CIP	1997	Annual Report 1997 CIP
Agroenterpr...	1999	Annual Report
Assessment	1998	Annual Report
PE-3	1998	Annual Report Community Management of Watershed Resources in Hillside Agroecosyt...
SN-1	1999	Annual Report 1999 Rural Agroenterprise Development Project
BP-1	1998	Annual Report Impact Assessment
IPRA	2001	Annual Report WKK Extending Lessons learned from Community Based Agricultural rese...
CIP	1992	Annual Report 1992 CIP
CIP	1994	Annual Report 1994 CIP
HILLSIDES	1995	Annual Report 1994-1995
	1997-98	Annual Report 1997-98 Systemwide
Studies	1998	ANNUAL REPORT 1998 PE-4 Land Use Studies
PE-4	1999	Annual Report 1999 Land Use Studies

Figure 4. Partial list of references in CDIPRA.

Responsible: *Jorge L. Cabrera*[3]

SN-3 Web site: http://www.ciat.cgiar.org:81/ipra/inicio.htm

In order to establish the homogeneity of the Web pages of the different CIAT projects, the "Web group" was created. This group is formed by representatives of each project, who are in charge of compiling the information that will be on the Web page and will also be responsible for modifying and updating the information of each project when necessary. The work will be coordinated by the staff from Communications and Graphic Design.

The page has been designed to be user friendly. The visitor to our site will not only learn about aspects related to the SN-3 Project but can also access, through links, the different partners of our project. The page has the following divisions:

- *Products*. Materials produced by the project on different topics related to PR, which can be consulted by visitors to our page:
  - o Books
  - o Instructional guides
  - o Manual
  - o CDs
  - o Educational videos

- *News*. Announcements of different events that will be held in the short and intermediate term, either by SN-3 or by one of our partners from the countries where the Project collaborates.

- *Services*. Announcements of the different types of training that the Project offers. These courses include communication techniques, types of diagnoses and participatory evaluation techniques, among others. These courses are targeted toward people who are in constant contact with the farmers and who need participatory tools for carrying out their activities. In addition, Training trainers courses are also offered periodically.

The CIALs

The CIAL methodology was developed by the Participatory Research Approaches Project (SN-3) of CIAT. The CIALs are constituted by four farmers elected by their community, who, together with a group of collaborators are responsible for a research project agreed upon with the community. These farmers are willing to serve and identify solutions to their problems. The CIAL does research on priority topics that have been identified during a process of diagnoses. After each experiment, the CIAL presents the results to the community. Each committee has a small fund to cover their research costs and risks, and they are backstopped by a trained technician-facilitator until such time that the CIAL has acquired sufficient maturity to manage the process independently.

[3] *SN-3 Project*

The Directory

In this section the visitor has the option of accessing the maps of the countries where there are CIALs. Then after selecting the desired country, they find a list of the different Committees.

The first CIALs began in Colombia in 1990. Since then they have been established in Bolivia, Brazil, Ecuador, El Salvador, Honduras, Nicaragua and Venezuela.

