

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

Milestones

- * School-age children acquire basic concepts of PR in theory and practice.

“Sharing learning experiences” - Workshops among organizations that have begun joint work in Central America, CIAT, CIPASLA and community groups in Cauca Province, Colombia”

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Highlights

Central American organizations of young people reorient their attitude and execution of their projects as a result of interacting with the farmers' organizations constructed on the basis of participatory methodologies

Abstract

The purpose of these workshops is to promote interactions among networks of young people supported by the Kellogg Foundation and farmers' organizations based on participatory models and to get to know firsthand the different participatory processes of the models that the Participatory Research Project (IPRA) at CIAT has been investigating in the communities in Cauca Province, Colombia. The strategy consisted in organizing field visits so that the visitors could learn about the processes of CIPASLA (Institutional Consortium for Sustainable Agriculture on Hillsides) and the different projects that support CORFOCIAL (Corporation for Promoting CIALs) and the research activities of the CIALs (Local Agricultural Research Committees). The community projects analyzed have components of adaptive research, production, transformation, marketing, communication, education, gender and natural resource management. The most outstanding outcomes mentioned by the participants were the importance of the participatory methodology, where the projects should arise from a need felt by the community itself; the importance of transmitting basic values that should be passed on to the new generations; respect for the land and the environment; and a feeling of loyalty, commitment to the process and to joint work. They also understood the importance of

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good project administration, clear rules, equity and technical support committed to the process of participatory research, which underlies the whole process.

Identification of the problem

The need to deal with situations that are more complex each day, such as the ever-increasing hunger and deterioration of natural resources, leads us to think about the need to involve the local actors in a broader R&D agenda, in which all those involved should participate. Participatory methods are an alternative tool for facilitating these processes and enable each actor to be heard and take part in the decision-making. Without these conditions, many projects have had negligible impact despite years of work and high investments. For this reason the active participation of the project beneficiaries is becoming more important so that they are able to take part in the development of their future. The role of the outside actors is to facilitate the processes in integrated teamwork and identify technological alternatives that respond to the local demands.

Background

With the spirit of integrating the projects financed by the Kellogg Foundation (WKK), the IPRA project was invited to participate in "The Second Meeting of Projects in the Initiative of Human Nutrition in the Latin American and Caribbean Region," held in San Salvador from 3-9 December 2000. At this event the CIAL methodology was made known. It was seen as an alternative that could possibly be applied in other areas such as health and education.

Later we received the visit of the Directors of Programs of Latin America and the Caribbean, Drs. Jana Arriagada and Heliodoro Días, who had the opportunity to talk personally with members of some CIALs in Cauca, and they were also able to learn about the interinstitutional model, CIPASLA. This experience—being able to converse with the actors of local organizations, visualize their accomplishments, their capacity to manage their organization and their projections—showed the importance of having other Foundation-supported projects or farmers' organizations interact and learn about these experiences.

Given the foregoing, the IPRA Project at CIAT proposed to develop a milieu, where the organizations involved in the CIALs and CIPASLA and organizations from four interinstitutional projects in Central America could interact. The projects selected were part of the Youngsters Networks of Nicaragua, El Salvador and Guatemala. In each case a group of ten or more institutions form a network, a consortium or an association that has received financial support to strengthen a style of joint work, where they lead the local development of a selected geographic area, with participation of the community, especially the younger people.

Methodology

The methodology consisted in conducting a sensitization exercise, prior to the field visits to CIPASLA, CORFOCIAL and the CIALs, on theoretical aspects and the way in which the participatory models have been implemented, as well as some of the results obtained. For two days they visited the different projects that form part of CIPASLA, ASOBESURCA, accompanied by the Director of CIPASLA, Rodrigo Vivas, and These projects have components of adaptive research, production, transformation, marketing, communication, education, gender and natural resource management, among others. At these sites they had the opportunity to interact directly with the actors of the process and explore different aspects of interest to the visitors in much greater depth.

On the third day the participants had the opportunity to visit some CIALs, where they could see methodological steps being applied and the adaptive research trials that they carry out. They were able to interact, with the farmers and the administrator of CORFOCIAL, Alfonso Truque

At the end of each day, discussions were held among the participants, with the aim of extracting the lessons learned (positive and/or negative) from each of the experiences.

The last day of the workshop, a summary was made of what had been observed, the workshop was evaluated, and a list of tasks was made, including commitments on the part of the participants with respect to what they would do when they returned to their countries in order to strengthen their networks, taking into account their respective conditions.

Activities

Basically five activities were undertaken:

- Presentations on the theoretical framework and results obtained with the participatory research methodologies in Cauca
- Tours and workshops to exchange information with the community organizations from Cauca and the networks of young Central Americans
- Discussion and analysis of the experiences by the visitors
- Establishment of commitments
- Follow up to the commitments made in Colombia

Results

Following the discussions and analyses of their experiences, it was expected that the different institutions and their networks would begin a process of adapting the lessons learned. To each network coordinator, a questionnaire was sent out to facilitate their reflections on the relevant aspects, adaptations or adjustments of the participatory methods that they had implemented in their projects after their visit to Colombia.

The following questionnaire and responses are a compendium of what was expressed by the members of the different networks.

- *What elements or aspects of the methodology and experiences of the visit have been put into practice in your local projects?*

One of the aspects that the participants highlighted most was believing more in the capacities of the local people. The visit permitted them to see and analyze directly how the beneficiaries trained and strengthened in their principles, were capable of executing actions just as any outside professional. With this local capacity, the project was more sustainable, and solid bases for the future were created.

This increased capacity permits the community to take decisions with greater confidence, which is essential for participatory processes. They also prepared profiles of projects based on community priorities, where the execution of these projects will be much more active and participative in those interest groups.

- ⇒ The management group from the Valle de San Andrés is adapting the CIAL methodology for their decision-making, preparing project profiles and executing agricultural projects.
 - ⇒ Working with young people who are given the basics of the local and national reality so that they can program relevant activities that strengthen the participatory structure of women in community actions as an indispensable factor in their capacity for self-reliance.
 - ⇒ Agricultural and livestock diversification to promote rational management of their natural renewable resources, protection of water sources, maintenance the ecological balance of the ecosystems in order to contribute to improving their quality of life and food security.
- *How did you share the knowledge and the material you received in the workshop once you returned to your country?*
- ⇒ They have held meetings at the level of the action communities from the Consortium of San Pedro Carcha-San Juan Chamelco Alliance for the socialization of CIAL and CIPASLA activities.
 - ⇒ The experience has been socialized with the Community Development Councils (COCODE) in Guatemala with emphasis on the community organizational structure of the CIALs, CORFOCIAL and CIPASLA.
 - ⇒ A workshop was prepared to disseminate the methodologies with the technical team from the area of Local Development of Salvadorian Foundation for basic support (FUSAI for its Spanish acronym)
 - ⇒ The materials were photocopied and given to other organizations and institutions.
 - ⇒ In Guatemala, the Universidad Rafael Landívar has plans to translate the CIAL hanbooks to the native language to be used in the formation of future CIALs.

- ***How did they adapt the methodology to the local situation?***

The methodologies have not been adopted as such; however, they are implementing the participatory principles, which is fundamental in these processes. They are also applying principles of equity, permitting the communities to take their own decisions and share the risks.

In the case of Guatemala, the legislation has apparently undergone important changes in compliance with the peace agreements, including the officialization of the Mayan languages, a new Municipal Law and the Law of the Urban and Rural Development Councils. These have strengthened the actions undertaken jointly with the consortium. In the case of the Municipality of San Juan Chamelco, activities to sensitize the community leaders are being carried out in order to achieve the outcomes outlined in the Annual Operating Plan.

- ⇒ In the Alliance of Young People of León and Chinandega in Nicaragua, a replica has been made of CIPASLA's coordination system, naming a coordinator who can be neutral at the moment of the decision-making and who does not belong to any other entity.
- ⇒ The work that FUSAI does in the field of agriculture is not specific to research; rather it is the dissemination of appropriate technologies that have been tested, and the CIAL methodologies could be easily adapted. Support is being given to the management group from the Valle de San Andrés, which is one of the commitments acquired.

