

Output 4: Methodologies for Establishing Community-Managed Participatory Monitoring and Evaluation Systems (PM&E) Tested, Applied and Widely Disseminated

Human and Social Capital Impacts of Applying Participatory Approaches: A Study of Local Agricultural Research Committees in Colombia (CIALs)

*V. Sandoval*⁵³, *S. Kaaria*⁵⁴, and *N. Lilja*⁵⁵

Introduction

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

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

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

53. Research Assistant, IPRA Project, CIAT, AA 6713, Cali, Colombia.

54. Senior Scientist, Rural Innovations Institute of CIAT, P.O. Box 6247, Kampala, Uganda.

55. Senior Scientist, Systemwide Program on Participatory Research and Gender Analysis for Technology Development and Institutional Innovation (PRGA), AA 6713, Cali, Colombia.

The study built on results from an earlier study Hincapié (2003) and an impact assessment study conducted by the IPRA Project in 1998 (Ashby & García, 2000).

Study objectives

1. The specific objectives of this study were:
2. To identify characteristics necessary for a community member to participate in the CIAL (including well-being and educational level, gender, innovators, unusual, etc)
3. To assess social and human impacts of the CIAL to its members as well as the members of the community

Research questions:

- (a) What are the characteristics necessary to become a CIAL member?
- (b) How is participation in CIAL membership distributed across the different gender and wealth groups?
- (c) Do CIALs improve the flow of information on technology demand between farmers/communities, to other communities and research and development organizations?
- (d) What are the benefits of being a CIAL member (human capital and social capital)?
- (e) What is the impact of the increased human and social capital among the members and communities?

Methodology

This study examined the impact of CIAL methodology, which incorporates farmer participation in the agricultural research process, through the establishment of local agricultural research committees (CIALs) in rural communities. This method was developed at CIAT in the 1990s and is currently used in approximately 250 communities of several Latin American countries. The community establishes a research committee with elected members. Each CIAL is supported by an agronomist or extension agent who trains the committee members in the research design (controls, replicates, systematic evaluation of results) and who visits their trials regularly to provide technical support. Support for the agronomist comes from the institution supporting the CIAL, usually an NGO, the national research or extension service, or some other institution involved in technology development and transfer. Costs of experimentation are covered by outside funds; however farmers are not paid for their participation or time. Research problems and priorities are set at the level of the community (by vote), but the experimentation is done by the CIAL on behalf of the community. Community members are able to visit the trials all along, and results of experiments are disseminated at the level of the community. If a series of experiments identifies a promising technology or practice, the CIAL will recommend it officially. Figure 1 illustrates the conceptual framework used to assess impacts.

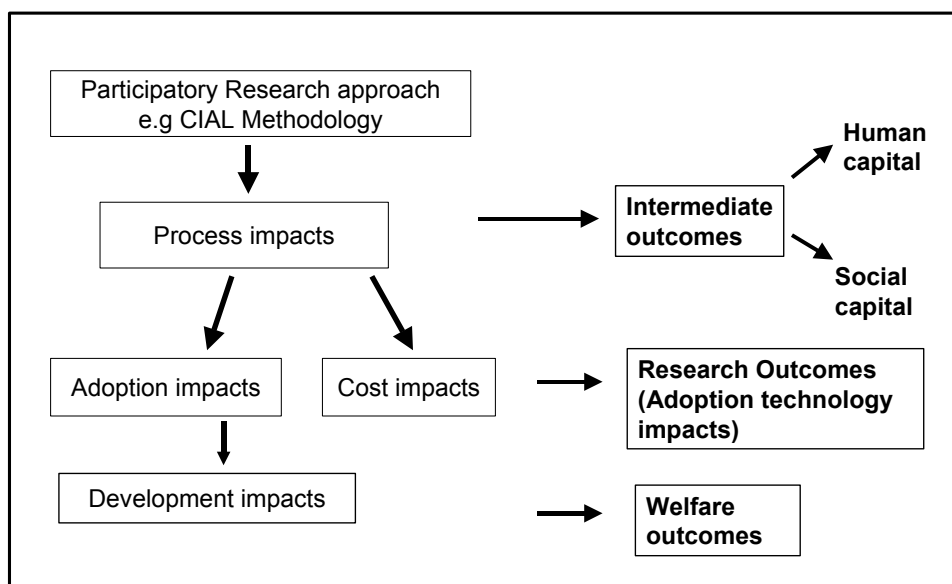


Figure 1. Conceptual framework for analysis.

The sample design: The study was made taking in count both levels: community with and without CIALs, and CIALs. Table 1 lists all CIALs included in the study. The sampling was done as follows:

1. **CIAL level:** The sample was selected from all existing CIALs in Cauca department that have more than 5 years. To ensure a representative sample, CIALs were also stratified by age and gender of membership. Thirteen CIALs in 12 communities in were selected. At the CIAL level, individual household interviews were conducted, and focus group discussions (FGDs) were conducted at the CIAL group level. All the CIALs included in the study and their description is included in Table 1.
2. **Community level:** In order to understand the impact of CIALs on individual members as well as on other community members, individual household interviews were conducted in six CIAL communities and four communities without CIALs. In each of these communities both CIAL and non-CIAL members were interviewed. In addition, both the male and female heads of household were interviewed. Four of communities selected: El Jardín, San Bosco, Tres Cruces and Cinco Dias, were selected because they formed part of the study documenting the impact of the CIAL methodology (Hincapié, 2003), while the other two (Crucero de Pescador and Carpintero) had been in the impact study conducted in 1998. The information from these earlier studies formed the basis for the design of the surveys for this study.
3. **Counterfactual (Non-CIAL communities):** In order to control for changes in the communities attributable to the presence of CIALs, 4 counterfactual communities were also selected on the basis of not being neighbors and similarity in various characteristics.

Table 1. CIALs included in the study.

Name of CIAL	Locality	Age of CIAL	Households in community	Number of members		Sample size
				Men	Women	
Andalucía	Caldoso	8		4		
Betania 1	Totoró	12	33	6	8	
Betania 2	Piendamó	7	15	6	2	
Buenavista	Caldoso	10	47	13	1	
Carpintero	Morales	8	181	20	10	46
El Jardín	Caldoso	10	38	3	1	10
Las Cruces	Silvia	6	57	3	3	15
Pescador	Caldoso	13	66	5		17
San Bosco (Female)	Santander de Quilichao	5	58		9	15
San Bosco (Male)	Santander de Quilichao	12	58	3		
San Isidro (Male)	Santander de Quilichao	7	66	5		
Cinco Días (Female)	Timbio	11	205	2	13	52
El Diviso	Rosas	12	83	4	2	

Results and Discussion

(a) Characterization of the CIAL members: The objective of this characterization was to learn the differences between the CIAL members and non-members within the CIAL communities, and to assess whether CIAL members are representative of their community. The following socio-economic characteristics of CIAL members and non-members were compared: Amount of own land, if they work off the farm or not, educational level, whether the person hires labor or is hired (work days hired during the year), yearly availability of food and participation with community organizations. Tables of these results are found in Appendix I.

The results show that there is no significant difference between CIAL members and non-members in terms of off-farm activities, land ownership, whether the farmer seeks off-farm employment or not, and land size. However, there were significant differences between CIAL and non-CIAL members in terms of level of education, participation in other organizations, yearly availability of food and whether household hires labor or not.

The results show that a larger number of CIAL members (75%) hired labor during some time of the year, which contrasts significantly with the non-members (47.5%) who hired labor during the same period of time. In comparing the total months in which the household faced food scarcity in the year 2003 between the members and non-CIAL members, it was observed 30.6% of the CIAL members and 14.6% of the non-CIAL members, stated that there was no scarcity of food. This may imply that one benefit of the CIAL methodology is improved food situation, which is expected because a majority of the CIAL work focuses primarily on crops that are important for food security in the region, such as common beans and maize.

The rest (85.4% of the non-CIAL members and 69.4% of the members) stated that during some time of the year, there was insufficient food, which affected the quality of life of the community, although those belonging to the CIAL indicated they were less affected. Other results show that a higher percentage of CIAL members (30.6%) have had secondary education as compared to non-CIAL members (8.8%).

Additionally, CIAL members participate in many other organizations in the community. For example, comparing members and non-CIAL members in relation to their participation in community organizations, found that a majority of community members 86.1%, participate in at least one organization. On the other hand, of the nonmembers, 51.8% participate in 1-3 community organizations and 63.9% of the CIAL members participate in at least four organizations.

(b) How do CIAL members Benefit from Participation: This section analyzes the impacts resulting from participating in the CIAL. The CIAL methodology is based on the premise that participation will build human and social capital through the enhanced capacity to experiment with new agricultural practices (Ashby 2003). Strengthening human capital, which involves enhancing farmer's knowledge and understanding processes is seen as an important component for building rural people's capacities to innovate, and is probably more important than just involving them in developing the technology (Johnson, et al., 2002). Various studies show that strengthening group working processes and enhancing social capital, is an important asset that can provide a variety of supportive mechanisms for enhancing rural livelihoods. At the community level, strengthening the social capital of rural communities and their organizational capacity is critical for horizontal and vertical linkages among communities, and between communities and rural service providers (Sanginga, Kamuisha and Martin, 2005; Ashby et al. 2000).

In this study, human capital was measured by assessing: leadership potential, enhanced capacity to experiment with new agricultural practices, and the capacity to facilitate problem solving in the community. This study looked at the relationship between farmer experiments conducted outside the regular CIAL activities and new crops tested within the CIAL. The results showed that 23% CIAL members did not conduct trials outside of those done by the CIAL. Of the group that did conduct other experiments besides those of the CIAL, 92.3% experimented with new crop varieties. Ninety four percent of the CIAL members indicated that they had acquired new skills in: new technologies for crop management; doing research in agriculture; organizing and administering agriculture and livestock production; marketing; speaking in public; and organizing meetings with the community.

Another indicator used to assess change in human capital was the number of positions a person holds in the various community organizations. The study found that within CIAL members the capacity to organize and lead community meetings increased with number of years the person had been a CIAL member. On the other hand, when CIAL and non-CIAL members were compared in terms of participation in community organizations, the study found that there was no significant difference in participation in community organizations. However, a large percentage CIAL members (85.4%) were in leadership positions in the various community organizations, as opposed to non-CIAL members (15%). These results are supported by focus group discussions results, which found that leadership potential, responsibility and commitment to the community were part of the criteria used to elect members.

(c) Social and Human Capital Benefits at the level of the community: In the comparison between the CIAL members and the members of their community, this study found significant differences, in terms of new varieties tested, changes in the way of planting and in providing agricultural advice to someone outside the family, during the last five years. With respect to new varieties of crops tested during the last five years, 59.2% of the members tested new varieties at least once in contrast with the 35.0% for non-members. The CIAL members had tested varieties of traditional crops (common beans and maize) and nontraditional ones (fruits, vegetables, wheat, rice and sugarcane), whereas the non-members had concentrated only on varieties of traditional crops (coffee, maize, common beans and cassava). With respect to the change in the way of planting during the last five years, it can be observed that around 55% of the members have tried to change something with respect to the way of planting, whereas only 38.5% of the nonmembers have tried. In the variable “providing agricultural advice to someone outside the family,” results showed that CIAL members provided twice as much agricultural advice as nonmembers (51 versus 25.9%).

Nevertheless, we expected to find these results. These differences can be explained by the activities of the CIAL methodology, the training, study tours and exchanges that these committees do. For the members, experimenting is an activity of the committee, and they have access to new varieties through exchanges with other groups and their relations with institutions. It should be highlighted that the nonmembers have also had interest in experimenting with new varieties and farming techniques despite the fact that they have not received the same training as the CIAL members.

In the analysis, we can see the existence of a group characterized by members that had conducted experiments beyond those that were part of the CIAL’s normal activities, had also experimented with new crops, learned other skills, and had a higher level of participation in other community organizations. The foregoing is corroborated by the multiple correspondence analysis, which distinguishes the two groups: The first is characterized by low community participation, which could be associated with their not changing their level of commitment to the community, their low interest in acquiring new skills or in testing new crops. In the second group are people with a high sense of belonging to the community, which is manifested by their high participation in organizations and their change in commitment with the community. They have also acquired new skills, which could be related to their interest in testing crops other than those that they generally plant. Using schooling as the explanatory variable, we can say that the higher level of education with the second group. Therefore we can assume that the benefits of being a CIAL member are, to a great extent, reflected in the members with a higher level of education.

(d) Improvement of leadership skills in agriculture and recognition as leaders in agriculture: To analyze this indicator, the recognition of CIAL members by their communities as leaders, experts in agriculture, and as being capable of solving agricultural problems in the communities were studied. Figure 2 shows that CIAL members are being recognized by their communities as being capable of attending to a group of visitors that would like to know about agricultural matters in their communities. The foregoing indicates that their communities recognize that CIAL members have extensive knowledge about farming in their communities. These findings are also corroborated by further results indicating that CIAL members are the farmers most recognized by their communities as agricultural experts. Figure 3 shows that the CIAL is one of the organizations to which belongs farmers recognized by the community as knowledgeable of community-related agricultural problems, and to whom a group of visitors could be taken.

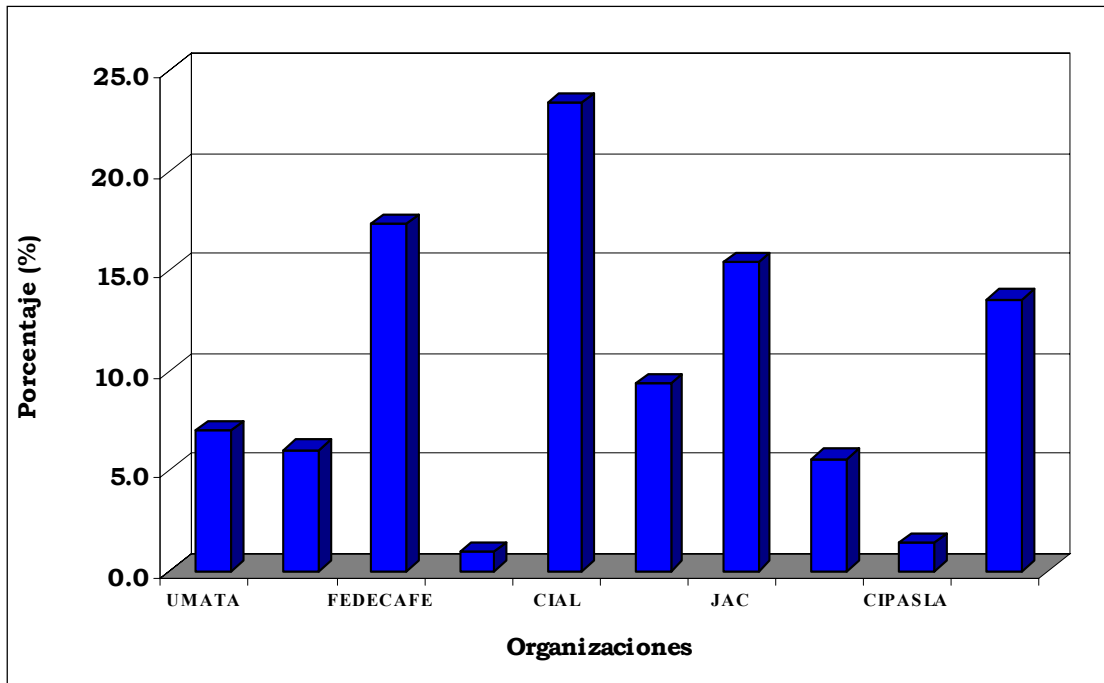


Figure 2. Organizations to which belong the farmers recognized by the community as knowledgeable of community-related agricultural problems, to whom a group of visitors could be taken.

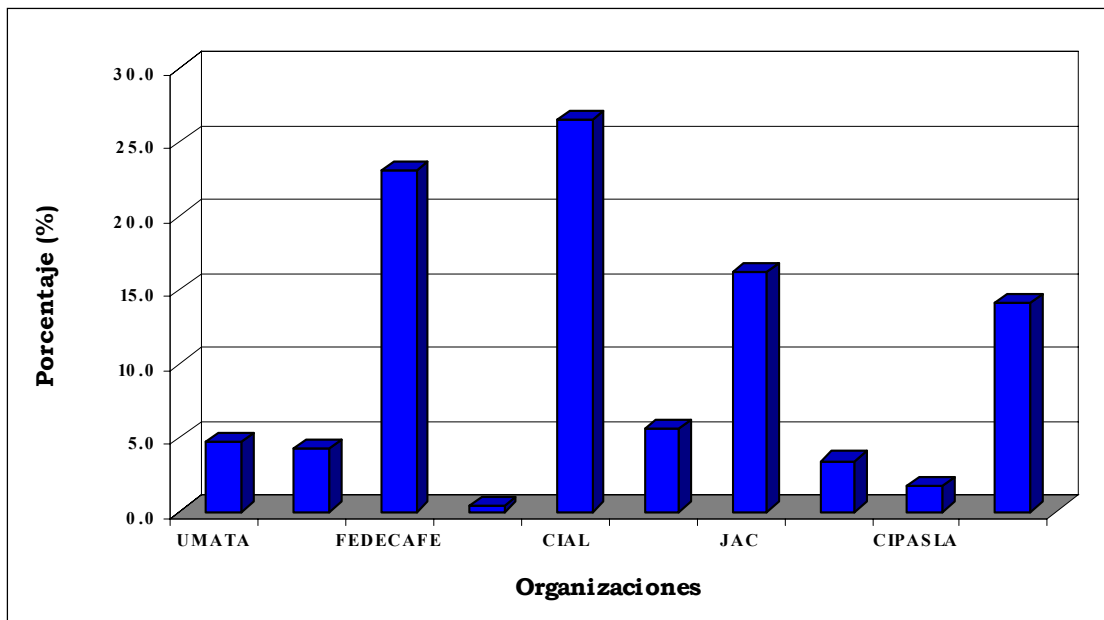


Figure 3. Organizations to which belong farmers recognized by their community as experts in agriculture.

