FINAL TECHNICAL REPORT

“Involving Communities in Technology Generation and Decision-making affecting Natural Resource Management in the Honduran Hillsides”


The purpose for which funding was sought for a second phase (1997-2000) of the project Investigacion Participativa en Centroamerica (IPCA) was to “continue the development and consolidation of community-based agricultural research and technology generation in selected areas of Honduras” with the goal of strengthening farmers’ capacity to generate appropriate technology and to influence institutions of natural resource management. Our key partner in Honduras in this second phase of the project was the Escuela Agricola Panamericana (EAP), Zamorano.

The specific objectives were identified as follows:

- To consolidate baseline information on farmer circumstances and to document the impact of farmer participatory research on the process of technology generation and adoption.

- To facilitate collaboration between community-based farmer research teams (CIALS) and members of the watershed management consortia (CLODEST).

- To strengthen the capacity of members of the watershed management consortia to use the results of community-based farmer research and to monitor changes in natural resource management in the Tascalapa watershed.

- To integrate farmer participatory methodology into higher educational institutions of national importance in Honduras as well as into local research institutions and NGOs.

The impacts of the project were to be sought “through linkages to local and regional technology generating institutions, through training and follow-up to NGOs, through the training of post-secondary students, as well as through the full documentation and elaboration of research conducted to-date”. In particular, it was posited that:
a. "CIALs function as a means to strengthen the local level organizational and decision-making capacity of farmers (in disadvantaged eco-zones); this in turn could lead to more demand-driven research and to an improved technology generation and transfer process, as well as providing farmers a voice and vote in wider decision-making structures such as the CLOs, or watershed management consortia being built as part of CIAT's Hillside project.

b. "CIAL methodology contributes to better technology development (a more relevant and quicker evaluation process, as well as improved adoption and/or adaptation), applicable directly at the farm and community levels.

This report seeks to assess whether the project has met the outlined goal and achieved the intended impacts. These will be evaluated by means of the activities and measurable outputs laid out in the original proposal and presented below.

Objective 1

To consolidate baseline information on farmer circumstances and to document the impact of participatory research on the process of technology generation and adoption.

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A report detailing indicators selected to measure impacts was completed and submitted to IDRC in September 1998. Chosen indicators were:

Technical:
1. Reduction in burning
2. Reduction in ploughing
3. Increased use of soil conservation practices: live barriers, legumes, minimum and zero tillage
4. Increased sowing densities
5. Increased yields

Institutional:
6. Research institutions developing technology for testing by CIALs
7. Research institutions incorporating farmers’ knowledge and technology into their research
8. Members of Tascalpa watershed committees (CLODEST), Yoro supporting the extension of CIAL research in the watershed.
9. Interaction and exchange (cross-fertilization of ideas) among different CIALs.

Social Capital:
10. CIAL members’ ability to take control of local research on their own, organize accounts, hold meetings.
11. CIAL members actively participating in the CLODEST and in other organizations to communicate local needs, especially in the area of technology development.
12. CIAL members’ demonstrated capacity and willingness to share information and new knowledge with others.

Results

Reduction in Burning

None of the CIAL members in the Lake Yojoa use slash and burn agriculture any more. This cannot necessarily be attributed to the IPCA project, however. Some, encouraged by other projects, such as Program for Rural Reconstruction, had already abandoned the practice prior to the arrival of IPCA. In Yorito, approximately 70% of CIAL members no longer burn.

What the IPCA project has succeeded in doing is helping farmers find alternative ways to better manage their plots in the absence of burning. Thus in the Lake Yojoa area, farmers now routinely use chicken manure to fertilize their plots rather than relying on burnt vegetation. This innovation was almost entirely the result of the IPCA project and has extended beyond CIAL members to include large numbers of other farmers in CIAL communities. PRR, which transports inputs, such as chicken manure, to communities now regularly responds to requests for chicken manure to communities in its orbit, as it did not before IPCA’s arrival. The use of zero tillage (or in-row tillage amongst the users of chicken manure) is also common. Under zero tillage, farmers plant seeds directly into the soil using the traditional dibble stick and then either apply a herbicide (Gramoxone) to clear weeds or simply remove them by hand. In the latter case, the weeds are left
between the rows of crops to act as a dead barrier to minimize erosion. The introduction of this practice is a result of the IPCA project.

Some CIAL members on the north coast continue to burn (half of the members in the case of CIAL El Pital and 2 CIAL members in CIAL California). The rapid growth of vegetation in this area, coupled with the larger size of farmers’ properties associated with the frontier nature of much of the region, results in more fallow regeneration between crop cycles. In an effort to convince those who continue to burn, the men’s CIAL in El Pital in the Cangrejal watershed is running an experiment to compare yields under burn/no burn treatments. The CIAL is currently completing the third round of this experiment. Concurrent with this experiment, CIAL El Pital is also testing the traditional belief of planting according to the lunar cycle. In this case, there are four treatments representing each lunar phase and yields are evaluated and measured as each one is harvested. Both experiments demonstrate clearly CIAL members belief in the value of formal testing to evaluate traditional technologies against new options.

Reduction in Ploughing

In Yorito, farmers who have properties in the valley and in the foothills are accustomed to ploughing with oxen prior to planting their crops. Poorer farmers must generally wait while the ploughs are being used by the owners of the oxen teams and by those who can afford to pay a higher rental rate. One of the most successful changes in practice introduced through the CIALs is the use of minimum, or in-row tillage, and zero tillage. In the former case ploughing time is reduced since the oxen can cover a field with fewer turns while with zero tillage this cost is eliminated altogether, although herbicide usage is increased. Overall costs have been reduced and, since the soil is only opened up in the row where the seed is to be planted, soil erosion is also minimized. CIAL members with lowland properties have not needed too much convincing to adopt these two practices because of the obvious cost savings and because yields have not been negatively affected in the short term; in the long term yields are likely to increase as soil fertility is better conserved.

There are four lowland communities in Yorito where these practices have been/are being established through the CIALs. In Luquigue minimum tillage is practised by all of the 12 CIAL members who cultivate an estimated 12 hectares between them. Other community members have also adopted this practice. In Rio Arriba, 21 of the 25 farmers in the community now use either zero or minimum tillage. An estimated 21 hectares is thus affected. In La Savana de San Pedro and San Antonio (San Antonio is an all women’s CIAL) where the practices were more recently introduced, so far 2 and 3 CIAL members, respectively, are using minimum tillage practices.
Increased Use of Soil Conservation Practices

With additional funding from IDRC associated with Hurricane Mitch-related research, a variety of soil conservation practices were undertaken. Live barriers involving, Pigeon pea, sugar cane, King grass, prickly pear, Valerian, lemon grass were established in 12 communities in Yorito, covering 4,885 metres in total. In Lake Yojoa, live barriers were established in 8 communities, covering 7,689 metres. Materials employed in the latter case were similar with the addition of pineapples, Canavalia, Gliciridia sepium, ‘izote’, ‘Espada de San Miguel’; dead barriers included mulch, stone terraces. In addition, drainage ditches (acequias) were constructed in front of some of the barriers in Lake Yojoa for a total of 1,091 metres. In CIAL El Paraiso in Santa Barbara, members are testing out different live barriers and different distances between plants as their experiment. This is taking place over a number of cycles; CIAL members keep registers of yields associated with each type of barrier and distances between plants.

In Yorito, where the use of chicken manure has not been feasible because of the distance to chicken farms, green manures are being established. IPCA estimates that 52,953 sq metres of green manures were facilitated through the project. Principal species employed are Canavalia, Mucuna and Dolichos.

