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MID-TERM EVALUATION OF THE

UNION OF AGRICULTURAL PRODUCERS OF NICARAGUA

COOPERATIVE AGREEMENT UNDER

THE PRIVATE AGRICULTURAL SERVICES PROJECT
No. 524-0315

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GLOSSARY OF ACRONYMS

ADAL	León Cotton Growers' Association
AGRIDEC	Agricultural Development Company
ANPROSOR	National Sorghum Producers' Association
APENN	Association of Non-Traditional Exports Producers
APROMANI	National Peanut Growers' Association
BID	Inter-American Development Bank
CA	Cooperative Agreement
CATIE	Center for Research and Teaching in Tropical Ag.
CLUSA	Cooperative League of the U.S.A.
FAGANIC	Federation of Nicaraguan Livestock Associations
INTA	National Agricultural Technology Institute
ISTI	International Science and Technology Institute
MAG	Ministry of Agriculture and Livestock
NGO	Non-Governmental Organization
PAS	Private Agricultural Services Project
PL-480	Public Law 480 (U.S. Food Aid)
PMPA	Program for Rice Production Management
PMSO	Project Management Support Office (in UPANIC)
PVO	Private Voluntary Organization
TA	Technical Assistance
UNAG	National Farmers' Union
UNCAFENIC	National Union of Coffee Growers of Nicaragua
UNICAFE	Union of Coffee Producers
UPANIC	Union of Agricultural Producers of Nicaragua
VOCA	Volunteers in Overseas Cooperative Assistance

LAND AND MONETARY UNITS

mz	manzana, land area equal to 0.699 hectares, 1.726 acres
C$	Córdoba de oro, monetary unit of Nicaragua

Official rate of exchange, Nicaraguan Córdobas per U.S. Dollar:

December 1991	C$5.00
December 1992	C$5.00
December 1993	C$6.32
December 1994	C$7.08
December 1995	C$7.93
August 1996	C$8.50

EXECUTIVE SUMMARY

The Union of Agricultural Producers of Nicaragua (UPANIC) Project, which began with the signing of the first Cooperative Agreement (CA) in March 1993, is funded under the Private Agricultural Services (PAS) Project authorized in June 1991. The project, scheduled to end in June 1998, has a total budget of $6.9 million, of which 41 percent remained as of June 1996.

PAS was a response to the deteriorated situation which existed in Nicaraguan agriculture following the 1980s. The concept of PAS and the UPANIC Project is that by strengthening existing private farmer organizations and providing them with the resources to make productive services and technical assistance (TA) available to their members, it is possible to help Nicaragua recover the productive capacity which it lost during the 1980s.

UPANIC, a national organization, represents farmer associations and federations in 10 different commodity sectors. To date, UPANIC has awarded 35 subgrants totaling Nicaraguan Cordobas (C$) 36.9 million, ($4.8 million), to member associations.

Productive Impacts

The mid-term evaluation shows that the UPANIC Project has already achieved many of its production objectives. The economic benefits are substantial. The coffee and livestock projects are now providing increased annual incomes of $4.3 and $1.6 million, respectively, to participating producers. Although operating for a shorter period, the consultant estimates that the rice outreach project will generate net annual profits of $2.0 million in the coming year.

Annual benefits of this magnitude — totaling almost $8 million per year — are impressive for a project which has had a total budget of $6.9 million. They indicate that the overall benefit-cost ratio is very favorable.

Based on field visits during the evaluation, the consultant estimates that coffee yields have increased by an average of 80 percent, or 4.60 qq/mz (quintals per manzana) for more than 2,500 growers. This results in a net increase in income of $222 per mz, which is more than $800 per year for a typical small farmer in the project.

Milk yields have increased by about 18 percent so far, and lactation periods and calving rates are also up. The consultant estimates that the net gain in profit due to milk and meat sales to be $66 per cow, which results in increased income of $660 for a typical small producer with a herd of 10 cows.

Institutional Impacts

The project provided funds to establish a Project Management and Support Office (PMSO), and for institutional strengthening of UPANIC. But most of the funds are designated to provide subgrants to member associations, both to strengthen them and to support the development of productive activities by their members.

UPANIC is a much stronger organization now than when the project started. Membership in the associations has expanded by 142 percent, and they have greatly expanded their sales of inputs to growers. New activities such as the manufacture of livestock feeds not only provide needed inputs to members but also are generating the necessary profits that will help the associations become sustainable.

To carry out the project, UPANIC has set up effective procedures for developing, monitoring, and auditing the subgrants. The way in which UPANIC has organized the subgrant process is one of the real strengths of the program.

The primary focus of the project has been on the producer organization, usually a commodity-specific association with provincial (*municipio*) or regional coverage.

UPANIC developed relatively standardized "modules" for major commodity areas: livestock, coffee, and the basic grains. Each module consists of components which may be selected and adapted to each site. This flexibility allows for the comparison and interchange of experiences among participating organizations.

UPANIC staff developed the ability to help each association establish a strong institutional footing. All were assisted in setting up functional accounting systems, and, where necessary, guidance was provided in obtaining legal recognition, the ***personería jurídica.***

The subgrants have provided resources which the associations have used to hire technical staff who provide TA to member farmers. Project funds were also used to increase the stocks of small farm input stores owned by the associations, and to support them in organizing productive services such as artificial insemination and product marketing.

Solidifying Results for the Future

While some of the benefits would continue even if the project were to end now, farmers require continued technical support to sustain many of the improved production practices introduced through the project. The farmers also require continued access to input supplies and credit. Thus, it is essential that the associations continue to function effectively.

While the individual associations have registered increases in revenues from sales through their input stores and other activities, such as feed manufacturing and product marketing, the gross margins earned from these activities are often too low. Many of the associations do not yet have a workable approach to pricing and to ensuring the profitability which will enable them to survive. To become sustainable, they need assistance in business management and in assessing the feasibility of entering into new areas such as coffee processing.

Recommendation. The consultant recommends that UPANIC expand the TA provided to the subgrant institutions to include support in business management, in the pricing of services, and in providing credit to members. This assistance should also include economists who can provide the associations with specific guidance in coffee and livestock marketing.

In some cases, the TA should include support for evaluating the feasibility of potential profit-making activities such as coffee processing.

UPANIC needs to secure TA for its own organization, to examine the question of how to expand its own revenues and to investigate the feasibility of new ventures that it has been considering. To achieve this objective, management consultants, who specialize in business advice to non-profit farm organizations, should be contracted.

One of the valuable institutional services which UPANIC has provided through the project has been national-level technical coordination. Dr. Luis Piuzzi, the Livestock Coordinator, and Jimmy Zambrana, the Coffee Coordinator, have not only acted in an administrative and monitoring capacity for subgrants in their respective areas, but they have also coordinated the technical activities of the associations. They hold periodic meetings of the association technical specialists and provide linkage to outside sources of technical support.

In rice production, Dr. Frank Gorrez has provided strong support, training and coordination at the national level for the rice technicians whom the outreach program has located in each production region.

When the project ends in 1998, the continuance of this same type of coordination will be essential if the associations are to continue to maintain competent technical support for their members. The technical specialists in the associations will wither on the vine unless they have outside support and access to information.

In coffee and livestock, the most logical approach is for UNCAFENIC and FAGANIC — the national grower federations for these sectors — to hire technical coordinators when the UPANIC Project is completed. However, these organizations must first clearly identify the need for these coordinators and ensure they have the funds to pay for them.

In the case of rice, continuing national coordination presents greater challenges, because there is no single umbrella organization that serves the interests of all of the farmers who are involved in the rice project. Further, it is not clear how the local area rice specialists will be employed to continue in that capacity after the project is completed.

Recommendation. UPANIC and project management must begin taking measures now to ensure that adequate national level technical coordination is continued beyond the end of the project. This process can begin by being sure that FAGANIC and UNCAFENIC recognize the need for this technical coordination, and then by helping them to develop funds to support it.

The same planning effort should evaluate the somewhat different circumstances of the rice program, to determine whether or not there is a way to institutionalize the technical support which the UPANIC Project now provides for rice. In planning for continued rice support, UPANIC should further strengthen the joint efforts of the National Rice Growers Association (ANAR) and the National Farmers Union (UNAG). The cooperation, which has already been achieved between these two organizations, is due to the commendable effort of UPANIC.

The rice outreach program under Dr. Gorrez started in the latter part of 1995, well after the other activities of the UPANIC Project. This program is currently funded only through September 1997. The initial results of this program are impressive, as the analysis in Chapter 5 indicates. However, two years is a very short time to expect such efforts to be fully realized or consolidated. It leaves little time to address the longer term institutional issues identified above.