Conclusions

The results show that CIAL members are representative of their communities in various aspects: of-farm activities practiced, whether the farmer seeks off-farm employment or not, and land size. However, there were significant differences between CIAL and non-CIAL members in terms of level of education, participation in other organizations, yearly availability of food and whether household hires labor or not. The study found CIAL members suffer less for shortages throughout the year as compared to non-CIAL members. This was an expected result because a majority of CIAL experiments focus primarily on crops that are important for food security in the region, such as common beans and maize.

The results also show that there are significant social and human capital benefits for CIAL members and their communities. CIAL members indicated that they had gained more knowledge about agriculture and were experimenting with new technology and were seen as agricultural experts and advisors in the community. Both results from the surveys and focus group discussions corroborate significant improvements in CIAL members communication and leadership skills. CIAL members experimented more with new crops, had learned other new skills, and had higher levels of commitment to their communities, thereby leading to a higher level of community participation. Communities acknowledged that CIAL members were experts in agriculture, were capable of attending to visitors and of solving agricultural problems in the communities. The communities indicated that they could consult CIAL members when they had agricultural problems.

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Appendix I. Data Tables

Table 2. Comparison between members and non-CIAL members in relation to land tenure.

CIAL Members	Amount of Land (ha)				Total
	< 1	1 - 3	3 - 5	> 5	
No	60	44	15	18	137
	43.8%	32.1%	10.9%	13.1%	
Yes	12	12	6	6	36
	33.3%	33.3%	16.7%	16.7%	
Total	72	56	21	24	173
	41.6%	32.4%	12.1%	13.9%	

Table 3. Percent comparison between members and non-CIAL members in relation to land size and seeking labor opportunities off farm.

CIAL Members	Work Off the Farm	Amount of Land (ha)				Total
		< 1	1 - 3	3 - 5	> 5	
No	No	26.3	23.4	7.3	11.7	68.6
	Yes	17.5	8.8	3.6	1.5	31.4
	Total	43.8	32.1	10.9	13.1	100
Yes	No	22.2	22.2	11.1	16.7	72.2
	Yes	11.1	11.1	5.6	0.0	27.8
	Total	33.3	33.3	16.7	16.7	100

Table 4. Comparison between members and non-CIAL members in relation to the Hiring/contracting labor (work days/year).

CIAL Members	Hire / Contract Labor (Work Days/Year)			Total
	Does not hire	1 - 6	6 - 12	
No	72	59	6	137
	52.6%	43.1%	4.4%	
Yes	9	19	8	36
	25.0%	52.8%	22.2%	
Total	81	78	14	173
	46.8%	45.1%	8.1%	

Table 5. Comparison between members and non-CIAL members in relation to scarcity of food in the year.

CIAL Members	Scarcity of Food (mo/yr)				Total
	Not scarce	< 3	3 – 6	> 6	
No	20	80	32	5	137
	14.6%	58.4%	23.4%	3.6%	
Yes	11	12	11	2	36
	30.6%	33.3%	30.6%	5.6%	
Total	31	92	43	7	173
	17.9%	53.2%	24.9%	4.0%	

Table 6. Comparison between members and non-CIAL members in relation to schooling.

CIAL Members	Schooling			Total
	No Education	Primary	Secondary	
No	17	108	12	137
	12.4%	78.8%	8.8%	
Yes	1	24	11	36
	2.8%	66.7%	30.6%	
Total	18	132	23	173
	10.4%	76.3%	13.3%	

Table 7. Comparison between members and non-CIAL members in relation to the number of community organizations in which they participate.

CIAL Members	No. of Organizations				Total
	Does Not Participate	1 – 3	4 - 6	> 6	
No	23	71	33	10	137
	16.8%	51.8%	24.1%	7.3%	
Yes	1	12	13	10	36
	2.8%	33.3%	36.1%	27.8%	
Total	24	83	46	20	173
	13.9%	48.0%	26.6%	11.6%	

Assessing the Impacts of Applying Participatory Approaches: A Case Study of Local Agricultural Research Committees (CIALs) in Honduras

L. Classen⁵⁶, S. Humphries⁵⁷, J. Fitzsimons⁵⁸ and S. Kaaria⁵⁹

Introduction

Many practitioners recognize the importance of participatory initiatives in these marginal contexts for helping to generate locally appropriate technologies and in helping farmers to adapt technologies to their farm-specific needs (Korten, 1980; Chambers, 1994; Selener, 1997; Berdegue and Escobar, 2002; Van de Fliert et al., 1999). In particular, participatory initiatives that incorporate more broadly-based efforts to enhance the natural asset base, build local institutions and strengthen networking are showing potential to instigate long-term and sustainable innovation (Berdegue and Escobar, 2002). However, an ongoing challenge for participatory projects is demonstrating the value-added from local stakeholder participation (Aycrigg, 1998). Many of the most important impacts are related directly to the project *process* and are hard to anticipate at the project outset making them very difficult to capture in impact assessments. Practitioners are searching for comparative frameworks for measuring the impact and, more specifically, the ‘sustainable’ impact of rural development projects. However, it is an uphill climb when the primary common element among small farmers in developing world contexts is diversity.

This paper seeks to add to the growing body of literature on sustainability of agricultural livelihoods for the rural very poor and, in particular, the role of participatory approaches for promoting what Stockmann (1997) has referred to as innovation-oriented sustainability. It outlines the results of a recent multi-level impact assessment of the CIAL (Spanish acronym: Comité de Investigación Agrícola Local (CIAL) participatory agricultural research project in North-Central Honduras and it explores the implications of these results for comparative frameworks for measuring more social and participatory project outcomes. The paper examines the different context-oriented divisions of rural livelihoods used by Berdegue and Escobar (2002). Specifically it discusses the implications of the highly diverse livelihood contexts of asset poor farmers for developing reliable and comparable impact assessment (IA) frameworks for measuring innovation-sustainability. The paper culminates in a list of principles for IA’s of agricultural research and innovation projects, which is meant as a launching pad for thinking about context-oriented approaches to sustainability and comparative frameworks for participatory rural project evaluations.

Relevant literature

Berdegue and Escobar (2002:11), assert that, “if we want to improve the performance of agricultural knowledge and information systems *vis-à-vis* poverty, it is time that we learned to deal with its diversity by means of customized approaches”. They propose a tripartite categorization of rural contexts to provide some policy guidance for thinking about

56. Consultant – IPRA Project.

57. Associate Professor. Department of Sociology and Anthropology, University of Guelph.
e-mail: shumphri@uoguelph.ca

58. Ontario Agricultural College, University of Guelph. e-mail: fitzsimon@rpd.uoguelph.ca

59. Senior Scientist, Rural Innovations Institute of CIAT, PO Box 6247, Kampala, Uganda.

development goals and approaches for agricultural innovation initiatives. The three categories are: a) farmers in areas with a high asset position and with favorable production environments, b) farmers in a low asset position with favorable production environments and c) farmers in a low asset position with unfavorable production environments (Berdegue and Escobar 2002:8). They argue that strategies to improve conditions of rural poverty must recognize these different rural contexts and customize their approaches appropriately.

Farmers in the first two categories have medium to high agricultural potential and networks, and agricultural innovation is market-driven or at least market oriented (Berdegue and Escobar, 2002). Poverty reduction strategies may target these areas since improvements in agricultural production will have not only some direct effects but also a high potential for indirect effects on urban and rural poor who are the net buyers of surplus production (Berdegue and Escobar, 2002). In these contexts, where agricultural production is market-driven, 'sustainable agriculture' is often interchangeable with the concept of 'sustainable development'. Sustainable agriculture occurs where "farming seeks to make the best use of nature's goods and services whilst not damaging the environment" (Pretty, 2000: 7; and Pretty, 2001: 4; also see Altieri, 1995; Thrupp, 1996; Pretty, 1995b, 1998).

However, the reality is that the majority of the world's rural poor will derive only very limited direct or indirect benefits from conventional agricultural research. The Honduran farmers involved with the CIAL project fall into Berdegue and Escobar's (2002) third category, characterized by extremely marginal growing conditions and few assets aside from unskilled labor. They have very diversified livelihoods, often relying heavily on non-agricultural activities to support their families, rendering much of the formal agricultural research of limited relevance to their needs. It is in these contexts that we see a break down of the more conventional model of agricultural research- innovation-extension-adoption. In this context approaches to 'sustainable' development and appropriate interventions become much more complex. Here, 'sustainable development' and 'sustainable agriculture' cannot be used interchangeably. It is in this category that this paper will focus, where measuring impact for 'sustainable' development is the most complex.

For farmers living in a precarious political, social, human and natural environment, livelihood diversity exists not only across households, but also across time (reflecting changes both in the stage of growth of the household and environmental changes) for any given household. Shaxson, (2000: 10) recognizes that "discrete impacts are not usual, and impact happens at different points in the process, and in different ways for different reasons." Farming is heavily reliant on nature as well as political and market structures that are both equally unpredictable and unalterable by the rural poor. These farmers are obliged to adjust their livelihood strategies to adapt to these changes.

The appropriateness of new technologies/solutions in this context is impermanent and context specific over space and time. The assumption of "relative homogeneity and stasis" in these contexts has led to the demise of innumerable development initiatives in the past (Mog, 2004: 2142). Berdegue and Escobar (2002: 10) argue that in these contexts program strategies have to be broad-based, focusing on enhancing asset positions including education and access to credit and most importantly creating "local networks of social capital [which] play important insurance and solidarity functions." Mog (2004) also asserts that "to tackle adequately the full spectrum of challenges presented by sustainable development requires a great diversity and multitude of ideas that can be adapted locally"

(p. 2142). This context diversity therefore has important implications for defining 'sustainability'.

Background

Context: This study was conducted in conjunction with CIAL participants in the municipalities of Yorito and Sulaco in the department of Yoro in north-central Honduras. La Fundacion para la Investigacion Participativa con Agricultores de Honduras (FIPAH) supported 25 local agricultural research committees (Comites de Investigacion Agricola Local: [CIALs]) in Yoro at the time of the study. Twenty of these were mixed, two were all male and three were all female. Average membership per CIAL in the area was 9, with a range of 6-23 members. The CIAL methodology was developed in the late eighties by the IPRA team, led by Jacqueline Ashby, CIAT (Ashby et al., 2000) The overriding objective was to provide an ongoing platform for integrating local needs assessments, local decision-making, and innovation for '*sustainable agriculture*' among poor and marginalized farmers (Braun et al., 2000). The approach enables community-based research teams to look for their own solutions to local agricultural problems. CIALs test out new agricultural technologies/techniques against local practice(s) through the design and execution of simple experiments. These are evaluated and analyzed by the CIAL and, if successful, the technology is recommended to the community. Honduran agronomists were trained by CIAT in the CIAL methodology in 1996. There are five regional CIAL associations (ASOCIALs) in Honduras comprising around 900 farmers. FIPAH supports three of the regional CIAL associations. The largest concentration of CIALs is located in Yoro (ASOCIAL Yorito, Victoria and Sulaco, where the impact assessment was conducted.

Through the CIAL project, farmers learn how to plan, manage, evaluate and analyze experiments. In each participating community, the CIAL hosts a community meeting to discuss local agricultural needs and to prioritize research goals. Agricultural priorities identified by communities in Yorito and Sulaco have been largely oriented around the production of staple crops: maize and beans, reflecting the overriding concern with food security. Thus 79% all the agricultural experiments carried out by CIALs have involve varietal testing or management techniques associated with maize and beans. However, most CIALs tend to carry out more than one experiment at a time and new crops such as soybean, wheat and rice or new inputs, such as organic fertilizers and pesticides, are often tried out alongside research in basic staples. The CIAL groups in Honduras also provide a platform for requesting information, assistance and micro-credit loans. CIAL members learn about managing budgets, sewing, new recipes, nutrition and health, amongst other things. They also administer loans provided via the Second Order Organization (ASOCIAL). These loans are sometimes used by the CIALs to purchase materials for building grain silos, or committee meeting rooms but they also afford CIAL members the opportunity to take individual loans from their CIAL organization to buy seeds or agronomic inputs, to buy/produce extra grains to store against the hungry season or to help make ends meet when produce from the prior harvest season has diminished.

Methodology

The CIAL project in Honduras provided a rare opportunity to take the results of a long-term (with more than 10 years of work in the field) and on-going agriculture project and employ participatory methods to understand the connection between the visible impacts and project methods. In this research we combined alternative and participatory tools with more

conventional interview and survey methods in an effort to capture both process-oriented changes and product impacts - both anticipated and unanticipated. The livelihoods framework acted as a guide for ensuring attention was given to all five-asset categories, human, social, natural, financial and physical capital. Because of the important role of these more process-oriented 'enabling' factors for 'sustainability' specific attention was given to capturing the more social impacts in this research. The methodological process in this research was five-fold:

- (i) Thirty-one initial interviews helped to identify impact categories that were later used for probing during focus group activities. In these interviews participants were asked to describe 'changes' since joining the CIAL in each of the five capital asset categories in the livelihoods framework. This information was used to guide focus groups with CIAL participants (Classen, 2003).
- (ii) In the second stage project staff and local participants facilitated focus groups in seven CIAL communities. A number of active learning tools were employed during these groups that encouraged small-group brainstorming and discussion to encourage shy participants to provide input.⁶⁰ The information generated during these discussions was abundant and identified a number of unexpected project effects and impacts. Local participants also identified a number of quantitative indicators that helped explain and justify more qualitative changes. In particular, changes in gender roles were made visible, something that had not been captured by prior CIAL assessments.
- (iii) Follow-up interviews were used to crosscheck the information gathered and were a good opportunity to further discuss points that were unclear during the group activities. They also captured certain negative aspects that did not come up during the focus groups (Classen, 2003).
- (iv) In the fourth stage the changes and indicators of more social changes identified during the participatory activities, as well as those of interest to the project staff and researchers were incorporated into a survey that was delivered to over 300 randomly selected project participants and non-participants in project communities.
- (v) Finally, the results of both the qualitative and quantitative analyses were brought back to the participants and more focus groups and small-group activities were employed to better understand the results and their implications for sustainability. These proved invaluable for explaining unexpected results of the survey. They also proved to be extremely useful for motivating and encouraging the project participants themselves who often exclaimed "this is the first of all of surveys we've participated in that has cared enough to bring the information back to us" and in many cases the participants immediately organized small group activities to address some of the concerns and challenges identified in the study.

The five areas of impact were defined: 1) Producing sustained improvements in agricultural production for food security. The other four are more social in nature and might be thought of as enabling factors for improving food security. These are: 2) Capacity building for ongoing innovation 3) Inclusiveness 4) Social capital construction for minimizing risk, and 5) Social capital and networking for institutional sustainability.

60. The active learning tool "think-pair-share" was found to be the most successful of for engaging all the participants in the discussions. See Stalheim-Smith, 1998 and Simons, 1997 for a discussion of active learning tools and their applications.

Results and discussion

Production and Food Security impacts for CIAL members: The results clearly indicate that the CIAL has had a significant and positive impact on food security for CIAL members. CIAL members had significantly shorter hungry seasons than non-members. Whereas the average annual period of severe food shortages, referred to as the hungry season, was as high as 5.6 weeks for non-members in CIAL communities, the CIAL members in those same communities experienced an average of 1.6 weeks of hungry season last year and many of the respondents found that the hungry season had been eradicated altogether in the past few years. This is a result both of technological innovations made available to CIAL members and human and social capital development.

CIAL members had significant increases in maize and bean yields compared to non-CIAL participants. Whereas maize yields increased for 61.2% of CIAL members and bean yields increased for 56.3% of CIAL members, only 29.4% and 32.4% of non-members experienced an increase in maize and bean yields respectively over the past five years. Thus improved yields for CIALs, as demonstrated below, are generally a function of multiple factors, rather than the simple adoption of new seed. CIAL members equate improvements in maize production to changes in farm management practices rather than new varieties. These activities include the better soil conservation techniques, better fertilization and planting techniques and, perhaps most importantly, better grain storage techniques. Many members explained that improved maize storage in grain silos introduced to the CIALs in 1998, along with planning for more effective estimation of food consumption, have been the most significant contributors to food availability during the hungry season. CIAL members had significantly higher levels of familiarity and/or adoption of the following 13 of 17 new technologies or management techniques investigated by this study: identification of diseases in bean crops, fertilizer use, seeding density, planting distances, planting along the contour, organic insecticides, selection of plants, seed selection, live barriers, incorporation of crop residues, live fences, in-row tillage, and food preparation techniques from soybeans.

Production and Food Security impacts beyond the CIAL: The extent of positive impact among CIAL members did not translate into widespread impact for non-CIAL members in CIAL communities. More complex techniques or complex combinations of management techniques and new crops however require much more learning and adaptation, effectively inhibiting adoption. The results show however, that that CIAL research is more relevant to their community needs than most other agricultural initiatives in their communities. When asked what kinds of things they would want an agricultural organization to do in their communities, 68% of non-participants in CIAL communities indicated that they liked the current work of the CIAL and would like to see the CIALs continue with many of the activities they are already engaged in. Eight-six% of the non-participating respondents find the activities and solutions presented by the CIAL so relevant to their needs that they would pay for their services, either through trade or cash.

Capacity building for ongoing innovation and experimentation: The CIAL members have a significantly higher capacity for problem identification, and appropriate solution development than non-members, which effectively enables them to find solutions to problems of food availability. When comparing participants and non-participants, the study found that CIAL members are doing more experiments on their own farms to look for solutions to agricultural problems. As a result of their capacity for experimentation and enhanced agricultural skills, and extensive bank of solutions, CIAL members are recognized as agricultural leaders in their communities. In CIAL communities, 76.2 % of CIAL members and 60.2% of non-members recognized a CIAL member to be the 'agricultural experimenter'

in their community. When farmers were asked where they seek agricultural advice in their communities, 78.1 % of the CIAL members said that they can rely on the CIAL to find solutions to agricultural problems and 31.0% of non-members said the same.

Inclusion of poor and marginalized: A common criticism of ‘participatory projects’ is that they do not necessarily ensure equal opportunities for the poor or minorities in the community. Poor, marginalized and illiterate people can often feel intimidated about joining local groups and decision-making within the groups is often controlled by local elites (Humphries et al., 2000). This *was* the case with the CIALs in Honduras at the outset and in 1999 a project assessment found that illiterate farmers and women were underrepresented and rather more outspoken farmers and community leaders or ‘joiners’ tended to dominate the CIAL groups (Humphries et al, 2000). This has the potential to limit the relevance of CIAL recommendations, excluding those ‘most in need’ in CIAL communities. Recognizing this, the CIAL project developed mechanisms to engage the poor and marginalized in the CIAL.

