

PROJECT: UTILIZATION OF RESEARCH RESULTS
(PROJECT # 93-5197-05)

By: W. Couto & C. Sere

There are a number of individual projects which have led to important technological contributions related to improved

OBJECTIVE.

The objective of these activity was to test the feasibility of implementing a project to assess, document and make available to the public the impact or potential impact of selected past IDRC involvement related to agriculture and natural resource management. A key element within this analysis is the identification of past results which have a potential as building blocks for the new Centre agenda. The work to be developed on the basis of this preliminary phase will be in close cooperation with the CAI Division, which will contribute its expertise in the fields of innovation and adoption studies, production of publications and audio-visual materials

It is expected that the communication of the findings among decision makers responsible for fund allocation to new projects and, in utilization of scientific and technological results, will contribute to improved fund allocation and the development of improved production systems. These will contribute in turn, to sustainable use of natural resources, biodiversity conservation and, environmental protection.

TERMS OF REFERENCE OF THE CONSULTANTS

a) Develop a list of candidate projects for impact assessment through consultation with present and former IDRC staff.

b) Review documentation available at LARO on selected projects, consult project staff and specialists about their assessment of project impact. In selected cases field visits may have to be made.

c) Write short project abstracts emphasizing the achievement of the project, their relevance for present development concerns and the impact/potential impact. Special attention will have to be given to existing materials which might be used in raising the awareness of policy makers and the general public.

d) Formulate a project proposal to conduct specific impact assessment studies for a limited number of projects selected from those reviewed under b). This proposal will be developed in close cooperation with staff from both CAID and ENR both at LARO and Ottawa. Results of these studies will be utilized in the production of printed and audio-visual materials.

WORKING METHOD

The work conducted in this preliminary phase consisted in the review of existing documentation in Centre files, the contact with present and former project and IDRC staff working in related fields and, qualified external informants. //

Preference was given to those activities which generated results with potential for incorporation to improved resource management and environmental protection. Other results with limited present application but which might be considered as important building blocks for new projects aimed to the same objective, were also considered.

use of existing improved varieties, new agronomic practices and, extension support in credit and marketing.

To improve the evaluation of project contributions and to understand the adoption process of the new technology, the following information was requested from technical personnel presently responsible for research and extension in Honduras:

- A brief description of the situation in the area of the project, before, immediately after project finished and, present situation in relation to level of adoption of improved technology (use of improved varieties, weed control, fertilizers and agronomic practices in general).

- The effects of the adoption of new technology on farmers' living conditions and on the use of land and water.

- Reasons or conditions which made possible the adoption of the new technology or which prevented the adoption of the technology.

- Potential for documenting previous information through surveys, visits to farmers, existing statistics, etc. and, for development of a video document or publication.

- Same as above, for other crops.

2) COFFEE BERRY BORER (MEXICO).

→ Higher priority
→ impact

Project # 89-0039

IDRC Status: Active

Previous Phases: 84-0113

Present Contact:

Sr. Coordinador del Centro de Investigaciones Ecológicas del Sureste Unidad Tapachula Tapachula, Chiapas México. ?

Project Abstract:

The Coffee Berry Borer (*Hypothenemus hampei*) is considered one of most important insect pest for coffee. It is originally from Equatorial Africa and was introduced accidentally to South America early this century. It was officially recognized in Brazil as early as in 1924. Its presence was later detected in most coffee growing countries of the Americas, including Colombia, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, México and Perú. It affects both coffee grains yield and quality and demands expensive control measures.

The control of the Coffee Borer is based on labor intensive cultural practices and repeated applications of chemical insecticides. In addition to the harmful effects on humans and the undesirable effects on the environment, applications of endozulfan, lindane and other insecticides, resulted in insect resistance to that kind of control.

The presence of the pest in México was first recognized in 1978 and is presently affecting coffee farms of Chiapas, Oaxaca, Veracruz, Puebla and Guerrero, producing tangible losses to more than 25.000 farmers. Given the limitations of the traditional chemical control, the Center for Ecologic Research for Southeastern México (CIES), of Tapachula, México, initiated research work on biological control of the pest in 1988, despite the unsatisfactory results obtained earlier in other countries in controlling the pest with the use of its natural enemies.

The work was conducted in cooperation with the International Institute for Biological Control (IIBC) and received IDRC support since 1991. The project aimed at the introduction and establishment of natural enemies of the pest identified in Africa.