Recommendation. It is recommended that UPANIC and USAID extend the rice outreach program until the UPANIC Project ends in 1998.

The USAID Advisor, Charles Oberbeck, has been with the project since its inception. This has provided great continuity to the administration of the project and undoubtedly has contributed to its success. Oberbeck's appointment is scheduled to finish at the end of 1996, after which time the full responsibility for the project will rest with the UPANIC Executive Secretary, Alejandro Raskosky.

Mr. Raskosky has worked in the project since its beginning and has served as UPANIC Executive Secretary since May 1995. He has now assumed responsibility for directing the PMSO and the project.

Considering that the project is still operating at a high level of activity, with 11 new subgrants just starting and about 20 older subgrants still continuing, the project and the PMSO staff would benefit by having the continued periodic support of short-term consultants after Oberbeck's departure.

1. INTRODUCTION

This report provides an interim evaluation of USAID's Cooperative Agreement (CA) with the Nicaraguan Union of Agricultural Producers (UPANIC). The CA began in March 1993 and is scheduled to be completed in June 1998. As of June 30, 1996, $4.1 million (73 percent) of the $5.6 million budgeted under the agreement had been spent.

The CA with UPANIC is one of the principal components of the Private Agricultural Services (PAS) Project, authorized in June 1991. PAS was a response to the tremendously deteriorated production base and divided institutional environment which existed in Nicaraguan agriculture after the 1980s. During this period there had been a partial land reform, a civil war, runaway inflation, and disruption of security in rural areas. Combined with bad government economic policies, this had resulted in a serious deterioration of the productive sectors.

The purpose of the PAS Project is to increase productivity and profitability of small and medium farms through strengthened technical and commercial services provided by private farm associations at the community level.

The Cooperative Agreement has two components: direct support to UPANIC, and subgrants to producer associations and cooperatives. The direct support to UPANIC has two principal objectives: to establish a Project Management unit to assist grantees in the development and implementation of projects; and to strengthen UPANIC as an organization in order to better represent the interests of the agricultural sector.

Scope of Work

The main purpose of this evaluation is to assess how well the needs of different customers (farmer members of the associations) are being met under the Agreement. A detailed workplan is provided as Appendix A to this report.

Specific objectives of the evaluation are:

- To assess the effect of the program on farm production levels, family employment and income, improved service access, and other important indicators.
- To provide representative case examples of the impacts of the project on participant producers from among the different types of UPANIC member associations .
- To develop quantitative statements of project impacts.
- To determine whether or not there has been unexpected progress in certain key areas of the project.

The International Science and Technology Institute (ISTI) provided the services of economist, Dr. James Fitch, who conducted the study during the period August 12 to September 6, 1996. He was

assisted in data collection and in making logistic arrangements for the field visits by Mr. Jeffrey Nash, an economist who was serving as a consultant to the project.

Methodology

The evaluation was conducted by gathering information from UPANIC and its member organizations, and from individual farmers and cooperatives participating in the project.

Initially, information was obtained from the periodic monitoring reports of the project. Technical reports and subgrant evaluations carried out by project consultants were also reviewed. A complete list of documents and reports used by the evaluation team is provided in the bibliography.

Collection of field data and other information gathered for the evaluation itself was based on various rapid appraisal techniques[1]. A mini-survey was conducted of 30 farmers selected from five participating associations, representing coffee, livestock and rice growers. Key informant interviews were conducted of leaders, managers, and/or the technical staff of these associations. Officials and technical staff of UPANIC were interviewed. Questionnaires for the survey and guidelines for the key informant interviews are provided in Appendix B.

Selection of associations to be contacted was based on several criteria. Associations were selected from all three of the main sub-sectors targeted by the project — coffee, livestock and basic grains. Associations which had initiated their subgrant activities relatively early in the project were chosen so that sufficient time would have passed for expected impacts to develop. Furthermore, associations were selected from different areas of the country, representing differing production conditions, farmers' needs and subgrant components.

Appendix C provides a list of persons interviewed and organizations contacted for the evaluation.

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[1] For details on these methods, see USAID Center for Development Information and Evaluation, "Using Rapid Appraisal Methods," TIPS Number 5, 1996.

2. BACKGROUND

The Private Agricultural Services (PAS) Project, authorized in June 1991, was a response to the deteriorating production base in the Nicaraguan agricultural sector. Agricultural production was at an historic low and private sector institutions were weak. To address this situation, the strategy of PAS has been to promote the provision of badly-needed productive services via selected private sector farm associations, including the affiliates of UPANIC.

Status of Nicaraguan Agriculture

Historically, the Nicaraguan economy has been based primarily on agriculture. Staples such as corn, beans, rice, potatoes and yucca have been produced for the domestic market, whereas exports of coffee, beef, sugar, and cotton have provided valuable foreign exchange. In 1989, however, the value of Nicaragua's principal agricultural exports was only half that of the 1979 level. Per capita consumption of corn, beans, rice and chicken was less in 1989 than in 1981.

The coffee sector exemplified the situation which had developed. Coffee production encompassed 140,000 manzanas in 1979 and accounted for 31 percent of exports. By 1990, only 107,000 manzanas were being actively tended; the rest having been abandoned due to conflicts of land title and lack of technical assistance.

The national livestock herd, which had peaked at 3.2 million head in 1979, was reduced to about 1.8 million head by 1990. Beef exports dropped from $93 million in 1979 to below $40 million by 1991.

Prior to 1979, the private agricultural sector was arguably the most productive and best organized in Central America. Numerous private cooperatives and commodity-specific national and local associations provided an array of services for member farmers.

In 1979, UPANIC was founded as an umbrella for the cotton, livestock, and coffee federations. During the 1980s, however, these private organizations were discriminated against by the Sandinista government. Most lost membership, and some ceased to function. The surviving associations emerged from the decade in a very weakened condition, and the services which they offered to members had been greatly curtailed. Nevertheless, the existence of UPANIC and its member associations provided a structure through which USAID could work in its efforts to help Nicaragua rebuild its agricultural sector.

At the start of the 1990s a number of sector wide constraints were acting to limit the ability of private producers to recover farm productivity:

- **Production techniques were badly outdated.** Nicaragua's isolation from its traditional trading partners had restricted private sector access to normal flows of technical information and inputs.

- **Producer-market linkages were weak and ineffective.** The Sandinista government had displaced the market as the primary allocator of agricultural inputs, and it had controlled exports through trade monopolies. Traditional marketing channels had been totally disrupted.

- **Availability of fertilizer, spare parts, and other inputs was limited.** Moreover, costs were much higher than in other Central American countries.

- **Access to credit and capital had been severely disrupted.** A state monopoly had been established in banking. Public sector agricultural lending had been poorly administered. Loans had been made indiscriminately to small farmers, resulting in low repayment rates and loss of the bank capital. Medium and large commercial farms had often been denied access to credit and thus were in very weakened financial condition.

- **Disarray existed in land titles.** There were disputes over the proper ownership of properties which had been confiscated and redistributed by the Sandinistas. In other cases, land registries had not been kept up to date, and families, who had used land for generations, did not have proper title. This situation added further complications to the credit process, and it served as a disincentive for producers to invest in the improvement of farms.

Design and Organization of the Project

To address the constraints outlined above, the PAS Project was designed with two components to be carried out by UPANIC[2]. First, there was to be institutional strengthening for UPANIC itself. But second, the largest component of the project was to provide subgrants to UPANIC member federations and local producer associations.

The purposes of the subgrants are both to strengthen the associations as institutions and to support the development of productive activities by the member farmers. The overall goal of the project is to increase the stability and incomes of Nicaraguan farmers.

The original Project Paper for PAS was signed on June 26, 1991, and it was amended in June 1994. The activities of UPANIC have been carried out under a Cooperative Agreement (CA) with USAID. The original CA was not signed until March 15, 1993, due both to delays in working out details between UPANIC and USAID, and due to a freeze on funding for Nicaragua which was imposed by the U.S. Congress. The CA was amended on March 17, 1995. The estimated completion date of the Agreement is June 30, 1998.

Under the original Project Paper and CA, the project was designed to be managed by an institutional contractor who would in turn hire a Project Advisor to assist UPANIC in organizing a Project Management Support Office (PMSO). The PMSO was to have the responsibility of designing and managing the subgrants to member associations, as well as for the institutional strengthening of

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[2] Together, these two components accounted for about 85 percent of the PAS budget under the original Project Paper of June 1991. A third component, relating to the development of non-traditional exports, has been carried out by APENN. This component of PAS is not included in the present evaluation.