The CIAL project found that with persistent encouragement of people to participate within communities through motivation by effective facilitation, the CIAL could appeal to the more marginalized groups in the communities. Thus, since 1999 the CIAL program in Honduras adapted the methodology from that of being elected to the CIAL by popular vote only, to including everyone interested in joining. In particular, women have been encouraged to join the CIALs. During participatory research activities, many CIAL participants expressed the view that the CIAL offered the first and only opportunity for women to participate and gave them the first excuse to challenge gender roles in the household and begin to participate more actively in other activities, including agricultural decisions and household spending. Project staff have found that once poorer, more marginalized persons do join the CIAL they tend to be more committed to the CIAL over the long term because they have benefited least from national extension services and hence have the highest propensity to benefit from the CIAL.

Among the CIALs that had more than five years experience at the time of this assessment, all were representative of their communities in most measures of socio-economic status. It remains in Honduras that agricultural research is of limited appeal to the landless poor and this research showed that farmers with a basic level of literacy more readily joined the CIAL. However, no significant differences were found in total land area or cultivated land area between member households and non-member households in CIAL communities. The overall average size of total land owned is 3.1 manzanas (mz) or 2.17 ha and the cultivated land size is 2 mz or 1.4 ha. The median total land size for both member and non-member families was 2.0 mz or 1.4 ha. The median cultivated land size for member families was 1 ha and for non-member families was 1.4 ha. As well, this research found no significant differences between member and non-member households in primary crops, in both cases they were maize and beans, nor in the average percentage of land dedicated to coffee. Finally, the same percentage of families in each of the two groups hire farm laborers each year and the average number of weeks of off-farm work per family last year in the two groups was not significantly different (overall average of 21 weeks). In all measures of land size and farming systems, CIAL members are representative of their communities.

There are small but significant differences in animal ownership among CIAL member families and non-member families. The largest difference in the average number of animals owned was in the poultry category, with 14.32 for CIAL families and 8.79 for non-CIAL

families. There was also a small difference between the number of pack animals and pigs owned by member and non-member families. CIAL families own an average of 1.46 pack animals whereas non-member families own an average of 1.13. CIAL members also explained that some have recently acquired a pack animal because they have begun to use live grass barriers in their fields as a soil conservation technique with the CIAL and this provides enough food to sustain one pack animal. Non-CIAL families have not adopted live barriers to any large extent and therefore do not access to have this food source. CIAL member households also own 0.68 more pigs on average than non-member households. No significant differences were found in animals that indicate more traditional forms of wealth such as cattle (mean number owned is 0.64) and other ruminants (mean number owned is .20). Thus the small differences in poultry, pig and pack animals for CIAL members is a result of the recent acquisition of these animals rather than being an indicator of an initial higher level of socio-economic well-being.

There are also small significant differences in educational levels between CIAL and non-CIAL members. In the CIALs, 46.8% of the CIAL members have four to six years of elementary education compared to 23.5% of non-members. Likewise, 80% of CIAL members are literate compared to 64.3 % of non-members. Literacy is certainly not a pre-requisite for membership but it remains a limiting factor for initial attraction to the CIAL. The CIAL still appeals to *individuals in local households* with higher levels of education.

Impact of the participation of women: The participation of women in the CIAL has a significant impact on household dynamics, changing the perception of both men and women of men's and women's roles in society, often improving problem solving between women and men, and affording women more liberty to participate in the community and collaborate in household decision-making. As well, the participation of women played an important role in encouraging the adoption of soy, a new crop in the community as well as diffusing information learned in the CIAL beyond the group to non-participating community members. These effects are most often the strongest in households where both husband and wife participate together in the CIAL and less significant when only one of either the husband or the wife is a member in a CIAL.

The perception of both men and women of men's roles in the family and society changed significantly, particularly when both husbands and wives were CIAL members together. Eighty-eight percent of the respondents of households when both the husband and wife were members felt that the husband had become more responsible with the farm and the family. The latter often included a reduction of alcoholism (a common problem throughout rural Honduras), more participation in the community and, in a very small number of cases, becoming more helpful with children and household chores. When only one of either the husband or wife was a member of the CIAL over 60% of respondents still felt that the man's role had changed. In households where neither husband nor wife was a CIAL member, 37% of the respondents recognized a change in the men of their household.

Likewise, the perception of women's agency in the family and community changed in CIAL households. When both the husband and the wife were CIAL members together, 91% of both male and female respondents recognized that such women play a bigger role in community activities and organizations and/or participate more directly in agricultural activities and when only the wife was a member 81% recognized a similar change. In this case there was no significant difference between households where both the husband and wife are members and those where only the wife is a member. When only the husband was a

member, significantly fewer (61%) of the respondents recognized a similar change in women's activities or agency within the community and only 31% of the respondents recognized a change when no one in the family was a CIAL member.

Problem solving tactics between men and women also improved more often for CIAL member households than non-member with results reflecting those above. When both were members, 70% described changes in problem solving mechanisms between themselves and their partner that were more egalitarian than the situation five years previously. When *just the wife* was a CIAL member 86% recognized similar changes and only 50% indicated that problem solving had become more egalitarian when *only the husband* was a member or when no one in the household belonged to the CIAL.

Women's participation with the CIAL also had a significant effect on their empowerment. A significantly higher percentage of women who are CIAL members play a role in decisions regarding what and where to plant on the farm, which farm products to sell and when and what food to purchase for the family, than non-CIAL member women, regardless of whether their husband was a CIAL member or not. These women also explained that this had changed significantly over the past five years, most often attributing this to a change directly related to increases in decision-making and organizational capacity resulting from participation with the CIAL or other local organizations.

Minimizing Risk through social capital development: The third and arguably most important enabling factor that came out of this research is the minimization of risk. Poor farmers are constrained by livelihood and social risks. The functional relationships that evolved during the process of learning the intricacies of formal agricultural research as a group was one of the strongest factors enabling them to investigate new technologies as it minimizes the risks inherent in agricultural research.

Experiments with new technologies have uncertain outcomes and thereby carry high levels of financial risk for the resource-poor. Dedicating even a small portion of land to an experiment that fails could be detrimental to the food security of the family. In the same vein, where resources are scarce, time is also scarce and opportunity cost is a limiting factor to farmer research. The results of the impact assessment show that the CIALs have overcome many of the 'risks' by developing high levels of social capital among members and between CIAL groups and other institutions. In Honduras, conditions of social connectedness generally do not prevail. The development of civil society in Honduras has been impeded by extreme social inequality and repressive military regimes, which have acted to support the status quo during almost two decades of violent conflict throughout the region.

The CIAL methodology uses a group approach and works to develop high levels of social capital among and across CIAL members, which has minimized the livelihood risks of experimentation in several different ways. Most importantly, the CIAL experiments are run on a 'common land' area,⁶¹ minimizing individual risk in the case of an experiment failure.

61. In some of indigenous communities, the land is held in common by the community and the community generally permits the CIAL access to a plot of land for the experiments. In other cases, private land is rented by the CIALs. However, when the experiments are very small, as during an initial screening trial (140-300 m²), one of the members who has more land than others frequently lends it to the group.

The opportunity costs of learning to and performing research are also offset by the productive benefits of high levels of social capital. Besides agricultural experiments, the CIAL performs many income-generating activities. On land rented by the CIAL groups, the members plant “proyectos productivos” or productive plots to produce seed or grain which is either stored for consumption by CIAL members or sold to non-members during seasons of food shortages (at a price below the market). As well, CIAL members group together to do a number of other micro-credit projects including, bake sales, sewing of school uniforms for sale. The relationships people have formed allow for the exchange of goods, materials, and labor among participating families that is less likely among non-participants.

Saving through the CIAL enables the group to take out loans from the ASOCIAL.⁶² In the survey 72% of CIAL members have taken individual loans via their CIAL over the past 5 years. All but one of the CIAL loans borrowed prior to 2003 have been repaid in full. While these loans may be used for diverse ends, they also help to offset the financial risks associated with experiments and allow CIAL members to undertake micro-level adaptations of new technologies on their own land.

As well, common quotes from both men and women were: “In the group we have the confidence and capacity to defend our rights” “We speak openly without problems in front of the CIAL group” “We have the confidence to work with other institutions” and “the women have confidence in their capacities.” Participants explained that there is *love* among CIAL members, that they have become a *family* and they now borrow and lend things when someone is in need; this is different from the past, prior to the organization of the CIAL, “when no one trusted one another.”

Social capital and networking for institutional sustainability: CIAL members argue that maintaining the group promotes ‘sustainability’, not only by offsetting risks associated with experimentation but also by creating an institution that will be capable of training new members and making the entire process of learning to investigate and innovate, a sustainable one. Evidence of networking and social capital for institutional sustainability is most apparent at the level of the second order organizations or ASOCIAL. The overarching goal of the ASOCIAL as described by its members is: “To encourage CIAL independence by supporting the CIALs and providing them with what they need to continue their investigations into the future, ridding them of their dependence on FIPAH.” The group approach for the CIAL not only provides an environment for capacity building, and provides social and financial support offsetting the risks of formal agricultural investigation and innovation, as we have seen above, but it also provides an institution for teaching the CIAL methodology to other people and thus sustaining the process of capacity building and social capital growth itself. The composition of CIAL may change as new members are encouraged to join and the participation of some permanent members waxes and wanes with different

62. Each CIAL must accumulate savings before the ASOCIAL will provide it with a loan. These savings are held by the ASOCIAL and help to offset the risk of lending. Savings must be equal to at least half the amount of the loan and all previous loans to the CIAL must be repaid before another can be issued. Thus there is considerable pressure on individual CIAL members to pay back their portion of the group loan so that the group as a whole can access another one. The principle is similar to that used by the Grameen Bank. As discussed, the default rate is very low and defaults only occur when the whole CIAL dissolves and therefore the pressure on the group is removed since further loans will not be forthcoming. For this reason, loans are only likely to be made to CIALs that have achieved some level of stability, evident through the level of prior savings.

seasons and obligations. Nevertheless, there is consistency in the membership of the ASOCIAL , which provides a backbone to the CIAL organizations.

In a series of focus groups with the ASOCIAL de Yorito, the members described the ASOCIAL function to include a) providing workshops on facilitation skills, organization skills, capacity building for budgeting and financing and on machinery and technology, b) training and employing the CIAL facilitators in the CIAL methodology c) acting as communication transmitters between CIALs, facilitators and local NGO staff, d) creating direct contacts and requesting help, information and funding from other local and national institutions, e) providing conflict resolution to CIAL members, between CIAL members and community members, and among CIALs and facilitators, and f) providing and managing loans for the CIALs. These are all essential to providing ongoing sources of information and new technologies as well as continuing to train and support agricultural research by the local farmers in the future. The ASOCIAL has also recently implemented the following activities in order to make the CIAL process more sustainable: a) familiarize CIAL members with the ASOCIAL activities so that there will be people to take over when the current ASOCIAL members no longer wants to participate, b) require written (rather than oral) requests from CIALs in an effort to begin to coach CIAL members in the process of directly approaching institutions and requesting information.

Overall, the results of this study showed that the ASOCIAL has a direct relationship with three national organizations and limited relationships or contacts with 18 different national and international institutions. At the national level, the Association of Honduran CIALs (ASOHCIAL), links the five regional groups in a national CIAL federation. The ASOHCIAL recently received international funding to test different methodologies for scaling-up impact with a number of CIALs in each of the five regions.

Conclusions

The paper discussed a multi-faceted approach to impact assessment involving the collection of both qualitative and quantitative data using both participatory, as well as formal survey techniques. It advocates a context-specific approach to ‘sustainability’ finding Stockmann’s (1997) innovation-oriented sustainability the most appropriate to the rural poor living in extremely marginal agricultural conditions. The research results showed a number of impacts that translated into improved food security for farmers participating with the CIAL project in Honduras. However, the most important of the results was the complex network of more social and human impacts that enabled the adoption of new technologies to occur

The results from the CIAL project in Yoro, Honduras support the value of promoting innovation-oriented sustainability for improving the livelihoods of the rural poor in marginal areas. The indications are that the CIAL project methodology is achieving innovation-oriented sustainability in rural Honduras. However, the complexity of these livelihoods combined with the nature of the technology produced to date also presents problems for scaling-out impacts of innovation-oriented approaches to non-project participants. As the results showed, non-CIAL members showed limited ability to readily adopt the solutions that CIAL members generated likely related to their limited capacity for technology adaptation. Much more research is necessary to understand how best to scale-out the impacts of participatory agricultural research. However, it seems from this research that a stronger commitment to capacity building for local level adaptations beyond the CIAL will be an essential component of successful diffusion of CIAL technologies.

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Strengthening Operativity of the Municipal Councils for Rural Development (CMDR) in Three Municipalities of the Cauca Valley Province, Colombia

Eliás Claros Trujillo⁶³ and Adriana Fajardo⁶⁴

Highlights

Support provided to the Provincial Ministry of Agriculture in the Cauca Valley for the capacity building of the Municipal Councils for Rural Development in three municipalities

Background

The Municipal Councils for Rural Development (CMDRs) are spaces for participation, created to reach agreement on policies and programs aimed at developing the rural territories in Colombia. The CMDRs facilitate the participation of the rural inhabitants in the decision-making that affects them; moreover it constitutes a space for exercising a committed citizenship in the management, execution, monitoring and control of rural development in their municipality (Piedrahita et al. 2000).

Nevertheless, although the CMDR and CONSEA (Sectional Council of Agricultural and Livestock Development) were created in the Province, the changes have not been accompanied by efficient management due to a shortage of economic resources, training on their role as instruments of development, and the absence of a culture of planning that governs the procedures and ensures the exercise of an efficient action based on an ample knowledge of reality as to what is involved. A USAID survey (USAID-Casals 2001) revealed the scant knowledge of the citizens about control mechanisms,⁶⁵ as well as the little knowledge of the rural people with respect to the CMDR.

In the Cauca Valley Province, there are 42 CMDRs constituted, of which a very low percentage operates efficiently. In general they do not have sufficient information and tools for planning, monitoring and evaluation (M&E) that enhance their operativity and let them continue with the planned activities, even if there are changes in the government administrations.

The Project, led by the Institute of Rural Innovation (IIR) at CIAT, has a double purpose:

- Promote favorable conditions so that the functioning of the CMDR is effective
- Develop a methodology that makes it possible to consolidate a strategy for action, strengthening the CMDR's operativity through training and transfer of tools and methodologies to support their decision-making.

63. Research Assistant, IPRA Project, CIAT. e-mail: e.claros@cgiar.org

64. Biologist, Rural Planning Project, CIAT. e-mail: a.fajardo@cgiar.org

65. The survey was applied within the framework of the Anticorruption Program in the four largest cities in the country (Bogotá, Cali, Medellín and Barranquilla) at the end of 2001. A total of 2400 people were interviewed by telephone.

Innovation

The IIR, Rural Planning, Participatory Research with Farmers (IPRA), and Information and Communication for Rural Communities (INFORCOM) projects have designed a strategy in which participatory methodologies are combined, such as vision-action-demands (VAD), participatory monitoring and evaluation (PM&E) and social network analyses (SNA). The purpose is for the CMDR to adopt these methodologies and become more efficient and effective in participatory processes.

Methodology for implementing the project

The intervention has consisted, in the first place, in conducting training events, the objective of which is the collective construction of concepts and later the realization of days for accompanying the CMDR constitutive committees for the participatory construction of their operational plans through the utilization of the following methodologies: VAD, PM&E and ARS.

Parallel to this, an information and communications system will be implemented in order to provide constant feedback between the community and the CMDR and between the CMDR and other participatory spaces at the provincial and national levels. This will be followed by a training phase and finally the phase of accompaniment and strengthening.

The steps carried out this far are:

1. Diagnostic survey of the current situation of CMDR
2. Application of the VAD methodology
3. Socialization of the results of the diagnostic survey
4. Presentation of the legal framework of the CMDR
5. Exercise for conceptualizing ARS
6. Exercise for conceptualizing PM&E
7. Exercise of analyzing current and future situations, taking into account the following aspects:
 - Current problems and their consequences
 - General objective
 - Specific objectives
 - Goals
 - Activities
 - Indicators
8. Election of the different CMDR constitutive committees (inspection, technical assistance, infrastructure, health, education and environment, among others)
9. Analysis of the problem areas of the different CMDR committees
10. Workshop: “The Learning Organization: Teamwork and communications”

Lessons learned

- A planning exercise does not end with the design of a concrete plan; rather it is a dynamic process, subject to continuous readjustment and revision, with the purpose of adapting it constantly to the circumstances, and evaluating the results at crucial moments. This generates learning in the organization, promoting an environment of continuous improvement.

- The CMDR's principal role is to reaching agreements by means of which the different actors involved in the rural development of the municipality interact, manifest their diverse viewpoints, set common goals and assume commitments and responsibilities that permit their fulfillment for the collective benefit.
- Planning and M&E become alternatives that permit the local authorities and the rural population to define a shared future and make a highly rational use of the scarce resources available.
- The CMDRs in the municipalities of Argelia, Bugalagrande and Palmira are not complying with the functions for which they were created. They operate as a source of information but not as scenarios for planning, M&E and management.
- The channels of communications among the CMDR members are very weak and vulnerable given that they depend on actors that at the moment they leave the CMDR network seriously affect its stability. This is the specific UMATAs case, which are in charge of communications channels.
- Many of the CMDR members do not have knowledge of its functions and responsibilities.

Outcomes

- In the process of accompanying and strengthening the CMDRs, three participatory workshops have been held thus far: diagnosis, legal framework and construction of concepts about planning, PM&E, the importance of leadership and teamwork.
- In the diagnostic workshop, the structure of the networks of participation, trust and representativeness were determined. The problematic areas of the CMDRs were also identified: the way in which they carry out the planning process and their management with respect to the rural development of the municipality. The degree of articulation among the different territorial instruments was also determined.
- Through the planning & PM&E workshop, the CMDR members were trained in the regulations of the CMDR's legal framework and its functions; and through practical exercises, the concepts of planning and PM&E were conveyed.
- The leadership workshop identified the elements for the effective development of the organization and the importance of teamwork in accomplishing goals.
- In the different CMDR committees, the process of constructing the operating plan has begun, identifying mechanisms for implementing PM&E.