- ***What difficulties have arisen and how have they been overcome?***

- ⇒ Most of the community authorities are adults who have filled these positions consecutively for some time, but an effort is being made to make them aware of the importance of incorporating young people with new ideas. The experience of the adults combined with their different perceptions can contribute more efficiently to processes of change in their community for the collective benefit.
- ⇒ The active participation of the actors in the rural area is very limited so that it is difficult to know the concerns of the majority, which makes community work very slow; but the financing and execution of the projects march at a much more accelerated pace because it is necessary to see results in the short term. Rural innovations with this type of participatory techniques contribute to accelerating the processes and increasing the participants' interest.
- ⇒ There is a lack of coordination among the different components due to the intent to avoid duplicating efforts in the execution of some activities. Nevertheless, each one in his/her component has planned the activities to be carried out and revised them with the rest of the members.

⇒ In the Nicaragua network, some activities have not been fulfilled in accordance with the plan drawn up in Colombia. It is expected that with the naming of the executive secretary, the follow-up should improve.

- ***What was the impact from the workshop and the evaluation of CIPASLA and the CIAL visited?***

According to the participants the IPRA Project/CIAT experience of working to strengthen community organizations is enriching. They also mentioned that the topics are easily replicable in the different countries.

- ⇒ Re-orient their thinking based on local experiences.
- ⇒ Motivated to strengthen community structures and channel efforts toward a similar experience
- ⇒ Makes one reflect on our reality and the one visited in the field
- ⇒ Makes one ponder on the role of IPRA/CIAT in the process
- ⇒ The workshop made it possible to see clearly the work being done by the two types of organizations and the methodology used. It was clear that the success of these organizations lies in their training and initial backstopping by the institutions to facilitate these processes. It is also evident that this is the result of a process that require stages or phases in order to reach the goals; that is, projects in the longer term.
- ⇒ With respect to CIPASLA, what most called their attention was that the participants in the process are convinced that they are positive agents of change at the level of their communities and that this process is highly beneficial as it gives them the opportunity to carry out technical activities that contribute to preventing the degradation of natural resources and the conception and utilization of organic farming.
- ⇒ In relation to the CIALs, what impacted them most was the degree of commitment and responsibility that the beneficiaries have acquired with respect to controlling their farms. They themselves are the ones who decide what to cultivate; but not only that—they also disseminate the results obtained, which are considered public assets.
- ⇒ In general this experience generated a great deal of enthusiasm in the different network participants, as well as knowing that an organized community can break with the cycle of poverty when they are organized and open to other circumstances and are capable of becoming sustainable.
- ⇒ In Nicaragua, the Colombian experience generated a great deal of enthusiasm in the different participants, especially knowing that when a community is organized, it can break the poverty cycle and be capable of becoming sustainable. This has led them to want to work more closely and develop different programs in network form.
- ⇒ In the Nicaragua network, they are obtaining legal status: the Consortium Network for Local Sustainable Development in alliance with young people.

Summary of achievements

What do you consider the principal achievements?

- Diffusion of participatory methodologies to strengthen the community organizations, which have been successful, as can be seen from their results. The methodologies presented to the participants of the Central American networks were implemented several years ago, and today they are being applied to various production projects that continue, although with some difficulties, and are managed directly by their own members. These projects in which the users participate in their development have a high degree of empowerment and are probably of easier sustainability in the future. Sharing experiences with the technicians of institutions from three Central American countries was also meaningful for them.
- All the technicians had the opportunity to know and interact directly with the executors and beneficiaries of the projects that are being executed with the communities in Cauca. They also had the opportunity of learning about the different methods and tools that have been used to facilitate participation and execution; and the different participatory processes on which the research and/or production projects are based.
- *Permit the members of the community organizations in Cauca to present their projects themselves.* Despite the fact that this has been done many times in the national context and occasionally during the visits of people from institutions or representatives of donors, this was the first time that the directors or representatives of the community organizations participated in the whole process in an event of this nature. For them it has been a highly enriching experience and has let them see other visions and have direct contact with representatives of institutions from other countries.
- *Sharing results among different projects that are or have been supported by the WKK.* On many opportunities meetings have been held among the diverse projects that the Foundation supports, and we have been surprised to find similarities, differences or ignorance of achievements of other projects. On this occasion, there was more time to share and discuss results or methods that can be easily be adapted and/or applied in other related projects. There is also the opportunity to maintain contact and continue to share results or concerns about the future.
- *According to a survey done with the participants after their visit to Colombia the achievements that they highlight are as follows:*
 - ⇒ Learning more about these participatory methodologies and applying them leads to greater acceptance at the community level.
 - ⇒ There is more good will among the community organizations (COCODE)
 - ⇒ The participation of young people in training in arts and crafts is stimulated.

- ⇒ It has been possible to train more young people in the methodologies of Healthy Schools.
 - ⇒ It has been possible to train more and strengthen the community organizations.
 - ⇒ More participation in structures with gender equity
 - ⇒ Developing topics of self-esteem
 - ⇒ Developing environmental topics
 - ⇒ Learning how to manage the methodology, which is a tool applicable in any development institution.
 - ⇒ Learning how to be able to work more closely with FUSAI in conciliating circumstances, such as the management group from the Valle de San Andrés and other types of alliances (e.g., the counterpart funds of Nejapa and Soyapango)
 - ⇒ Having learned about a noteworthy and successful experience.
 - ⇒ Having conceptualized our experience in light of the experience
 - ⇒ Internalizing the CIAL methodology and the CORFOCIAL and CIPASLA experience in organizations and institutions.
 - ⇒ Obtaining legal status
 - ⇒ In Guatemala (FUNDEMI,) the achievement within the community organization component for strengthening technology, has been the creation of “Community Centers of Technology,” which are in charge of replicating the training in their respective work groups with the support of the technician-facilitators.
 - ⇒ Manage resources
 - ⇒ Sign agreements
- *In accordance with your experience thus far, would you say that the original expectations for achieving these results were realistic? If not, why? How should unrealistic expectations be addressed? If you have modified the expected outcomes, indicate the changes.*
 - ⇒ Yes, the central idea of this project was very realistic in the sense that the Foundation already knew a great deal of the methods that our IPRA Project has developed, and they even financed these processes at the onset. These processes have gradually been passed on to the farmers themselves, and today they are the ones who direct and lead them for the benefit of the participating communities.
 - ⇒ With the previous results, what we were looking for was to share both the successes and failures of these methodologies. We also wanted the participants to be able to question and discuss their concerns about the participatory methods with the producers themselves and learn what these have meant in the execution of their projects so that each person could get what he/she wanted from that experience and then put into practice adaptations or apply principles to improve their performance.

Factors or circumstances (positive and/or negative) in the surroundings that affected advancing toward the accomplishment of the objectives.

- ***Positive:***

- ⇒ The willingness of the producers and other participants in the processes from Cauca to participate actively in all the tours
- ⇒ The willingness that the participants had to work hard in order to fulfill the objectives of the workshop
- ⇒ The access to abundant and diverse cases or examples of applying the methods
- ⇒ The majority of the visiting technicians had experience in field work with farmers

- ***Negative:***

- ⇒ The difficulties in communication especially after the workshops
- ⇒ Establishing agreements among the parties to agree upon dates for the workshops
- ⇒ Some personal problems among the participants caused difficulties in the application or adaptation of some of the participatory experiences
- ⇒ because participatory methodologies were not included in the institution's annual plan.

Lessons learned

The main lessons learned were as follows:

- Exchanging ideas and knowledge among the men and women farmers, the participants and project executors and technicians just beginning the participatory processes facilitated their sensitization.
- When holding this type of workshop, it is essential to establish specific commitments well ahead of time in order to facilitate the application and/or adaptation of the knowledge acquired
- When facilitating these processes of knowledge of new alternatives, it is necessary to check with the participants regarding training needs that arise in order to complement the information received.
- By letting the farmers themselves participate as facilitators, showing and teaching their experiences, their knowledge is being valued and their self-esteem is strengthened.
- The conceptual and/or personal difficulties or differences among the technician-facilitators within the networks can seriously limit the results in participatory development projects.

- For the participatory development of the communities and the strengthening of their organization, it is very important to have among the institutions, entities from both the development and technological sector in order to support or promote the offering of this knowledge through them.
- Counting on the power of information and the dissemination of results is a critical factor in community development.