UPANIC. In addition to support for staffing the PMSO, the project provided funding to hire technical consultants to assist in subgrant project development, monitoring and evaluation.

AGRIDEC, the institutional contractor hired to help set up and administer the project, finished its assignment at the end of 1994. At that time, USAID opted to contract directly with the Project Advisor to continue working on the project.

Under the amended CA signed in 1995, the staff of the PMSO consists of an Executive Secretary, a Livestock Sector Coordinator, a Coffee Sector Coordinator, and Administrator/Financial Analyst, a Program Assistant, and a Driver/Messenger. The agreement further stipulates that the Executive Secretary will become fully responsible for the operating of the PMSO and that the USAID Advisor will be phased out after the end of 1996.

The amended CA was expanded to encompass any PL-480 Title III local currencies which UPANIC might obtain to support project activities.

Budget

The project budget established in the amended agreement provided for a total of $5,643,474 in USAID funding to be provided through PAS. This includes $3,531,752 for subgrants to farmer associations and $513,700 to provide consultants for TA. Subsequently, $300,000 in additional money was provided by AID, and agreements have been reached with Nicaragua's Secretariat for PL-480, Title III, to provide an addition of $1 million. This brings total funding to $6,943,474. Virtually all of the additional funds are to be dedicated to subgrants.

Project Objectives and Achievements to Date

A number of specific institutional and productive objectives were stipulated in the amended CA. These are described in the following table, together with an indication of the achievements to date. The achievements will be analyzed in detail in Chapters 4 and 5 of this evaluation.

OBJECTIVES AND ACCOMPLISHMENTS OF THE UPANIC PROJECT AS OF MID-1996

INSTITUTIONAL OBJECTIVE:	ACCOMPLISHMENTS
• UPANIC to be more financially sustainable; • To offer increased services to the agricultural sector. • To have increased membership and new affiliates.	• Revenues more than doubled but more revenue needed. • Stronger member representation and technical support. • Association membership up by 142 percent; one new commodity group has joined.
• Member associations to have improved accounting systems. • With sustainable training and technical assistance programs.	• Completed. • Good programs in place; more work needed on sustainability
PRODUCTIVE OBJECTIVE:	
• Productivity doubled on over 3,500 mz of coffee.	• Yields up 80 percent on 19,500 mz.
Livestock productivities to increase: • Calving rates to reach 55 percent. • Lactation rates to reach 6 liters per day. • Lactation period increase to 250 days/year	Results of recent study: • 64 percent. • 4.6 liters/day. • 258 days.
• Productivity increased by 10 percent on over 17,500 mz of basic grain.	• Up by 29 percent on 16,900 mz of rice.
• Over 2,000 small farmers to sell coffee in blocks through their associations.	• Four of eight associations have carried out block marketing; • One marketed for 264 growers last year.
Over 1,200 producers selling cattle and milk through association facilities.	• Four associations have established cattle sales yards; • Sales of 323 head benefitting about 30 farmers to date.
Over 200 small scale farmers selling basic grains through their associations.	• One association has marketed corn and beans for 394 farmers.

3. ROLE AND ACCOMPLISHMENTS OF UPANIC

UPANIC was founded in March. 1979, just before the Somoza government was overthrown. At first UPANIC had supported the Sandinistas, who had been instrumental in ridding the country of Somoza. However, as the policies of the Sandinistas became clear, UPANIC became a point of focus for opposing many of these policies. It spoke out against the confiscation of land. livestock and other private property. Jorge Salazar. UPANIC's first president, was assassinated in 1980. Many leaders of UPANIC and members of its component associations lost property during the 1980s. and some were jailed.

UPANIC emerged from the 1980s in a weakened condition. It had neither staff nor resources with which to represent the interests of its members. What activities it did engage in were political in nature. UPANIC and its member associations had no technical capabilities with which to address its members' productive needs. Nevertheless, UPANIC's basic organizational structure was still intact, and this offered the potential for dealing with productive issues.

The commodity groups of UPANIC represent most of the important sectors of Nicaraguan agriculture, including coffee, livestock, dairy, rice, sorghum, maize, cotton, sugar, and bananas. These commodity groups were formed to represent the specific interests of private producers in each area of specialization. Some of these commodity groups are federations of local area associations. FAGANIC is a federation of local cattlemen's associations, and UNCAFENIC represents local coffee producers' associations.

While many local producers' associations had managed to survive the 1980s, they had been badly weakened. Many of these associations had received support from USAID when they were first founded in the 1970s, but services such as credit and sale of farm inputs, which they provided to their members, had greatly deteriorated.

Development of Project Activities

In November 1991, the U.S. consulting firm AGRIDEC was named by USAID as the institutional contractor to assist UPANIC in implementing its part of the PAS Project. In February 1992, AGRIDEC employed Charles Oberbeck as the long-term Project Advisor, to help organize the PMSO and to administer the project.

Activities before finalization of the CA. Although the cooperative agreement for the project was not finalized until March 1993, the time spent waiting for this to happen was not wasted. The PMSO was established in 1992, as planned, but with limited staff. This staff included Alejandro Raskosky, who became the Livestock Coordinator in 1993 and who subsequently was promoted to be Executive Secretary in 1995. UPANIC rented larger offices, suitable for the regular meetings and representational functions, as well as to house the PMSO.

The PMSO helped UPANIC conduct a thorough financial and administrative review. Based on this review, a new accounting system, with adequate internal controls, was implemented. Accounting was computerized, with software capable of handling project accounting requirements, as well as

UPANIC's own institutional needs. Personnel and procurement policies were developed. UPANIC was granted PVO status by USAID.

Also during 1992, TA funds in the AGRIDEC contract were used to employ short-term consultants who helped to develop projects for the coffee sector and to begin analysis of potential livestock subgrants.

The efforts required to start the project were realized despite the fact that another UPANIC president, Arges Sequeida, was killed in November 1992.

Pace accelerates with signing of CA. After the original CA was signed in March 1993, the pace of the project picked up. UPANIC hired Francisco Javier Gurdian[3] as Executive Secretary in April, and Jimmy Zambrana was named Coffee Coordinator in September. Under the direction of the Executive Secretary and the Project Advisor, the PMSO initiated procurement of vehicles, office equipment, and computers.

A Steering Committee[4] composed of key UPANIC representatives was approved by USAID, to assist in subgrant review and selection. The project developed criteria for ranking subgrant proposals. These included:

- Impacts of the project on producers;
- The proposing association's capability to implement the project;
- Economic sustainability for both producer and the implementing association;
- National level economic impacts;
- Number of beneficiaries, inclusion of small and medium-size producers, and effect on association membership; and
- Counterpart funds contributed by the association.

UPANIC assisted the associations in making surveys of their members, to obtain information about their situation and needs, and to provide a baseline for project monitoring. A standard reporting form was developed for use by the grant recipients. UPANIC acquired database management software in order to analyze the surveys, and to collect and analyze data for subgrant monitoring and evaluation.

As the first grants were being written up, the PMSO decided to include both the institutional support and productive components for each association in the same subgrant project. Originally, it had been envisaged that the grants for the productive components would be made on a competitive basis. In the end, they were not competitive. However, the size and components in each subgrant project varied depending on the needs and capabilities of the association.

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[3] Gurdian resigned in May 1995 to take another job, at which time he was replaced by Alejandro Raskosky.

[4] The Steering Committee was later dropped when the CA was modified in 1995. By then it had been learned that most of the required supervision of the granting process came directly from UPANIC's Board of Directors, with the guidance of the Executive Secretary and the USAID Project Advisor.

Use of consultants. During 1993, the UPANIC utilized 42 separate consultant assignments involving a total of 634 person days, to help the PMSO and the associations in sub-project design and grant writing, and to provide TA for project implementation. For example, consultants provided advice on how to conduct and monitor the basic grain validation trials. Throughout the project there has been continued use of consultants for these purposes, as needed, and more recently to assist in project evaluation.

First subgrants awarded. UPANIC reviewed and submitted the first three subgrants to USAID for funding in June 1993. They were approved in September and work on them was initiated immediately. Two of these involved improvement of basic grain production, whereas the third was for small farmer coffee renovation. In 1994 the subgrant process accelerated. UPANIC submitted nine livestock association projects for approval by USAID in December 1993 but they were returned because AID's policy in Nicaragua had been revised to disallow the procurement of vehicles with grant funds. After being revised to omit vehicles and include other components, USAID approved these projects in February 1994. UPANIC prepared and submitted seven more coffee association projects which were approved by USAID in September 1994. An institutional support grant was made to the dairy industry improvement group in December 1994.