Finally, in Yorito, 22,000 trees were planted by CIAL members in 14 communities. These were mostly for the purpose of providing wood for lumber, for conserving water courses, fruit trees and for firewood.

In addition to direct funding for soil conservation and reconstruction after Hurricane Mitch, IDRC also funded student research into soil conservation. Research conducted by CURLA student, Elmer Canales, in the Lake Yojoa area, found that 92% of farmers interviewed felt that live barriers had afforded the best protection to their soils during the onslaught of Hurricane Mitch. By contrast, agroforestry systems were not recognized by farmers as having been useful in this regard (mainly because they were not laid out in a manner that actually affords adequate protection). Researcher conducted measurement showed that parcels with conservation were significantly less affected by soil loss than those without. Nevertheless, 43% of the parcels in Canales’ study demonstrated the effects of slippage, which occurred on plots both with and without soil conservation. Most farmers he found only attend to conservation measures whilst the Spring planting is underway; they tend to rest their plots during the postrera or Fall cycle and consequently abandon conservation work during this period. Thus it is generally necessary to reconstruct or clean up barriers and other conservation measures each Spring cycle. Because soil conservation is not well maintained throughout the year, soil fertility is negatively affected; blocked drainage ditches, leading to problems with sedimentation, represented the most frequent example of poorly maintained conservation structures.
According to Canales, such problems weakened live barriers and made them more susceptible to damage, and consequent upon this, soil erosion and slippage were more serious. Since hurricane season coincides with the fallow period, farmers must be made more aware of the dangers of this neglect.

Another student, Omar Gallardo, who was funded through the Mitch-program, researched the design of conservation measures adopted by farmers in Yorito. Live barriers were easily farmers’ first preference for soil conservation. His findings showed that farmers’ preferred King grass, Valerian and sugar cane for the first barrier because of their dense nature, rapid development, resistance to water currents, and wide availability in the communities. Less dense barriers, provided by Pigeon pea, did not serve this purpose according to farmers. However, this species worked well in the second level of barrier if King grass was in the first and Valerian worked well with sugar cane in the first row. Farmers elected species, such as King grass or sugar cane for the bottom row to prevent soil loss from the farmers’ parcel. Thus farmers combine species to come up with efficient erosion barriers, to diversify their parcels, and, at the same time, to provide their crops with sufficient light.

In terms of distance between live barriers, Gallardo found that farmers who had experience of them for some time on their properties, recognized that the steeper the slope, the closer the barriers had to be. On slopes of 20-30%, the distance should be 14-16 mts, 30-40%, 10-12 mts, 40-60%, 6-8 mts. Distance between barriers, also affected species selection; steeper slopes with shorter distances led to farmers selecting Valerian, Zacate, Canavalia, while Pigeon pea, sugar cane and King grass were recommended for larger distances. Farmers described as “passive” tended to use longer distances between rows, those described as “dynamic”, utilized shorter distances. The shorter the distance, the more care required, the more pruning needed, etc.

Gallardo’s excellent study, which was recently completed (July 2000), shows that farmers have acquired considerable knowledge about the use of soil conservation and that this should be employed in disseminating soil conservation more widely in the area of work. As in the case of CIAL El Paraíso, some of the CIALs might test out the informal findings through formal experiments. Gallardo’s study, when combined with CIAL work, is an excellent illustration of the utility of applied research and makes a strong case for the continuance of financing for student theses.

**Increased Sowing Densities**

This has increased in all locations. In general terms, the distance between plants and rows has decreased from around 1 metre to around 80-90cm. This has led to increased use of
seed per area planted. Thus in Yorito, estimated maize seed planted in the past was 17-20 lbs/manzana; now it is 20-25 lbs/mazana. At the same time that the amount of seed/mz utilized has increased, the number of seeds planted per hole has actually decreased from 4-6 seeds to 1-3, associated with the improvement in germplasm. Increased sowing density, in conjunction with use of improved varieties, has helped to raise yields.

**Increased Yields**

IPCA calculates that improved varieties, mainly Zamorano’s *Tio Canela* beans and *DICTA Guayape* maize, are being sown on 229 hectares/per annum by CIAL members. Because of Hurricane Mitch in 1998 and poor weather during the 1999 harvest which resulted in heavy losses particularly in Yorito, it is difficult to estimate reliable yield increases associated with the area under improved varieties. Indeed, interviews with CIAL members in Yorito regarding the use of *Tio Canela*, distributed through the Seeds of Hope program, suggest that they sustained particularly high yield losses because of wet weather. They contend that *Tio Canela* is more susceptible to water damage than their own local bean variety (*Concha Rosada*). However, *Tio Canela* is also worth about one-third more than their own variety on the local market and hence losses were partially compensated through the higher value of production.

In spite of the difficulties of measuring yield increases, in the case of CIAL Santa Cruz, farmers report that maize yields have doubled from 25 qq/mz to 50 qq/mz. resulting from the use of increased planting densities, improved cultural practices (eg. management of a phosphorous deficit problem (*sangre de toro*), improved fertilization (use of urea and green manures), improved seed (involving improved selection of local varieties and use of DICTA Guayape). Overall, farmers regularly report that they now “produce more on less land” as a result of practices learned through the CIALs. In the near future, once yields have been assessed for the Spring 2000 cycle (the harvest is only now being assessed), we hope to have more accurate results available.

**Institutional Change**

*Research Institutions developing technology for testing by CIALS*

One of the most evident changes brought about through the IPCA project has been the transformation in the relationship between Zamorano and CIAL members. Zamorano’s agricultural department under Dr. Juan Carlos Rosas now interacts with IPCA and CIAL members on a regular basis. For the past two years, IPCA has been actively participating as a partner institution with Zamorano in two participatory breeding projects involving maize and beans funded by programs of NORAD (Norwegian Government) and the
CGIAR System-wide Initiative on Participatory Research and Gender Analysis, respectively. The two participatory breeding projects are improving local crop varieties based on the criteria of CIAL members in Lake Yojoa and Yorito. Through the IPCA project, farmers’ varieties in the two regions were collected, along with their criteria for improving these varieties. In the past cycle, the first crosses from the farmers’ bean variety, Concha Rosada, were grown out in Yorito and CIAL members selected progeny (F3) from amongst the segregating populations. The first bean crosses involving the Lake Yojoa local variety, Vaina Blanca, and elite lines, will be placed in the ‘selection centre’ in La Buena Fe (PRR) in the Fall cycle (2000). The first progeny from the maize crosses will be ready to be placed in ‘selection centres’ in the 2001 Spring cycle.

The work to improve local varieties (criollos) of maize and beans has evoked substantial interest from CIAL members. Given the number of trials that most CIALs have now undertaken using improved varieties of maize and beans, farmers are keen to maintain and improve on their local varieties. Most of the newer varieties do not contain all the characteristics that farmers want, and most importantly, they are not always as well adapted to local conditions as their own. Thus while they may outperform local varieties under good conditions, they often fail to do so under more adverse circumstances (eg. the heavy rains of 1999). Moreover, farmers prefer the taste and texture of their own varieties. Thus the goal of participatory breeding is to breed into local varieties what the farmers want (eg. higher yields, better colour). By including farmers from the different CIALs in the actual process of selecting progeny, we may find variations in the varieties that farmers will be releasing in the future. The CIALs also become natural organizations for micro-enterprise to manage the release and maintenance of the new varieties. There are high expectations on the part of the CIAL members for the future of improved criollos which will be ready for release around 2002/3.