The four years effort resulted in the successful introduction of the parasitoid Cephalonomia stephanoederis. The

work involved the identification and collection of parasitoid insects in Kenya and Togo, studies on their biology and development, the development of rearing methods for the borer and parasitoid insects and of simple field methods for multiplication of the parasitoids, their release in several areas and, field studies on their level of control and establishment. A number of small farmers have been trained in simple methods of multiplication and release of the parasitoid.

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South-South
consideration

How many

At present, *C. stephanoderis* is established in several areas of southeastern Mexico and can be considered as an important contributor to the control of the Coffee Berry Borer. Additional work is necessary however, to improve methods of multiplication, to combine biological control with other control methods, to better understand population dynamics under varying climatic conditions and, to improve the assessment of level of parasitism in field conditions. The work call the attention at regional and worldwide scale and similar or complementary work has been initiated in seven Latin American countries.

SAIDOO

There are still some technical problems which require more consideration and improvement for development of a successful biological control of the pest: (a) improvement of laboratory and farm methods for rearing the parasitoid; (b) studies on populations dynamics under varying climatic conditions of the region; (c) effect of population density of the host on the multiplication of the parasitoid in field conditions; (d) potential interferences between biological control and pesticide applications to control other pests and (e) integration of biological control with other methods for more efficient control of the pest.

The completion of the work already initiated has the potential of allowing for the development of an efficient biological control method integrated to cultural and chemical methods. This will result in limited use of pesticides, with its effects on the environment and, increased income for farmers as a result of higher value of the product and increased yield.

Recommendations:

A proposal has been submitted by CIES, Mexico, requesting support for a third phase of the Project. The followings are the consultants' comments on the proposal and potential follow-up actions:

1) The coffee borer is an important pest affecting coffee plants at a worldwide scale. Its control requires frequent use of pesticides with undesirable side effects on humans and the environment. Biological control of the pest has been tried in a few countries with mixed results. The CIBC/CIES project initiated in Mexico in 1988 has contributed significantly to the

development of important components of biological control of the pest. Applications of these findings in some selected areas of Chiapas State proved to be effective in some conditions and have been adopted by small farmers with encouraging results.

2) Among others, contributions of the project were: (a) a better basic knowledge of the biology and development of parasitoid insects; (b) development of a method for in vitro rearing of parasitoid insects; (c) development of semi-artificial diets to multiply host insects and parasitoids, (d) development and application of a simple method for rearing parasitoid insects at farmer level; (e) establishment of the parasitoid in selected areas by means of repeated releases of parasitoids and, extension of methodology to communities and adoption by large number of farmers.

3) There are still some technical problems which require more consideration and improvement for development of a successful biological control of the pest: (a) improvement of laboratory and farm methods for rearing the parasitoid; (b) studies on populations dynamics under varying climatic conditions of the region; (c) effect of population density of the host on the multiplication of the parasitoid in field conditions; (d) potential interferences between biological control and pesticide applications to control other pests and (e) integration of biological control with other methods for more efficient control of the pest.

4) The completion of the work already initiated will allow for the development of an efficient biological control method integrated to agronomic and chemical methods. This will result in limited use of pesticides, with its effects on the environment and, increased income for farmers as a result of higher value of the product and increased yield.

5) Finally, it is considered that the project in its third phase will make use of results previously obtained with support from IDRC and will be very much in line with present IDRC strategy, specially in relation to environmental concerns. It will be also in line with other IDRC activities, specially with those supporting integrated pest control management.

6) It is suggested to support the CIES request with limited resources, to allow for detailed examination of scientific and technical aspects of the project and to formulate a new proposal for a third phase of the project. Funds should be used for hiring an external consultant to examine the project and assist in the formulation of a new proposal based on the limitations pointed out above, and others which might be found. A major effort should be made to integrate biological control with other methods, to ensure efficient control of the pest. Technological transfer to farmers should be an important component of the project.

7) The proposed terms of reference for the consultant are:

Consultor internacional en control biológico de la broca del café.

TERMINOS DE REFERENCIA.