In 1995, three additional subgrants were submitted by UPANIC and approved by USAID. These included one in basic grains and two with livestock associations, bringing the total of approved grants to 24 by the end of the year.

Provision of software and training in accounting. As the various associations began implementing their subgrants, the project provided them with accounting software, and PMSO personnel trained their accountants in the installation and use of this software on micro-computers which had been provided with subgrant funds. This permitted the associations to employ accounting procedures which are required for financial reporting by the project. PMSO personnel also assisted the associations in the procurement of computers and other equipment provided by the grants.

TA for rice outreach program. A new dimension was added to the project's use of technical assistance in September 1995, when Dr. Frank Gorrez, an agronomist, was hired to implement an outreach program in rice. The Program for Rice Production Management (PMPA), which is funded for two years, is designed to parallel the rice validation program implemented as a project subgrant by the Nicaraguan Rice Growers' Association (ANAR).

SAVINGS IN PRODUCTION COSTS

The Roberto Centeno Cooperative is small, with only 40 manzanas (24 hectares) of irrigated rice as a cash crop for its nine members. It has been participating in the rice technical assistance program for over one year and is experiencing yields 30 percent greater than before. Members attribute these yields to a better selection of rice seed, change in fertilization practices, better attention by the members to caring for the crop because of frequent visits by the rice program technician, well-timed rainy seasons, and much lower irrigation costs. This cost savings results from a new type of paddy leveler the program showed them how to build on the farm with available materials (otherwise it might cost $ 200 to build). By using this leveler they need only one-half of the water previously pumped, meaning one-half the electricity and one-half the labor used to guide the flooding from field to field. The savings in electricity alone amounts to $ 220 per manzana; a total of $ 17,600 per year with two crops, plus much less use of herbicides and labor for weed control because of more uniform flooding.

It demonstrates improved production practices, including the results of the ANAR validation trials. to members of ANAR and to small rice growers who are affiliated with the Nicaraguan Farmers Union (UNAG). The latter organization, which was first organized by the Sandinista government and later converted into a NGO, is not a member of UPANIC.

PL-480 is new phase of grant funding in 1996. During the first half of 1996 when UPANIC reached agreements with the PL-480 Secretariat to provide $1 million in local currency to fund six additional subgrants through the project. Three of these involve land titling activities to be carried out by coffee associations which earlier received grants for institutional strengthening and productivity improvement, and three are for additional livestock projects. One of the additional livestock subgrants will go to FAGANIC, the Federation of Nicaraguan Cattlemen's Associations. In turn, FAGANIC will use these funds to carry out institutional strengthening and productivity improvement in six small cattlemen's (livestock) associations.

In addition to the PL-480 grants, UPANIC has prepared five other grants for USAID funding under the project. Two of these have been submitted for approval but have not yet been signed. One of them is for drying equipment to be provided for a rice cooperative in Siuna, while the other will provide a peanut dryer to an association in Chinandega. UPANIC has prepared and reviewed three other livestock projects, which are now ready to be submitted to USAID for approval.

In the first quarter of 1996, the project augmented the budgets of 14 of the original 24 subgrants, after the original funds had been depleted and after they had received favorable evaluations of progress. The new funding will permit the activities of these successful programs to continue until the project ends in 1998. Three subgrant projects were considered completed by the end of the first quarter of 1996.

In mid-1994, one of the original grants had been terminated for poor performance. The decision was taken not to augment three others because performance had been unimpressive or problematic. For example, it was decided not to augment the Leon Farmers' Association (ADAL) subgrant after an evaluation of that project. The evaluation found that the technical performance of ADAL in carrying out validation trials had been satisfactory. However, loans which were made for validation trials to several of the Association's key members were delinquent, and the financial condition of the Association had deteriorated.

Loans to non-affiliated organizations. One of the changes in the 1995 amendment to the CA was to enable UPANIC to make project subgrants to non-affiliated organizations[5]. Such grants have been developed and are ready to be finalized for two different organizations. One of these is a grant being made to a cattlemen's organization in El Ayote. This group is not a member of FAGANIC. It is composed of former civil war opponents who are working together to improve their livestock production practices.

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[5] Such organizations will still need to meet the same criteria as member associations in other regards, however, such as having recognized legal status (*personeria juridica*) and a competent accounting system.

The other grant being made to a non-affiliate is for drying equipment to be provided to the rice growers cooperative (COOPEMINAS) in Siuna. This is a case where USAID had identified the need through one of its natural resources programs but where the counterpart agency did not have the technical and administrative capabilities to make such a grant. UPANIC agreed to add this project and administer the corresponding subgrant, although COOPEMINAS is not one of its affiliate organizations. Rather, it comes under UNAG[6].

Evolution of the Subgrant Program

The subgrant projects are the main component of the UPANIC Project. It is through the subgrants that services are delivered to farmers and that they ultimately provided support in increasing their production and incomes. Thus, to understand how the UPANIC Project really works, it is essential to understand the process through which the subgrants are developed, monitored and carried out.

The primary focus of the project has been on the producer organization, usually a commodity-specific association with provincial (*municipio*) or regional coverage. Only two national-level organizations (for rice and sorghum) have been recipients of funding, even though others do exist (as for coffee and cattle). In part, this focus is a result of the strategy to operate as close to the producers as possible (the association or sometimes a cooperative), instead of relying on a "trickle-down" effect.

The structure of the subgrant program consists of two parts, institutional support and productive projects, with complementary support functions carried out from a higher level, usually UPANIC itself with direct funding from USAID. Occasionally other support agencies (UNAG) or funding sources (PL-480) were used, but coordinated through UPANIC. Appendix D "Farmer Association by Type, Coverage and Status" displays types of activities covered by subgrants mentioned in this section.

A typical project proposal is between 15 and 20 pages and follows a simplified format describing the association and its members' principal production activities, the project's objectives and proposed actions, and the resources needed for implementation. UPANIC developed relatively standardized "modules" for major activity areas: the commodities of livestock, coffee, and grains, and the complementary activity of land surveying and titling. Each module consists of components which may be selected and adapted to each site. This allows for the comparison and interchange of experiences between participating organizations.

Institutional Support. Virtually all recipient organizations were weak at the outset of their subgrant projects: a minimal management structure, few services to the membership, rudimentary bookkeeping, almost no office facilities, and subsistence-level financial support from members. Each association needed to improve its institutional capacity to implement its project. The Program targeted three areas to support: systems and staffing, physical infrastructure, and input supply store.

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[6] USAID has augmented the UPANIC Project budget by $300,000 for this purpose.

The first area primarily referred to the bookkeeping system to be accountable for project funds, and secondarily to a technical staff to allow implementation of the technology transfer aspects sought by the Program. In most cases, to keep costs down, management and bookkeeping staff were not funded directly, whereas funding for relatively more expensive technical staff was included. The subgrants also included a substantial inventory of inputs for the association stores, to help generate the income needed to employ a bookkeeper. And UPANIC provided training in the computerized bookkeeping system. Often the agricultural or livestock technician provided by the project also supported the organization's president or Board of Directors in routine management, while mainly engaged in conducting technical assistance activities, extension and training.

Nearly all subgrants provided funds for stocking input supply stores and hiring technical staff, whereas the coffee association projects also included funding to staff the manager and bookkeeper positions.

All but one project provided for infrastructure improvement in the form of adding basic office equipment (usually furniture, computer, photocopier and fax). Two livestock associations also received funds for remodeling building space to accommodate an office, input supply store or storage facilities. The recent peanut processing and rice marketing projects are exceptions, as they place much more emphasis on equipment and plant construction.

The input supply store was considered to be institutional support, even though it is a commercial activity, because it usually already existed in a limited form, and because it provides both a financial turnover to support other activities and an improved public image of the association. All the coffee and livestock associations received support for input supply operations, whereas the basic grain projects financed input purchases by participants in validation trials, rather than having a separate commercial activity.

All associations were required to add significant counterpart financing of operations, usually ranging from 36 percent to over 50 percent of the total subgrant project cost for the three-year duration. Major counterpart items were office/store rental, employee salaries (secretaries, store clerks, equipment operators, watchmen, and often bookkeepers), and office expenses (utilities, office supplies). Because of changes in USAID regulations, many associations had to provide their own vehicles and cover operational expenses.

Technical Components. The major part of projects financed through subgrants or with PL-480 funds is for implementing productive activities in the areas of livestock, coffee, land titling, and basic grains. The project bears most of this cost during the first two years. The third year is financed entirely by the association, unless the subgrant is amended to add more funds. The following description of these components does not distinguish between subgrant and PL-480 financed projects, since the organizational and technical aspects are the same.