Future plans

What structure has been established to continue this project?

The idea was not really to continue implementing specific actions in the execution of the project, such as these workshops for sharing information among members of institutions from Central American countries to Colombia. What we hope is that successful experiences such as these or others that occur in other places and possibly in the participants' projects, will also be supported in their diffusion and replication. This type of event is stimulating and permits the participants to learn firsthand about situations different from those that they face daily. They let us explore in greater depth experiences that perhaps in similar conditions or even under more difficult conditions can also obtain good results. The key is to be able to know firsthand the executors and the results and difficulties lived in the field in order to extract the experiences and apply them to ongoing or future projects.

In the future it would be helpful to have an initial survey to be filled out by the participants beforehand in order to determine their expectations. If the survey contains information on the organizations to be visited, their objectives and achievements, the visitors can be much more explicit about specific topics and their needs.

Along these same lines, it is important to come to an agreement with the participants ahead of time, with respect to the commitments and mechanisms that may keep them from applying the adaptations, principles or lessons that they consider relevant in the improvement of their projects.

Recommendations

What recommendations would you make to the other project directors who work in this area or in the Foundation?

- *New workshops:*
 - ⇒ There is a need to establish prior commitments more clearly among the participants with respect to what they will do or the proposals for which this type of event is being held.
 - ⇒ After the workshops it would be constructive to carry out some type of survey or poll to determine training needs that the group has in order to be able to explore

in greater depth the experience lived and apply the methods that could prove useful in their work with communities, improving relevance for they have firsthand opportunity to hear farmers' needs. The incorrect application of a tool or a method can be harmful for both the technician an/or the community.

- *Communication channels*

- ⇒ Define the regional coordinators and their specific commitments to the project to facilitate the process
- ⇒ The lack of habit or nonexistence of communications limits and delays the processes. It is very difficult to communicate via email. On the other hand, the technicians' and professionals lack of a writing habit makes the promotion and diffusion of results complicated.

- *Support for participatory projects*

- ⇒ When beginning participatory processes with rural communities, it is necessary to have technicians with an attitude for and knowledge of participatory methods; otherwise they must be trained. It is important to have prepared and committed persons with community interests that help obtain the desired outcomes. Another important element is the facility for transmitting their knowledge to the key people in the community and for gradually strengthening local capacity and leadership skills in order to empower their project.
- ⇒ The rural development and extension projects should have counterparts in research institutions that have a comparative advantage in the development of technologies, as is the case of computer mediated information centers (usually called "tele-centers"). In this way they can access information of use and interest to the producers, that can help them open doors toward the broadening of their alternatives of production and development; i.e., forming strategic alliances that benefit their clients the farmers.

A methodology designed to promote sustainability of a second-order organization

Facilitator: *Alfonso Truque Díaz*⁶

Highlights

38 CIALs generating alternatives to resolve agricultural and livestock problems in their communities

Abstract

The purpose of creating the CORFOCIAL organization was to bring together all the committee-based research services (CIALs) in the Cauca Province in a second-order nongovernmental organization so that the farmers would have the opportunity of improving their livelihood and economic sustainability in a more organized and efficient manner. The application of participatory methodologies permits the farmers to present demands for research technologies and be the ones to evaluate them in search of better adaptation and greater adoption to their local production systems. CORFOCIAL has a team of farmers trained in the CIAL methodology participatory monitoring and evaluation, where it is proposed to form leadership at the local level so that small farmers can participate more fully in the decision-making and planning in research projects, production and training. Among the more outstanding results are the discovery of new leaders, the recovery of indigenous experimentation, the diversity of crops and the appropriation of the methodology by the communities involved.

Identification of the problem

Most of the time, both the male and female farmers in our country are not considered in the process of generating and transferring technologies. For that reason many small farmers do not follow the technical recommendations, but modify them according to their needs and resources. Thus the methodology of participatory research in the CIAL model is an alternative that permits the farmer to become a main actor in adaptive research.

Background

The menu offering new and innovative technologies is quite large and diverse; nevertheless, the small farmers do not use these technologies in the way in which the scientists expect. There are numerous experiences regarding ignored agronomic recommendations, equipment that was not adopted, varieties that were rejected, etc. On the other hand, other new practices not recommended by scientists pass from farmer to farmer.

Frequently, these initiatives of the farmers have not been foreseen by technicians nor by the professionals trained in traditional approaches to research. Today, however, many

⁶ Administrator of CORFOCIAL

professionals believe in the importance of having the active participation of farmers in the different phases of applied research.

Methodology

The methodology used is the application of the eight steps of the research ladder that is used in the CIALs. Each of these steps is carried out with the community: motivation, election of the committee, diagnosis and feedback; with just the Committee: the planning and setting up of the trial, evaluation of the technologies and analysis of the results.

Activities

In addition to the research activities, the committee should carry out with their community:

- Meetings
- Tours
- Field days
- Training of farmers

Results

- Food security in the CIAL and its community
- Capacity for validating technologies
- Integration of the community
- Awareness of research as a tool
- Strengthened as individuals as a result of training
- Capacity for managing external resources
- CIAL that are recognized for their work in the region
- Creation of new CIALs
- Training businesses (accounting, preparation of projects and products)
- New leaders in the community

Table 1. Descriptive aspects of the CIALs in Cauca Province and their research topics.

Name of CIAL	Village or Community	Municipality	Date Formed	CIAL		No. Families/Community	Research Topic	Research Stage
				M	F			
Asomuripik	La Peña	Totoró	05/2001	13	3	60	Aromatics	Planning
Betania	Betania	Piendamó	07/91	6	8	33	Sugarcane varieties	Planning
Buenavista	Buenavista	Caldono	06/93			30	Cape gooseberry or <i>uchuva</i> (<i>Physalis peruviana</i> .)	Trial
Campo Alegre	Campo Alegre	Caldono	02/92	6		30	Maize varieties	Commercial
Carpintero	Carpintero	Morales	10/95	20	10	55	Maize varieties	Trial
Chambimbe	Chambimbe	B. Aires	02/96			35	Upland rice varieties	Confirmation
El Jardín	El Jardín	Caldono	09/93			40	Common bean (<i>Phaseolus vulgaris</i>) varieties	Confirmation
El Pinar Hombres	El Pinar	Piendamó	03-00			80	Potato varieties	Trial
El Turco	El Turco	Santander	09/94	5	1	25	Plantain varieties	Confirmation
Esmeralda 1	Esmeralda	Piendamó	11-2001			50	Maize varieties	Production
Esmeralda 2	Esmeralda	Piendamó	11-2001			50	Staking in peas	Production
La Esperanza	Esperanza	Caldono	01-2001	14	6	20	Potato varieties	Production
La María	La María	Piendamó	07/96			60	Maize varieties	Confirmation
La Palma	Esmeralda	B. Aires	04-2001	4	4	35	Soybean varieties	Planning
La Unión 1	La Unión	Piendamó	05-2001	4		53	Maize varieties	Confirmation
La Unión 2	La Unión	Piendamó	05-2001	8		53	Bean varieties	Confirmation
Las Cruces	Las Cruces	Silvia	01/97			50	Bean varieties	Trial
Las Lajas	Las Lajas	Santander	01/2001	7		56	Potato varieties	Confirmation
Pescador	Pescador	Caldono	05/90	5		300	Bean varieties	Trial
San Bosco Muj.	San Bosco	Santander	01-2001		9	60	Potato varieties	Trial
San Bosco Hom.	San Bosco	Santander	02-1991			60	Maize seed prod.	Commercial
San Isidro Muj.	San Isidro	Santander	10/96		7	30	Soy flour bread	Production
San Isidro H	San Isidro	Santander	09/96	5		30	Cassava varieties	Production