Se ha hecho >

El consultor, en estrecha colaboración con el Coordinador de la Unidad Tapachula del CIES, realizará las siguientes tareas:

1. Examinará los avances realizados en el Proyecto de Control Biológico de la Broca del Café y formulará recomendaciones relativas a necesidades de investigación para consolidar los logros y para perfeccionar los métodos utilizados. En particular examinará las posibles necesidades en:

- perfeccionamiento, masificación de los métodos de multiplicación
- complementación entre el control biológico propuesto y otros metodos de control biológico o químico
- conocimiento de la dinámica de poblaciones en diferentes condiciones climáticas de la región
- desarrollo/mejoramiento de métodos de estimación de nivel de parasitismo en condiciones de campo

2. Examinará los avances realizados en relación a extensión y sugerirá las modificaciones/ampliaciones en la estrategia del proyecto, necesarias para asegurar la participación de productores en el control biológico.

3. En base a lo indicado en los puntos 1 y 2 y sobre la base de la propuesta formulada por el CIES, elaborará un proyecto complementario al recientemente finalizado, para ser presentado al CIID y otros posibles donantes.

3. Formulará recomendaciones relativas a la importancia de los logros del proyecto y las posibilidades de utilización de la técnica desarrollada por el proyecto, en otras regiones cafeteras de américa tropical. En particular, deberá especificar en detalle, los aspectos más destacables del proyecto y las alternativas disponibles (boletín técnico, nota de divulgación, video, etc.) para documentar/divulgar los mismos y los beneficios derivados del proyecto.

4. Redactar un informe técnico sobre el trabajo realizado y las conclusiones y recomendaciones formuladas.

3. Plantain production improvement (in Colombia).

Project # 90-0159

IDRC Status: Active

Previous Phases: 87-007

Present Contact: Dr. Silvio Belalcazar,
Centro Satélite de Plátano y Banano ICA
Armenia-Quindío, Colombia

Project Abstract:

The project made important contributions towards the development of improved banana and plantain production technology. The new technology includes improved planting techniques, biological and chemical control of insects and diseases and, controlled vegetative development. The new technological components have a good potential for its incorporation into sustainable natural resources management, reduced environmental impact and reduced health hazard. The project contributed also to the development of technological components which, if not for immediate application, will contribute to project development under the new IDRC mandate.

On the other hand, it should be recognized the contributions of the project to improved living conditions of farmers and the public in general in countries where banana and plantains are economic and socially important.

A useful and attractive manual on production technology for the crop was published with support from IDRC, INIBAP, ICA and the Federation of Coffee Growers of Colombia. It is suggested the development of a brief publication on most important aspects of the project in relation to both, scientific and technological results, with emphasis on photographic resources and a short text. A video showing technological components, results of laboratory and field work and participation of farmers in the process, would be recommended.

4. PEACH PALM AND AROIDS (COSTA RICA).

Project # 90-0076

*Needs further support
results when?*

IDRC Status: Active

Previous Phases: 87-0026

Present Contact:

Sr. Luis Gómez, M.Sc. Centro de Investigaciones Agrómicas
Universidad de Costa Rica San José COSTA RICA

Project Abstract:

IDRC has supported the development of technology for production of virus-free plants of several edible root plants and methods for in-vitro multiplication of pejibaye. The laboratory methods developed are essential for development of a technology very much needed for increased production and quality of several root plants consumed by large proportion of the population. In the case of pejibaye, there is need for a proper multiplication of pejibaye which will ensure homogeneous populations of this palm with the purpose of fruit and palm hearts production under cultivation.

It is considered that the project made important contributions towards the development of a suitable method for obtaining virus-free plants of edible roots like ñame and cassava, with important potential benefits for small farmers and the population in general. It would be of the interest of IDRC to document and make available to the public the achievements of the project. A special short publication mainly based on graphic documents and a video would be suitable means for that purpose. Both documents should be based on the techniques used, results obtained in laboratory and field conditions and, the expected benefit for farmers and consumers.

Recommendations:

1) The achievements of the project justify a brief document and video on the technological advances and potential applications of the technology developed if cooperation from project leaders is obtained.

2) Related to the proposal for extended support to the project, the following comments have been made:

a) The proposal is aimed at the consolidation of results obtained by the project in the production of virus-free plants and in-vitro multiplication of selected plants, into production systems. As such, a second phase of the project will build on previous investment allowing for results to contribute to improved income and living conditions of small farmers.

b) There are two assumptions implied in the proposal that would be necessary to explicit if this is actually the intention of the proposal. If not, a valid explanation for not working with improved varieties and the lack of consideration of economic factors should be given:

1. There are not improved varieties of tuber or root tropical plants available or, traditional varieties are either higher yielding or preferred by the public when obtained from virus-free plants.