Livestock Associations. There are 22 livestock associations with projects that are on-going, being initiated or in the approval process, plus one other with FONDILAC (an organization of dairy producers), which is limited to input supplies. The livestock projects have the following modules, although the actual use of these services depends on membership acceptance:

- 15 offering an artificial insemination service with one or two inseminators;

- 14 with equipment to formulate animal feed concentrate mixes, and 13 of these with additional equipment to manufacture mineral supplement blocks;

- 10 with equipment to offer other animal nutrition programs, such as hay baling, preparation of silage and storage of molasses, and a few with electric fences to demonstrate intensive rotational pasture use;

- six with corrals to hold cattle auctions, several of them with scales for weighing cattle; and

- four with equipment to refrigerate and display meat for sale to consumers, and one with equipment to store and transport milk to processing plants.

Coffee Associations or Cooperatives. There are eight associations that present nearly identical activities to supplement the primary effort of intensive training in coffee plantation renovation and management. Three of these groups also are involved in land titling and one in basic grains marketing. The coffee project components are:

- establishment of nurseries for improved coffee plants, coupled with member training on maintaining their own nurseries;

- establishment of demonstration plots on production practices; and

- assistance in arranging block sales of coffee to processing plants.

Land Titling. Many small farmers in the northern regions do not have formal title to their land, which excludes them from possible access to formal credit. Three coffee associations which also receive subgrants for technical activities (Jinotega, Matagalpa and Nueva Segovia) will be providing the surveying and legal assistance required to prepare the documentation for land titles. This activity is financed under the PL-480 program.

Basic Grains. Six organizations are involved in activities to improve the production or marketing of grain commodities, primarily sorghum, rice, soybeans, peanuts, corn and beans. These activities include:

- commercial-scale field validation trials of different varieties and improved technical practices, mainly in sorghum, rice and soybeans in three associations (ANPROSOR, ANAR and ADAL), coupled with providing production technical assistance and training;

- complementary technical assistance in rice variety selection, seed multiplication, field preparation and water use;

- construction and equipping of processing facilities for peanuts and rice in an association and a cooperative, and establishing a revolving credit fund for marketing rice; and

- providing credit to small producers through the Matagalpa coffee association to produce and market corn and beans.

Complementary Resources from PL-480 Title III Funds. In recognition of UPANIC's successful experience in implementing and monitoring its subgrant projects, the Secretariat allocated $1 million in Title III funds to UPANIC for development of additional proposals targeting agricultural producer groups. As indicated above, two types of projects have resulted:

- land surveying and titling for small producers' farms to complement ongoing subgrant activities by three coffee associations, thereby taking advantage of the associations' existing structure for managing project funds; and

- financing livestock technician for local extension activities, introducing services to improve animal nutrition, and establishing input supply stores with six small livestock associations sponsored by the national federation of livestock associations (FAGANIC), using the technical modules developed under UPANIC's subgrants.

Current Status of Project Budget and Expenditures

Table 1 shows the status of the project budget as of June 30, 1996. The total project budget is $6.9 million, including $1 million in PL-480 Title III funds. Of the total, $2.8 million, equivalent to 41 percent of the total, remained to be spent. This budget, stated in U.S. dollars, may be somewhat misleading in one regard. The line item for equipment and supplies includes equipment and supplies which is procured by the PMSO and donated in-kind to the various association subgrantees. Under USAID accounting procedures, this cannot be listed as a part of the subgrants.

In the detailed subgrant budget shown in Table 2, the value of in-kind equipment and supplies has been added to the subgrants. This budget, with values in Nicaraguan Cordobas de Oro, comes to a total of C$36 million. Of this amount, 42 percent is for subgrants to livestock associations, 23 percent for coffee association projects, 9 percent for coffee association titling projects, and 26 percent for projects relating to basic grains.

As Table 2 indicates, the awards to the individual associations varied from less than C$200,000 to over C$3 million. The average award per association was C$923,000, equivalent to about $120,000[7]. The awards varied due to the size, capabilities, and needs of the different associations.

One association, the Matagalpa Coffee Growers, has received three separate awards, totaling almost C$3.2 million (approximately $415,000). One of these was for coffee production, one for basic grain production, and the most recent is to assist farmers in getting titles to their land. The Matagalpa

[7] This is based on the average of the various exchange rates in effect over the life of the project.

Association is large[8], it has good membership participation and management, and it has been very successful in serving small farmers.

Another way of analyzing the subgrant activity in the project to consider annual progress. This can be seen in Table 3. It shows that the greatest number and value of awards was made in 1994. However, with the addition of PL-480 funds and with the provision of additional funding from USAID, 1996 has also been a high volume year for the project.

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8 Membership was 1,356 in June 1996.

Table 1. STATUS OF PROJECT BUDGET AS OF 6/30/96

Item	Budget			Spent to Date	Balance 6/30/96	Percent Remaining
	USAID	PL-480	Total			
SALARIES	$540,098	$30,225	$570,323	$355,296	$215,027	38
CONSULTANTS	513,700		513,700	340,471	173,229	34
TRAVEL & TRANSPORT	112,736		112,736	59,088	53,648	48
BENEFITS	114,421		114,421	60,235	54,186	47
OTHER DIRECT COSTS	200,767		200,767	167,493	33,274	17
EQUIPMENT & SUPPLIES	1,150,000		1,150,000	774,168	375,832	33
SUBGRANTS	2,981,752	941,284	3,923,036	2,121,385	1,801,651	46
AID RESERVATION	290,000		290,000	204,584	85,416	29
AUDITS	40,000	28,491	68,491	23,773	44,718	65
	$5,943,474	$1,000,000	$6,943,474	$4,106,493	$2,836,981	41

Note: Amounts are in U.S. Dollars.

Table 2. Status of Subgrants, July-August 1996.

		Amount C$	Percent Remaining 6/30/96	Percent of Total	Year Started	Notes
BASIC GRAINS PROJECTS:						
1	Sorghum (national ass'n)	1,123,074	0%		1993	t
2	Agriculture (Leon)	1,215,430	6%		1993	
3	Rice (national ass'n)	1,496,325	28%		1994	a
4	Corn and Beans (Matagalpa)	1,530,000	61%		1995	
5	Peanuts (Chinandega)	1,539,478	0%		1996	
6	Rice marketing (Siuna)	2,551,533	100%		1996	
	Sub-total	9,455,840	42%	26%		
LIVESTOCK PROJECTS:						
1	Boaco	739,632	18%		1994	a
2	Camoapa	1,056,161	13%		1994	a
3	Chinandega	938,014	20%		1994	
4	Chontales	883,673	0%		1994	
5	Esteli	964,923	11%		1994	a
6	Granada	806,241	16%		1995	
7	Leon	966,787	11%		1994	a
8	Matagalpa	813,607	19%		1995	
9	Nagarote	887,741	11%		1994	a
10	Rivas	1,087,628	11%		1994	a
11	El Sauce	785,531	14%		1994	a
12	El Ayote	765,139	100%		1996	p
13	San Jose de los Remates	1,405,328	100%		1996	p
14	Ometepe	395,500	100%		1996	
15	Siuna	376,530	100%		1996	
16	Jinotega	441,900	100%		1996	
17	Quilali					
18	Wiwili					
19	Somoto	1,856,133	100%		1996	f,p
20	Ocotal					
21	Condega					
22	San Juan de Limay					
23	FONDILAC (Dairy Organization)	313,487	0%			
	Sub-total	15,484,055	42%	42%		
COFFEE PROJECTS:						
1	Boaco	964,659	19%		1994	
2	Dinamba	865,050	20%		1994	
3	Esteli	867,167	12%		1994	
4	Jinotega	1,774,293	17%		1994	
5	Managua	186,488	0%		1994	
6	Masatepe	926,304	18%		1994	
7	Matagalpa	2,083,091	15%		1993	
8	Nueva Segovia	958,497	15%		1994	
	Sub-total	8,645,549	16%	23%		
LAND TITLING PROJECTS:						
1	Jinotega	1,220,992	100%		1996	c,p
2	Matagalpa	849,900	100%		1996	c,p
3	Nueva Segovia	1,263,352	100%		1996	c,p
	Sub-total	3,334,244	100%	9%	1996	
	TOTAL	36,919,688	41%	100%		

NOTES: [a] Additional funding added to budget in 1996.

[c] To be carried out by same coffee association listed above.

[f] To FAGANIC for six small livestock associations.

[p] PL-480 Title III funding. [t] Terminated early.