Name of CIAL	Village or Community	Municipality	Date Formed	CIAL		No. Families/Community	Research Topic	Research Stage
				M	F			
Santa Isabel	Santa Isabel	Totoró	10/97			15	Staking in peas	Commercial
La Independ.	La Independ.	Piendamó	2002			45	Diets for guinea pigs	Confirmation
Asopanela	Portachuelo	Rosas	04/92	5		20	Fertilization in sugarcane	Trial
Camposano	Camposano	Timbío	12- 2001	9	5	80	Upland Rice varieties	Confirmation
Cinco Días Muj.	Cinco Días	Timbío	03/92	2	13	120	Soybean varieties, Industrialization	Commercial production
El Diviso	El Diviso	Rosas	09/91	4	2	83	Maize varieties, seed	Commercial lots
El Placer	El Placer	El Tambo	08/96	5	5	85	Maize varieties, seed	Commercial lots
Santa María	Santa María	Timbío	03-201	4	3	85	Staking in peas	Production lots
Portachuelo Alto	Portachuelo	Rosas	09-2001	5	1	20	Green bean varieties	Production
El Uvo	El Uvo	Timbío	04-2001	10	6	35	Bean varieties	Production lots
Alto de San José	Alto de San José	Timbío	10-2001	10	2	80	Upland rice varieties	Confirmation
Parraga	Parraga	Rosas	04-2001	4	8	25	Upland rice varieties	Confirmation
Pinar Mujeres	El Pinar	Piendamó	08-2002	5	8	90	Horticulture	Confirmation
San José	San José	Silvia	23-04-2003	6	5	50	Wheat varieties	Trial
La Fortaleza	Carpintero	Morales	08-2002		30	55	Diets for broilers	Production

Lessons learned

- The farmers are indigenous researchers.
- After training, the farmers become the facilitators, and the degree of responsibility is high.
- The CIALs are gradually working towards self-reliance.
- The farmers' degree of appropriation of the trials facilitates their independence.
- Sharing experiences at the annual meeting strengthens the CIALs.
- Delegating functions in the work team (technicians and Guides) creates self-esteem.
- CORFOCIAL does not do research in agriculture but extends other services (e.g., writing letters, credit for the CIALs, training).

Recommendations

- Strengthen the revolving fund of the CIAL to promote the production and marketing of the products that have been researched by the CIAL.
- Strengthen the organization with communication channels for searching for sustainable alternatives
- Modify the organic structure for introducing programs, such as that of the rural enterprises and rural development.

Future Plans

- CORFOCIAL will have the necessary human, logistical and financial resources to continue and improve research, organization, management, and agricultural and livestock development of the CIALs, within a framework of sustainability and respect for natural resources.
- It is very important to expand the number of CIALs.
- Prepare a portfolio of services in order to expand training services
- Offer a farmers' field school on different topics

Indigenous women process potatoes

Researcher: *Fausto Merino*⁷

Highlight

Groups organized to do participatory research generate mechanisms of self-financing in search of additional sources of income that guarantee the continuity of the participatory process.

Definition of the problem

Among the principal limitations for the small and intermediate potato producers in the Province of Chimborazo is commercialization. The factors that contribute to this situation are, on the one hand, that the farmers do not manage criteria related to quality; that is, they take their product to the market without any type of selection, the potatoes are physically damaged from incidence of pests and pathogens, sizes are nonuniform, varieties are mixed, the tubers are dirty, packing is inadequate, etc. On the other hand, the lack of knowledge of alternate markets for their product and their incapacity to face commercialization individually, added to their incapacity to negotiate, has resulted in their getting low prices for the sale of their product.

Traditionally the objectives of the agricultural research institutions, as is the case of INIAP, have been to increase yields and reduce production costs. However at present other objectives should be added, such as the management of information on markets, improvement of product quality and aggregate value of the production, and better interpretation of the market, its demands and agroindustrial production processes. In the case of potatoes, the use that is given to processed potatoes is constantly growing, the industry demands fairly stable volumes, the raw material needs to meet certain specifications and future demands also need to be known.

Objectives

The general objective is to implement a rural agroenterprise that processes and offers a permanent supply of potatoes suitable for french fries to restaurants and fast food establishments in the city of Riobamba, to benefit the group of women organized in the CIAL “Flor Naciente.” The specific objectives are as follows:

- Determine the volume of demand for potatoes for french fries in restaurants and fast food establishments in the city of Riobamba
- Establish criteria for quality and purchasing habits (varieties used, quality, size, likes and preferences, other purchasing alternatives)
- Identify the current supply system to find possibilities of doing business between the small producers and the restaurants and fast food establishments in the city of Riobamba
- Implement and position a rural agroenterprise on the market to offer potatoes for french fries continually

⁷ Coordinator, UVTT-Chimborazo, INIAP.

Background

The potato is a basic staple in the family basket of the Ecuadorians. Consumption was 38 kg/yr per capita for the period between 1986 and 1993. The price for potatoes on the Ecuadorian market is highly unstable, which causes insecurity for the producers dedicated to this crop and frequently leads the consumers to decrease their consumption. The Ecuadorian society is becoming more urban every year. The data show that while in 1974 the urban population in Ecuador was only 38.4%, in 2002 it had reached 55.4%. At the same time, women have an ever-increasing production role outside the home, which has generated changes in the dietary habits of the Ecuadorian society.

The quality of fresh potatoes in wholesale provisioning markets, shops or supermarkets is in most cases poor due to different types of primary and secondary lesions, lack of uniform size and dirtiness in handling the product, resulting in numerous impurities. The habits of potato consumption have expanded, however, and industries offer diverse processed or semiprocessed products that increase the ways in which to consume this tuber.

Of the total volume used by the industry 89% is used for potato chips (smooth or crinkled). The supermarkets also offer peeled, cut, precooked and frozen potatoes, as well as flour for preparing mashed potatoes. This last product is imported from Chile for sale by the supermarkets; however the volume is insignificant, which is the reason why no domestic processor is interested in producing it at the local level. To the extent that the volume of consumption increases, some firm will become interested in this type of processing.

In the Province of Chimborazo the potato continues to be one of the main crops, being both a basic staple and a source of work and income for the population. The tubers are mostly used fresh; in recent years, however, there has been more consumption of processed potatoes; fundamentally fried potatoes (chips and french fries) and, to a lesser extent, other types of products.

In the city of Riobamba the fast food business has been growing so there is an ample market for consuming french-fried potatoes, which are offered by certain places where roasted chicken is sold (more than 380 restaurants). Basically they work on a small scale, serving french-fried potatoes as a side dish for chicken, sausages, meat, etc.

After processing the data compiled on the restaurants and related businesses, it was concluded that the greatest use given to potatoes is in the form of french fries. The second way in which potatoes are used in the restaurants and related businesses is in the form of soups. The third way of offering potatoes to the public is mashed; and in the case of restaurants and related businesses, other important forms of consumption are in salads and tortillas.

In the Guabug community located at an altitude of 3400 m in the parish of San Juan Province of Chimborazo, Ecuador a group of women constituted a CIAL (Local Agricultural Research Committee), which they called "Flor Naciente." In 1996, they were trained in the participatory research methodology to investigate potato varieties that would adapt at the local level (Table 1). After four years the women selected two varieties (INIAP Rosita and INIAP Friepapa) through participatory evaluations. They

improved their harvests, but not their income due to the very low price that the middlemen paid them. On holidays the women farmers take the potatoes to the wholesale market. Despite their good quality, the price received does not compensate their investment and effort.

Table 1. Training activities developed with the CIAL.

Events Held	Topic	Objective
Course	Integrated crop management for potatoes	Improve product quality
Observation tour	Visit to share experiences with the IIRR CIALs	Promote self-reliance
Observation tour	Visit to rural agroenterprises in the Province of Bolívar	Motivate the creation of a rural agroenterprise
Meetings	Reflection-action-reflection	Promote and motivate a business-oriented organization in the zone
Participation in agricultural and livestock fairs	Byproducts from potatoes	Promote and motivate business management
Course on processing potatoes	Cutting trials, antioxidants and packaging potatoes	Learn about optimal cutting sizes of potatoes and adequate rates of antioxidants
Short course on processing potatoes	Frying trials with different varieties of potatoes	Identify the best variety and frying times needed to obtain potato chips of better quality
Short course	Learning about tools used to determine supply and demand	Conduct rapid market appraisal

Research questions to be addressed

- Does the implementation of a rural agroenterprise for processing and commercializing potatoes responds to the consumption needs of the inhabitants in the city of Riobamba and to the socioeconomic requirements of the CIAL “Flor Naciente”?
- How has consumption of potatoes (volumes and varieties) evolved in recent years in the city of Riobamba?
- What characteristics should be considered concerning the supply of potatoes to restaurants and fast food establishments in the canton Riobamba?