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Participatory Analysis of the Rules of the Game in the Framework of the Bolivian System of Agricultural and Livestock Technology (SIBTA)

Edson Gandarillas⁶⁶ and Rolando Oros⁶⁷

Accomplishments

- A participatory method was developed for analyzing institutions (rules of the game) within the framework of SIBTA.
- The bottlenecks (high transaction costs and risk) that inhibit or reduce the participation and competitiveness of the actors in the system were identified.
- The nature of the bottlenecks was identified in order to lay the foundations for minimizing their incidence.
- The foundations have been laid so that decision-makers can generate institutional innovations that take into account the perspectives of the different actors in the system.

Abstract

SIBTA, which is an R&D system based on the competitive mechanism of the free market, is governed by the Operating Regulations of the Competitive Fund for Innovation (RO-FCI) with respect to its Applied Technological Innovation Projects (PITA). In terms of the New Institutional Economy, this RO-FCI represents the rules of the game that govern the interactions among the different actors in SIBTA (FDTA, demanders and suppliers); in other words, they can inhibit, reduce or limit participation and competitiveness. The authors have called these factors, “bottlenecks of the RO-FCI,” which are explained by the presence of high transaction costs and risk. The document presents the process of identifying the bottlenecks of the RO-FCI for the PITAs, facilitating the users’ participation so that they can make known their perspective, in such a way that the emerging institutional innovations can contribute to reaching SIBTA’s objectives. The work was done with 80% of the suppliers and demanders, holding 10 workshops with the participation of 170 representatives, selected on the basis of five different criteria. The results show that the bottlenecks are found throughout the RO-FCI process. The following steps stood out: selecting the PITA proposals, implementing the PITAs, payment of the counterpart funds by the demanders, and the monitoring and evaluation (M&E) system. The results varied according to the FDTAs (Valleys, Highlands, Chaco⁶⁸ and Humid Tropics). Experience shows that the bottlenecks, expressed as high transaction costs and risks, can have different origins. Such is the case of the relationships of power among the actors (both at the staff and organizational levels), the nature of the risks (e.g., the degree of vulnerability in the working zones and the institutional arrangements of the RO-FCI as in the case of contracting services), and the level of organizational development of the suppliers and demanders. Therefore, the perceptions about the transaction costs and risks would vary according to specific contexts.

66. National Coordinator of the Promoting Change project, executed by the CIAT (International Center of Tropical Agriculture)-PROINPA (Promotion and Research of Andean Products)-Imperial College alliance (e.gandarillas@cgiar.org).

67. National Coordinator of the FIT 9 project, executed by CIP (International Potato Center) and PROINPA (roros@proinpa.org)

68. Hot, semiarid lowlands.

Background

The Bolivian Government created the Bolivian Agricultural and Livestock Technology System (SIBTA) to promote and support modernization of technology and the sustainable development of the agricultural, livestock, forestry and agroindustrial sectors, with an important private-sector institutional participation. To this end, SIBTA finances Applied Technological Innovation Projects (PITAs)⁶⁹ through the Foundations for Agricultural, Livestock and Forestry Technology Development (FDTAs)⁷⁰ in the Highlands, Valleys, Humid Tropics and Chaco, as well as National Strategic Innovation Projects (PIENs) under the supervision of the Ministry of Small Farmers and Agriculture and Livestock (MACA). SIBTA responds to the demanders⁷¹ and administers a competitive process of awarding productive projects. Suppliers⁷² of technology that respond to the demands of the beneficiaries participate in this competitive process through PITAs. By means of this strategy SIBTA seeks to meet the following objectives:

- Reduce rural poverty, improving the producers incomes and the population's food security
- Increase sectorial competitiveness
- Play a role in the use and sustainable management of natural resources
- Contribute to the modernity and institutionalization of rural producers' associations as basic authorities in the process of demanding technological innovation

Within the New Institutional Economy (NEI) the term "institution" refers to "rules of the game." these can be either formal or informal, "defining the incentives and sanctions that affect the people's behavior and their interactions" (Dorward et al. 2002, p. 5). Thus the organizations are the "game players," groups of individuals united by a purpose to accomplish common objectives. These organizations can be political, economic and social (North 1990, Dorward et al. 1998). Another important distinction within the NEI is between the institutional environment and its arrangements (Davis and North 1971; Stockbridge 2001). The former refers to the set of general rules with which the people and the organizations develop and work out specific institutional arrangements in a society. The institutional arrangements are forms of contract that were created for transactions among contracting parties that govern the way in which they cooperate or compete.

69. According to the definition of SIBTA (2003), a PITA represents a set of activities with a focus on agroproductive chains and a vision of programs that comprises the validation, adaptation and transfer of technologies of process, product, management and technical assistance for their adoption with the objective of promoting integrated changes in the chain.

70. The FDTAs are private institutions of public interest, mixed in nature, without political party, religious or profit-oriented purposes, created within the framework of SIBTA. They enjoy autonomy of technical and administrative management and are in charge of administering and managing resources for financing PITAs from different sources, among which are those from the Bolivian Government and organisms of multilateral and bilateral cooperation. Their commitment is to promote the dynamic, competitive, efficient and participative system of technology development in each macro ecoregion, favoring the demands of the actors in the agrofood chains, which define intervention priorities.

71. Any organized actor from any of the links in the agroproduction chain that can benefit from a PITA

72. An organization, institution or business, alone or associated, with a technical and administrative capacity for providing Applied Technological Innovation services, that participates, in alliance with a demander, in the tender for the final design and execution of PITAs.

In the Bolivian case, SIBTA is considered an R&D system based on the competitive mechanism of the free market. Therefore, in terms of the NEI, SIBTA's rules of the game for its PITA component are governed by the Operating Regulations of the Competitive Fund for Innovation (RO-FCI). The economic agents that make transactions are the farmers (associations and the Territorial Base Organization - OTB) also referred to as demanders; the providers of R&D services (suppliers); and the respective FDTA. In the context of the PITAs the institutional arrangements are the contracts that are signed by the three agents when they reach an agreement to develop a PITA.

Given that this system is novel, there is a need for periodic institutional adjustments in its implementation, tending toward the greater participation of the beneficiaries, preventing exclusion, promoting equity and seeking greater efficiency and strength of the competitive market of suppliers in order to respond better to the demands of the small Bolivian farmers.

SIBTA has been functioning for five years; and its RO-FCI for the PITAs has been adjusted four times. Such adjustments are referred to as institutional innovations (Hall et al. 1998) that regulate the agents (FDTA, demanders and suppliers) so that the interactions among them are more efficient. However, the institutional innovations generated to date were developed within MACA so there was no participation of the other agents or actors within SIBTA (suppliers, demanders, FDTA staff, etc.). In this context this document presents the experience of the projects Promoting Changes (FOCAM)⁷³ and FIT-9⁷⁴ in the development and implementation of a participatory method for diagnosing the current performance of RO-FCI.

Objective

Identify the bottlenecks of the RO-FCI for the PITAs from the users' perspective in such a way that the emerging institutional innovations can support SIBTA's objectives

Methodology

The identification of the bottlenecks in the rules of the game of the RO-FCI for the PITAs initially merits their definition within the context of SIBTA: the institutional arrangements perceived by their users as restrictors (presence of high transaction costs and risk) that reduce the competitiveness of the suppliers and the participation of the demanders.

The sources of information for the analysis were the suppliers and the demanders of services. To identify the sample (80%) that would participate in the workshops for analysis, the following criteria were used:

73. Promoting Changes is the short name for the project "Participatory Monitoring and Evaluation (PM&E) for rural innovation in Bolivia." FOCAM seeks to balance the demand for agricultural research from low-resource farmers with the supply of agricultural and livestock research so that this research responds more clearly to the low-resource population. FOCAM is supported financially by British cooperation (DfID) and is executed by CIAT- Colombia in partnership with the Imperial College of the University of London, England and the PROINPA Foundation.

74. This project carries out its actions within the framework of the Program for Facilitating Technological Innovation (FIT). It is financed by DfID and is operated by CIP and the PROINPA Foundation.

- Nature of the organizations. In the case of the demanders: associations, grassroots organizations, cooperatives, etc.; for the suppliers: consultants, NGOs, businesses, etc.
- Transversal coverage of actions vis-à-vis the FDTA's regions of influence. Suppliers that work with more than one FDTA or demanders that are located in more than one FDTA
- Experience of PITA's implementation. Suppliers and demanders that work with more or fewer PITAs.
- Topics of PITAs. Cattle-raising, apiculture, annual crops, etc.
- Length of experience with a PITA. At least 6 months

The diagnosis with the suppliers was done on the basis of the following steps:

1. Convening the service providers to the workshops for analysis. The FDTAs from each macro ecoregion convened the suppliers of technology identified by means of the foregoing criteria.
2. The workshops began with the explanation of the process that the RO-FCI follows and then responded to the participants' questions. The reason for this was to ensure that all participants had a minimum basic knowledge of the RO-FCI (minimize error of knowledge and pertinence) so as to relate their experience to the regulations.
3. Through the technique of brainstorming, the participants wrote down the bottlenecks that they had experienced on separate cards. All participants were urged to write down their experiences, emphasizing that the suppliers should be exhaustive in identifying all the bottlenecks that they had had.
4. The cards were collected and then each was placed along the chain of the RO-FCI. The text was read aloud; then with the aid of the participating group, the card was placed under the pertinent link.
5. When all the cards have been placed, there is an overall panorama of the chain; and it is a straightforward task to identify the links where the greatest density of cards is found. At these places the ideas are summarized, eliminating the repeated cards. Each idea is written on a different card.
6. Feedback was given for each card in the schema of the chain of the RO-FCI steps so that all participants understood the concepts, content and definition of the bottlenecks.
7. Finally, they proceeded to quantify the bottlenecks.

The procedure for the diagnosis with the demanders was done the same way as in the case of the suppliers, with the following differences:

1. The explanation of the RO-FCI was done through a sociodrama, where two neighbors from a community meet with an FDTA representative, who explains the development of the RO-FCI, using examples from the community.
2. The participants do not write the cards using brainstorming; rather they express their opinions, which are written down by the facilitators. With the help of the participating group, the card is placed in the corresponding link of the RO-FCI chain.



Schema showing flow of the RO-FCI chain for the PITAs.

Results

Ten workshops were held with the participation of 170 representatives of entities supplying services for four FDTAs. The workshops not only made it possible to locate the bottlenecks of the RO-FCI from the perspective of the suppliers, but also helped understand their nature, especially in terms of transaction costs and risks.

Figure 1 shows that many of the bottlenecks are located in the process of selecting the PITA proposals (Section 3) and the actual implementation of the PITA (Section 4). The results varied according to the FDTAs (Valleys, Highlands, Chaco and Humid Tropics). Such variation could be attributed to the FDТА staff and the way they operate the RO-FCI. For example, the negotiation of the PITA (Step 3.7 – this is code for the negotiation step in RO_FCI) in the FDТА-Chaco has a relatively high weight (24%) compared with the other FDTAs. According to the data obtained from the service providers, this could be caused by the person who is responsible for this process because this person *“likes to exercise his/her power with the service providers’ staff.”* As a result, the negotiation takes more time and money, increasing the supplier’s investment as well as the transaction costs and risk, consequently turning into a bottleneck of the process.

Similarly, the signing of the contract (Step 3.9 - this is code for the negotiation step in RO_FCI) in the FDТА-Highlands has a relatively high weight (27%) compared with the other FDTAs. According to the data collected from the service providers, this could be because the suppliers feel that the services contract represents a high level of legal insecurity for them. *“The contract strongly penalizes the failures in which the supplier could incur; in contrast, the contract does not penalize the failures of the FDТА or of the demanders.”* Therefore, the degree of uncertainty is increased, and the service providers think twice before deciding to sign the contract. It is important to mention that the Highlands is a very high-risk zone due to the prevalence of frosts, droughts, etc.; it is also considered the poorest zone in Bolivia because the farmers could not contribute the 15% counterpart funds required by SIBTA. Moreover, there are small supplier organizations in the process of formation that do not usually have the logistical means and financial stability that would permit them to continue working when there are delays in the FDТА payments. All these factors make the transaction costs and risks high, increasing the uncertainty for the service providers.

Other factors mentioned by the suppliers were primarily the form of payments to the suppliers (apparently there are delays in the FDТА payments due not only to the bureaucracy of the State but primarily to the fact that the regulations link the payment of the services to the demanders’ approval, the contract punishes the supplier for failures of the demander but does not punish the FDТА for delays) and the M&E systems for the PITAs (given that the beneficiaries of the PITA do not evaluate the actions of the suppliers directly and that the FDТА does not have consolidated M&E systems).

Table 1 shows the results expressed as bottlenecks of the RO-FCI by the demanders of services. The demanders pointed out that given the short duration of the PITAs (18 months), the current RO-FCI does not take into account the PITA’s activity in perennial crops such as fruit trees; thus technological innovation is almost impossible in these crops. Another aspect mentioned is the low percentage of investment (5%): *“The demanders’ contribution is 15%, but the investment is so low that they do not recover what they invested.”*

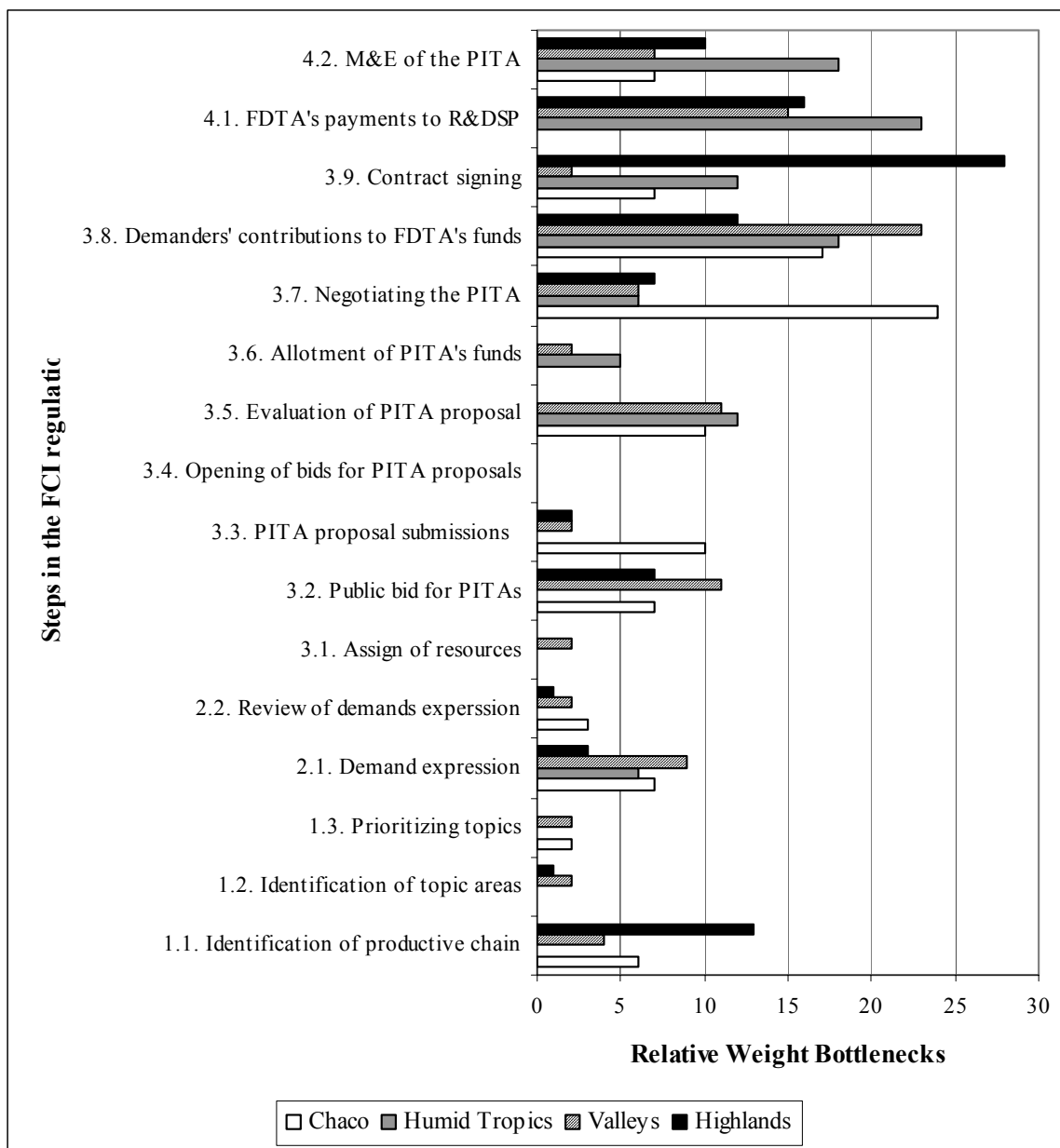


Figure 1. Location of bottlenecks identified in the RO-FCI by the R&D Service Provider (170 representatives of R&DSPs and four FDTAs), June 2004-Jan. 2005.

The amount requested by the FDTA as counterpart funds (15%) is apparently not in line with the demanders' financial possibilities as in all cases this bottleneck, which limits their participation, was mentioned. Finally, the low or nonparticipation of the demanders in the M&E processes for the PITAs was mentioned frequently, naming several difficulties (demanders' failure to pay, inconformities with respect to the suppliers' work, and prevalence of opportunism among both demanders and suppliers) as a result of this low participation.

Table 1. Bottlenecks of the RO-FCI from the standpoint of the demanders of SIBTA.