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Table 3. SUBGRANT AWARDS BY YEAR			
Year	Number of Subgrants[9]	Amount C$	Percent of Total
1993	3	4,241,595	12
1994	18	16,682,360	45
1995	3	3,149,848	9
1996	11	12,665,885	34
Total	35	36,919,688	100

[9] In 1996, the subgrant for the six small livestock associations, to be administered by FAGANIC, is counted as a single award.

4. IMPACTS OF THE PROJECT ON UPANIC AND THE FEDERATIONS

The main objective of this evaluation is to assess the impacts of the UPANIC Project on the farmers who have participated in the subgrant programs. This assessment is provided in Chapter 5. However, another important part of the project has been the institutional strengthening of UPANIC itself. This chapter deals with the impacts of the project on UPANIC.

Increased Membership and New Affiliates

Through the subgrant projects, the membership of UPANIC affiliate associations has grown significantly. This is most clear in the coffee and livestock commodity groups, which comprise the majority of UPANIC's affiliates. Among the eight coffee associations and 11 livestock associations receiving subgrants prior to the end of 1995, membership grew from a combined total of 2,974 when the projects were initiated, to 7,209 by the end of June 1996. This is an increase of 59 percent over approximately two years[10]. As is demonstrated in Chapter 5, a majority of the new members are small coffee farmers.

Another institutional goal of the project was to increase the number of affiliate groups in UPANIC. A step was made in this direction when the national Peanut Growers Association joined UPANIC in 1995.

Offering Increased Services to the Agricultural Sector

UPANIC has published a quarterly[11] magazine with a distribution of some 2,000 copies which is used to inform association members and the public about its activities, including those of the USAID Project.

With the support of the PMSO, UPANIC has established a database on Nicaraguan agriculture at its headquarters in Managua. The database has been used in analyses of tax proposals and other policies which affect Nicaraguan agriculture.

UPANIC has installed Internet service as a means of acquiring information, and for purposes of communication via e-mail. The office of one of the member associations now has an on-line computer linkage to UPANIC headquarters. This is a pilot project for improving communications and providing more up-to-date information to member groups.

Expanded Representational Services

Improved representation of member interests is another service area where UPANIC has made clear progress.

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[10] Two of the 11 livestock projects did not start until the latter part of 1995.

[11] The publication of this magazine has been temporarily suspended while UPANIC makes arrangements to do its own printing and distribution.

UPANIC has demonstrated an increasing ability to work around some of the political divisions which had characterized the agricultural sector at the time the project was started. For example, UPANIC has been asked to mediate disputes arising from privatization and property confiscation.

UPANIC has developed the ability to work with UNAG despite obvious philosophical and political differences between the two organizations. This is true particularly on technical issues. For example, UPANIC has worked out agreements to include UNAG cooperatives in the PMPA program through which UPANIC has provided the services of Frank Gorrez to the rice sector. In turn, UNAG provides support for these activities at the local level. UPANIC has helped UNAG and its own affiliate rice association, ANAR, to work together in supporting Gorrez and PMPA.

Recently, UPANIC hired a local consulting firm to analyze the effects of a proposed new land tax which would have a heavy impact on the agricultural sector. The results of this study were published in July 1996. UNAG appeared with UPANIC in a press conference which was called to express the agricultural sector's views on the proposal. While the final decision on this tax change has not been made, it is expected that the UPANIC (and UNAG) effort will have some success in modifying the law which results so that it is not so burdensome for agricultural producers.

UPANIC is in regular contact with the Ministry of Agriculture (MAG) on current policy issues in agriculture. During the past few months UPANIC has been asked to participate in two meetings called to solicit agricultural sector views on MAG programs, and to identify future policy issues.

The president of UPANIC is a member of the board of directors of the National Rural Development Program (PNDR), which the Inter-American Development Bank (BID) is financing for MAG. This appears to have helped at least three member associations secure funding from PNDR, which has in turn complemented activities they had already been able to initiate with UPANIC subgrants.

UPANIC member federations have also been able to exert greater influence on policies which affect their own commodity sectors. Leaders in both FAGANIC and UNCAFENIC affirm that their organizations are now stronger and more influential as a result of the support which their member organizations have received through the subgrants.

An example of the value of this greater power is provided by UNCAFENIC's participation in UNICAFE, Nicaragua's Coffee Commission. Due to an assessment which it receives from all sales of coffee, UNICAFE is relatively well funded, with an annual budget of $2 to $3 million. This is used for a combination of research, extension and other industry needs, but it has typically been administered in a very bureaucratic way which has not placed much emphasis on private sector grower needs. During the past year, UNCAFENIC has been able to get the Commission to modify its budget so that a greater proportion is now being allocated to extension, and thus to addressing specific grower technical concerns.

UPANIC to Become More Financially Sustainable

Dues collected by UPANIC from affiliate organizations increased from C$31,824 (approx. $4,389) in the fiscal year ending July 1994 to C$65,245 ($7,908) for the first eleven months of fiscal year

1996. While this is impressive, considering that it is an 80 percent increase in just two years. it represents only a small part of UPANIC's ongoing needs.

The organization's total operating and administrative expenses, not including the USAID Project. are currently running at more than C$250,000 per year, not including any of the 11 employees who are being paid for by the project. Thus, these expenses are more than four times the current revenue from dues.

Some of the member organizations are several months behind in the payment of dues to UPANIC. Even if dues were to be raised and payments should become more reliable, UPANIC's operating needs may not be covered until after the project is completed. At that time UPANIC will have to pay for its own staff, unless the staff is drastically reduced and other services are curtailed.

At times in the past, deficits have been avoided by funds derived from donations or donor activities. For example, in the current fiscal year UPANIC made about C$308,000 from markups on Japanese government fertilizers which had been donated to Nicaragua[12] and used to generate local currency. UPANIC was given some of this fertilizer to distribute through member associations, and it was allowed to extract a markup in the process.

UPANIC has explored a number of ways in which it might add income-generating activities or services. It purchased a seat on BAGSA, Nicaragua's commodity exchange, evidently with the idea that executing trades for a fee could be offered as a marketing service to members. But trading volume on the exchange has been quite low, and opportunities for income generation here may not be very promising. Another income-generating idea that has been discussed is for UPANIC to acquire a Seed Inoculant Laboratory that the government is currently planning to privatize. However, the feasibility of such a venture has yet to be analyzed, nor is it clear that it would be compatible with UPANIC's main mission.

[12] This program evidently works much like U.S. PL-480 Title III food donations.

5. IMPACTS OF SUBGRANTS ON THE ASSOCIATIONS AND THEIR MEMBERS

The subgrants were designed to benefit farmers and livestock producers as well as to strengthen the associations. The purpose of this chapter is to measure the effects of the subgrants on the associations and their members, and thus to determine the extent to which project objectives are being achieved.

There are a number of ways to look at institutional strengthening. The amended CA stipulates that an objective of the subgrants is to improve the accounting systems of the associations and to help them develop sustainable training and technical assistance programs. The subgrants are also designed to help the associations provide more and better services for their members. The services must also be financially sustainable. Another aspect of strengthening the associations and making them more sustainable is to increase their membership.

With respect to the producers themselves, the objectives of the subgrants include increasing the productivity of small and medium-scale producers, and providing increased access to marketing for small farmers. Here again the aspect of sustainability becomes important. In particular, to be sustainable, productivity- increasing practices must be profitable. In other words, they must generate more income for farmers and livestock producers.

Effects of the Projects on the Associations

About 75 percent of the subgrants have gone to the livestock and coffee producer associations. As noted in Chapter 4, these associations have achieved a 59 percent increase in membership since the grants were initiated two years ago. However, most of this growth has come from the coffee sector, where the eight grant receiving associations expanded by 267 percent, whereas growth in livestock association has been a far more modest nine percent.

Size and gender composition. Most of the associations are made up of medium to small-sized producers. A majority of the farmers in the coffee associations are small farmers. Nine out of ten association members come from rural area farms where the average planting is just only 4 mz.

The livestock associations have a somewhat lower proportion of small producers (those with less than 20 head) than the coffee associations. Small producers constitute about 20 percent to

ORGANIC COFFEE — Technology within the reach of small farmers

Traditionally the small coffee farmer has done little more than harvest his crop, since he lacked money for the fertilizers and pesticides normally used. However, today his plantation can now qualify as chemical product-free, or "organically grown". Forty such farmers in the Matagalpa Coffee Association are participating in a special USAID-sponsored program led by CLUSA (Cooperative League of the USA) to market their coffee as organic. CLUSA has the experience and marketing connections to provide the necessary technical assistance, and the Matagalpa Association has the organization and outreach capability to complement this. By following advice emphasizing very labor-intensive practices, a resource the small farmer has readily available, he can double production within two years with virtually no cash investment. Prices for this type of coffee are both higher (42 percent over regular coffee in early 1996) and more stable. In the second year he can expect nearly three times the usual income from coffee, thanks to higher production and premium prices.