Methods

Marketing study

The overall objective of the marketing study was to know the new trends of the market for potatoes by applying surveys to restaurants, roast chicken places and fast food establishments in the city of Riobamba. The specific objectives were to:

- Ascertain the current and projected competition of the market for potatoes in the Riobamba canton
- Determine the distribution channels of the product that the project offers
- Find out the prices of the inputs for potato production
- Measure the market potential of potatoes for french fries
- Analyze the potential participation in the market
- Analyze the prices for commercializing the potatoes
- Analyze the competition

Instruments for gathering data. To support the research methods selected, the following research techniques will be used.

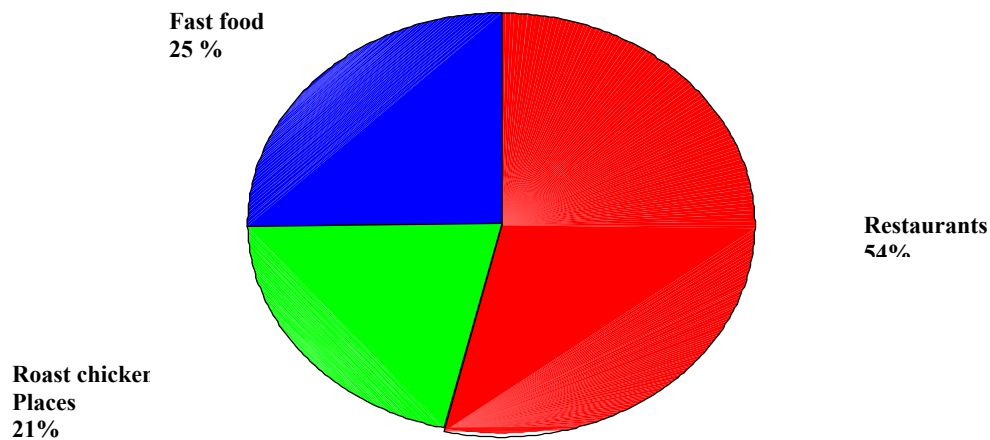
- Field observations to study the behavior of the market for potatoes in Riobamba
- Surveys to be processed with the owners of restaurants and fast food establishments, this technique will help identify the viewpoints of those who are actually involved in the business.

Field work

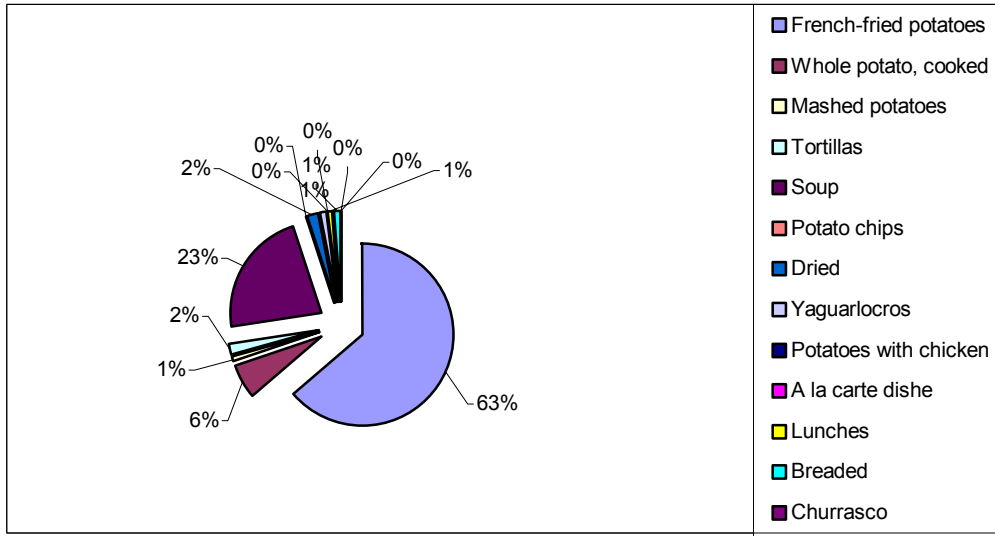
The surveys will be applied to 100 places where food is sold in the city of Riobamba in accordance with the established census.

Processing and interpretation of results

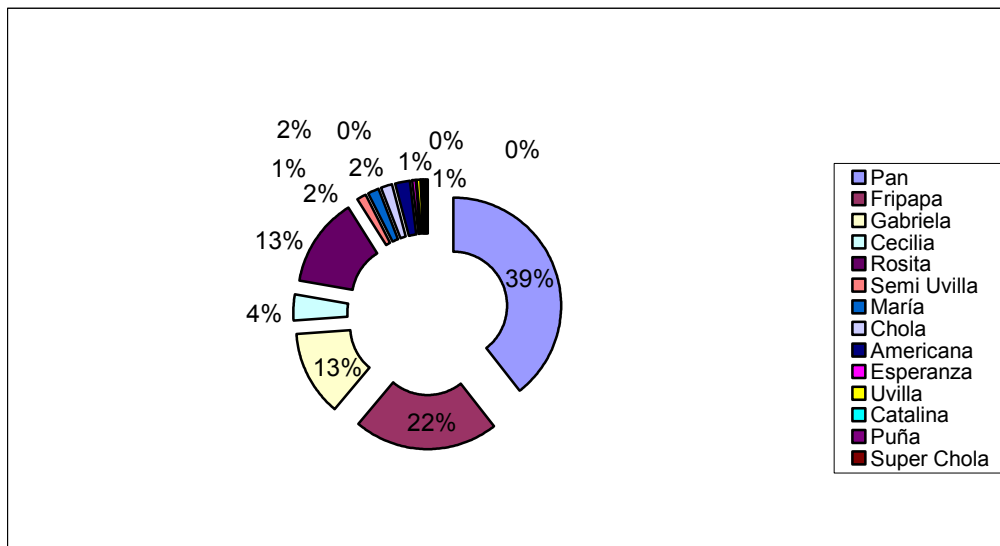
- *Types of businesses surveyed.* With the results of the total sample (100), 54 restaurants, 21 roast chicken places and 25 fast food establishments were surveyed. These correspond to businesses that are commercially active, as there are very small businesses that use or sell very few foods in which potatoes are used.



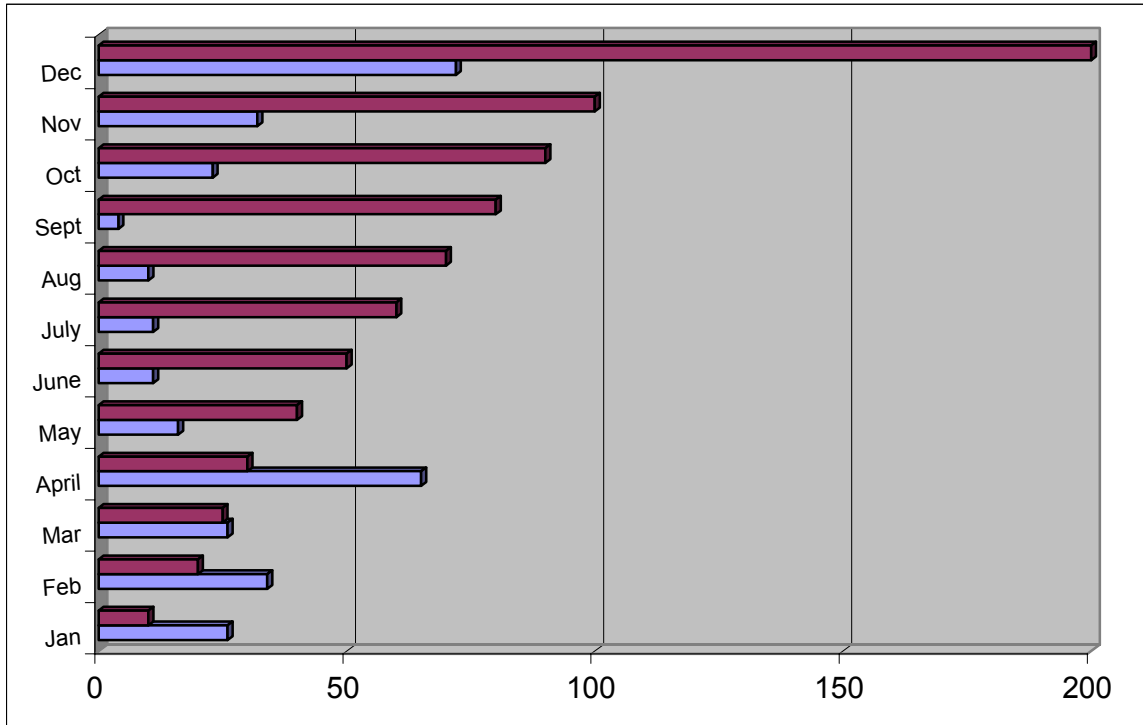
- Main products made of potatoes that are offered in the businesses.* The businesses offer french-fried potatoes (63%) and in soups (23%), while other points of consumption utilize the whole potato (6%), cooked. Thus there is an opportunity to offer processed products for these businesses throughout the year.