2. Increased production of tubers and roots promoted by the project will be absorbed by existing local market or exports, without any effect on present prices received by farmers.

c) It is not clearly stated how the availability of virus-free "seeds" would contribute to reduced use of pesticides with the benefits for human health and the environment, as claimed by the proposal.

d) The proposal should group clearly, in separate sections of the document, the objectives, expected results and activities of the project, which are given in separate parts of the document.

The long term objective of the project might include parts of what is presented as specific objectives:

To contribute to the diversification of sustainable production systems, increasing the income and living conditions of farmers growing tropical roots and tubers, by means of the use of virus-free "seeds" of traditional varieties used by farmers.

As results or products of the project, the following items might be indicated:

1. Virus-free "seed" of tuber and root plants available to farmers.
2. Improved technology adopted by farmers and incorporated into tropical roots and tubers production systems
3. Improved farmers' organization and product marketing procedures.

The activities to be developed by the project to obtain expected results might include:

For result 1, "seed":

- Collection, description, identification, multiplication and conservation of traditional tropical root and tuber plants.
- In vitro multiplication of virus-free plants.
- Adaptation of plants produced in vitro to greenhouse conditions and preliminary field multiplication.
- Certified "seed" production in a joint program with farmers' associations, with the technical support and supervision of specialized institutions, including the following steps:
 - pre-basic seed
 - basic seed (includes initial, pre-foundation and foundation seed).
 - registered seed
 - certified seed

For result "Technology":

- Assistance to farmers through organized groups, in handling seedlings produced in laboratory, the pre-planting adaptation to field conditions and, agronomic practices.
 - Field days at seed production plots and cropping areas.

For result "marketing" :

- Training and technical assistance to farmers in enterprise management and organization, and for storage, packing, marketing and export sales of root and tubers.

As a conclusion, with some formal changes on specified points, the proposed project could be considered as an important effort to improve living conditions of a sector of farmers and to food production. It might also contribute to reduced use of pesticides.

3) Related to the proposed video, information provided by the project leader indicates that MSS. Hardy from Ottawa, would be producing the video in November 1993.

Also, a request for further financial support for a continuation phase of the project has been submitted by the Universidad de Costa Rica and is also under consideration of IDRC, Ottawa.

*OJO Contact
Frank*

5. PLANTAIN/BANANA IMPROVEMENT (HONDURAS).

Project # 90-0163

IDRC Status: Active

Previous Phases: 88-0208/85-0013

Present Contact: Director General de la
Fundación Hondureña de de Investigación
Agrícola San Pedro Sula,
HONDURAS.

Project Abstract:

The advances made by FHIA project in creating new genetic material resistant to black Sigatoka can be considered impressive. The availability of these resistant material and its worldwide distribution represents an important contribution in economic and social terms as well as from the point of view of environmental impact.

According to information obtained from FHIA, CAID Ottawa would be preparing a publication for "Reports" on the subject. The potential for developing a video would be also under consideration by Ottawa.

Recommendations:

1) The production of a short publication on the project and results obtained so far is recommended. It should point out the socioeconomic importance of results for countries where banana and plantains represent an important fraction of food consumption. Also, the potential for consumption of pesticide residue-free bananas in developed countries as a result of the project, should be emphasized.

6) PRACIPA NETWORK (CIP).

Project # 91-0200

IDRC Status: Active

Previous Phases: 86-0241/ 83/0128

Present Contact: Ing. Gino Aguirre
Cochabamba, Bolivia

Project Abstract:

The project has develop a number of activities in Bolivia, Colombia, Ecuador, Perú and Venezuela, where potatoes have an important role from both, social and economic point of view. The purpose of the project is to improve living conditions of small farmers through the utilization of better potatoes "seed", improved agronomic practices and plant protection techniques, extended and improved conservation conditions of product for consumption and for utilization as "seed" and, better commercialization procedures. Keys point in project activities were the utilization of traditional potatoes varieties, under improved conditions, and reduced use of agro-chemicals.

SAIDOO

The production of improved potatoes "seeds" by means of a simple technique known as "positive selection of plants" proved to be highly effective in the absence certified seed of improved commercial varieties. Crops started from potato seeds obtained through this technique produced higher yields than common seed used by the farmers for both, traditional and improved varieties.