30 percent of the members in the larger, more centrally-located associations. Among the associations of the more remote locations in the north, however, there is a greater proportion of smallholders. In the San Jose de los Remates Livestock Association, which is just starting with a subgrant this year, most of the members have small herds.

In the rice project, the members of the National Rice Association (ANAR), are all large in size, with more than 50 mz of rice. However, the outreach program has been designed to include the rice-growing cooperatives affiliated with UNAG, and these all have a very small rice area per member. In the six cooperatives included in the project so far, the 1083 members have an average rice area of just 7.2 mz. Thus, because of the inclusion of the UNAG affiliates, the rice outreach project is effectively reaching small growers.

Inclusion of female producers was not identified as a specific objective of the project, either in the PP or CA. Nevertheless, female membership in the associations and cooperatives visited for the evaluation ranged from 10 percent to 45 percent, which indicates that female participation in the project is significant.

Growth in membership and in participation of members has varied among the associations. In a few associations, member participation and attitudes have not been particularly good[13]. This is part of the reason why three associations were not given additional funds to extend their subgrant projects earlier this year.

Technical assistance and training. Technical assistance and training are the main productive services which the associations have been able to offer through their subgrants. In the view of project participants, the project is achieving results in these areas. In the rapid reconnaissance survey, producers were asked to identify the main impacts of the project. The 26 growers responding to this question indicated that the following items were among the most important effects:

- Technical assistance 54 percent
- Training 19 percent
- Productivity improvement 19 percent
- Better production practices 19 percent
- Validation trial results 15 percent

All of the above responses are linked directly to the provision of TA and training in the project. The importance of these factors as a group appeared to be somewhat more important than credit and input availability, which accounted for 31 percent and 23 percent of the responses, respectively.

Input stores. Increased sales in association input stores has been an important feature of most of the subgrants. Most farmers interviewed in the rapid survey mentioned the input stores as being a very

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13 Pourraid, Gustavo, "Informe Evaluativo de los Proyectos Ganaderos." Proyecto Integrado de Servicios Técnicos Ganaderos USAID-UPANIC, Marzo de 1996, identifies several livestock associations where participation is low. Charles Coy, a VOCA volunteer made the same observation in his visits to several livestock associations in late 1994.

important service of the associations, and many recognized that the project has helped the associations expand their input sales activities.

In the eight coffee associations of the project, cumulative sales for the first 21 months of the project amounted to C$10.5 million, which is equal to C$2,900 per member ($344). In the Masatepe Association, for example, input sales in 1995-96 were 133 percent greater in 1995 than they had been in 1992.

The subgrants provided the associations with funds to purchase additional supplies for their input stores. These donations have provided the associations with an important increase in working capital. Most have used these funds not only to increase their stock, but also as a means of extending additional in-kind credit to their members.

Most of the associations try to offer low input prices to their members. This may conflict with their ability to generate the profits they need to support technical staff and other association activities in the future. Most associations visited indicated that their price markups are 20 percent or less. The gross margins earned by the eight coffee associations ranged from 3 percent to 35 percent during the first quarter of 1996, with an average of 19 percent. It is doubtful that many of the input stores have high enough margins to cover their full overhead costs, and more doubtful still that existing margins would be able to support technical agents.

Pourraid's study[14] of the livestock subgrants found margins similar in the livestock association stores to those found in coffee. He found that the associations are not sure whether they are making a profit or losing money, but his own evaluation was that many are probably operating at a loss.

Yet, many of the problems which are seen in the input stores are more in the nature of growing pains than of serious long-run difficulties. Some of the larger associations have expanded their sales and net revenues to the point where they feel sure that they will be able to pay for TA when the UPANIC Project is finished. The directors of the Camoapa Livestock Association expressed that view, for example, as did the Matagalpa Coffee Association.

All five of the associations visited during the evaluation indicate that increased revenues from input store sales are viewed as a source of support for technical staff after support from the UPANIC Project has been used up.

Having more inputs available in the association stores has helped to ensure that the items they need to implement the technologies being promoted by the project are available.

In-kind credit. Most of the associations visited in the survey sell inputs to their members on credit. The availability of credit is highly significant, particularly for small farmers who encounter many obstacles in working with the National Development Bank (BND), and who are often at a disadvantage when it comes to dealing with merchants who will extend credit.

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[14] Pourraid, op. cit.

The capital provided to the associations through the subgrants, particularly the stock for the input stores, has helped them expand the in-kind credit in inputs which they offer to their members. Given the fact that finance is extremely limited at the present time in Nicaragua, access to this kind of credit is essential in helping small farmers gain access to the inputs they need to employ improved technology. For example, prior to the project, many small coffee growers could not obtain credit for fertilizer or chemicals. Not enough has been available through the association stores to satisfy all of their needs, but that which has been available has been a big help.

As the association grows and their managers gain business experience, stronger ties are developed with private input distributors. Some of these suppliers have been willing to extend credit of 30-45 days or more on stocks ordered by the associations, and the associations then use this to provide more short-term credit to their members.

THE NEED FOR IN-KIND CREDIT

A highly valued service UPANIC Project associations offer is short-term credit for sales from their input supply stores. Other input retailers extend credit only with substantial "strings attached". One example is the typical coffee farmer in Masatepe. Without in-kind credit such as offered by his association's store, he would have to pledge a set volume (not value) of his harvest to get a pesticide on credit. At harvest, the pesticide dealer sets the price he will pay for each bag of coffee. The association, however, lets the farmer sell first and then recuperates its loan, much to the farmer's benefit. A second example is the cattle rancher. Given the urgency involved in treating animals, often he must sell some cattle at bargain prices to buy needed products, undermining his base for future production. But with in-kind credit from the association's store, he has the option of no-interest credit for 30 days (the same time given to the association by input dealers), allowing him time to negotiate a better price for his cattle or make other arrangements to pay the association. More than one-half the producers contacted in evaluating the project indicated that improved access to inputs and availability of credit were among the most important benefits of the project.

Some of the associations have sold coffee plants raised in their own nurseries on credit to growers. This has been made possible by support for the nurseries in the subgrants and has helped to facilitate coffee plantings. In the case of Matagalpa, growers are also given credit for the other inputs such as fertilizer, used in the first year of renovation. However, there are other costs associated with renewing coffee that occur in the second and third year, before the new trees begin to produce. The National Development Bank has quit giving credit for coffee renewal, and the associations do not have the ability to provide all the credit that is needed to finance renewal. Thus, the lack of adequate credit is a real bottleneck in renewal of coffee plantings.

Other services made possible by the subgrants. The subgrants provided equipment and materials to the associations which has not only enabled them to support improved technology by their members but also constitutes potentially valuable new sources of revenue to the associations. This is particularly true for the livestock associations, which have been assisted in offering artificial insemination, hay baling, silage preparation, and concentrate feed manufacturing services.

Feed concentrate manufacturing equipment is generating significant sales for the Camoapa Livestock Association, for example, where concentrate sales are currently approaching 30 percent of total sales revenues. The directors of this association think that they will soon outreach the capacity of the equipment they received through their subgrant, and they are already laying plans for expansion. They are the only manufacturer of livestock feeds in their area. Before they acquired their feed

manufacturing equipment, their members had to buy feed at much higher prices in Managua. The availability of feed is bringing them new members.

During 1994-95, the six livestock associations, which had received equipment, sold a total of 5,400 cwt of feed concentrates and 7,389 mineral blocks which they made for their members.

The operation of hay and silage making equipment for members is now generating 10 percent of total revenues for the Nagarote Livestock Association. The five associations engaged in this activity made a total of 192,549 bales with their equipment. This generated an estimated C$337,000 ($39,600) in sales revenues. The consultant estimated that each bale generated a net saving of C$1 each to the farmer, in comparison to the cost of purchase on the market. This meant a total savings of $22,650 for the livestock producers in these associations.

The importance of having such services available was mentioned as an important project impact by most of the growers interviewed in the livestock associations visited for the evaluation.

In the coffee subgrants, five coffee associations were supported in establishing nurseries for the production and sale of coffee seedlings. This resulted in C$462,000 ($54,000) in combined sales for these associations in 1995. The Masatepe Association sold 226,000 seedlings in this way for revenues of C$203,000, and the association business manager determined that this was a profitable business for them. Despite the current success of the nurseries, the demand for nursery trees tends to rise and fall with international coffee prices, and thus the nursery business is not one that can be counted on continuously.