Stages of the RO-FCI	Bottlenecks
Determining the demand for technological innovation	<ul style="list-style-type: none"> • The duration of the PITAs is too short; e.g., for fruit trees, forestry, etc. • Lack of the demanders' organization makes it difficult to express demands and negotiate the PITAs.
Evaluating the proposals	<ul style="list-style-type: none"> • The demanders do not participate in the evaluation of the suppliers' personnel..
Allotting the funds	<ul style="list-style-type: none"> • Insufficient amounts for executing some PITAs. • The projects need greater levels of investment in the budget; 5% is too low.
Negotiating the project	<ul style="list-style-type: none"> • There are no methodological tools for adjusting the PITA after its approval. • The proposal cannot be negotiated with more than one supplier. • Negotiating with the FDTA is subjective, depending upon the person responsible for the process.
Contribution of the demander	<ul style="list-style-type: none"> • The demanders, especially indigenous groups and poor communities, are not in a condition to contribute the 15%.
Signing of the contract	<ul style="list-style-type: none"> • The issue of gender and indigenous groups disqualifies some projects where these groups cannot be included.
Supervising, M&E of the PITA	<ul style="list-style-type: none"> • There is no coordination with the demander or with the municipality, which contributes the 15% for the M&E. • The demander does not participate in the monitoring of the PITA • There is a lack of socialization of the PITA among the project's beneficiaries.

Conclusions

Experience shows that the bottlenecks, expressed as high transaction costs and risks, can have different origins. Such is the case of the relationships of power among the actors (both at the staff and organizational levels), the nature of the risks (e.g., the degree of vulnerability of the working zones, and the institutional arrangements of the RO-FCI, such as the case of contracting services) and the level of organizational development of the suppliers and demanders. Therefore, the perceptions about the transaction costs and risks would vary according to specific contexts.

Many of the bottlenecks make reference to the institutional arrangements (contract for services among the FDTA, demanders and suppliers). Apparently there is an issue of legal insecurity, which is heterogeneous for each of the signatory parties of the contract. This incomplete contract apparently causes high transaction costs and risk for each actor. Thus the FDTA and suppliers should invest more resources in the monitoring systems so that risks can be reduced. In the case of the demanders, this can result in opportunism (free riding), which causes difficulties in the execution of PITAs in the long term.

The information gathered in this process will be provided qualitatively to the decision-makers when they are adjusting the rules of the game for the PITAs and generating institutional innovations that are closer to the needs of the actors.

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PM&E and the Empowerment of Producers' Organizations

Juan Fernández R.⁷⁵ and Edson Gandarillas⁷⁶

Accomplishments

- Participatory Monitoring and Evaluation (PM&E) has contributed to the empowerment of people and organizations because it has promoted active participation and has involved the organizations' members in all phases of the project and decision-making.
- PM&E is also improving the organizations' capacity for (a) representativeness and internal democracy, (b) participating effectively with proposals in strategic planning exercises, (c) negotiating with institutions and other actors, and (d) developing their sense of co-responsibility.

Abstract

The Participatory Monitoring and Evaluation (PM&E) system developed by CIAT was applied by the Promoting Changes project in the context of the Bolivian Agricultural and Livestock Technology System (SIBTA), prior adaptation and adjustments of the methodology for the different rural areas, characterized by having one of the highest levels of poverty in Latin America. The principles of PM&E are oriented towards contributing to the empowerment of the people, organizations and institutions. After analyzing the effects of applying PM&E in organizations, it was possible to determine that the methodology contributes to empowerment, primarily in the following aspects: Empowerment greater participation and levels of commitment of the beneficiaries in the projects; better performance of the service-providing entities as a result of the producers' evaluation; greater knowledge of the beneficiaries about the products, milestones and activities that the projects consider; and farmers' management and leadership capacity enhanced.

Background

Despite the fact that the Bolivian Agricultural and Livestock Technology System (SIBTA) was created around an approach centered on demand, which places a high priority on the participation of agricultural and livestock producers in the different phases of a project, the Operating Regulations of the Competitive Fund for Innovation (RO-FCI), which regulates the process of the Applied Technological Innovation Projects (PITAs), does not contemplate mechanisms that permit the participation of the beneficiaries during the process. The PITA's M&E system continues to follow a "traditional" approach, where project beneficiaries are limited to a passive role of providing information.

As a way of supporting SIBTA and other R&D programs, while contributing to the empowerment of producers' organizations, the Promoting Changes Project (FOCAM⁷⁷) has promoted the implementation of PM&E in demander organizations of the PITAs, using "action training."

75. Ag. Eng., MSc, Technical Researcher, CIAT-FOCAM, e-mail: j.fernandez@cgiar.org.

76. FOCAM Project Coordinator – Bolivia. E-mail: e.gandarillas@cgiar.org

77. FOCAM seeks to balance the demand for agricultural research from low-resource farmers with the supply of agricultural and livestock research through the implementation of PM&E in the market for national agricultural and livestock technology innovation. The PM&E methodology proposed by FOCAM was developed by the International Center of Tropical Agriculture (CIAT) (Hernandez et al. 2000) and adapted to meet the Bolivian context.

Empowerment is a process of self-determination, whereby the people or communities gain control over their own lives. It involves a process of conscientization (becoming aware of all the factors that influence people's lives) and liberation (gaining power to decide about their own destiny) (WHO 1998).

Studies carried out by PADEM (2003) regarding the empowerment of small farmers' and indigenous organizations (OC-I) formulate a series of considerations. Some indicators of empowerment proposed by this institution are the capacity of the organizations for:

- Strengthening themselves, developing their representativeness and internal democracy
- Participating effectively and with proposals in strategic planning exercises
- Negotiating with other institutions and actors to make decisions that favor not only their own sector but the others as well
- Developing a sense of co-responsibility and belonging to the municipality, which is expressed in the real and constructive exercise of social control of municipal management

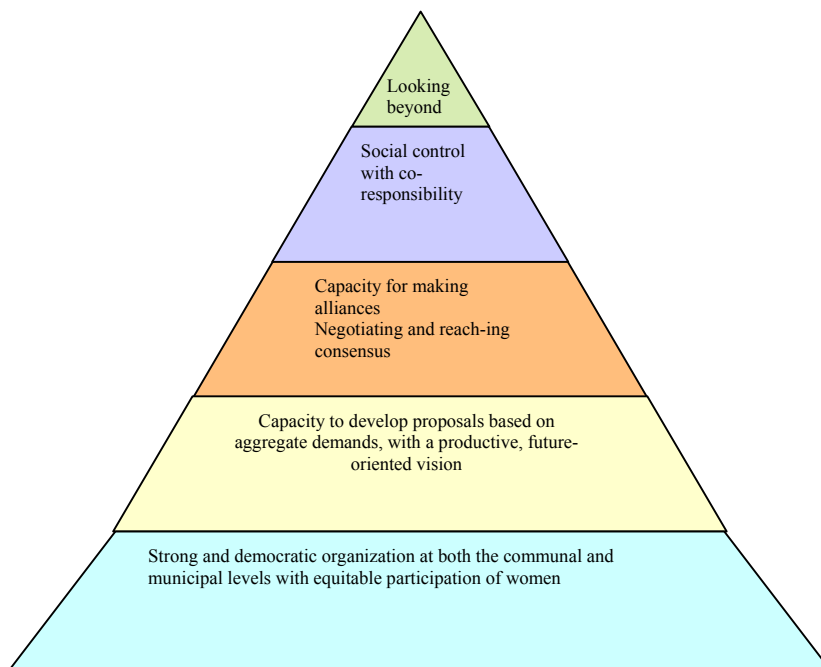


Figure 1. Pyramid of empowerment proposed by PADEM (2004).

The concept of empowerment is directly related to that of participation. At higher levels of participation, there are greater levels of autonomy and empowerment (Fig. 2).

Objectives

- Characterize the context where the PM&E methodology was implemented
- Determine indicators of empowerment
- Identify the relevant contributions of this methodology to the empowerment of small agricultural and livestock producers' organizations



Figure 2. Ladder of participation showing levels of participation from the nominal to decision-making, equivalent to empowerment.

Methodology

This article is based on analyses of information about the progress made and results accomplished in processes of implementing PM&E in Small Farmers Economic Organizations (OECAs) that are demanders of PITAs, promoted by SIBTA and financed by the FDTAs (FDTA-Valleys) and in projects of the Services and Technical Assistance Program (PROSAT), supported by the Prefecture of the State of Chuquisaca, Bolivia.

Results

Social context: According to the Government of Bolivia (2001), the country has one of the highest levels of poverty in Latin

America. In 1992 data from the Population and Housing Census revealed that 70% of the population did not have their basic needs met; and at the end of the nineties, 63% of the population had family incomes under the poverty lines (Table 1).

Table 1. Percent poverty and extreme poverty according to area of residence.

Area	Nov. 1999	Nov.-Dec. 2000	Oct.-Nov. 2001	Nov.-Dec. 2002 (P)
POVERTY				
Bolivia	62.03	65.47	64.39	64.60
Urban	51.36	54.47	54.28	53.94
Capital	46.36	52.03	50.54	51.01
Rural	80.12	84.54	81.06	81.99
EXTREME POVERTY				
Bolivia	35.84	39.17	37.29	36.77
Urban	23.51	27.93	26.18	25.71
Capital	20.66	25.69	22.28	23.94
Rural	56.72	58.66	55.60	54.78

SOURCE: MECOVI survey ⁷⁸ (in Casazola 2003).

Poverty in the rural area characterizes 82% of the population; extreme poverty is 55%. In the rural area, poverty is explained in great part by the low productivity of the agricultural and livestock sector and the low value of the products on the market.

The social context of the demanders of projects where PM&E was implemented is characterized by the following aspects:

78. This information comes from a continuous survey of households/living conditions that forms part of the program for improving surveys and measuring living conditions (MECOVI); data gathered by the National Institute of Statistics (INE) (INE et al. 1999).

- The producers are small, their landholdings ranging from 2-8 ha.
- The principal activity is agricultural production.
- The level of formal education is low; the majority does not finish primary school.
- With respect to health, there are endemic problems such as Chagas' disease and malaria.
- The strongest organization is the agrarian *sindicato*.

To illustrate the foregoing, the socioeconomic stratification of a zone where PM&E implementation was facilitated, is provided: the municipality of Padilla, State of Chuquisaca, Bolivia (INE et al. 1999) (Table 2).

Table 2. Socioeconomic stratification in the Municipality of Padilla.

Strata	Percentage
A	20.5%
B	31.2%
C	48.3%

SOURCE: HECOP (2003).

Some 50% of the population in the municipality is found in Stratum C, the majority of whom are living in poverty. Stratum A corresponds to families that have more than 4 ha under production, more than 45 head of cattle, housing that has more than four rooms, and higher levels of formal education. The majority know how to read and write. Stratum B includes families that have the same assets as in Stratum A, but in smaller quantities and quality (Fig. 3).

Families from Stratum C generally have a production area of 0.5-2.5 ha, very few sheep (no more than 20) and their houses do not have more than 2 rooms. They generally correspond to young families in the process of consolidation, the majority of whom do not know how to read or write.

Institutional context

Municipal Government: Given the level of poverty in the zone, the policies that form part of the Municipal Government of Padilla in the productive environment are to:

- Promote and drive the process of productive transformation
- Encourage the economic development of the municipality, making effective the concept of a productive municipality, allocating a greater proportion of public investment in the agricultural and livestock sector



Figure 3. Doña Cristina Loayza and her three children represent a typical family from the average stratum of the rural area of the Municipality of Padilla, community La Ciénega.

- Promote research and technology transfer applicable to local conditions
- Open, repair and maintain roads to guarantee commercialization of the products
- Promote tourism and ecotourism in each of their stages

To accomplish part of its objectives, the municipality of Padilla is linked with the following schemas of rural development policies at the national level:

- The Bolivian System of Agricultural and Livestock Technology (SIBTA⁷⁹): SIBTA is an interinstitutional system that seeks to optimize its technical, human and financial capacities around the planning, promotion and execution of activities of agricultural and livestock, forestry and agroindustrial technology innovation in the national setting and based on regional needs.
- The Foundations for Agricultural and Livestock Technology Development (FDTAs): Through their Competitive Fund for Technology Innovation (RO-FCI), the FDTAs finance the execution of Applied Technological Innovation Projects (PITAs). In the Municipality of Padilla the FDТА-Valleys (2004)⁸⁰ is financing two technological innovation projects in the chili peppers and peanuts agroproductive chains, at the request of a Small Farmer Economic Organization (OEC), the Association of Producers of Chili Peppers and Peanuts from the Municipality of Padilla (АРАJIMPA), with support from the Municipal Government of Padilla.

PM&E and empowerment of the OECs: It would be an overstatement to assert that the implementation of PM&E empowers the organizations and the people; or said differently, that the people and organizations that use PM&E are empowered. PM&E is one element among many that contribute to empowerment.

In the case of АРАJIMPA, they underwent a process of about one-and-a-half years to adopt PM&E. In this process the Association's leaders were committed to institutions and entities such as the Municipal Government, which provides the services, and FDТА, as well as to fulfill the objectives of both the PITA and the organization. In the Chaco⁸¹ region, different from АРАJIMPA, which had a "bottom-up" process, the executive bodies of the FDТА-Chaco, based on the successful application of PM&E in other settings, promoted the validation of the methodology in their context and contributed to generating mechanisms for its institutionalization.

Based on the information of the experiences regarding the effects of PM&E in different contexts, it was concluded that overall, PM&E contributed to empowerment in the following aspects:

- The organizations have begun a process of appropriating PM&E, in which their leaders have played an important role in training and disseminating it among the farmers.
- PM&E is permitting the supplier entities to provide a better service.

79. SIBTA was created in March 2000 as a model of interaction between the country's public and private sectors, constituting a network that links up with the need for technology innovation of the actors from the agroproductive chains.

80. This is the operational branch of SIBTA for the adequate execution of the PITAS in the macro-region of the Valleys.

81. Hot, semiarid lowlands.

- PM&E is contributing to there being a better response and participation of the beneficiaries in the process.
- The producers in their different strata are informed about the characteristics and development of the projects of which they are beneficiaries.
- PM&E is contributing to improve the management and leadership capacity of the producer organizations' managers.

Conclusions

- PM&E contributes to the empowerment of the producers' organizations, basically because it promotes the active participation and involvement of the members of the organization in all project phases and decision-making related to their own development.
- The use of PM&E is contributing to a change from a passive (receptive) attitude to an active one (decision-making) on the part of the farmers. Thus it is improving their capacity for (a) representativeness and internal democracy, (b) participating effectively with proposals in the strategic planning exercises, (c) negotiating with other institutions and actors, and (d) developing a sense of co-responsibility.

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Participatory Methodologies Make the Processes of Technological Innovation Viable in Bolivia

V. Polar⁸², E. Gandarillas⁸³, J. Fernández⁸⁴, J. Almanza⁸⁵, and INNOVA Project⁸⁶

Accomplishments

- As a result of the process of implementing the methodology of participatory monitoring and evaluation (PM&E) and other participatory methods⁸⁷, gaps were perceived in the operating regulations that guide the process of executing technological innovation projects in Bolivia. These gaps were identified and confirmed through a process of dialogue and interaction with the different actors in the system.
- New participatory methodologies were generated to fill these gaps and are currently being implemented and adopted by the Bolivian institutions responsible for these processes.

Background

From 2003-2005 the FOCAM⁸⁸ project began a series of experiences related to the strengthening of the Bolivian Agricultural and Livestock Technology System (SIBTA) through the incorporation of participatory methodologies in the framework of Applied Technological Innovation Projects (PITAs),⁸⁹ tendered by the Bolivian Government through SIBTA. The purpose of the FOCAM project was to adapt the PM&E system to Bolivian conditions in order to bring about its institutionalization at the level of SIBTA, together with the other participatory methods that had already been tested in order to optimize the results generated by its projects.

82. Ag. Eng., Researcher from the FOCAM Project, v.polar@cgiar.org.

83. FOCAM Project Coordinator – Bolivia. E-mail: e.gandarillas@cgiar.org

84. Ag. Eng., MSc Researcher from the FOCAM Project, j.fernandez@cgiar.org.

85. Ag. Eng., Researcher from the FOCAM Project, jalmanza@proinpa.org.

86. INNOVA is a joint project among the PROINPA (Promotion and Research of Andean Products) Foundation, the “Mayor de San Simón” University (UMSS), through its projects PROMETA and PROMASEL (Project of Sustainable Weed Management on Hillsides), and the Tropical Agricultural Research Center (CIAT-Bolivia). It has financing from the Department for International Development (DfID) of the British Government, under the coordination of the International Potato Center (CIP).

87. Other participatory methods used by FOCAM include CIALs (Local Agricultural Research Committees), and Participatory Evaluations.

88. FOCAM, which stands for Promoting Changes, is the short name for the project “Participatory Monitoring and Evaluation (PM&E) for rural innovation in Bolivia.” FOCAM seeks to balance the demand for agricultural research from low-resource farmers with the supply of agricultural and livestock research so that this research responds more clearly to the low-resource population. FOCAM is supported financially by British cooperation (DfID-RLD) and is executed by the International Center of Tropical Agriculture (CIAT- Colombia), and the Imperial College, University of London, England.

89. According to the definition of SIBTA (2003), a PITA represents a set of activities with an agrop productive chain approach and a program vision that comprises the validation, adaptation and transfer of technologies of processes, products, management and technical assistance for their adoption with the purpose of promoting integrated changes along the chain.

The PM&E methodology and other participatory methods that were to be institutionalized served at the same time as a framework for identifying a series of problems and shortcomings within the project cycle, giving rise to the generation of several tools designed to promote participation and equity in the processes developed.

In what environment was the proposal developed?

SIBTA was created with an approach centered on demand, prioritizing the participation of agricultural and livestock producers in the different project phases, based on two important assumptions:

- The producers are organized and have the capacity for participating actively—from the identification of their needs for technological innovation to the evaluation of project impact.
- There is a system for supplying technological innovation, capable of responding to the farmers' demands with efficiency and efficacy, using a participatory approach.

In practice it was perceived that except for a few cases, these two hypotheses were not achieved. Based on what was seen, there was a need to develop and/or strengthen the capacity of demanders, suppliers and administrative entities of funds in the use of participatory methodologies in order to make the full interaction among the different actors and their closer connection to the system viable.

A PITA is established at the petition of a demander.⁹⁰ There is a legal framework (Operating Regulations for the Competitive Fund for Innovation, RO-FCI) that should be clearly defined to establish the “rules of the game” for executing projects before the PITA can begin its activities.