I accompanied Dr. Juan Carlos Rosas and two members of the IPCA team in June on a visit to experiment sites in Yorito. The CIAL experiments are being managed by CIALs with support from the paratecnicos trained by IPCA; the participatory breeding site (participatory selection site) is managed, with CIAL support, by a recent graduate from CURLA/former IPCA thesis student, Omar Gallardo. Dr. Rosas commented that the experimental design of the CIAL trials was better laid out than most of those in the experiment station at Zamorano. He also commented that for him IPCA is the perfect research partner. What is clear is that scientists at Zamorano do not have the time, nor the inter-personal skills to be able to interact on a frequent basis with CIAL members. They require an intermediary organization, such as IPCA. IPCA staff members’ qualifications as researchers (Jose Jimenez was previously director of the National Bean program, and both Juan Gonzales and Fredy Sierra are members of CURLA’s Research Department) make them very different from most other potential NGO partners. IPCA has the advantage therefore of being both a very credible local research organization as well as a
thoroughly 'farmer-first' centred institution: they are able to straddle the world of science and the world of poor farmers with admiration coming to them from their partners on either side. I would contend that good farmer participatory research can only be conducted satisfactorily within such a relationship.

Apart from participatory breeding work, Zamorano has supported the CIALs with materials not only for testing, but also for multiplication and release. In the case of CIAL El Paraiso which has tested bean varieties over various cycles, one variety, DICZA, always received the highest evaluations by CIAL members, in all rounds of experiment testing (prueba, comprobacion, produccion). According to Dr. Rosas, this variety had never been released because it never scored particularly well in national trials. After CIAL El Paraiso lost most of its DICZA seed because the CIAL could not plant it out in one growing season, Dr. Rosas readily agreed to support the CIAL by providing them with enough seed to plant two hectares under this variety. This variety will now be released by the CIAL. Dr. Rosas recently informed a meeting of experts involved in participatory breeding in Guatemala earlier this year that El Paraiso was indeed about to "liberate its own variety". To prove its support for the liberation of seed by farmers themselves, Zamorano is helping El Paraiso with seed bags with their own logo.

In the case of CIAL, Savana de San Pedro, Yorito, Zamorano has provided the CIAL with bean seed (Tio Canela) to set up a micro-enterprise. Again, this CIAL had gone through all the three testing phases of this bean and proven that it performed remarkably well in the valley in Yorito. CIAT recently donated an irrigation system to this CIAL to enable it to produce up to three bean crops per year and therefore to replicate materials for use by other communities.

These two examples clearly show Zamorano's (and CIAT's) willingness to work with the CIALs and indeed to support them actively in meeting their goals. This is not something that the Agronomy Department, under Dr. Rosas, had done in the past.

Finally, Zamorano developed a research project into heat tolerance in beans to deal with the problem of low yields affecting north coast farmers. The results of IPCA's work with the CIALs demonstrated clearly that in the primeravera cycle farmers were consistently forced to go high up the mountain sides in order to be able to produce beans. Problems of high heat and Web Blight negatively affected their yields. However, farmers' means to deal with the problem were having a very negative impact on the environment since farmers consistently choose the steepest slopes where water run-off was the most rapid in order to lower the effects of moisture and humidity. Zamorano is conducting research into this area through a Beans-CRSP program and it also hosted Cornell PhD student, Tom Porch, who worked with north coast CIAL, California, with IPCA's support, over a number of months. This thesis will be finished in the next few months. Juan Carlos
Rosas reports that new heat tolerant bean varieties will be ready for testing with local CIALs in the very near future.

*Research Institutions, eg. EAP-Zamorano, CIAT, DICTA incorporating farmers’ knowledge and technology into their research*

As discussed above, Zamorano is incorporating farmers’ criteria into their breeding program, as well as exploring the advantages of having farmers select progeny at an early stage of the breeding process. The costs and benefits of this approach are being assessed within the project. This will consider whether it is cost effective to involve farmers at an early phase in the breeding program, or whether conventional breeding makes more economic sense. IPCA’s costs will necessarily have to be factored into this equation. What is clear at the present time is that new institutional funding formulae will necessarily have to be designed for this type of program. As it stands, nearly all of the funding from the maize and bean projects has stayed with Zamorano and only a very small proportion (less than 15%, or approximately $10,000) has gone towards supporting the work at the local level (which includes gathering all the data on farmers’ criteria, maintaining the experimental plots, salary of one agronomist, transportation costs, etc.) despite the amount of time and resources that is actually required to do this. Funding organizations will have to be prepared to fund local partners separately if larger research institutions are unwilling to allocate the funds in a way that more accurately reflects actual costs.

IPCA’s interaction with DICTA was important and frequent in the early part of the second phase, just as it was in the first phase. In the past, we had a close relationship with personnel in the maize breeding program as well as in the bean program. Both programs, however, have now disappeared as DICTA seems to be on the verge of collapse. Thus, while in the past we were provided with materials for testing by the CIALs, this has now ended. As with Zamorano, IPCA provided DICTA scientists with the results of the farmer-led trials. Moreover, researchers from both DICTA and Zamorano have attended the CIAL’s national meeting, the *encuentro*, when farmer representatives of the different CIALs present their research findings to one another. Thus, both DICTA and Zamorano have had access to the farmers’ findings allowing them to incorporate this knowledge into their breeding programs.

IPCA has collaborated closely with CIAT, mostly at the Yorito site. In particular, IPCA worked with CIAT in its Seeds of Hope program after Hurricane Mitch. In this case, IPCA provided seed to CIAL communities and then recuperated the seed which had been multiplied up by the farmers. As mentioned earlier, much seed was lost or damaged because of very wet conditions at harvest time. This type of program, as with participatory breeding, depends on a great deal of effort by intermediary organizations,
such as IPCA. In this case, IPCA delivered seed, got farmers to sign contracts agreeing to repay it, and then had to go and collect the seed, sell it and return the money to CIAT. It required numerous visits to the different communities, trying to locate farmers particularly after the harvest. All this was done without any recompense. There was a good deal of ill feeling over this which I took up with members of the Hillside project both in Cali and in Tegucigalpa. There is a tendency to regard these kinds of services, provided by intermediary organizations, as free of cost apparently because they are humanitarian in nature. Participatory work of the type provided by IPCA has a cost associated with doing it, which has to be billed to the larger research centres that generally receive the donor funding. I am currently in the process of insisting that IPCA keep careful track of these expenses in order to be able to bill them in future. Even so, it would be difficult to capture the full operating costs of the IPCA project in this way and this makes it difficult to envision how as project such as IPCA could become self-sufficient as an intermediary organization, without outside sources of donor support.

IPCA is collaborating with CIAT in its SOL program in Yorito. The SOL concept (supermercado de opciones locales) has not been clearly set out and even staff at CIAT headquarters itself seem unclear as to what it involves. From my point of view, it appears to be a demonstration plot containing a number of different options that local stakeholders may evaluate and access. It also invites local institutions to set up their own SOLs (SOLECITOS) at different sites. Thus IPCA/CIALs have a SOLECITO in Mina Honda high up in the watershed where the new bean materials (participatory breeding work) are located, as well as a variety of other materials being tested by the CIALs. The idea is to have sites managed by different organizations across the Tascalpa watershed. Thus the concept is perhaps less novel than it might appear; rather it is a coordinated effort at running demonstration plots in one geographical area. The conflict between the CIAL work and the SOLECITOS may come when what the CIALs decide to test is different from what is considered novel from the scientists’ point of view. Because of the novel nature of participatory breeding involving the CIALs, so far this does not appear to be a problem.