Also, a serious limitation for the use of improved commercial varieties potatoes is the decay of its yield potential as a result of the virus contamination in the field, by means of insect transmission. The project supported also activities which resulted in a virus-free seed produced by means of a fast technique based in tissue culture and quick propagation from young stems.

How much higher?

How much is yield affected by virus contamination?

Parts of these project achievements are already been documented by means of special publications by participant institutions. A video on insect control of potato moth was also produced. Support from IDRC in the documentation and disseminations of project results will contribute to visibility of the project and improve project impact throughout the region.

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The control of pest and diseases is vital for healthy, high yielding potato crops in most producing areas of the Andean

region. The lack of chemical control of pests results on reduced yields and poor quality product. On the other hand, continuous use of chemical insecticides is not at the reach of farmers because of the high cost and, when it can be afforded, increases health risks and environmental contamination. A main concern of the project was to look for reduced rates and frequency of insecticide applications. The project supported also the development of biological insect control procedures which ended in the production and commercialization of a bioinsecticide known as "Baculovirus" consisting on a virus-derived product which can be applied to potatoes seed to control a moth known as "polilla de la papa" (*Phthorimaea operculella*). (Video)

} BILL

Recommendations:

=> Selama
=> SAIDOU

It is suggested to allocate limited funds to better documentation of project results by means of one special bulletin and the development of a video on techniques developed by the project and their applications. Results obtained by farmers with the utilization of the techniques and their effects on better living conditions of farmers and consumers should be explored with project coordinator and national project leaders.

7) GUINEA PIG PRODUCTION SYSTEMS (PERU).

Project # 89-0115

IDRC Status: Active

Previous Phases: 85-0182

Present Contact:

Project Abstract:

Cuys are small rodents of Latin American origin, which were domesticated during Inca and pre-inca times. They constitute a traditional red meat source in Andean societies from southern Colombia to Bolivia.

Cuy production is particularly adapted to the resource endowment of poor families. The diet of the cuy can be largely based on forages and fibrous household wastes. They are usually kept in the kitchen or in simple pens, frequently with chicken, ducks and other minor species. Thus their production does not require major investments and allows the productive employment of family labor, mainly women and children. The productive cycle is short as animals reach slaughter weight in 8 to 12 weeks. Females are relatively fertile (litter size 1.5 - 2 , 3 to 4 litters per year, mating within hours after giving birth) and young ones develop quickly. They can be weaned at an age of one week.

The cuy population of Peru is estimated at 21 million with an annual off-take of 66 million head producing some 17000 MT of meat. To put this in relation to other meat producing activities in Peru, the country produced 280000 MT of chicken and 112000 MT of beef in 1991 (FAO). Almost all of this production comes from household systems. The average stock number per household is in the range of 20 to 30 animals. Cuys thus offer the potential of both increasing household consumption of red meats and raising incomes. Cuy meat is highly valued by both rural and urban consumers in Peru as is documented by the prices paid per kg. limelight which are well above those of chicken, pork, beef.

The rationale for this project is the fact that the traditional system of production involves a series of inefficiencies which reduce its role as contributor to nutrition and incomes. These relate mainly to the high mortality and slow growth rates of cuys. The grant supported research by INIA during the period 198 -1993 with the overall objective of developing appropriate technologies for cuy production systems in Peru and other countries where this species is produced.

Specific objectives include: characterization of existing production systems, understanding cuy nutrition and its interactions with other management factors, continuing breeding programs, designing improved production systems, engaging in the transfer of these technologies.

Some of the major achievements of the project to date include:

-development of the "poza" or pen system as an alternative to free keeping of cuys in the kitchen or in a large pen with other species. The "poza" systems allows to separate groups of animals and to give them a more targeted management.

-documentation of the benefits of controlled mating. With the poza system it is possible to handle small groups of females with one male, instead of one large group with several males in it. The latter leads to fighting and mortality.

-breeding of cuy lines of higher productivity. Under experimental conditions improved cuys of the Peru breed weight twice as much as the criollo animals at an age of 8 weeks. Under farmer conditions and within cross-breeding programs the genetic benefits are masked by environmental conditions. Differences are not statistically significant.

-a substantial body of knowledge has been developed in relation to the management of cuys: use of available feed sources, animal health aspects (mainly control of ecto and endoparasites), reaction to changes in altitude and temperature, etc.