How was the proposal born?

Based on previous work, the FOCAM Project proposed to insert the PM&E methodology and other participatory methods in the SIBTA framework so that their processes would take into account the perception of the end beneficiaries, seeking their satisfaction with respect to the products generated. As this process advanced, bottlenecks were perceived in the RO-FCI.

In order to learn the perception of all the actors in the process with respect to the functioning of the RO-FCI and to identify the bottlenecks clearly, the FOCAM Project, in coordination with the FIT 9⁹¹ project, has been carrying on an open dialogue with the different actors. This analysis of the RO-FCI has resulted in the precise definition of gaps where there is a need to incorporate already tested participatory methodologies and generate other complementary ones that promote inclusion and equity, thereby contributing to optimize the results of the ongoing projects.

90. Any organized actor of any one of the links along the agroproductive chain that can benefit from a PITA.

91. “Horizontal Learning” Project, which forms part of the Program for Strengthening Technological Innovation, financed by DfID and executed by PROINPA and CIP.

Objectives

Analyze how the participatory methodologies adapted and generated for the national context contribute to filling the gaps identified in the functioning of SIBTA's RO-FCI.

Methodology

Preliminary analyses conducted by the FOCAM Project to evaluate the process of adapting the PM&E, CIAL (Local Agricultural Research Committees), ECA and Participatory Evaluations of Technology methodologies resulted in the identification of concrete aspects that limited their adaptation and adoption in the national context. Later observations made it possible to relate these limiting aspects to the RO-FCI.

To counteract the problems identified and propose alternative solutions, strategic alliances were established, oriented toward making the generation, design and validation of new methodologies viable for their later dissemination and institutionalization.

Institutional alliances

Based on the underlying problems and with the purpose of strengthening SIBTA and the technology transfer processes being carried out, two strategic alliances were generated: one between the FOCAM and FIT 9 projects and the other between the FOCAM and INNOVA projects.

The FOCAM-FIT 9 alliance permitted an open dialogue with the different actors in the system, the purpose of which was to analyze the RO-FCI, identify bottlenecks or gaps, and then generate proposals for modifying these regulations in a way that would optimize the processes. A series of group analyses were carried out that resulted in a proposal for modifying the RO-FCI, which was presented to SIBTA's decision-making bodies for their consideration.

Parallel to the analyses of the RO-FCI facilitated by FOCAM-FIT 9, both the proposed modification and the gaps identified were analyzed within the FOCAM-INNOVA alliance in close coordination with the FDTAs, in order to generate a solution for the problems identified.

Generation, design and validation of methodologies

The generation of the proposed methodologies began with the specific demands of the FDTAs, detailing the problems identified and difficulties faced at the level of the PITAs. These demands were then analyzed from the standpoint of participatory principles by the FOCAM-INNOVA alliance in order to design methods of rapid and simple application.

Studying the demands in depth: Despite the fact that the legal requisites for an organization to be awarded a PITA are clearly established, there are some gaps that destabilize the process. These gaps begin with detecting the organizations' demands. There is no adequate methodology for this purpose, and it is not possible to determine how genuine these demands are. Although the operating regulations state that before beginning the project, the organization's legal representative should sign off (attestation of having no

objections), it is also clear that he/she is fully empowered to decide what the desired outcomes for the project should be. Moreover, there is no mechanism that transcends the legal stipulations that would permit greater interaction with the grassroots groups (Polar et al. 2004).

In addition to the foregoing, it is important to highlight that, as mentioned earlier, one of the assumptions on which SIBTA is based is the existence of a competitive technology supply and demand market. This assumption is incorrect, given that the market is highly heterogeneous, with very few large suppliers and many small ones that are not in a position to respond to the needs of their region. The capacity for investment, especially among the small suppliers, is very limited, making it very difficult for them to make the pre-investment disbursements required for looking into demand.

As a result of the foregoing, a new method was designed that seeks to study demand in depth according to the specific conditions of the demanders and considering the suppliers' limitations during the pre-investment phase. The "In-Depth Study of Demands for Preparing PITA Proposals" methodology facilitates formulating the bases of a project proposal, based on the identification and in-depth study of demands broken down by farmer type, taking into account the local development aspirations that the farmers have, as well as promoting a solid supplier-demander alliance.

Adjusting the proposal: One of the critical stages in generating a PITA is when a project is pre-selected in the classification process, after which it enters the negotiation and adjustment stage before the awarding contract is signed. According to the RO-FCI, the suppliers should make the adjustment in their proposal in close interaction with the farmers-demanders, leading to the definition of a baseline for the project (INNOVA-FOCAM 2005).

Nevertheless, despite the fact that the regulation identifies the characteristics of the product to be obtained at this stage, there are no tools for facilitating this process. It was also observed that the suppliers do not have the instruments to identify the expectations of different types of farmers within the same group of the project's beneficiaries, which would increase the possibilities of achieving the outcomes expected by each group. Consequently, the projects end up being implemented homogeneously with heterogeneous groups of farmers, resulting in the dissatisfaction of some of them. Moreover, this shortcoming in terms of instruments makes it difficult to formulate a baseline that reflects the producers' heterogeneous conditions, once again generating homogeneous information that does not necessarily reflect the project's initial conditions.

These gaps with respect to instruments and methods are the origin of the "Participatory Adjustment of Proposals" methodology. This instrument is used to explore the expectations of different farmers' groups within a group of beneficiaries in order to adjust, adapt and modify the project's products, activities and indicators before its final approval. Likewise, it contributes to the strengthening of the supplier-demander alliance, increasing the commitment of the beneficiary group toward the project to be executed. Moreover, by identifying the different farmers' groups and differentiating among their expectations, it is possible to define variables accordingly, oriented toward the construction of a focalized and relevant baseline.

Controlling the quality in the process: During the execution of the PITAs, the regulations stipulate that the corresponding FDTA should evaluate the projects' partial results. These evaluations are done based on the system for monitoring activities carried out and the milestones reached, based on the logframe of the proposal. The number of PITAs that are currently being executed has surpassed the capacity of available human resources and the time required for the FDTAs to implement this process with the desired levels of quality (INNOVA-FOCAM 2005).

On the other hand, the monitoring systems do not include explicit variables for determining the demanders' degree of satisfaction with respect to the project. This makes it difficult to formulate adjustments that could be made to the project later in order to satisfy the beneficiaries' demands.

These considerations inspired the development of the "Participatory Mid-Term Evaluation of PITAs in Execution, Based on the Satisfaction of the Demanders' Expectations" methodology. This method gathers information on the beneficiaries' satisfaction with respect to an ongoing project, using the financers' planning tools (e.g., logframe, milestones). The method also facilitates the identification of complementary actions required to achieve the project's results.

Controlling the quality when the projects end: As mentioned in the previous section, the FDTAs' difficulties in terms of resources are a limiting factor in executing processes of ex-post quality control of the projects. Moreover, the existing systems do not include explicit variables for determining the satisfaction of the demanders and/or information about their future perspectives.

The "Final Evaluation of Technological Innovation Projects" methodology is a tool that can be used to compile information on the demanders' satisfaction with respect to the projects of which they were beneficiaries. The method is based on the demanders' perception regarding the project's execution, as well as the performance of the different actors involved, the results obtained and the new knowledge acquired. It also helps identify the future expectations of the groups to ensure the continuity of the processes undertaken.

Dissemination: Once the methods had been designed and validated in different projects at the national level, they were systematized and presented to different actors in the system.

Results

The new methodologies generated were well accepted both within and outside SIBTA. Some of the applications were implemented directly by the FOCAM-INNOVA team while others were being done directly by the actors involved in the process. Table 1 presents details of the applications carried out by the team, which made it possible to validate and adjust the methodologies. It is important to highlight that at this time some of these methodologies are being applied in different FDTAs. Some of them have already been institutionalized while others are still in the process of being evaluated and adapted.

Table 1. Summary of application of the methods by the INNOVA-FOCAM teams.

Methodology	Application
In-depth study of demands	<ul style="list-style-type: none"> • Proposal presented for improving the quality of potato production in the Municipality of Umala by means of integrated crop management with emphasis on pest control • Proposal presented for improving broad bean crop production and commercialization in the Municipality of Colomi, Cochabamba • Three applications in response to demands for promoting the technologies validated and promoted by Working Group 3 of the INNOVA project. Three proposals were generated and included in the INNOVA project's POA.
Participatory adjustment of proposals	<ul style="list-style-type: none"> • Strengthening of the competitiveness of potato producers from Pocona and Morochata, linked to the market • Investigation of markets and commercialization strategies for chestnut producers from Pando • Training and technology change in the integrated management of South American Camelidae in the mountains of the Municipality of Batallas, Los Andes Province, La Paz State
Mid-term evaluation	<ul style="list-style-type: none"> • Biological control of the coffee berry borer in the municipalities of Caranavi and Coroico, La Paz State • Support for the commercial production of peanuts in O'Connor Province, Tarija State • Sustainable management of the woodlands with cattle raising and integrated herd management, Association of Cattle Ranchers and Rural Communities of the Municipality of Cabezas, Cordillera Province, Santa Cruz State. • Improving the opportunities and competitiveness of beef commercialization of the members of the Federation of El Chaco Cattle Ranchers • Technology transfer for providing feed and forages for beef cattle in Villa Montes, Tarija
Final evaluation	<ul style="list-style-type: none"> • Improving the quality of "Nuestra Tierra" peaches from Vallegrande • Improving technology for producing chili peppers in the region of El Chaco Chuquisaqueño

The new methodologies were disseminated through different training events sponsored by the 4 FDTAs, the Ministry of People's Participation, the "Mayor de San Simón" University and suppliers of technology. In these events representatives of the different sectors from the country's four macro ecoregions participated.

Conclusions

As a tool for organizational strengthening, the methodology of Participatory Monitoring and Evaluation brings groups together around a common dream or objective. In the life cycle of the projects, the PM&E framework covers the initial exploration of the demand to the evaluation of outcomes and the exploration of new demands. However, all these efforts are in vain if there is no continuity in the principles of participation, equity and inclusion. Some of the contributions of the new methods are described below.

In-depth study of demands: Some of the project proposals that arose from the application of the method are currently being executed. The real contribution of the method will be seen when the results and impacts of the PITAs are evaluated. Nevertheless, it can already be seen that the application of the method contributes to the proposals being centered on the farmers' demands and inspired in their vision of development, thereby contributing to the strengthening of the supplier-demander alliance and to the empowerment of the projects. The level of investment that the application of the method requires corresponds to the level of risk that the suppliers of technology have to assume in the pre-investment stage (INNOVA-FOCAM 2005a).

Participatory adjustment of proposals: Project proposals adjusted using the "participatory adjustment of proposals" methodology are currently being executed. Preliminary observations show that the application of the method has already contributed to differentiating among the expected outcomes of the project by type of demander. The process has also contributed to strengthening the supplier-demander alliance and promoting the beneficiaries' empowerment with respect to the project. It has also been observed that the information reflected in the baseline is focalized, pertinent and relevant to the outcomes expected by the demanders.

Mid-term evaluation: In the different PITAs where the method was applied, information was obtained on the degree of demander satisfaction with respect to the activities executed by the supplier, identifying causes and generating proposals based on the complementary actions required to achieve the expected project results. As in earlier cases, the method contributed to increasing the beneficiaries' commitment toward the project and strengthening the supplier-demander alliance.

Final evaluation: The methodology for the final evaluation provided detailed information on the actors' performance, the accomplishment of results, and the project beneficiaries' degree of satisfaction. It was also observed that the qualitative information generated complements quantitative evaluations implemented at a different level. There have been cases where the information obtained was used as the basis for expressing demand in the formulation of subsequent projects within the framework of a program's vision.

Global contributions of the methods: Tools such as the stratification of beneficiaries⁹² in the methodology of participatory adjustment of proposals and the zoning of the area of influence in the in-depth study of demands can be used to propose specific technological supplies for the different strata and/or zones, thereby ensuring the inclusion of less-favored groups in the benefits generated by the projects.

The mid-term and final participatory evaluation methodologies, in addition to constituting an easily applied tool for compiling information on demanders' satisfaction, generate opportunities to communicate with the demanders and get feedback from them. Although the methods were designed for being applied initially within the SIBTA framework, their dissemination has resulted in the possibility of their being adopted in other systems of technological innovation at the national level, among which stand out the health and education sectors.

92. Stratification of farmers is done using the methodology of "Levels of Wellbeing."

In all cases the challenge is to maintain the spirit of the methods in terms of promoting equity and the inclusion of the least favored in the development undertakings, thereby guaranteeing the achievement of the goals proposed by the national policies in terms of reducing poverty and development with equity.⁹³

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93. The legal and strategic framework of the Institutional Strategic Plan of the Ministry of Agriculture 2005-2007 details the national policies designed to reduce poverty and bring about development with equity.

Use of Participatory Monitoring and Evaluation (PM&E) in the Chaco Foundation (FDTA-Chaco)

*W. Fuentes F⁹⁴, E. Gandarillas⁹⁵, J. Fernández⁹⁶, V. Polar⁹⁷, M. Soruco⁹⁸, R. Cruz^{**}, and D. García^{***}*

Accomplishments

PM&E as a methodological tool applied in the context of the FDTA-Chaco has made important contributions to the market of technological innovation (suppliers and demanders):

- It has generated a collective awareness that the system's *raison d'être* is the productive organization; therefore the demanders now show their capacity and exercise their right to express their satisfaction for the service they receive.
- It constitutes an instrument that generates information about the execution of the activities; and based on this information, actions are taken with respect to improving the quality of the service.
- It is strengthening social organizations, permitting them to give their opinions and be part of the construction of their own development.

Abstract

This experience was implemented in the Bolivian Chaco macro ecoregion, where the Foundation for Agricultural, Livestock and Forestry Technology Development of the Chaco (FDTA-Chaco) operates and where the Promoting Changes (FOCAM) Project has the purpose of contributing with the implementation of Participatory Monitoring and Evaluation (PM&E) systems in the different Applied Technological Innovation Projects (PITAs) in order to strengthen the demanders' capacity in the suppliers' technology transfer processes. The PM&E methodology was developed by the International Center of Tropical Agriculture (CIAT) and adapted to the Bolivian context by FOCAM. The steps for using PM&E in the FDTA are: (i) implementation of the methodology, (ii) execution of the methodology by the demanders, (iii) use of the information and (iv) decision-making. Among the principal results at the level of the FDTA is that PM&E has made an important contribution to the market for technological innovation. It has generated a collective awareness that the *raison d'être* of the system is the productive organization; therefore the demanders now show their capacity and exercise their right to express their satisfaction for the service they receive. At the supplier level, they are beginning to use the information from the PM&E and apply corrective measures in time; moreover, greater institutional commitment is being stimulated by the project's success. At the demander level, the PM&E instrument helps transmit their

94. Ag. Eng., Researcher of the FOCAM/CIAT project. e-mail: walterfu_2000@yahoo.com; * Belong to the FOCAM project team; ** Belong to the FDTA-Chaco team; *** Thesis student of the FOCAM project.

95. FOCAM Project Coordinator – Bolivia. E-mail: e.gandarillas@cgiar.org

96. Ag. Eng., MSc, Technical Researcher, CIAT-FOCAM, e-mail: j.fernandez@cgiar.org.

97. Ag. Eng., Researcher from the FOCAM Project, v.polar@cgiar.org

98. Desarrollo del Mercado de Innovación Tecnológica, Fundación para el Desarrollo Tecnológico Agropecuario del Chaco (FDTA-CHACO) maya.soruco@sibta.gov.bo maya.soruco@fdta-chaco.org.bo

suggestions to the suppliers and financiers in order to optimize the projected outcomes for the PITA. FDTA has evidence that the methodology works; therefore, there is a willingness to include it in the institutional POA so that it can be applied in all the PITAs they finance.

Background

The importance of implementing a PM&E system in the Applied Technological Innovation Projects (PITAs) of the Foundation for the Development of Agricultural, Livestock and Forestry Technology for the Chaco (FDTA-Chaco) lies in the need for having a methodological tool that complements the FDTA's current M&E system.

From the onset and up to 2004, the FDTA-Chaco's M&E process was carried out by permanent staff and some technicians on secondment. As of 2005, a team of six supervisors was formed, among whom the PITAs in execution were distributed, so that the work would be more efficient. Nevertheless, the process ran into three main difficulties: (i) the insufficient number of staff (supervisors), (ii) the lack of an appropriate methodology for the monitoring and evaluation of projects, and (iii) lack of clarity in the staff's responsibilities.

From there arose the need for implementing the PM&E system, which complements the current FDTA system and which provides information on the quality of execution of the programmed activities in the different PITAs from the demanders' standpoint, thereby contributing to the accomplishment of the objectives of the different projects.

According to Aubel (2000), PM&E represents an opportunity for programs or projects to examine the quality of implementation of their activities, for measuring the progress made toward obtaining results, and for formulating the lessons learned. In this respect Reuben (2003) mentions that PM&E provides more complete and in-depth information, increases transparency and strengthens the commitment to implement corrective changes. The shared learning improves the performance of the institutions that deliver services and the effects of the same; and increases the sense of ownership, autonomy and organization.

Objective

Describe, learn about and analyze the contributions resulting from the use of PM&E in the PITAs and their effects on the different actors involved in the process—the FDTA-Chaco, service suppliers and demanders.

Materials and methods

Location and characteristics of the study zone: The Chaco is one of the four macro ecoregions of Bolivia, formed by parts of three states (Santa Cruz, Chuquisaca and Tarija), distributed in 17 municipalities.⁹⁹ The region has a population of almost 300,000 inhabitants, an Amerindian population of almost 80,000 among the Guaranies, Weenhayek and Tapiete, living on a surface of about 128,000 km² (20% of the South American Chaco).

99. Cuevo, Boyuibe, Camiri, Lagunillas, Gutiérrez, Charagua, Cabezas in Santa Cruz; Huacaya, Machareti, Monteagudo, Villa Vaca Guzman, Huacareta in Chuquisaca; Entre Rios, Yacuiba, Carapari, Villa Montes and the Bermejo triangle in Tarija.

This hot, semiarid region is traditionally dedicated to beef cattle-raising and swine. The main crops are maize, peanuts and chili peppers. Hunting and fishing are means of subsistence.