Members of the Tascalapa Watershed committee (CLODEST), Yoro supporting the extension of CIAL research in the watershed.

This will be discussed separately below. A report on the integration of the CIALs into the CLODEST was given to IDRC in September, 2000.

Interaction and exchange (cross fertilization of ideas) among different CIALs
Since the IPCA project began, there have been three national meetings, known as the *encuentro*, involving CIAL representatives. This is a hugely popular event that has grown over the years from around 50 persons in attendance in 1997 to 120 in December 1999. CIAL members from Nicaragua have attended two of the *encuentros* in Honduras.

Needless to say, as the numbers have increased, the costs have risen from US$3,000 in 1996 to around US$7,000 in 1999. At the April 1998 encuentro which was attended by Jacqueline Ashby, Ann Braun and others from CIAT, Colombia, a video was made of the event which captured the extraordinary enthusiasm of those attending as well as the level of research competence achieved by CIAL members. At the event, farmers share ideas through formal presentations, as well as through poster displays. While the first event in 1997 was orchestrated and moderated by IPCA, by the 1999 *encuentro*, farmers moderated the whole event themselves. It was quite superb. This demonstration, in conjunction with the marked improvement in presentations and explanations about the experiments themselves, help to verify the degree of empowerment acquired through the CIAL process.

At the regional level ideas are exchanged through the local chapter of the ASOCIAL. This is a national network of CIAL members organized through regional chapters. Executive members meet on a monthly basis at the regional level to discuss projects, group issues, the organization of events, etc. Research results are shared between members at the regional level and decisions are made in the ASOCIAL around which results to share with other CIALs through formal presentations at the national *encuentro*.

**Social Capital**

*cial members' ability to take control of local research on their own, organize accounts, hold meetings*

Beginning in August 1999, doctoral student Kirsten Probst from the University of Hohenheim was assigned by CIAT to work with the CIALs in Yorito in developing a process of monitoring and evaluation. The methodology has turned out to be extremely useful for monitoring the 'health' of group dynamics involving the CIALs. CIAL members elect indicators to demonstrate the progress of the group; these include frequency of meetings, punctuality, group savings, transparency of handling CIAL funds, etc. In short, the M&E methodology is a mechanism to gauge improvements in the development of social capital.

At the outset, just two CIALs were selected as pilot projects for testing the methodology; this was subsequently expanded to two more. After a full year of testing, the methodology is being applied to all CIALs in Yorito. In the pilot CIALs, progress was noted towards
improving group work in three of the cases measurable through the indicators selected; in
the fourth case, progress had not been made, although the methodology made members
conscious of this and therefore it was considered a useful tool for improving the situation.
If the CIALs are to evolve into microenterprise, clearly an effort has to be made to help
members work as a group and to become accountable as a group, etc. Therefore, a
methodology that helps to make members more aware of the group process is a valuable
instrument. It should be noted, however, that CIALs need support in administering this
methodology and a graduate from the Instituto San Pedro has been hired to manage the
evaluation with the CIALs. Fredy Sierra has directed this work on behalf of the CIAT and
Kirsten Probst. Funding was recently organized through the PRGA to maintain the M&E
component for six months after Kirsten Probst returns to Germany to write up her thesis.
Thus, M&E methodology while valuable, does carry a cost which increases the overall
cost of maintaining the CIALs (US$3,600/year).

**CIAL members actively participating in the CLODEST and in other organizations to
communicate local needs, especially in the area of technology development**

Discussion of CIAL members' participation in the CLODEST will be dealt with below.
It is also discussed in the recent report submitted to IDRC in September.

**CIAL members demonstrated capacity and willingness to share information and new
knowledge with others**

As discussed in the report submitted to IDRC in September 1999 (now ODI AgREN
Paper 104, July, 2000), the CIALs are no longer the elitist organizations that some of
them tended to be at the outset. By opening up the CIALs to any interested person, the
CIALs have become more community-focused, rather than vehicles for enabling the
more powerful in the communities to access information and knowledge which they had a
tendency to keep to themselves. As we point out in the paper, the more open CIAL
process, which is likely to result in the inclusion of more women and illiterate farmers
than were present in the earlier CIALs, also means that the CIAL methodology may take
longer to instill. This will carry a higher cost since more visits by the agronomist will be
required. Nevertheless, the CIALs in existence today are well positioned to act as
vehicles for community development and indeed, have spawned a number of separate
projects through the ASOCIAL structure in most of the communities where they operate.

The evidence shows that the CIALs are an effective means to involve communities in
technology development. They are also an effective vehicle for supporting wider efforts
at community development and local empowerment. In the five years that IPCA has
operated, CIAL members have been transformed through the CIAL process. Some of the farmers, who had never had a public role before, have become spokespersons for their communities. They are connected to researchers and scientists, they know how to access new information through new networks, and they are not afraid to stand up and tell people about their experiences. In my opinion, these other aspects of the CIAL process are as important as participatory research.

1. ii. Scholarship for doctoral thesis dealing with conflicts in NRM in Yoro area

Two progress reports to be submitted by student during fieldwork period (R. DeVries)

This was cancelled as the student for whom it was planned left the doctoral program for reasons of health. With IDRC’s approval the money was transferred to IPCA to help compensate for the decline in the value of the Canadian dollar during the first year of the project. I met this year with Olaf Westerman, CIAT, and we discussed the possibility of including the case study of land tenure conflicts in Lugique in his doctoral research.

1.iii. 3 course buy-outs for Guelph professor for project research, student supervision and administration

Article for publication on development of CIALs in Honduras (September 1999, S. Humphries). Document on integration of CIALs into CLODEST (September 2000, S. Humphries). Trip Reports (S. Humphries).

The course buy-outs permitted me greater freedom to travel to Honduras in the winter semester when I only had one course to teach. The buy-outs also freed up time for administering the project. I have been in weekly, and frequently daily, contact with the IPCA project through email throughout the three year period. I have also managed the funding, receipts, accounts, etc. at the University primarily with support from the Office of Research. I supervised two graduate student theses in Honduras (A. Beaudette, H. Gregoire) and sat on the committee of another (E. Sifton). Finally, I collected field data of my own during the summer months and wrote up the findings as per the schedule of output (reports of September 1999, September 2000).
In the past six months or so I have been working to organize continued funding of the IPCA project with USC-Canada under their Seeds of Survival Program. At the present time, this has been guaranteed until next April. In the meantime I am trying to organize a collaboration between Seeds of Survival, CIAT and Guelph. The hope is to collaborate both in Central America and in Southern Africa.


It is also available on the internet at [www.odi.org.uk/agren/publist.html](http://www.odi.org.uk/agren/publist.html).

A translation of the above publication into Spanish is currently being prepared for dissemination in Honduras.