The major challenge to the project in terms of achieving a ~~socioeconomic-economic impact~~ is the fact that up to now it has attempted to improve household systems where cuy production is just one more and relatively minor activity. The hope was that this would be achieved through the introduction of improved cuy breeds. But monitoring of the performance of these new breeds in farmers' systems has documented the strong interaction of genetic potential with other managerial aspects, such as separate housing of different categories of animals, control of internal and external parasites implying among other things separating cuys from other household animals, feeding regimes, etc. A number of these interventions imply changes in traditional ways of doing things, most imply additional work and some expense. Given the limited extent of the cuy enterprise and the fact that it is mainly for home consumption, it is not clear how strong the incentives for change are.

The project has also worked with some family operations mainly producing cuys for the market. Here the potential for

adoption of management changes is larger as results are more visible in terms of additional incomes. This might imply that the project will make a significant contribution to incomes of selected small farmers who have comparative advantages in cuy production for the market. In this case a particular issue is the marketing of cuys. High prices at the consumer level do not indicate high prices at the farm gate. In the case of cuys small numbers produced by individual farmers at any point in time imply high assembly costs and potential returns to farmer organization.

Research into the marketing chain is necessary to identify entry points to increase efficiency. At present an expansion of the project into the development stage, with a strong emphasis on household production systems, extension approaches is being discussed between the Peruvian researchers and IDRC.

Recommendations:

The review of the draft proposal of August 16, 1993 suggests that in line with the above considerations, more socioeconomic-economic analysis input is required into more accurately targeting the extension and development effort. Hard data is needed on the marketing issues and on the real benefits of improved cuy management systems to different types of families. This implies a need for a more rigorous on farm validation effort before large scale diffusion is attempted. At the same time the Center is supporting the production of a video on cuy farming systems. This may be useful to raise the awareness of the importance of traditional animal species as well as their management within the context of sustainable development, income generation and employment for women, children, etc. At this stage it is too early for major impact assessments or adoption studies of this project. If the appropriate research is done, such an impact study may be warranted in 3 to 5 years time.

what about the linkages with other development efforts & the demand for improved stock ...
The project / INIA sell app 6,000 breeding stock per year. !!

We are missing several projects: additionally

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Guatemala, Panama, Peru (Native fruit trees)

8) SUSTAINABLE AMAZONIAN SYSTEMS (PERU).

Project # 91-0215

IDRC Status: Active

Previous Phases: 86-0112/83-0119

Present Contact:

Project Abstract:

9) SUSTAINABLE HIGHLAND AGRICULTURE (PERU) .

Project # 92-8762

IDRC Status: Active

Previous Phases: 84-0193

Present Contact:

Project Abstract:

10) TROPICAL FORAGE RESEARCH NETWORK (RIEPT)

Project #

IDRC Status: Closed

Previous Phases:

Present Contact:

Project Abstract:

CONCLUSIONS

Research is by its very nature a risky activity, and IDRC's portfolio reflects this fact. Nevertheless the review of former AFNS projects in the LARO region revealed that over the past decade a series of creative and challenging research projects have been supported. These projects were selected reflecting the mandate of the Center at that point in time. Projects supported by AFNS were geared to expanding food production in developing countries with a particular concern for rural poor. As the mandate of the Center has evolved to become an Agenda 21 institution, as reflected by the present Corporate Policy Framework, broader concerns about environment and natural resource management are guiding project selection.

This review shows that a series of partnerships with recipients developed under the previous mandate, do fit well into new CPF and thus offer the scope for making the new CPF operative in a quick and cost-effective manner.

The approach used of contacting PO/former POs and then project leaders revealed that motivation of the latter to contribute their assessment of achievements was variable. We venture the following hypotheses for this reaction:

OJO:
TERRY,
SALAMIA

-these scientists see limited rewards to contributing this information, they have not understood the change of the center mandate. In other cases they have contacted Ottawa staff and have developed links and proposals directly with headquarters and thus see no point in supplying information to LARO.

-the fact that such an assessment requires a detached analysis of overall research strategy followed. In many cases project leaders have not developed this holistic analysis capability as is reflected by research conducted and reports produced. This point is developed further at a later stage.

-most projects are still very much at a technology design phase. In spite of a stated systems perspective they tend to follow a rather linear research strategy with limited interaction with the ultimate users. This research strategy has shown its limitations in solving agricultural problems in LDCs. It will be an even more important constraint in dealing with the new research agenda, which involves even more complex systems.