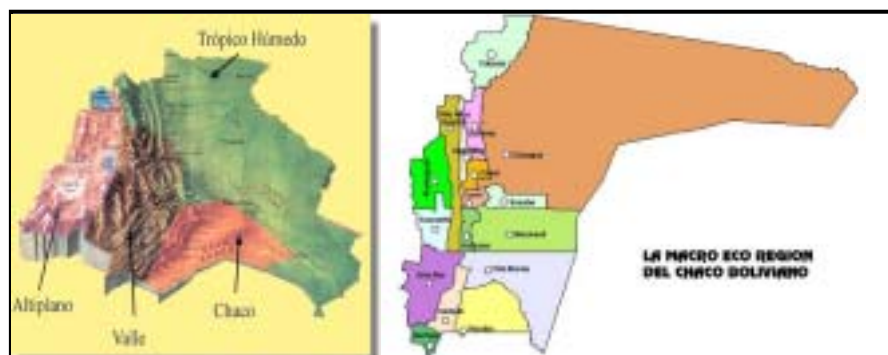


Figure 1. Geographic location of the macro ecoregion of the Bolivian Chaco.

The Bolivian Agricultural and Livestock Technology System (SIBTA) and the FDTA-Chaco: SIBTA is an instrument created with the purpose of developing and promoting agricultural, livestock, forestry and agroindustrial technology innovations in Bolivia. SIBTA consists of four Foundations for Agricultural and Livestock Technology Development (FDTAs¹⁰⁰), defined according to the four macro ecoregions of the country: highlands, Chaco, humid tropics and valleys.

The FDTA-Chaco, through its Competitive Fund for Technological Innovation, currently finances the execution of 51 PITAs throughout the macro ecoregion in the agroproductive chains of bovines, swine, apiculture, peanuts, maize, chili peppers and subtropical fruits, with different types of demanders (e.g., associations, agrarian *sindicatos*). As of February 2005, the FDTA-Chaco, in an interinstitutional agreement with the Promoting Changes project (FOCAM¹⁰¹), agreed to implement PM&E systems in their PITAs.

Process of implementing PM&Es in the PITAs: The methodology used in implementing PM&E was that proposed by the Participatory Agricultural Research project (IPRA) of the International Center of Tropical Agriculture in Colombia (CIAT) (Ashby et al. 2001), with adaptations to the social context and the PITAs by FOCAM in Bolivia.

Methodological steps for using PM&E in the FDTAs: The process for using PM&E involved the following steps:

100. Private entities of public interest, formed by different sectors of demanders and suppliers of agricultural and livestock technology.

101. FoCam (Promoting Changes) is the short name for the project “Participatory Monitoring and Evaluation (PM&E) for rural innovation in Bolivia.” FOCAM seeks to balance the demand for agricultural research from low-resource farmers with the supply of agricultural and livestock research so that it responds more clearly to the low-resource population. PM&E proposes to strengthen the capacity of the demanders (producers-beneficiaries of PITAs) in the overall process of technology transfer carried out by the suppliers so that the project is more effective in achieving the objectives of poverty reduction in Bolivia.

- *Implementation.* With the support of the PITA supervisor and a facilitator of the methodology, the PM&E system was implemented in a workshop that lasted about 4 hours. The participants were representatives of beneficiary communities of PITAs. The steps that were followed were: (i) motivation, (ii) conceptualization of PM&E terms, (iii) construction of the dream or group objective, (iv) construction of local indicators, (v) socialization of PITA's activities, (vi) filling out and applying formats, vii) election of person responsible for conducting the PM&E in his/her group.



Figure 2. Supervisor of the FDTA, implementing PM&E.

- *Execution.* The groups, with the support of their representatives who had been trained, execute PM&E for all the activities in which the supplier is engaged. This step is supported by the FDTA supervisor. The suppliers' participation in this step is vital; their role is basically centered on helping the demanders remember the realization of the PM&E after each activity has been executed.
- *Use of the information.* The PM&E reports from the different groups or communities are compiled, systematized and inserted by the FDTA supervisor in the monthly informative formats for supervising the PITAs. These reports become the legal 'bearer' of the demanders' suggestions or recommendations.
- *Decision-making of the FDTA.* The information generated by the demanders is analyzed and discussed by the FDTA's executive body. Based on that information, this body decides the monthly actions to be taken jointly by the supplier and demander.

Results

The contribution of PM&E to the work of the FDTA-Chaco: The following paragraphs summarize the opinions expressed in interviews by the Director¹⁰² of the FDTA-Chaco, and those responsible for the Organizational Strengthening and Technological Innovation units.

The use of PM&E during these months has shown the following advantages:

102. Edgar Rodo, Lic., Executive Director of the FDTA-Chaco.

- The methodology is participatory; that is, there is active participation of the demanders and/or project beneficiaries in the M&E of its activities.
- Upon executing the PM&E parallel to the activity that is being evaluated, immediate results are obtained. Thus the PM&E constitutes an early-warning system for taking corrective measures in the project so that it can reach its proposed objectives. The information generated in the PM&E report constitutes an important input for the FDTA supervisors.
- The PM&E has made an important contribution to the market of technology innovation (suppliers and demanders). It has generated a collective awareness that the *raison d'être* of the system is the productive organization; therefore the demanders are now showing their capacity and exercising their right to express their satisfaction for the service they receive.



Figure 3. PM&E meeting among suppliers and demanders.

The contribution of PM&E with respect to the service suppliers: The execution of the PM&E in the PITAs has generated changes in the service provided by the suppliers:

- The suppliers are beginning to use the PM&E information and are applying corrective measures in time, resulting in greater institutional commitment given the project's success.
- Likewise, PM&E has become a tool for finding out the demander's degree of satisfaction with respect to the execution of the activities; and based on this information, take actions in order to improve the quality of services.

According to the evaluations of the beneficiaries, these actions include optimizing the training sessions, the use of simpler terms and more graphics, as well as including more practice.

In this regard UNPFA (2004) mentions that PM&E is becoming a process that permits the different stakeholders to express their needs, interests and expectations. The process of dialogue and negotiation among the stakeholders that occurs in PM&E facilitates the conciliation of the stakeholders' divergent viewpoints.

The contribution of PM&E with respect to the demanders: With respect to the demanders (e.g., communities, associations, *sindicatos*, groups), using PM&E has shown that:

- The demanders feel committed to the project and have a positive attitude about contributing to it constructively.

- PM&E has become an instrument that helps transmit the demanders' suggestions to the suppliers and financiers to optimize the outcomes projected for the PITA. An example of the application of PM&E is that shortcomings were detected in the execution of activities by some PITAs such as the prolonged absence of the technicians from the project, inopportune delivery of materials, and unjustified delays in activities. PM&E enables the demanders to resolve these problems in the shortest time possible, through agreements with the supplier.
- Likewise, the demanders learn to evaluate the quality of the services provided by the supplier and request improvements in them, thereby strengthening their capacity for analysis, reflection and decision-making to ensure the success of their projects. This has enhanced the demanders' organizational and management capacity.
- In this respect UNPFA (2004) highlights the fact that in participatory evaluations, the stakeholders themselves identify and resolve project-related problems, which strengthens their capacity for participating actively in the fulfillment of the project's objectives instead of remaining passive beneficiaries of development assistance. Self-evaluation can help strengthen the associations among different stakeholders and increase their comprehension of the program's processes and end results.

Perspectives of PM&E in the FDTA-Chaco: The FDTA executives reason that if they have had good results with the PM&E methodology, these are not the total expression of its potential; therefore much greater advantage should be taken of it. FDTA already has evidence that the methodology works; therefore there is a readiness to include it in the institutional POA so that it can be applied in all the PITAs whose degree of execution is below 50%.

The following actions would have to be implemented prior to that:

- Continue the process of training farmer-leaders to disseminate the methodology among the project's demanders.
- Promote the organizational strengthening of the demander groups that will be implementing the PM&E.
- Disseminate the methodology among the suppliers of technology, emphasizing the fact that the results of the PM&E reports are inputs for improving their services.

Principal difficulties: It is important to mention some difficulties that were encountering during the process of implementing PM&E so that they can be taken into account in future processes or interventions.

At the level of the demander

- The organizations lack the capacity to convene the meetings of the association and do not have sufficient leadership to motivate the beneficiaries to implement the methodology.
- The distance (in some cases it reaches 100 km) between the communities benefiting from the PITAs causes delays of both of the implementation of the methodology by the technicians and of attending meetings of the association or training events on the part of the demanders.
- The transfer of knowledge of the methodology to the demanders requires time for their becoming familiar with the methodology and being motivated to implement it.

- The PM&E activities overlap with the harvest period (2 months) and the full-time dedication of the producer.

At the level of the supplier

Some suppliers are not sufficiently interested and willing to implement PM&E.

Conclusions

- It is important to institutionalize PM&E among all SIBTA actors, which means incorporating norms for their implementation in its bylaws and regulations.
- The FDTA supervisors have appropriated the principle of participation and acquired aptitudes for forming groups and mediation in order to establish an effective dialogue and discussion among suppliers and demanders, oriented toward accomplishing the objective.
- In the process of implementing the methodology, it is essential to coordinate activities with the technical teams of the suppliers to join forces in the PM&E process.
- PM&E strengthens the social organizations (producers associations, communities, capitánías and other groups) by letting them express their ideas and construct their own development processes.
- In many cases the PITAS cover several communities; therefore, in order to establish PM&E systems, it is important to generate and adapt strategies to each context.

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Livelihoods, Social Capital and Participatory Monitoring and Evaluation Approaches

*Luis Alfredo Hernández Romero*⁹⁷

Background

Participatory Monitoring and Evaluation (PM&E), Most Significant Change (MSC), Social Network Analysis (SNA) and Appreciative Inquiry (AI) could turn on important tools for strengthening social capital among others assets. This hypothesis remarks social relations and possible ways for its transformation through SNA and PM&E experiences in Colombia and others contexts in Latin America. This brief outlines five mechanisms through which social capital (SC) can potentially benefit livelihood outcomes.

Social capital and monitoring approaches

Regarding SC, the definitions vary according to the authors. As Chambers & Conway (1988) and Carney, (1998) put it, SC is a concept that tries to capture the essence of community life. They explain SC as one of the five capital assets (natural, financial, physical, human and social) required for a means of living. Putnam (1993) views SC as “features of social organization, such as trust, norms and networks, which can improve efficiency of society by facilitating coordinate actions.” Mignone (2003) goes one step farther by subsuming “*communities’ interactions*” under the term SC; thus communities work well or poorly based on the ways in which people interact. Higher levels of SC imply a culture of trust, participation, collective action and a norm of reciprocity. Higher levels of trust allow people to learn from each other, share information and enjoy more positive relations. Several researchers have written about SC in terms of the following five elements: social relationships, social networks, social norms and values, trust and resources.

All social relations have a potential for SC, but to be usable and to produce benefits they have to be transformed. Monitoring approaches such as PM&E, MSC, SNA and AI imply social relations or connections. These approaches can be used to study organizational change and community systems because they make visible who interacts with whom in the exchange of agricultural information and knowledge. Thus communities identify connections to others, opening doors to ideas, opinions and resources; that is, people and their connections provide a conduit for information. For example, MSC could be considered a form of PM&E. It is participatory because stakeholders are involved both in deciding the sort of change to be recorded and in analyzing the data. MSC has been likened to AI, and some people describe the way AI can be used in the M&E process too. AI is considered as a package of approaches used to study organizational change and community development. SNA depicts relations among ‘actors’; that is, people or groupings of people in weblike diagrams comprised of points and lines (Singer 2002). Relations can be of any type; e.g., relations in rural communities, like PM&E committees or information flow among stakeholders. People who are central in an advice network are actively engaged in both helping others and mutual problem-solving.

97. These ideas are part of my PhD thesis: “ Selection of Tropical Forages: Development of Participatory Procedures.”

According to the definition of PM&E (Patton, 1977), this tool offers a forum that allows different stakeholders to articulate their perspectives, to strengthen their organizations and promote institutional learning (evaluating process). In this context, PM&E leads to better work, encouraging a culture of trust, participation and collective action, which are features of social organizations with a high level of SC.

Entry points for monitoring approaches

According to Narayan and Pritchett (1999), there are five entry points for interventions: more efficacious government, solving common-pool problems, diffusion of innovations, lowering transaction costs, and informal insurance (http://www.caledonia.org.uk/soc_cap.htm).

More effective government

(A CIAL can be defined as a “farmers-run research service that is answerable to the local community,...experimenting locally unknown and unproven farming methods, to compare them with established practice” ASHBY et al. (2000).

At the beginning of the PM&E process, CIAL members construct the overall objective and the first specific objective is almost always to achieve strengthened CIAL groups. In some cases that means that they have to increase participation, levels of trust, motivation, etc. (Hernández 2003). There are with PM&E established to monitor CIAL objectives and increase their commitment, sense of ownership and self-determination (e.g., Fortaleza Carpintera, El Progreso and Santa María CIALs). The majority of CIALs with PM&E procedures have also established crucial relationships and networks, organized around common interests (see Fig. 1). There are CIALs organized to do research on common beans, cassava, sugarcane for panela, potatoes, raising chickens and hens.

Depending of their evolution, some CIALs begin interactions with external agencies for resources, training, or to influence polices. This is a clear example of how PM&E motivates government services to reevaluate their objectives and attitudes through understanding and negotiating the perspectives of the CIALs (e.g., PITA, Applied Technological Innovation Projects in Bolivia). The presence of relationships allows for better monitoring of government services and likely improved government delivery. A visible social network will help monitor and evaluate the impact of interventions. These social networks can take on many forms: community-level and along market chains. SNA, an ongoing project in the Fortaleza and El Progreso groups, has generated maps that will facilitate designing concrete interventions. Those maps showed the need to create new bridging, bonding and linking ties. These groups will try to start a contact sharing and exchange effort with other CIALs in the area. Another result is the conceptualizing of roles: How can they go outside to enrich their network; and how the weavers can transmit their knowledge to other members and in this manner share the weight of making (and keeping) valuable connections (Álvarez, 2005).

In summary, government officials are immersed in civil society through these participatory approaches and thus become more responsive to the needs of society when relationships (bridging and linking SC) are stronger and more numerous.

Diffusion of innovations

As noted in the analysis, monitoring approaches build connections among people, which means conduits or channels for information. Flow maps, networks and discussion forums resulting from PM&E processes allow different stakeholders to strengthen organizations and promote institutional learning. With better information regarding innovation, stakeholders are able to obtain benefits of new technologies more quickly. My hypothesis is that the snapshots provided by the network maps across time show a picture of and explain existing innovation technologies in each community, which will permit the group to identify systematic differences between innovators and less innovators (as baselines). For instance, CIAL-La Union in Piendamó, Cauca Province, has been testing maize and common bean varieties. In this way farmers increase and spread knowledge about new technology options inside and outside the community. In this case the flow of information also involves a scaling-up process.

Lowering transaction costs

High transaction costs are often cited as a limiting factor in rural development. In the context of market chains, PM&E and SNA will be able to identify bottlenecks in the flow of price information; distribution of profits within the different segments of value-chain information; and agricultural commodities, which must comply with certain quality standards. Nowadays, some CIALs know price information regarding the market chain of sugarcane for panela and marketing sour starch from cassava. Both cases are related to networks constructed around a market chain. Scaling the networks would drive down transaction costs, which in turn drives scaling up of the network (my hypothesis).

Informal insurance

One important indicator of SC is diversity of membership in community groups and local organizations. We found that some farmers belong to several groups. In Fortaleza Carpintereña, we identified several groups and organizations comprising farming groups and mother groups. CIALs with bridging SC, involving relationships, networks and adequate information about outcomes, are in a better position to pool risk and create informal insurance mechanisms. Such mechanisms may allow CIALs to invest in riskier activities. (It is important to remember that from the onset a CIAL fund is established to help absorb research risks.)

Solving common-pool problems

PM&E offers a forum in which stakeholders can articulate their perspectives through collective action. This includes decisions about rotating exchange labor or group labor for a number of farm operations such as planting, weeding, harvesting, raising chickens and quails, etc. CIAL-Fortaleza shows a most significant change in terms of the women's role in agricultural activities. The women are working on different issues: medicinal plants, raising animals, diets for chickens, and care of older people, among other activities. The Fortaleza CIAL represents the community of Carpintereña with increasing levels of SC. Communities with higher levels of SC are more able to take actions that avoid exploitation or common-pool resources being taken advantage of. In this case, the visualization of links and people through social-network maps helps identify positive roles for individuals and other actors

around them, and to design strategies for improving the intensity and quality of these relationships.

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Participatory Monitoring and Evaluation for Stakeholder Engagement, Assessment of Project Impacts, and for Institutional and Community Learning and Change

J. Njuki, S. Kaaria, C. Chitsike, and Pascal Sanginga⁹⁸

Background and Introduction

PM&E draws from 20 years of participatory research traditions including participatory action research (PAR), participatory learning and action (PLA), Participatory Rural Appraisal (PRA), and farming systems research (FSR) and farming participatory research (FPR). By the 1980s, concepts of participatory monitoring and evaluation had already entered the policy making domain of larger donor agencies and development organizations most notably the Food and Agriculture Organization (FAO), the United States Agency for International Development (USAID), the Danish International Development Agency (DANIDA), and the UK Department for International Development (DFID), the Swedish International Development Authority (SIDA), the Norwegian Agency for International Development (NORAD) and the World Bank. (Howes 1992). Outside the field of development, PM&E can also trace its beginnings in the private sector where there has been growing appreciation for individual and organizational learning (Raynard 1998).

PM&E involves stakeholders including local people in deciding how progress should be measured, in defining criteria for success and in determining how results should be acted upon (Guijt & Gaventa, 1998). PME strives to be an internal learning process that enables people to reflect on past experience, examine present realities, revisit objectives and define future strategies by recognizing differential stakeholders' priorities and negotiating their diverse claims and interests (Estrella et al., 2000). In these processes the local people are involved in developing indicators to measure change, in collecting and analyzing the data, and making a decision as to how to adjust the activities. PM&E is not a tool but a diverse constellation of approaches, methodologies and techniques. PM&E is not just a matter of using participatory techniques within a conventional monitoring and evaluation setting. It is about radically rethinking who initiates and undertakes the process, and who learns or benefits from the findings (IDS, 1998). PM&E systems provide a framework for collaborative learning and for involving project clients, participants and partners in the M&E process. PM&E produces important benefits including valid, timely and relevant information for management decision-making and project improvement within R&D institutions. It leads to improved accountability; examines assumptions on what is progress; can lead to contradictions and conflict; but can also be empowering by putting local people in charge, it helps in developing skills, and showing all stakeholders that their views count.