**Objective 2**

*Facilitate collaboration between community-based farmer research teams (CIALs) and members of the watershed management consortia*

| 2.1. Increase the number of CIALs from 3 to 10 in the Tascalapa watershed | To be completed by late 1997/early 1998. Process to be documented in report as well as article on CIALs |

The number of CIALs in the Tascalapa watershed increased rapidly from 3 to 20. The current number stands at 16. In other words, we overshot the target considerably. The demand for CIALs has been strong from the outset. The number of CIALs in excess of the target was in part due to the demand for women-only CIALs in Yorito, which in three communities coexisted alongside mens CIALs. Overtime, however, these have merged into mixed CIALs, where women dominate numerically. In particular, in native Tolupan communities the men’s CIALs have not been successful and they have folded; those men who continued to be interested in the CIAL work joined the women’s groups where they form a minority. The lack of interest from indigenous men is mainly because of their keen interest in logging, particularly once they received official rights to the land in 1999. This, however, poses an on-going problem in the Tascalapa watershed since most non-native residents are against it, particularly where it will affect down-stream communities.
The high demand for CIALs in Yorito is almost certainly influenced by the popularity of Jose Jimenez who has led the CIAL process there. He is well-known by most and his reputation as an agronomist and farmer-first supporter is second to none in the region. His charisma cannot be dismissed from the success of the CIALs or indeed for winning the support of research institutions, such as Zamorano. Both he, and Juan Gonzales who works in the Lake Yojoa area and the north coast, are highly committed to the CIAL process. As researchers they are motivated by the experiments, and as human beings, by the relationships that develop between them and CIAL members. These affective ties are powerful motivators for all concerned and cannot be overlooked in the success of the CIALs.

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<tr>
<th>2.ii. Increase communications with CIAT</th>
<th>Monthly report to be sent to CIAT, Tegucigalpa by IPCA. Results of experiments to be reported after each crop cycle. Regular meetings to take place in Yoro with CIAT and IPCA representatives.</th>
</tr>
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</table>

The written communications anticipated between IPCA and CIAT did not occur. IPCA staff are generally not good at written communications. However, in all fairness to them, since Jose Jimenez is in the field for more than three weeks of each month, where he has had no access to a computer or, until recently, to a telephone, written communication was not feasible. Moreover, once CIAT moved its local office from Yoro to Yorito, daily contact has occurred between IPCA and Luis Brisuela, the CIAT representative in the field. Relations between IPCA and CIAT at this level have been excellent. Where problems have arisen has been higher up the hierarchy. Quite simply, there has been a tendency on the part of some CIAT staff to regard IPCA as part of their project and to simply expect IPCA to perform certain functions to support its own programming. I, for one, have opposed this particularly when it has meant increased operating costs for the IPCA project which were not budgetted.

| 2.iii. Increased Linkages/Communications with Agronomy Dept. Zamorano | Monthly reports to be submitted to Zamorano by IPCA. Reports to be submitted after each crop cycle. Dr. Rosas to visit CIALs on a regular basis |
As mentioned in the section on indicators, the relationship with Zamorano has been excellent. IPCA has provided information to Zamorano resulting from trials run by the CIALs and the two-way flow of information between the two organizations has been frequent and continuous throughout the three-year program. As mentioned, the only irritant has been Zamorano’s tendency to maintain most of the funds for participatory breeding, rather than parcelling them out to collaborating institutions.

<table>
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<tr>
<th>2.iv. Increase linkages with DICTA/FHIA</th>
<th>CIALS to evaluate the work of these institutions in their region</th>
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</table>

Discussion of the relationship with DICTA has been dealt with earlier. In the first two years the relationship was good and both parties benefited. After Hurricane Mitch, DICTA’s research capacity has more or less collapsed. Our relationship with FHIA has not been frequent in this phase of the project. This has mainly been conditioned by the decline in the number of CIALs on the north coast where FHIA is active in cacao research and extension. In other words, the shift in focus to Yorito and Lake Yojoa has affected the frequency of contact with FHIA personnel. The IPCA project should probably have made more effort to foster the relationship further. On a recent visit to Honduras, Carlos Quiros, a close personal friend of the director of FHIA, accompanied IPCA on a visit to FHIA to renew the relationship. Clearly, IPCA can benefit from access to germplasm for agroforestry development.

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<tr>
<th>2.v. Utilize the experiences of CIPASLA, Colombia to guide the CLODEST</th>
<th>Obtain information from Colombia as it becomes available</th>
</tr>
</thead>
</table>

Jorge Alonso Beltran who was instrumental in setting up CIPASLA in Colombia moved to Nicaragua and has visited Yorito reasonably frequently in order to help guide the CLODEST. My comments on the nature of CIAT’s interaction in the CLODEST are documented in the report submitted to IDRC in September 2000. As mentioned in this, I do not believe that one-day flying visits are the best way to organize such activities. Notwithstanding the fact that Jorge Beltran has an excellent grasp of participatory approaches (background in IPRA) and has been a positive influence on the process, because of the distances involved travelling between Nicaragua and Honduras, it has been difficult to coordinate discussions between the three-member, grupo de apoyo. The quick trips between Tegucigalpa and Yorito on the part of IICA have further complicated this. Consequently, each member of the grupo has tended to act independently, preventing the development of a coordinated strategy to guide the CLODEST.

Nothing about CIALs + CIPASLA in Honduras, Nicaragua
2.vi. Consolidate existing CIALs in zones outside benchmark area  Document CIAL experience in report and article

As discussed in the report submitted to IDRC in September 1999, north coast CIALs have been difficult to maintain. Of the seven that were originally set up between 1993-6, only 2 have continued. Reasons for the lack of success are varied. In the case of San Francisco de Saco, the group’s decision to discontinue participatory research in 1998 was due in part to the departure to the United States of a couple of key players in the CIAL and, more importantly, because the group, which grew considerably after it also became a credit association, led to it becoming more interested in the credit activities than in research. This group, originally based on the CIAL, has now amassed close to $10,000 in savings and is considered one of the most successful rural credit groups in the country. I believe that we should consider this a success, not a failure. The credit association developed out of the social organization of the CIAL. Moreover, IPCA continues to have an excellent relationship with former CIAL members. I believe this to be a good indication of community development that the CIALs have helped to instigate.

In the case of CIALs in Rio Cuero (Recreo and San Marcos), Santiago Arriba, Los Limpios and El Zapote the role of other organizations, which had far more resources to offer farmers than IPCA (eg. the CIDA-supported PDBL project), led to loss of interest by farmers. Moreover, in the early days of the IPCA program, we focused almost exclusively on the experiments, which we later found was not sufficient to maintain farmer interest. High levels of poverty has made it necessary to include income-generating projects alongside the experiments. Thus later on the CIAL experiment work was supported through collective grain plots which helped to remunerate the efforts of the members in research activities. Finally, on the north coast, farmers are not up against the same constraints that they are in Yorito and Lake Yojoa. Properties are on average larger, and resources more abundant. Because of nearly year-round rainfall, two, or even three, crops per year may be produced. Thus the incentive to intensify production is simply not there. The fallow crisis which has long since hit most parts of Honduras, is only now becoming apparent on the north coast. Moreover, Velvet Bean, which grows rapidly with almost immediate effect on yield (as it does not in drier areas), is commonly employed to maintain soil fertility. Thus the problems facing farmers are quite simply not as serious as in other parts of the country. The two north coast CIALs that have continued to prosper (El Pital, California) are both in more established communities where declining fertility is more apparent. They are also two communities where other projects are absent.