Potential for impact studies:

It would be of interest to be able to assess the impact of selected activities of IDRC in Latin America and the Caribbean on

country or regional development and, to understand the process of adoption of the results of research activities supported by IDRC.

It was possible to develop a list of selected projects whose activities generated information which produced an evident impact or have potential for producing sizeable impact on the development of selected areas or the region was produced.

However, it will not be possible to define a summary of the situation at the beginning of each project and, in most cases, will not be possible to make quantitative estimations of the impact produced by the projects, independently of other effects.

An analysis of the factors which contributed to the identified impact and of those factors which did not allow for achieving the expected impact, including technical factors, socioeconomic conditions and the policy environment in which the results were obtained, would be extremely difficult in this situation.

Moreover, the limited exposure to potential users of the technology does not make the consultation of the users/nonusers by means of statistically designed survey instruments a very productive mechanism to gain insights. Thus ex-post impact studies will require that the process of diffusion be more advanced.

Potential for socioeconomic-economic input into the research process:

Most of the projects reviewed are handled by recipients with a strong background in agronomic research. Efforts have been made to strengthen many of the teams in the field of socioeconomic-economic analysis but talented social scientists have been attracted to other institutions. This is reflected by the fact that frequently after years of research the innovations are at a stage where researchers consider it suitable for diffusion to farmers, only to realize that demand for the technology is not there or has evolved due to market changes etc.

Discussions of systems, production to consumption linkages, etc are in the terminology used but need to be actually incorporated to a larger extent. This seems to relate to the lack of trained social scientists with a farming systems understanding in the NARS and the low priority given to social sciences when scarce personnel budgets are being allocated.

It is particularly important that socioeconomic-economic inputs are supplied at the early stage in the research process to avoid misallocation of funds and frustration of scientists.

Based on participatory diagnostic work, reviews of the state of the arts, ex-ante analyses can be undertaken. As the research process advances on farm trials, user panels, and other social sciences techniques need to be more widely used to generate feedback. One important use of this feedback is the use of the generated information to turn ex-ante analyses more and more "realistic" and closer to an ex-post study.

Strategies to incorporate the social sciences dimension:

IDRC has traditionally been interested in the process and thus the emphasis has been on developing the human resource. Given the limitations of this approach in the past, it has to be complemented by other approaches if results are expected. One approach being tested at present is the formation of research consortia, where the diverse scientific skills required in research are shared by more than one institution in a flexible manner. It is hoped that this will among other things, make work attractive enough to retain talented scientists in the system. e.g. social scientists. Another approach is the identification of different partners with whom to develop projects. This trend is quite visible in the region. NGOs are frequently being considered the more cost effective and "client driven" institution. They also seem to be more able to draw in specific scientific skills as needed in projects, e.g. through the hiring of consultants.

Proposed diffusion activities for projects for which relevant contributions for present development concerns and/or potential impact were identified.

On the basis of previous findings, it is suggested to develop a special publication with the purpose of raising the awareness of policy makers and donors on the results of selected IDRC projects. The publication should be based on photographs and short texts, pointing out the contributions of the projects to improved living conditions of farmers and the general public, reduced health hazard and environmental impact, as well as the relevance for present development concerns.

Short videos on selected activities and results of some of the projects examined will contribute to improved diffusion of IDRC activities and past contributions in the area of improved natural resources management, reduced environmental impact and improved living conditions in both, developing and industrialized countries. A list of selected projects and proposed means for diffusion of results is attached.

Matrix of status and recommended action for diffusion of results
in projects selected for impact studies.

Proj.#	Proj. Name	Status	Proposed means for diffusion	
			Video	Note
84-0127	CROPPING SYSTEMS, HONDURAS	Closed	Inf. not avail.	
89-00392	COFFEE BERRY BORER, MEXICO	Under rev.	YES	YES
90-01593	Plantain production, Colomb.	On going	YES	YES
90-00764	PEACH PALM AND AR., C.RICA	Under rev.	YES	YES
90-01635	PLANTAIN/BANANA IMP.HONDURAS	On going	YES	YES
93-5197	POTATO COOP. PROG. (PRACIPA)	On going	YES	YES
	CUY PROD. SYSTEMS, PERU.	Under rev.	YES	NO
	TROP. HUM. (PUCALLPA)			
	PUNO			