CIAT's approaches to developing a PM&E Systems

Community-Driven PM&E Systems: The CD-PM&E approach builds on the concepts and ideas developed by the Institute of Development Studies at the University of Sussex (Estrella et al., 2000; Guijt & Gaventa, 1998), the PIM concept developed by Germann et al. (1996), and more recently by Probst (2002). Probst's work focused on using PM&E as an

98. Scientists with Enabling Rural Innovation in Africa, CIAT-Africa, P O Box 6247, Kampala, Uganda.

instrument to support systematic reflection, learning, the generation of knowledge and process-oriented management at the community level. In community driven PM&E, community members themselves identify their own objectives and initiate activities to achieve these objectives. They develop their indicators for measuring progress towards achievement of the objectives; indicators to assess change, are in charge of the data collection and analysis, and finally use the PM&E results to adjust their activities. Community indicators are based on local experiences, perceptions and knowledge. The purpose of the community driven PM&E is to empower the local community to initiate control and take corrective action and to basically empower them to improve their social well-being. This type of PM&E approach is unique because of the emphasis on developing a system that is managed and supported by local communities, for their own purposes.

Community driven helps capture differences and different viewpoints from different groups within a community who may have different perspectives, aims and objectives. These differences may be due to their experiences, their social and cultural situations such as their wealth, gender among other things. By promoting participatory approaches, it gives the rural people a voice in their community. It is an important vehicle for increasing participation and improving accountability. Appropriate forms of PM&E help the local people manage their own affairs better, take more control of the projects and their aspirations and increase the likelihood that project-supported activities will continue after the project ends. It enables the community to look systematically at what they want to achieve by deciding their own goals, what they have done in that they reflect on their achievements, what they still need to do i.e. what action has to be taken and what changes they have seen by capturing differences and different viewpoints on their indicators. The amount of local control over the process can be assessed by considering who makes decisions (researchers or local people, and which local people or groups), who implements the activities, who analyses the information, and who is the research ultimately for- who will use the results of the research and how (McAllister, 1999).

Institutional level: At institutional level, different stakeholders involved in research and development projects including communities are involved in defining project objectives and activities, in deciding what should be monitored and evaluated. They contribute to the development of indicators to measure the achievement of objectives and the successful completion of activities. Roles for data collection and analysis are shared between the different stakeholders. Data and information collected is shared systematically by the stakeholders leading to learning and adjustment of activities and approaches and to the documentation of best practices. Within this institutional PM&E, communities or local stakeholders can be involved in various ways including during the planning stage,

This paper analyses experience with establishing project/institutional level and community-based PM&E in three countries; Uganda, Malawi, and Kenya and gives the results and changes that have been achieved at institutional and community level as a result of these systems. The objectives of this work were:

- To strengthen PM&E systems within R&D projects to critically analyze and understand the institutional learning and change process, to increase self-learning, cross learning, and to evaluate impacts;

- To establish an appropriate PM&E system at the community level that allows local people analyze and interpret change, to learn from their own experiences, to adjust strategies accordingly and to systematically evaluate progress and
- To develop strategies for the institutionalization of PM&E in R&D organizations

Methodology: The PM&E process

Figure 1 shows the steps that are involved in establishing PM&E both at community level and institutional level. The back and forward arrows between the two systems are steps were the two interface or feed into each other. Although the process is drawn as though it were linear, it is cyclical and the use of PM&E results lead into the planning process and into another cycle of monitoring. The reflection process occurs at most of the different stages of the PM&E process. As teams develop and agree on what to monitor, they are reflecting on past experiences and deciding what is achievable and what is not. Reflection at the end of the PM&E cycle enables the team to look at the key achievements and to plan a way forward. These steps are briefly described below.

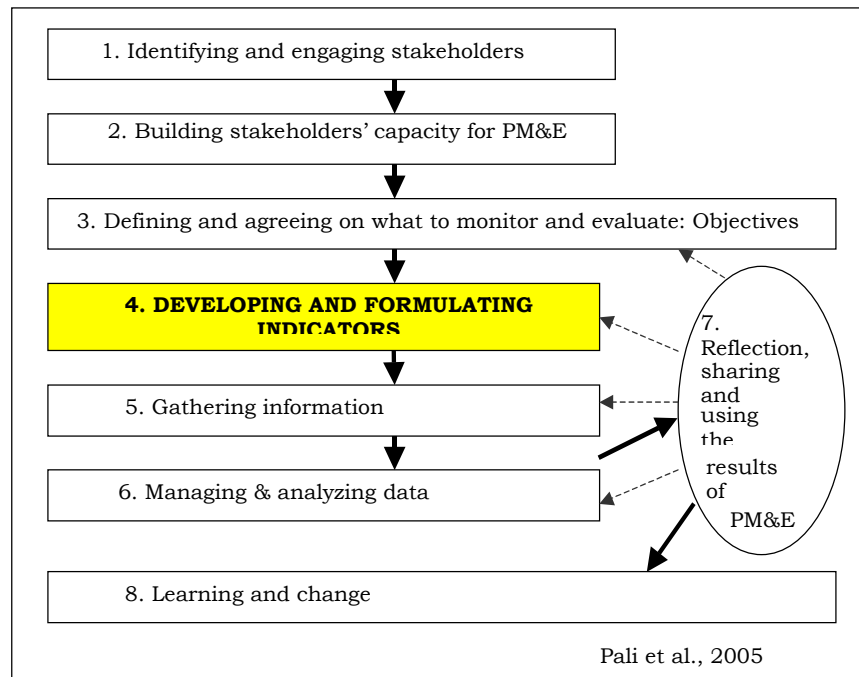


Figure 1. Steps in the PM&E.

Results and Discussion: Using the data from PM&E for Enhanced Decision-making

Stakeholder participation: Inclusion of different stakeholder perspectives in monitoring and evaluation: Through a direct participation in the monitoring and evaluation process, the PM&E process has allowed the different stakeholders involved in the projects project to better understand each other’s views and values, and to design ways to resolve competing or conflicting views and interests. Scientists especially have benefited from getting community perspectives and contributions in terms of what their objectives and

desired expectations are as well as providing more qualitative indicators for measuring progress to supplement the usually very quantitative measures that they use for monitoring.

Through this process, differences in indicators have emerged between the different stakeholders, between farmers and scientists and amongst farmers themselves especially between men and women (see Table 2), youth and the elderly, between different wealth levels and cultural backgrounds. For example, in Kitale, Kenya where communities are relatively well off with larger land sizes and large numbers of livestock, the indicators of improved food security are diversity of foods available for consumption and quantity food that households have in storage. On the other hand, in Mtwapa, Kenya where households are relatively poorer, the indicators for improved food security are increase in number of meals per day from one to three and availability of food throughout the year (no emphasis is made on quality). Although these indicators are related, their expressions reflect differences in well being of the different communities.

Table 2. Differences in indicators between men and women.

Result: Increased incomes from sale of beans	
Indicators from Men	Indicators from Women
<ul style="list-style-type: none"> • Income generating activities initiated • Increased ceremonies in the village • Good clothing –<i>Men wearing suits</i> • Good housing with iron sheet roof 	<ul style="list-style-type: none"> • More children being sent to secondary school • Good food (breakfast, good quality tea) • Women going to market weekly • Better clothing -- <i>women wearing new khangas, kodokodo,</i> • Increase in women membership in merry go-rounds (group savings and credit)

Some indicators are very specific to ethnic groups reflecting differences in culture and beliefs. For example, increased ceremonies are a common indicator of increased food availability among the Kenya coastal communities where ceremonies are part and parcel of their culture while this does not come up as an indicator with other communities. There were however still a lot of similarities in community expectations and indicators across different communities which provides an opportunity for a comparison of indicators across different sites and communities. Some of the differences in indicators between scientists and communities are that communities tend to focus more on the outcomes versus the specific outputs. For example, community indicators for improved soil fertility tend to differ significantly from scientists', whilst community indicators are more often related to increased yields rather than the nature of the soil itself. Community indicators combine both qualitative and quantitative measures while scientists' indicators are more quantitative and generic as the examples given in Table 3.

Table 3. Differences in indicators between scientists and farmers.

Outcome	Indicators
Improved soil fertility	<p>Quantitative Nutrient levels (carbon, phosphorus, macronutrients) Increase in yields</p> <p>Qualitative <i>Perception of farmers on change in soil quality (-colour, -type & presence of weeds, -texture)</i></p>
Increased food security	<p>Quantitative Amount of food stored and number of months with food / <i>Having Food throughout the year</i> Increased production (acreage and yields)</p> <p>Qualitative <i>Perception of men and women farmers of food availability and composition(e.g. Number of meals per day , -Quantity of meals, Composition of meals, Maize purchases, Amount of relief, Farmers looking for casual for casual labour)</i></p>

Given all these differences in perspectives and expectations, one of the key roles of facilitation in the PM&E process has been to ensure that all these differences are not conflicting and do not lead to parallel monitoring systems by ensuring that they are negotiated, understood and integrated in the monitoring and evaluation process.

Community organization and learning: The path from knowledge generation to knowledge utilization is direct in CD-PM&E because the same actors are involved in all activities. Once PM&E information is collected and analyzed the next step is reflection process that enables the community to discuss and communicate their PME results; provide a forum for exchanging and evaluating information; allow community members to systematically review and look back to the start of their activities, comparing it with where they are currently and to understand what has changed; and to allow all members to reflect on the progress of the project and to adjust it as required. Different tools have been used in the data analysis and presentation. Simple graphs, tables, role plays help to enhance the community understanding of the progress made their achievements and what needs to be adjusted. This has enabled communities to e.g calculate profit and loss, improve participation, keep group members active, re-orient project implementation, recognize and acknowledge their achievements, and more importantly take action to improve their activities.

Institutional organization and learning: PM&E at the project and institutional level has led to increased learning and better organization in the way the institution manages the research-development process and in the monitoring and evaluation. Scientists identified several aspects in the way in which they are engaging with communities: (1) An important change noted was that before the initiation of the PM&E system, scientists would develop a project and then take it to the farmers for implementation, however, now scientists are discussing and prioritizing issues with communities. The scientists feel they are now more practical and realistic and are better addressing the needs of the farmers they work

with. This is also reflected in the level of community understanding of what the scientists are doing with them. (2) Through the development of the 'impact chain' the projects have become more impact oriented especially within the adaptive research projects. Scientists are beginning to use questions such as 'so what?' as a strategy of orienting projects towards impacts. (3) The sharing of roles and responsibilities in the process is creating openness and reducing the suspicion that sometimes exists between scientists and communities. (4) A systematic process for generating, managing, collecting and analyzing data has led to a more robust PM&E system at the project level, which has improved project management. For example in KARI Mtwapa, a similar activity reporting format has been developed which is currently being applied across 5 projects. This format ensures that a comparative analysis can be conducted across projects and information on progress of activities can be collated and aggregated in a systematic manner.

Targeting and improving the project implementation process: As a result of the reflection process and the use of PM&E information, project activities and outputs are reviewed periodically and adjusted where and when necessary. Our results indicate that the PM&E systems have led to changes in the project implementation process. These changes vary from aspects such as better targeting of the beneficiaries or stakeholders, to more complex changes such as the addition of activities, adjustment of methodologies, as well as revision of the project objectives. For example in a Soya bean project in Kitale, Kenya, an activity on community multiplication and bulking was included after the team including research, extension and the farmers realized that the activity was crucial to the achievement of the results (increased incomes from sale of soya beans and improved nutrition) during a reflection meeting. They realized that the activity was crucial to the achievement of results although it had not been planned for during the project development. As farmers define future objectives they are able to bring in new activities that help them achieve these expected results. They are able to develop a strategy and a sequence of activities that are required to realize these objectives.

Identifying indicators to Measure Empowerment: While it has been very easy and straightforward to develop indicators and measure benefits from technological options, the development of indicators for benefits of participatory approaches has not been always easy. One of the key results of participatory processes is empowerment. There have been some attempts to measure empowerment especially in studies that want to demonstrate the impacts of an intervention on empowerment (Kabeer, 1999). Through the results from our work in Malawi and Uganda, communities have identified different indicators to measure empowerment from their own perspective: Empowerment entails a process of change from the inability to make a choice to a situation where persons can make choices. Different types of empowerment stand out: social and cultural empowerment, economic empowerment and political empowerment. Another distinction is between choices that have to do with allocation of resources (both physical and the rules and norms that govern the allocations), and choices to do with the freedom of action, bargaining, or negotiation and capacity to define their life choices. These choices may be strategic choices or non strategic choices. The indicators vary across sites and countries and depend largely on levels of poverty, cultural traditions, region and status of women in the community. Table 4 gives some indications of indicators from men and women for different types of empowerment.

Table 4. Types of empowerment and their indicators from communities.

Type of empowerment	Common indicators across communities
Economic empowerment	<ul style="list-style-type: none"> ▪ Women have small business of their own from which they can use money to fulfil their own needs (basic necessities such as matchbox without having to borrow) ▪ Acquire personal bank accounts for their money in their names ▪ Women can organise and establish revolving funds
Socio-Political empowerment	<p>Internal (household and community)</p> <ul style="list-style-type: none"> ▪ Equal representation in committees – having women who are active and effective in major committees in the community ▪ Women have the capacity to buy clothes or use their money without requesting for permission from their husbands ▪ Women being able to contribute and say their ideas in community meetings ▪ Women and the youth are involved in decision making processes at the household and in the community. Decisions are not only made by the elderly men and the village authority <p>Links with others</p> <ul style="list-style-type: none"> ▪ Capacity to approach the extension worker ▪ Capacity to negotiate for higher prices ▪ Self reliance in looking for services that the community members require e.g finding seed, market, and services from other organization ▪ Women and youth are to be found in key decision making bodies in the communities and outside
Access to physical resources and the rules and norms that govern them	<ul style="list-style-type: none"> ▪ Women to have their own plots which they can decide how to use. ▪ Ability to use their own money
Freedom of action, bargaining, or negotiation and capacity to define life choices	<ul style="list-style-type: none"> ▪ Girls will be going to school and not for early marriages ▪ Women to be self reliant ▪ Women can go out to distance markets buy goods and come to sell in the community without any restrictions (freedom of movement)

Key issues, challenges and lessons

The PM&E process has shown that when stakeholders such as farmers and the extension are involved in all stages including the development of the results and activities to be monitored, the indicators that will be monitored, the type of data to be collected and how it will be collected, it leads to a more robust monitoring and evaluation. The involvement of stakeholders in PM&E however requires a lot of negotiation, prioritization of issues and strategic collection of data for PM&E. More often the question has been to what extent or at what level different stakeholders should be involved. There is however some key issues that requires consideration to make the PM&E process more effective. These include but are not limited to:

Promoting a culture of reflection and learning: One of the key objectives of PM&E is to promote learning and use of information for decision making. Learning is however not an automatic process in organizations. People can feel threatened by the results PM&E. It can affect power structures by giving more decision making to more disadvantaged and less powerful people such as communities or the disadvantaged within communities. As a result of this, a change in attitude from one of being protective to one of being open to learning should be cultivated. The process should be given time and should not be rushed. It also implies that PM&E should not be seen as a one off activity but as a culture and a way of doing things.

Scaling out the PM&E and impact assessment process: How do we reach more communities and more projects with PM&E? One of the approaches and the easiest is to integrate PM&E into methodologies and approaches that projects are using in their implementation of activities, for example integrating PM&E into the FFS approach or the FRG approach. This means that as project teams implement the FFS curriculum, PM&E is part and parcel of the curriculum. This will of course imply refining the PM&E process so that it is shorter and easier to apply. A second approach is to apply the indicators from one community into communities with similar characteristic (cultural, socio-economic, ethnic, etc) or use results and indicators from other schools with similar technologies and geographical area to introduce new schools to PM&E. This however has its shortcomings as the communities may not have as much ownership to the results “imported” from other schools or communities compared to if they developed their results themselves.

Integrating gender and equity into PM&E: With participatory research, gender and equity concerns are central to the implementation process. More often than not, gender and equity has not been reflected in the PM&E performance frameworks. Gender and equity issues including participation, empowerment, changes in gender relations need to be negotiated by both the project teams and the communities so that they become part of the PM&E process.

Negotiation and sharing roles for PM&E: Data collection needs to be a shared responsibility between researchers, extension officers and farmers. Teams however need to be careful so that none of these become overwhelmed with the data collection. For example farmers should not collect data that is not of interest to them but only to scientists. Information should also be shared across all stakeholders; for example scientists should share their information with farmers and vice versa. A common assumption with regards to data collection by farmers has been that once farmers know the indicators they should collect data on, they will get on with it. More often than not, the capacity of farmers to collect and analyze data has to be built. This should however not be taken to the extent that researchers give farmers long complicated forms or data sheets in which to record data as this may deter them from collecting the data.

Standardization and comparability: Indicators and questions from PM&E will differ between projects if they are defined in a participatory way, which may make it difficult to compare outputs and outcomes of different participatory approaches between projects.

There are many challenges in setting up and implementing PM&E systems. Ensuring that PM&E does not just become a technical process-develop results, indicators, collect data and analyze. The learning aspect of PM&E needs very strong emphasis so that there is a balance between focus on the implementation and on the learning and the use of PM&E data

to take corrective measures and make decisions. Establishing and supporting PM&E systems is an expensive process, both in terms of time, human capital and material resources for initiating and sustaining M&E, and also because of the intensive facilitation required in the initial stages. In most cases, organizations will not have the skills that are required to support the process and these skills may need to be built before the process can take off. Due to the involvement of different stakeholders, strategies need to be developed to involve these different stakeholders. For example for CD-PM&E the use of graphics, identification of local vocabulary for some of the technical terms should be done.

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