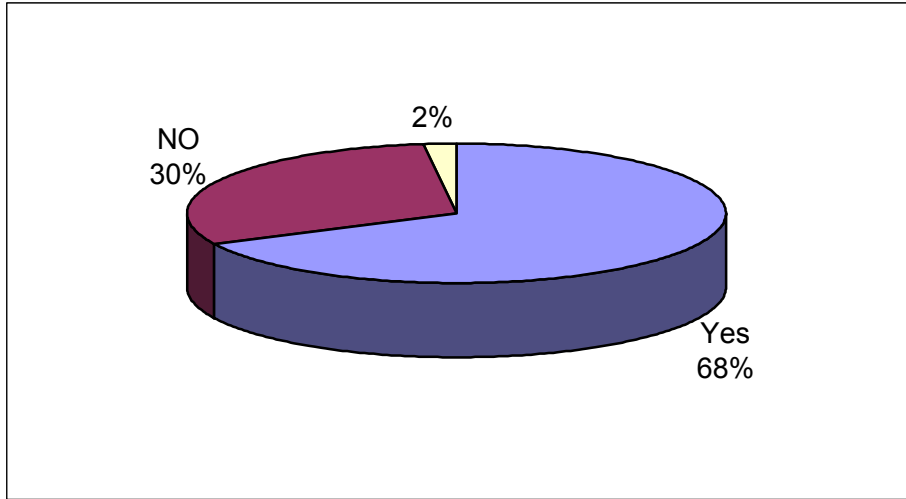
- Main varieties of potatoes that they purchase.* Among the varieties of potatoes that the businesses buy the most important are Pan (39%) because they do not fall apart when fried; Fripapa (22%), Rosita (13%), Gabriela (12%) and Cecilia (4%). We should highlight that the varieties in greatest demand were selected as the most promising in the CIAL Flor Naciente.



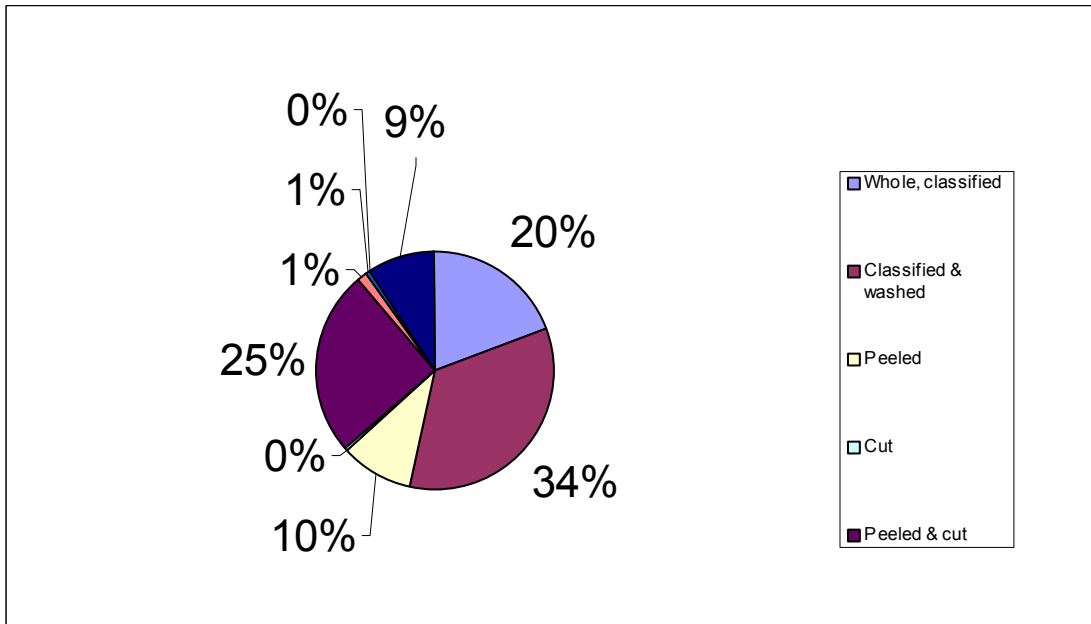
- Months of highest sales and percent increase.* The months of greatest sale in the year are April (an increase of 30%) and December (100% increase). In the other months, stable growth was maintained without major impact on the normal pattern of behavior of the businesses. This will permit planning the time of planting to have greater production during the months of highest sales.



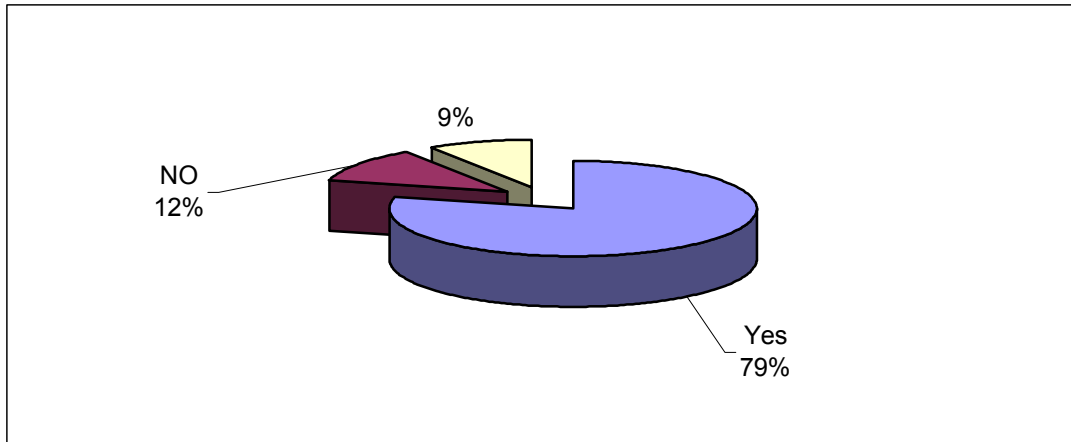
- Preference for purchasing the potatoes in other presentations.* Among those surveyed, 68% were open to the idea of purchasing potatoes in other presentations such as classified, peeled, washed, thin strips and cubes, 30% preferred the traditional presentation, while 2% of the owners of food stands had no preferences.



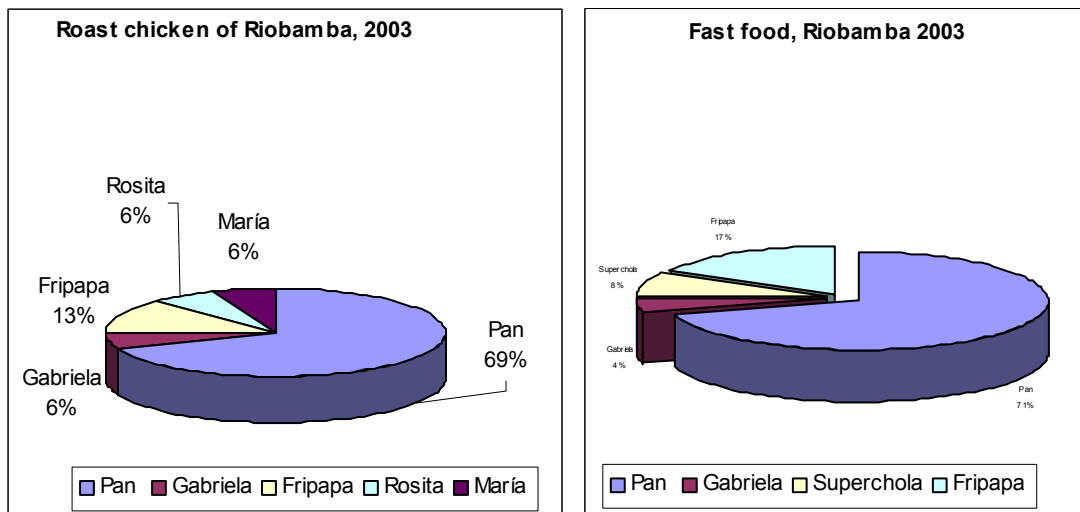
- *Processing.* The type of presentation that the owners of roast chicken places and establishments of fast food would prefer are classified and washed (34%), peeled and cut (25%), whole and classified (20%), peeled (10%), while 9% are indifferent to the type of presentation of the product. Thus there is the possibility of incorporating aggregate value to the product in different presentations.