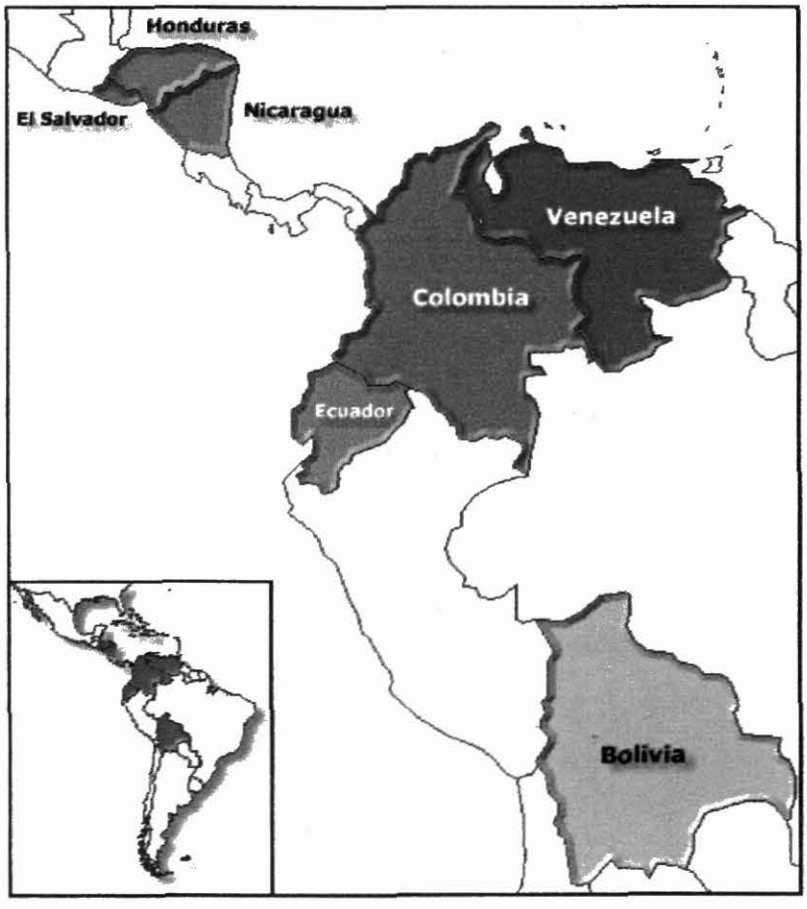

Figure 1. Map for accessing the lists by country where there are CIALs.

Two people we would like you to meet

Interviews with Suly Pajoy and Adelmo Calambaz, farmers who narrate their experiences with their CIALs.

Investing in farmers as researchers

The visitor can access the different chapters of the book that has documented different Latin American experiences in the application of this methodology.

About us

Composition and actions of the SN-3 FPR team

- Description of the team
- Our team
- Research topics
- Partners and donors

LIST OF ACRONYMS AND ABBREVIATIONS USED

Acronyms

ACIN	Asociación de Cabildos Indígenas del Norte del Cauca (Colombia)
ADDAC	Asociación para el Sector Agropecuario (Ecuador)
ASADI	Asociación de Agricultores del Diviso (Colombia)
ASOBESURCA	Asociación de Beneficiarios de la Subcuenca del Río Cabuyal (Colombia)
ASOCIAGUARE	Asociación de CIAL de la cuenca del Río Yaguare (Honduras)
ASOCIALAYO	Asociación de CIAL del Lago Yojoa (Honduras)
ASOHCIAL	Asociación Hondureña de CIAL
ASOPANELA	Asociación de paneleros de Santander de Quilichao (Colombia)
BMZ	Der Bundesminister für Wirstschafliche Zusammenarbeit Germany)
CARE	Cooperative for American Relief Everywhere
CCI	Corporación Colombia Internacional
CECAN	Corporación Cívica Daniel Gillard (Colombia)
CEDEAGRO	Centro de Desarrollo Agropecuario (Bolivia)
CETEC	Corporación para Estudios Interdisciplinarios y Asesoría Técnica (Colombia)
CGIAR	Consultative Group for International Agricultural Research (USA)
CIAE	Centro de Investigación Agrícola y Extensión (Venezuela)
CIAT IPRA	Partipatory Research in Agriculture
CIAT-Bolivia	Centro de Investigaciones en Agricultura Tropical
CIAT/Laderas	CIAT laderas Nicaragua
CIDICCO	Centro Internacional de Información sobre Cultivos de Cobertura (Honduras)
CIMMYT	Centro Internacional para el Mejoramiento del Maíz y el Trigo (Mexico)
CIP	Centro Internacional de la Papa (Perú)
CIPASLA	Consorcio Interinstitucional para una Agricultura Sostenible en Laderas (Colombia)
CLODEST	Comité Local para el Desarrollo Sostenible de la Cuenca del Río Tascalapa (Honduras)
CORFOCIAL	Corporación para el Fomento de los Comités de Investigación Agrícola Local (Colombia)
CORPOICA	Corporación Colombiana de Investigación Agropecuaria
CORPOTUNIA	Corporación para el Desarrollo de Tunía (Colombia)
CPECs	Colectivos de Productores Experimentadores Comunales (Nicaragua)
CETEC	Corporación Regional de Estudios Interdisciplinarios Asesorías Técnicas (Colombia)
CRECED	Centros Regionales de Capacitación, Extensión y Difusión (Colombia)
CUAO	Corporación Universitaria Autónoma de Occidente (Colombia)
DAMA	Departamento Administrativo del Medio Ambiente (Colombia)
DfID	Department for International Development (UK)
DILPE	Directorio Local de Promoción Económica (Bolivia)
DIPEIB	Dirección Provincial de Educación Intercultural Bilingüe del Cotopaxi (Ecuador)
EAP	Escuela Agrícola Panamericana, El Zamorano (Honduras)
FAO	United Nations Food and Agricultural Organisation (Italy)
FEPROH	Fomento Evangélico para el Progreso de Honduras