In the Lake Yojoa area, the CIALs have prospered. As discussed in the technical report submitted at the end of Phase 1, our relationship with the Program for Rural Reconstruction, located in Lake Yojoa district, had been somewhat strained at the outset.
By bringing the CIAL concept into communities supported by PRR’s paratechnical staff, we increased the amount of work they were expected to do. Since they were poorly paid and devoted part of their time to money-making activities, the extra work they were expected to do led to poor relations between IPCA and PRR. When those most vocally opposed to IPCA’s presence left PRR, and World Accord, the Waterloo-based NGO which supports PRR financially, got a new program officer, things started to change. Martin Wolf, the new program officer and a graduate of Guelph’s International Development program, became interested in the CIAL methodology and began to support PRR’s work with the CIALs. Indeed, upon reading the IPCA report (September 1999), he has made some of the funding to PRR contingent upon increasing the number of CIALs. PRR now supports 5 CIALs, while IPCA supports 7. (World Neighbours has also started some CIALs in the region). IPCA provides leadership in training, organization, etc to CIALs supported by these other NGOs. Our relationship with PRR now is excellent and World Accord considers PRR to have really turned around in large measure as a consequence of this relationship with IPCA. We are planning joint activities.

| 2.vi. Establish regional associations of CIALs in Yoro and Lake Yojoa | One or two meetings of regional associations to take place each year. Report on meetings at project year end. |

Associations of CIAL, known by the acronym, ASOCIAL, have been set up in Yorito and Lake Yojoa. There are four chapters of the ASOCIAL in total: apart from the two IPCA supported chapter, there is one in Francisco Morazan where FEPROH is located, and one in Paraiso, supported by Zamorano. In total, there are 522 CIAL members across the country, excluding newer WN members. In Lake Yojoa, a representative from each CIAL forms the executive of the ASOCIALAYO; in Yorito, representatives were elected by the CIALs to a smaller executive ASOCIAL Yorito board. This board meets once a month.

ASOCIALAYO representatives maintain a plot in the experiment station in return for seed for CIAL members at the end of the season; in Yorito, ASOCIAL members have obtained group loans for productive projects through the CLODEST. In this way, the ASOCIAL chapters provide a mechanism for wider community development efforts.

Recently, representatives of the different ASOCIAL chapters met with a lawyer to discuss ways to incorporate the association. ASOCIAL representatives from each chapter also put forward their hopes for the association so that these ideas can be incorporated into the structure. The goal is to incorporate the ASOCIAL in the future so that it may solicit its own funds, pay its own technical and paratechnical staff, etc. This follows the model of incorporation of the CIALs in Colombia.
2.vii. a. Socio-economist to gather information on farmer experiments/local practices | Report available during second year of project
---|---
b. Socio-economist to set up focus/study groups to gather information as required by CLODEST | As need arises
c. Socio-economist to set up database on all farmer experiments conducted by CIALS | To be set up during Year 1 of project. Computer to be purchased at the outset of Phase II

a. As discussed in September 1999 report, we have not found much evidence of proactive farmers’ experiments. But, as indicated, this is likely because the CIAL method, which teaches farmers to run formal trials, has the effect of suppressing farmers’ recognition of their own informally run experiments. Clearly, Gallardo’s findings vis-à-vis farmers’ experience with different live barriers shows that farmers do conduct informal experiments. Once farmers are taught to run formal experiments, however, this stimulates them into new ways of thinking leading to future experimentation. Thus CIAL members commonly run mini-experiments on their plots even while the main CIAL experiment is being conducted. As with the previously cited examples of lunar phase experiments and measuring the effects of slash and burn, once understood, formal testing becomes part of cultural practice which farmers readily incorporate into the craft of agriculture.

One area of traditional knowledge that is been carefully recorded by IPCA concerns farmers’ varieties of maize and beans. In Yorito, focus groups have been organized to discuss the different histories of different varieties, their traits, etc. Another was recently conducted in El Pital, Atlantida and groups will shortly be set up in Santa Barbara. This information serves as background to the participatory breeding effort that is currently underway and to generally document the history of varieties and losses in agrobiodiversity in the different regions. In Lake Yojoa, a collection of farmers’ varieties is being mounted in La Buena Fe, PRR. In future, this information will be written up in support of the participatory breeding work which is being undertaken.

b. As discussed in the September 2000 report on the CLODEST, the watershed committee lacks the centralized organization to evaluate its projects and to gather information collectively. Consequently, collective research has been non-existent. Because the grupo de apoyo has not adopted a common strategy, each member tends to pursue its own project goals as discussed earlier. This is equally true of IICA, CIAT, and IPCA.
c. Two computers were purchased at the outset of Phase II of the IPCA project. One is housed in the Instituto San Pedro, the other in the IPCA office in La Ceiba.

IPCA maintains a record of all experiments. However, IPRA has asked that the information be stored in a format compatible with its own and other CIAL projects so that this information can be readily accessed by all. I believe it is relevant to ask who owns this information. Can it be freely used by IPRA, or any other organization? Can this information be employed for research and publishing purposes? I was recently asked (after a proposal had been written) if CIAT and IFPRI could conduct an impact assessment based on the CIALs in Honduras (principally on those of IPCA). I objected and the proposal was not submitted. Just as participatory breeding opens up all sorts of questions around intellectual property rights, a methodology, such as the CIAL method, also opens up many ‘ownership’ questions.

| 2. viii. Key CIAL members to be trained as paraprofessionals | Training to begin as soon as possible |

IPCA has trained 8 paraprofessionals. In Yorito, 4-5 paraprofessionals work on a part-time basis with the CIALs. One day every two weeks/month is spent in the office, recording their activities. Jose Jimenez devotes a considerable amount of time working with these individuals. All of them are well trained and proficient at their jobs. There is one woman who works mainly with the women’s CIALs; the other 4 are men. Most of these individuals are also ‘facilitators’ who are being trained by IICA as part of their CLODEST program. This clearly helps IPCA with its own capacity-building effort.

In Yorito, Juan Gonzales has trained 3 new paraprofessionals who will shortly begin part-time work with the project. Up to now he has worked with PRR’s paraprofessionals. This has always been a somewhat awkward relationship because they were primarily working for PRR, even though IPCA paid them an additional incentive to cover the extra work expected of them. Nevertheless, there was a tendency to only do this additional work when Juan Gonzales was present and to continue with more traditional PRR activities when he was not. The IPCA-trained paraprofessionals will work exclusively with the CIALs.

Role e importance?
There have been 3 annual CIAL meetings. These were held in April 1997, April 1998, and December 1999. Because of Hurricane Mitch in November 1998, the Spring meeting in 1999 was delayed until the end of the year. Experiments were frequently lost because of the hurricane and therefore many CIALs had no findings to report from 1998 spring cycle. By delaying it until the end of 1999, CIALs could report findings from that year’s spring cycle. Because of this, we have not scheduled a meeting in 2000. IPCA plans to organize one for April 2001. A summary of experiments presented at each of the meetings has been produced by IPCA. As the event has become larger, producing such a document has become quite time consuming and costly. As mentioned earlier, in 1999 it cost around $7,000-8,000 to run the encuentro and to produce the proceedings. Most of the cost was carried by IPCA. CIAT provided $3,000 from funding from its Seeds of Hope program.

A video was produced of the 1998 encuentro. This is in Spanish and funding has not yet been found to produce a sub-titled version in English. The video clearly shows the empowerment of CIAL members that has taken place through participatory research activities.

**Objective 3**

*To strengthen the capacity of members of the watershed management consortia to use the results of community-based farmer research and to monitor changes in natural resource management in the Tascalapa watershed*

*1.i. Strengthen the role of the ‘comision de produccion y medio ambiente’ (CPMA) within the CLODEST*

*Activities to be agreed on by consensus between members following training in group dynamics, conflict management and consensus-building*

As discussed in the September 2000 report, the CPMA, which was renamed COAMA (Comision de Agricultura y Medioambiente), has become synonymous with the ASOCIAL Yorito. The coordinator of COAMA is also the national director of the ASOCIAL and a member of the executive of the local ASOCIAL. In the past, COAMA
supported-projects were not exclusively for CIAL members but this year support has only gone as credit against CIAL mini-projects in an effort to make the projects more sustainable than those in the past.