- *Willingness to do business with the CIAL Flor Naciente.* Of those surveyed, 79% would be willing to do business with the producers who work on the production, processing and commercialization of potatoes; while 12% would stay with their current suppliers, and 9% simply commented on the question. This is an opportunity that would have to be exploited by the CIAL to establish its business.



Processing of the demands



No. of qq of potatoes for french fries/wk in roast chicken places and fast food establishments, Riobamba.

- In the roast chicken places potatoes for french fries are consumed weekly in the following amounts for five varieties: Pan (69%), Frippapa (13%) and Rosita, Gabriela and María (6% each). The fast food establishments use two varieties: Frippapa (17%) and Pan (71%). The group of producers will be able to offer the varieties they are currently planting and that have suitable characteristics for this type of industry.
- To improve their income, the CIAL “Flor Naciente” has decided to incorporate aggregate value to the potatoes by offering potatoes peeled and cut in thin strips (french fries) to the roast chicken places and fast food establishments in the city of Riobamba.
- The aggregate value is a new activity, as no there are similar local experiences; thus it was necessary to investigate new techniques for processing the product, using small-scale tools and equipment. After calculating production costs, the women could obtain a price of \$18.00 for the quintal of potatoes, as shown in Table 2.

Table 2. Rough estimate of the cost of producing 1 kg of potatoes for french fries, CIAL Flor Naciente, Chimborazo.

Line Item	Costs (\$/kg)
1. Production costs	
Raw material	0.16
Antioxidant	0.03
Packaging	0.03
Transportation	0.01
Labor	0.02
Tools	0.02
Subtotal	<u>0.27</u>
2. Income	
Sale of 1 kg of potatoes for french fries	<u>0.40</u>
3. Profits	
Production costs	0.27
Gross profit	0.40
Net profit	<u>0.13</u>

Production of potato chips

The CIAL found that when the potatoes are peeled and cut into thin strips for french fries, 30% of the potato is discarded. This could be given another use, transforming the waste product into potato chips, packed in polyethylene bags for commercializing them at the community level and in the educational centers in the sector as a complementary activity to processing potatoes for french fries and to make efficient use of the raw material.

This activity is also new for the CIAL members. They had to conduct some trials using cottage-scale equipment in order to determine if the activity was profitable. They were able to obtain US\$19.00/qq of potatoes, as shown in Table 3.

Table 3. Approximate costs of small-scale processing of potato chips based on 1 kg of raw material, CIAL Flor Naciente, Chimborazo.

Line Item	Cost \$/kg
1. Production costs	
Raw material	0.114
Day's wages	0.205
Oil	0.057
Gas	0.014
Seasoning (salt)	0.003
Packaging	0.029
Sealer	0.004
Tools	0.018
Subtotal	<u>0.442</u>
2. Income	
Amount of bags from 1 kg of fresh potatoes	5.5 units
Unit cost of sale (\$/unit)	0.10
Total revenue from sale	<u>0.55</u>
3. Profits	
Production costs	0.442
Gross profit	0.55
Net profit	<u>0.103</u>

In this way small farmers organized in CIALs can create small rural agroenterprises, generating sources of employment at the local level, improving their income and the livelihood of their families.

Conclusions

The marketing study has been a basic tool for determining the demands and other parameters that are needed to plan strategically the processing and commercialization activities that the CIAL Flor Naciente is undertaking.

To determine the demands, it was necessary to conduct a marketing study, with the support of the IPRA Project at the CIAT through the INIAP-UVTT Chimborazo, the CIAL Flor Naciente and the National University of Chimborazo. It was determined that the potatoes, peeled and cut in the form of french fries to be offered to the roast chicken places and fast food establishments in the city of Riobamba.

The CIAL-Flor Naciente, with the small-scale processing of potatoes and offering two new products (potatoes for french fries and chips) to the consumers of the city of Riobamba and the community of Guabug, respectively, can obtain \$ 19.00/qq of potatoes, which is traditionally sold for a maximum of \$ 5.00/qq.

Lessons learned

The indigenous women in Chimborazo, organized as CIALs, have the capacity to process and commercialize potatoes—an activity that might seem utopian for the rural sector.

The CIAL methodology has been the basis for seeking sustainability with other activities complementary to production given that the producers not only need to increase their production but also seek their economic welfare.

The women organized in the rural sector have also been actors in their own development. The development and implementation of a new participatory method generated innovations among the different production actors (generation of capacities and leadership).

Recommendations

- Legalize the organization as a rural agroenterprise so that it can gain access to other services such as credit and training
- Support the preparation of proposals to seek funding to make the a processing center and sales point of their products suitable.
- They need to make strategic alliances so that the organization has access to training in business management and basic bookkeeping.
- The participatory research and evaluation should continue being the basic tools so that the organization continues to explore new techniques that will let them maintain technological options according to the needs that arise.

“Training the future” – Young researchers: Learn how to run a cial.

Researcher: *José Ignacio Roa V.*⁸

Abstract

Young people in rural areas of developing countries are not exempt from the problems of the rural communities in general, including the lack of access to land, inadequate education and training, low prices for farm products, poor market infrastructure, low level of technology, limitations in the credit and poor participation in community activities. In Colombia one of the problems that affects rural youth is the inadequate education system because the curriculum has a clearly urban orientation, which does not stimulate the young to do research on their ecosystem. In this project the IPRA Project proposes to stimulate the research capacity of rural youth on the topic related to the food security of their communities. To this end, presentations were made, and training was imparted on participatory methodologies such as the community-based research services (CIALs), where the students decide what to investigate, as well as plan, execute and evaluate the alternatives proposed by them. It is expected that in the short term, a research habit will be formed in the school that will stimulate the director and staff of the school Juan Salvador Gaviota⁹ to include these participatory methodologies within the academic curriculum, contributing to the creation of a strengthened academic model to be put into practice in the education of rural youth and that it be, at the same time, sustainable over time.

Background

There is a very serious problem in many countries of the world, which is the lack of opportunities for young people. The rural youth are being prepared better than their parents because they have easier access to schooling, but they run into the problem that society does not offer them opportunities for developing their capacities. It is common to find young people unemployed in the field; and when they migrate to the cities, the possibilities of work are very scarce.

Introduction

For some time the W.K. Kellogg Foundation has supported projects that train the young. In the year 2000 the project “Communities and Watersheds,” in collaboration with the IPRA Project, sent a proposal to the Kellogg Foundation to develop a project with young students, La Hondura (El Dovio township), a community that is found in a mountainous zone, where the farmers grow plantains, a little maize and common beans.

General objective

⁸ Professional specialist, SN-3 Project, CIAT, Colombia

⁹ Jonathan Livingston Seagull.

In a period of three years, it is expected that the young people from the region of the Canyon of the Garrapatas River and the group “Heirs of the Planet” in Bellavista, will improve their access to high-quality education to stimulate their personal development and improve the conditions of their natural and physical surroundings through research processes.

Justification

Principles of the project

- Education is a fundamental component for rural development.
- Innovative, integrative, collaborative and sustainable forms of providing education for rural youth are required.
- Young people have a great interest in science, innovation and teamwork.
- Rural youth need to explore new strategies to improve their living conditions.
- The sustainable management of natural resources (soils, water, forests, climate and biodiversity) can contribute to improving the living conditions of the rural communities.