FIDAR	Fundación para la Investigación y el Desarrollo de la Agroindustria Rural (Colombia)
FONAIAP	Fondo Nacional de Investigación Agropecuaria (Venezuela)
FORTIPAPA	Fortalecimiento de la Investigación y Producción de Semilla de Papa (Ecuador)
FUNAN	Fundación Antisana (Ecuador)
FUSAI	Fundación Salvadoreña de Apoyo Integral
GIPMF	FAO's Global IPM Facility
GRUPEDSAC	Grupo para Promover la Educación y el Desarrollo Sustentable (Mexico)
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation) (Germany)
IDRC	International Development Research Centre (Canada)
IPCA	Investagión Participativa en Centro América (Honduras)
HGRP	Hurrícane Georges Recovery Program Haití)
IIRR	Instituto Internacional para la Reconstrucción Rural (Ecuador)
INIA	Instituto de Investigaciones Agropecurias (Chile)
INIAP	Instituto de Investigaciones Agropecuarias (Ecuador)
INPRHU	Instituto de Promoción Humana (Nicaragua)
INTA	Instituto Nacional de Tecnología Agropecuaria (Nicaragua)
MANRECUR	Proyecto de Manejo de Recursos Naturales (Ecuador)
MARNR	Ministerio del Ambiente y Recursos Naturales (Nicaragua)
NARO	National Agricultural Research Organization (Uganda)
PRGA	CGIAR Systemwide Program on Participatory Research and Gender Analysis
PNRT	Programa Nacional de Raíces y Tubérculos (INIAP-Ecuador)
PRODESSA	Centro de Promoción en Investigación, Desarrollo y Formación para el Sector Agropecuario (Nicaragua)
PROINPA	Fundación Promoción e Investigación de Productos Andinos (Bolivia)
PROINPA	Fundación para la Investigación en Papa (Bolivia)
PRONATTA	Programa Nacional de Transferencia de Tecnología Agropecuario (Colombia)
PRR	Programa de Reconstrucción Rural (Honduras)
SCD	Sociedad Cristiana para el Desarrollo Rural en Laderas (Honduras)
SDC	Swiss Development Center
SENA	Servicio Nacional de Aprendizaje (Colombia)
SERTEDESO	Servicios técnicos para el Desarrollo Sostenible (Honduras)
SOL	Supermercados de Opciones para Laderas (Nicaragua)
SP-IPM	CGIAR Systemwide Program on Integrated Pest Mangement (SP-IPM)
TecniCIAL	Técnicos que Trabajan con CIAL (Honduras)
UMATA	Unidad Municipal de Asistencia Técnica Agropecuaria (Colombia)
UNICAM	Universidad Campesina (Nicaragua)
UNIR	Una Nueva Iniciativa Rural (Honduras)
UNPRHU	Instituto de Promociones Humanas (Nicaragua)
UNSS	Universidad Mayor de San Simón (Bolivia)
UVTT	Unidades de Validación y Transferencia de Tecnología (Ecuador)

Abbreviations

avg.	Average
AIR	Rural Agroindustries Committee
CAL	Comité agropecuario local
CEG	Clone evaluation group
CIAL	Comité de Investigación Agrícola Local
CDIPRA	Documentation Center of the SN-3 Project
cv.	Coeficiente de Variación
DAP	Days after planting
diam.	Diameter
df	Degrees of freedom
DIT	Discriminatory Index among Tools
FFS	Farmers' Field Schools
FPR	Farmer participatory research
FRG	Farmer research groups
GO	Government organization
HQ	Headquarters
IAM	Integrated agroecosystem management
IARC	International agricultural research center
JAC	Juntas de Acción Comunal (Colombia)
LCMI	Local capacity for market intelligence
max.	Maximum
M&E	Monitoring and evaluation
mo	Month
MS	Mean squares
MA	Ministerio de Agricultura (Cuba)
MAG	Ministerio de Agricultura y Ganadería (Ecuador)
MAG	Ministerio de Agricultura y Ganadería (Costa Rica)
NARS	National agricultural research systems
NGO	Nongovernmental organization
NICT	New information and communication technologies
NR	Natural resources
NRM	Natural resource management
PIM	Participatory impact monitoring
PM&E	Participatory monitoring and evaluation
PPB	Participatory breeding programs
PPI	Proyectos productivos integrados
PR	Participatory research
QDI	Quality-Discriminatory Index of Variables
R&D	Research and development
RCBD	Randomized complete block design
SL	Sustainable livelihoods
SS	Sums of squares
SWOT	Strengths-weaknesses-opportunities-threats
var.	Varieties
vs.	Versus