COAMA has not become involved in conflict resolution; nor has any other group within the CLODEST. While a training session in conflict resolution was introduced in the first year of Phase II of the IPCA project, this was supply-driven; it was not something that local people demanded. There are serious conflicts over land in Yorito, especially in Luquique. Indeed, a member of the CLODEST was murdered during 1999 in a conflict that some said was land-related. However, the local population has not called for conflict resolution, nor has the mayor and council supported such an initiative. As the CLODEST has become more narrowly focused on project execution and support, as discussed in the September 2000 report, rather than on the larger issue of concertacion, such macro-concerns are lost from view. Associated with this narrowing of vision, is the withdrawal of most professionals from the CLODEST committee.

### 2.ii. Identify, recruit and train lead CIAL farmers to become active members of the CPMA

| Funds to be made available for travel, contingent expenses associated with meetings |

At the outset, IPCA paid a day of labour to CIAL members to encourage each CIAL to send a member to the meetings of the general assembly. Meetings were dominated at the time by school teachers and other professionals and the farmers were alienated from the proceedings. Indeed, the only reason they attended was because they received their day's wage.

As the ASOCIAL became organized and members took up formal positions with the CLODEST, CIAL members no longer take a back seat at meetings. Indeed, as discussed in the September 2000 report, farmers now account for a substantial proportion of the CLODEST membership and play a major role in shaping activities through their role on the executive board.

### 2.iii. Provide logistical and financial support to CPMA to increase profile of committee within watershed

| Provide annual support of CAD$6,500 to CLODEST. Terms of reference associated with fund dictate that small farmers, women and native leaders be the main beneficiaries of early training |

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The bulk of the $6,500 provided to the CLODEST in each of the years over the past three years has gone to support the activities of COAMA. A smaller amount has funded CLODEST administrative and personnel support (e.g. part of secretary’s salary, half of motor bicycle used by CLODEST technical assistant, painting and rehabilitation of CLODEST office). The funds for COAMA have supported an adult literacy program in CIAL communities, two phases of a vegetable-growing program in CIAL communities, a community development project undertaken by school teachers in one CIAL community, and credit for CIAL mini-projects. Women have been the main recipients of COAMA projects through the vegetable program and, since they now make up the majority of CIAL members in Yorito, through credit to the mini-project program. Native leaders have not participated in COAMA. Moreover, while men from native communities originally formed two CIALs, they soon left to engage in logging work. Women dominate in CIALs located in two native communities.

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<tr>
<th>2.iv. Promote, train and support the extension of participatory methodologies to organizations within the watershed</th>
<th>Provide presentations on CIAL methodology as demanded. Invite support from other organizations (ISG) working in participatory learning and the management of pluralism.</th>
</tr>
</thead>
</table>

IPCA has provided support in farmer participatory research to SERTEDESO and to PDA (World Vision). Both NGOs began by supporting their own CIALs but later abandoned them. As we discussed in the September 1999 report, teaching poor and often illiterate farmers the CIAL methodology is not an undertaking to be taken lightly. It requires prolonged support and a real interest in research on the part of the NGOs. If this is not forthcoming, the CIALs will not prosper. Neither SERTEDESO, nor PDA received funding specifically for their work with CIALs; rather it was an extra item on the agenda along with their other activities in the communities. Once the onerous nature of the CIAL work was appreciated, coupled with the lack of financing for this work, both NGOs abandoned their CIALs and IPCA was left to continue support. Where the CIALs have flourished, it is because the support organizations were committed to research; the CIALs are not institutions that can be left without support, at least not in the early years following set up. Paratechnical support may substitute for agronomic support but training paraprofessionals is also time-consuming.

- IDRC’s plan to include other organizations, such as ISG, did not come about.

24
As mentioned above, conflict resolution training was brought in during the first year. Steve Sherwood spent a few days in Yorito with the CLODEST discussing different cases and approaches used, but his visit was not followed up by CLODEST members. The desire to include conflict resolution was driven by donor interest, not by local people. This is not to say that conflict resolution is not required; it clearly is and tensions have increased in the conflict between Luquique and the native community situated above it which wants to log the surrounding hillsides. However, local leaders have not supported an initiative to try to resolve this issue. Since COHDEFOR is behind the loggers, the mayor and council are in an awkward position. As it stands, Luquique residents alone are blocking the entrance to all equipment and so far have succeeded in staving off the assault on the watershed.

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<tr>
<th>3.vi. Computer to be purchased for CLODEST</th>
<th>CIAT GIS database installed in Yorito by IDRC intern in Fall, 1997.</th>
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A computer was purchased in 1997 but the GIS database could not be installed at the time of G. Rusnak's visit. It has not been installed by CIAT in the subsequent years.

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<tr>
<th>3.vii. Seek ways to integrate faculty and students of San Pedro Institute into monitoring activities</th>
<th>IDRC intern to organize study group, Fall, 1997. Process written up as MA thesis.</th>
</tr>
</thead>
</table>

As far as I know, this was completed. However, I have not seen G. Rusnak’s thesis. SERTEDESO has continued monitoring activities around water courses and has employed, individuals, sometimes from ISP, for this purpose. As the CLODEST has become more narrowly focused on project implementation, the impetus to do broader joint environmental programs has tended to diminish.

**Objective 4**

To integrate farmer participatory research methodology into higher educational institutions of national importance in Honduras as well as into other relevant local institutions.
IPCA began providing classes in 1996-7, and in the following year, in farmer participatory research to students in the basic grains course at CURLA. However, the numbers were smaller than those anticipated at the outset. At this time, the course was taught by the director of the research unit who was sympathetic to FPR. However, the course was a 2nd year one and it did not provide IPCA with the vehicle that it required to be able to select students for thesis research. This required access to 4th year students. In recent years, the number of agronomy students at CURLA has plummeted (associated with the decline in work opportunities because of government cutbacks) resulting in a very high number of faculty to students in the agronomy field. Thus there are many faculty who do not have access to students and competition amongst them is quite fierce. Therefore, although Fredy Sierra was recently promoted to a faculty position at CURLA he does not teach for lack of students. This has complicated IPCA’s ability to provide classes in farmer participatory research at CURLA. A new program area at CURLA in Ecotourism, however, is providing a new opportunity for teaching in the field of participatory methodologies. In early October 2000, the IPCA team provided a three-day course to 12 students in the program. Thus although we have not really made the in-roads into the agronomy field at CURLA that we intended, we are maintaining linkages with CURLA through other areas.

Despite the difficulties of providing classes on FPR to agronomy students, four very good students completed their theses with IPCA on problems identified by farmers; 3 worked in Yorito, one in Lake Yojoa. One of these students, Omar Gallardo, has continued to work with the project through the participatory breeding program funded by NORAD. Two other students started thesis research with IPCA in Atlantida; one has a thesis pending and the other dropped out because of problems with his advisor at CURLA. These two students were both recommended by CURLA, rather than being selected by IPCA through course and volunteer work with the CIALs. However, it is also true that close supervision could not be provided to these two students in the same way that it was provided to the other four since most of IPCA’s time is spent away from the north coast. If IPCA accepts future students for thesis supervision, it will be for research in Yorito or Lake Yojoa only where students can be supervised on a daily basis.