Specific objectives

- Facilitate the emergence of young leaders who have not yet developed their potential through the development of communication skills, teamwork and management of information systems. The groups of participants will share their experiences, history and have the opportunity to reflect on the lessons learned.
- Establish alliances among the groups of rural youth and schools, universities, research center and businesses that facilitate the research processes and development in which the rural youth are interested.
- Establish self-financing mechanisms for the members of youth groups or other groups that wish to continue their studies or establish businesses where they can apply the knowledge acquired and improve their income.

In accordance with the results obtained in the development of the project, we expect to develop among all the participants, a model that can be extrapolated to other regions. This model should provide the tools so that these young people become active participants in the management of natural resources and in the improvement of their living conditions. This objective includes the establishment of a participatory monitoring and evaluation system so that the participants acquire the habit of following up the progress made in their projects.

Project partners

- **ACERG** - Association of Educational Centers in the Canyon of the Garrapatas River. Brings together 37 primary and secondary schools located in the watershed of the Garrapatas River, with the mission of working as a team to strengthen the educational program based on three complementary principles: agroecology, agricultural (production-oriented) schools and education compatible with the ethnic diversity of the region.
- **Heirs of the Planet - Youth, Life and Nature of Bellavista** is a group formed by 37 children and young people dedicated to the research and conservation of the natural resources of their region. They form part of a network of 16 similar groups in Colombia.
- **CIPAV** - Center for Research on Sustainable Agricultural and Production Systems. Its objective is to investigate and promote the use of efficient and sustainable systems for using the natural and human resources available, in harmony with the environment.
- **CIAT** - International Center of Tropical Agriculture is oriented toward the reduction of hunger and poverty in the Tropics through collaborative research that improves agricultural productivity and the management of natural resources.

Methodology

This project is based on the application of participatory methods, in which the participants take part in the decision-making in all the processes in which they will be involved. In addition, the methodology of the community-based research services CIALs (participatory diagnoses, participatory evaluations of the technology being tested) will be applied, as well as the concepts of participatory models for natural resource management and conservation.

All these methodologies were discussed in meetings with the young people from the school in La Hondura, where the IPRA methodology was presented and discussed.

Activities

- Participatory diagnosis with the students of the Juan Salvador Gaviota school
- Reading of the CIAL handbooks that explain the concept of research and the CIAL methodology
- Election of the members for the Committees on common beans, maize and rice on 6 February
- Workshop at CIAT on participatory research, 6 May
- Planting of trials with the students from the school, 24 April
- Training on the use of the “smiley faces” format for the CIALs and evaluation of the different trials with the students, 11 June

- Training on the principal pests and diseases of common beans in the coffee-growing zone and postharvest management for the CIAL members, students and teachers of the school Juan Salvador Gaviota, June 11.



Photo No.1: Martha Rodríguez and Leandro Muñoz, members of the CIAL, on their bean experimentation plot.



Photo No.2: Technical from IPRA Project with member of the CIAL, School Juan Salvador Gaviota.

As soon as the project was approved, there were great expectations on the part of the teachers and students of Juan Salvador Gaviota. In order to begin planning the project, a meeting was organized at CIAT with the teachers, director and staff of the school and the different members of the CIAT projects “Communities and Watersheds” and IPRA who participate in this project. At this meeting all the participants voiced their concerns and expectations with respect to the project. Presentations were also made about the mission and the participatory methodologies used in the two CIAT Projects involved in this project.

Later, a similar meeting was held with 30 students in Juan Salvador Gaviota School. In that same meeting food security was defined as one of the objectives relevant for them. For that reason, the CIAL methodology was shared with them, and the possible commitments and responsibilities for establishing the committee were presented. The purpose of this meeting is “Motivation.” Once the students decided to form their own Research Committee, it was agreed to program the date of the meeting for electing the members, Leader, Secretary, Treasurer and Extension agent (Table 1).

La Hondura, the community where the school is found, culturally has a high index of common bean and maize consumption; thus it can be affirmed that they are the principal staples of the region. When the meeting was held for the participatory diagnosis and to select the topic to be researched by the CIALs, the students had already elected by consensus the topics that they wanted to investigate. They decided to form a CIAL to investigate maize varieties that were more early-maturing than the regional variety (i.e, can be harvested at 6 mo).

Another CIAL committee was also created that wanted to identify common bean varieties more resistant to common diseases in the zone such as Ascochyta, web blight, anthracnose and angular leaf spot, as well as pests such as leaf eaters. There were 23 students at the diagnosis meeting. Another committee was also created to evaluate upland rice materials. Thus the three committees are trying to conduct research on different alternatives of interest to the community and seek to identify solutions to problems in their production systems.

Table 1. Participation of students in the meetings.

ACTIVITY	STUDENTS (No.)
Motivation	30
Election of the CIAL Committee	25
Diagnosis	23
Planning	12
Planting the trial	5
Training	15

At the meeting for planning the trials of common beans, maize and rice, 12 student members of the CIALs attended. They agreed to plant plots (4 rows, 4 m long) with three replications in different parts of the community. For fertilizer, it was agreed to apply at planting “Bocashi,” an organic product that they are learning to make at school. It is low in cost because the ingredients are from the region; moreover, it is a new alternative to the expensive chemical fertilizers that are traditional in the region, costing US\$16/50-kg sack of 10-30-10.

The CIAL doing research on common beans planted the variety ICA Catío, supplied by the CIAL in Pescador (Cauca), and the varieties supplied by the CIAT Common Bean Project: AFR 612, AFR 298, Cal 96, Cal 143 and regional Guarzo.

In maize they planted the varieties supplied by the CIAL-San Bosco (Cauca) called Yunga and SiKuani; and the farmers from La Hondura got the regional maize to compare its performance (the yellow check). The CIAL working on upland rice planted the varieties CIRAD 396, IRAT 216 and IRAT 13, provided by the CIRAD Rice Project at CIAT.

In order for the students to be able to identify the commonest pests and diseases that are attacking native bean varieties in their region and at the same time determine which of the new varieties that they are studying in the CIAL are more susceptible or tolerant, training on this topic was provided for 15 students from the school. The methodology used was a slide presentation in the classroom, followed by a visit to the CIAL trial, planted at the school, where the students could identify the commonest diseases in the zone such as anthracnose (*Colletotrichum Lindemuthianum*), *Ascochyta (Ascochyta phaseolorum)* and web blight (*Thanatephorus cucumeris*).

Through the CIAL trials the students now have a clearer concept of what research is and why one should first plant in small plots rather than in large lots. There is great sense of empowerment as they realize that their trials are providing important information for transmitting to their community.

The committees were also trained to manage the format of closed evaluations (smiley faces) to evaluate the alternatives being tested. When the common bean varieties began to reach maturity, an evaluation practice was done with the students so that they could become familiar with the format and begin to understand the importance of recording the criteria used to evaluate the different varieties and observe which would be the best ones to continue planting, for common beans as well as maize and rice.

Conclusions

- As a result of the practice in the trials and strengthening the students' research capacities in school, both the students and some of their parents wish to plant more trials on their farms. Thus local research has been stimulated.
- Training young students on the scientific method is easier and the learning is more rapid than adults. This can be seen in the way that the students caught on to the different concepts and scientific terms used in this training.
- Despite their age, the students showed a high degree of responsibility in taking care of the trials.
- The children are very aware of the problems in their homes, primarily the lack of food and of the opportunities for them in the immediate future. They want to do research to help find new alternatives for generating income on their farms for their parents.
- At the end of the school period, it was noted that there was instability among the people who formed part of the CIAL as a result of which some students did not want to continue for lack of support from the teachers of the school. In view of this weak, the Project named a person to provide more continuous support to the CIALs.
- It was observed that the students wanted to plant the trials on their farms with their parents because there they have the collaboration of their parents, brothers and sisters. This might possibly be a new model to be tested the second semester of 2003.
- The CIAL system of research has motivated the students to read, go to the CIAT library to do research, communicate more with CIAT researchers, and feel very proud to show their trials.
- The technicians are setting up their own trials, independent of the CIAL trial.
- This has created a lot of expectations among the young people regarding the future, and they ask questions such as: What are we going to do now? ¿What comes next?