Two of the students’ theses dealt with soil conservation and were discussed earlier. The other two focused on beans: one looked at bean diseases facing farmers and the
constraints in dealing with the problem in very poor hillside (Native) communities in Yorito; the other focused on cultural practices and farmers' criteria for bean selection. The latter thesis, in particular, provided much of the background to the participatory bean breeding work that is currently underway in Yorito. Each of these theses represents substantial departures from the usual research conducted by CURLA faculty and students. The farmer-focused topics and the participatory methods employed to acquire information mark a turning point in Honduran undergraduate research. The supervision provided by IPCA to the students was truly excellent and certainly far beyond anything normally afforded CURLA students. Two of the students are currently employed in development projects in Honduras (PROLANCHO, CARE), one is working in agricultural research in Gran Cayman (to earn money), and one is employed by Zamorano to support the participatory breeding work in Yorito.

4.ii. Provide training in farmer participatory research to students at the Instituto San Pedro

Courses to begin in early 1998

As with CURLA, IPCA began giving classes at ISP early in the second phase of the project. However, when Jose Jimenez and Fredy Sierra were not actually approached to teach in the 1998-9 cycle, they did not actively intervene to try to mount a course in that year. Rather, students were sent to them by the school for consultations on FPR. Whether this represents a preference by the school for a more informal approach to teaching FPR, or rather a timidness on the part of the school about approaching IPCA directly, is not known. IPCA should probably have been more proactive in offering their services. However, IPCA has maintained a close relationship with ISP faculty and director and has taken on interns (2-3 each year), which it has supported both institutionally and financially, for two months each summer. One of the most recent interns has just been admitted into EARTH in Costa Rica. Thus, while teaching students from ISP about FPR may have been less formal than envisaged in the proposal, it has nevertheless taken place informally. Moreover, as mentioned earlier, one former student from ISP, Nilda Martinez, is now working full time with IPCA, running the monitoring and evaluation program with the CIALs.
As mentioned above, Dr. Rosas is very impressed with the CIALs, particularly with IPCA’s support of the CIALs. Interestingly, Zamorano is not working in PPB with the CIALs of Zamorano, only with those supported by IPCA. This is certainly illustrative of the respect that Juan Carlos Rosas has for members of the IPCA team. However, it should be noted that Zamorano-supported CIALs have suffered from insecure funding which has made it difficult for the Zamorano technician to provide the support necessary to CIALs in his area. Nevertheless, there appears now to be interest within the Watershed Program at Zamorano to include participatory methodology in the curriculum. Thus Zamorano’s CIALs may benefit from this interest in the long run. Interestingly, the Agronomy Department has not itself sought funding for the Zamorano CIALs which might have offered a good training opportunity to the institution’s agronomy students, just as IPCA-supported CIALs have provided to CURLA students. However, the location of the CIAL’s (formerly) within Rural Extension at Zamorano, which seems to have had little relationship with Agronomy, may be the source of the problem.

IPCA continues to support IPRA in providing follow-up to other NGOs employing the CIAL methodology. IPRA normally visits once or twice per year and IPCA accompanies IPRA on these occasions. In addition, IPCA provides leadership on all ASOCIAL activities. It organizes events, such as the encuentro, and other national CIAL meetings; without IPCA, there would be no ASOCIAL events.

IPCA continues to train paratechnical staff at PRR and to provide leadership to PRR in CIAL-related activities. However, as mentioned, PRR is now actively trying to develop a CIAL program of its own.

IPCA has been involved recently in training an NGO, Centro de Proyectos de Desarrollo de Campesinos Parceleros located in Olancho. 23 participants were present at the training which lasted for a week. IPCA has agreed to return at the end of November to complete the course which took longer than expected because of the low literacy level of most of the farmers present.
Finally, IPCA has participated in providing training to World Neighbours. Most of the WN technicians are working in the Rio Platano Reserve. From IPCA’s experience, this is not a propitious area in which to begin using the methodology. Our own experience on the north coast suggests that they will not be successful at getting farmers to intensify production in an area of such abundance.

| 4.v. Provide training opportunities in CIAL methodology to local organizations | As demand arises |

Outside of the above-mentioned NGOs, there has been little opportunity to train other institutions. Government organizations supporting public research in Honduras have declined substantially. DICTA appears to have ceased research operations altogether. Thus opportunities to train government technicians in the CIAL methodology have disappeared.

**Conclusions**

The impacts of the project were to reside in the “linkages to local and regional technology generating institutions, through training and follow-up to NGOs, through the training of post-secondary students, as well as through the full documentation and elaboration of research conducted to date”.

1. The project has achieved its objectives in developing linkages between farmers and scientists. The relationship with Zamorano is very productive and is providing farmers with novel technologies that they could never have accessed without the IPCA project. The CIALs are now involved in participatory plant breeding which will result in varieties tailored to local conditions, bearing characteristics selected by the farmers themselves. Zamorano is helping individual CIALs with micro-enterprise development in the area of artesanal seed initiatives. However, Zamorano is not capable of working directly with the CIALs. Rather the relationship requires mediation by IPCA. Whether intermediary organizations, such as IPCA, are economically sustainable is, I believe, an important question. Zamorano has not provided funding up to now support CIALs in Paraiso which could provide an important training opportunity to Zamorano students and faculty, nor has it supported IPCA in a financially equitable manner in joint projects. Without a change in the way that project funding is administered, it will be difficult to support participatory research programs with farmers in remote areas. I maintain that they are not viable without intermediary support, at least in the short and medium terms.
2. IPCA has provided training and follow-up to other Honduran NGOs and most importantly, it is leading the process of federating the ASOCIAL across the country. All NGOs using the CIAL method in Honduras look to IPCA for leadership. The ASOCIAL federation, once incorporated and provided with a skilled leadership, has the potential to organize and channel support to the CIALs in the future.

3. IPCA has trained post-secondary students. It has supervised interns from the Instituto San Pedro in Yorito during three summers and 6 thesis students from CURLA. Where it has not been very successful is in getting a course on participatory research institutionalized as part of the curriculum at either institution. In the case of CURLA I believe that this was beyond IPCA’s control; in the case of the Instituto San Pedro, more could probably have been done to ensure inclusion. However, in Yorito, the work of the CIALs is very visible, particularly as farmers have come to play a leading role on the CLODEST committee. Poor farmers, particularly those who are CIAL members, now have a voice in Yorito as they did not before.

4. Findings from the IPCA project have been written up and published with the Overseas Development Institute, UK. A Spanish version of the findings will be produced shortly for distribution in Honduras and elsewhere in Latin America. It has already been translated but requires some editing. Either version could be placed in an academic journal in the future, once the ODI copyright has expired in a year’s time. The findings contained in the study on the watershed management committee in Yorito are more sensitive and would need careful, and extensive editing, if they were to be published. The CIAL findings are to be discussed in a workshop session, entitled “Adapting the CIAL Methodology to fit the Context” at the up-coming meeting of the CGIAR PRGA System Wide Initiative in Nairobi. Findings on participatory plant breeding work with the CIALs will be presented at the International Farming Systems symposium in Santiago, Chile in November and published in the proceedings.

5. Finally, a donor has been located to provide continued support to the IPCA project and the CIALs. USC-Canada has guaranteed financial support for an initial six months with the possibility of continued funding, in conjunction with another donor, in the future.