MAKING TECHNOLOGY AVAILABLE

Experience in several livestock associations shows that modest changes in technology can have considerable impact. Access to hay cutting and baling equipment in Nagarote's association allowed José Domingo to prepare around 5,200 bales in the last two years, thereby saving over $ 1,000. Mario and Dolores both buy feed concentrates from their Camoapa Association, since now it has the equipment to prepare feeds from locally available materials at half the price. Mario reports an increase in milk yields of 50 percent and a net gain of 25 percent of income from milk sales — almost $ 1,250 per year. Dolores confirms having similar results in his dairy herd and adds that improved pasture management and the use of concentrates and mineral supplements make it possible for him to finish out cattle to market weight within three years, instead of the customary four. This allows him to use expensive bank credit to buy cattle for fattening — without the Association's feed products, he couldn't do this.

Marketing services. Coffee marketing assistance and block marketing has provided in Matagalpa, Masatepe, Boaco and Nueva Segovia associations. The block marketing of coffee — that is, small growers selling through a merchant where terms have been negotiated in advance by the association — is particularly important to the small growers, who otherwise lack bargaining power in dealing

with merchants. Quantitative impacts of these services are discussed below.

Of the four associations who have offered block marketing services, the associations in Masatepe and Nueva Segovia have been most active and consistent, whereas block sales have been more sporadic in the other two associations. The Masatepe association has sold more than $900,000 worth of coffee for its members in each of the past two years. In doing so, they generated commissions of more than $6,000 for the Association. In interviewing farmers in the Masatepe area, it was found that this sales program has resulted in new members joining the Association.

MARKETING OF STAPLE FOODS

One of the targets in the recent PAS Cooperative Agreement amendment is to increase market access for small farmers. The Matagalpa coffee association has a specific project to finance input costs for producing staple foods (corn, beans and some rice). However, it has added an unique aspect: storage of these products with the option for producers to choose when to sell on the local market. This arrangement allows the small farmer to turn over part or all of his production to the association in anticipation of better prices in the future. In this fashion, the association has assured repayment of the loan, and the farmer can sell part or all at the time he wishes, repaying the loan and receiving any surplus. Nearly 400 farmers are participating in this project (averaging 1.9 manzanas each) in the late 1996 planting season, almost double the goal established in the Cooperative Agreement.

Group sales of livestock are a similar enterprise, although these activities do not appear to have progressed as far as those in coffee. By organizing such sales in a way that ensures competition among buyers, and by providing a place for producers to obtain accurate weights of their animals, the grower is benefitted. The buyer gains because he does not have to spend so much time going from farm to farm. The association charges a fee — 2 percent of the sale value at Nagarote — for the service, so this also becomes a source of revenue to the association.

Although the activity has taken time to get started, it now appears to be gaining momentum. The Nagarote Association undertook the purchase of land facilities for a sale yard on its own, without grant funds, after it saw what the three other associations, which had received subgrant support for sales facilities, were doing. The Camoapa Association now has plans to develop "mini sales yards" in two areas of the district so that small livestock producers will be able to utilize them.

Representation of member and community interests. While UPANIC and the federations have been active in representing member interests in policy issues at the national level, the individual associations have been similarly active at the local level. Several of the associations interviewed for the present evaluation indicated that they had been successful in getting access roads improved in their area. Officers of the Boaco and Camoapa Livestock Association are members of local boards in their areas which provide guidance on the best use of available road building equipment. They express their members' views as to the best location for new roads, and as to which old roads are most in need of repair. The Boaco Association helped coordinate the efforts of growers along one road to help pay for part of the cost.

The local associations have also been active in expressing their views on tax issues to UPANIC and the national producer federations. For example, the local coffee associations became very active in expressing their views on the recent coffee tax proposal, which was then modified.

A number of association members and directors interviewed expressed their view that the associations are becoming significant "channels" for outside assistance and support to producers and local communities. Several of the subgrant-receiving associations have succeeded in obtaining food support from the World Food Program which has been used to improve farms and to build or repair community facilities. Others have succeeded in getting support from the Nicaraguan Rural Development Program (PNDR) to make community improvements. Some of the Coffee Associations have made agreements with the National Technical Institute (INTA) to provide certain kinds of support for their technicians. Several livestock associations served as hosts to VOCA volunteers who came to provide support for improved livestock management.

All of these activities indicate that the associations are gaining institutional strength and their ability to do this has been enhanced by the subgrant support.

Improved accounting systems in member associations. One of the specific objectives of the amended CA is to improve the accounting systems of the member associations. As noted above, all but two of the subgrants to associations have provided them with computers and software for accounting. Moreover, association accountants have received training in the use of both equipment and software from UPANIC. This assistance served two purposes. First, it enabled the associations to establish accounting systems which adhere to recognized accounting principles, and which can easily be kept up to date. Second, it has also provided competent accounting of grant funds, which can easily be followed and audited by UPANIC accountants and external auditors.

As could readily be observed in the field visits during the evaluation, the most important impact of the accounting systems is to provide financial and business management information which is available to association managers and directors. With this, the associations have the ability to determine their financial status and to determine whether or not their input stores and other service activities are generating sufficient returns to support themselves. Similarly, they could be used to determine the extent to which some activities must be supported with other funds if they are to continue.

Having the accounting systems in place is a tremendous asset, and most associations are taking advantage of it to some extent. However, many of the associations still do not know how to get full use of their accounting systems to support better business decisions. This may be because, as noted earlier, they are unsure of what constitute adequate margins and profits for longer term sustainability. Further, most do not yet know how to utilize these systems to distinguish between the various services they offer, to determine which are operating at a profit and which at a loss.

The Coffee Association in Matagalpa and the Camoapa Livestock Association both indicated that having competent up-to-date financial statements had helped them in gaining support from other outside agencies.

The accounting systems provide the associations with significant management capabilities, but this is not to say that most of them have reached the point where they are taking full advantage of this system. However, as time passes they will learn to benefit more from these systems, particularly if opportunities for training and support in business management become available.

Financial sustainability. As noted above, the largest revenue-generating activities of the associations are the input stores. In many cases, these stores, like many of the other services which are being offered, are not generating high enough margins to be profitable. Unless this is changed, when the outside support of the UPANIC Project and other donor projects has finished, the associations will be in a precarious financial condition.

While all of the associations contacted during the field visit are concerned about generating adequate margins and becoming sustainable, they do not yet have a good enough grasp of the concepts of "profit" or how to price the goods and services that they offer to make them profitable.

LIFE AFTER PROJECT SUPPORT ?

Young Lionel Castillo is optimistic. "It is too early to say that there will be a profit from renewing and replacing our coffee [total three manzanas], but we now see there is a future." And what happens when the Boaco Cooperative receives no more support from the UPANIC project? "The organization we have built here with the people in this village, and what we have learned, will last. Now we know how to plant coffee ourselves, and we'll have to work without the guidance of the association's technician."

All of the associations which were contacted are considering various kinds of new business ventures and services which would help them to become profitable. Many of the coffee associations are considering going into some type of coffee processing, and the livestock associations are engaged in the expansion of sales yards. However, many of them lack the business experience and training which is required to evaluate and properly plan such ventures.

Impacts on Producers in the Coffee, Livestock and Grains Sectors

The impacts on producers can be measured in various ways. As discussed above, producers have received more services from the project, including expanded access to inputs and credit. The participation in TA and training has been high, and farmers interviewed in the rapid field survey were uniformly positive in their remarks about the value of having access to these services.

The ultimate determinant of the value of the services, which farmers are receiving through the project, is whether or not they improve the producers' profits and incomes. Almost every producer contacted in the rapid survey indicated that the project is having some kind of positive impact on his or her income[15].

Increases in profit and income which result from the project result from changes in the basic components of profit, namely:

- increased size of the production units;
- improved productivity and greater volume of production;
- changes in the cost of production; and
- improvement in the price received for the product.

[15] Of the 19 producers who responded to this question, 18 said the impact on their income is positive. In some cases the increase in incomes has not been registered yet, but the participants can see that it will be by the time that coffee renovation and herd genetic improvement bear fruit.

Each of these factors will be analyzed in turn, before determining overall impacts on profits and income. The analysis centers on three product groups: coffee, livestock, and rice. Coffee and livestock were chosen because subgrants for associations related to these two areas constitute about 75 percent of the overall subgrant program. Basic grains projects make up the balance or the subgrants, and rice was chosen because it has been the largest activity in the basic grains area.

Changes in size of production units. Size of the production unit is important in determining overall production and profitability of a crop or livestock operation. With a greater area of coffee in production, the grower can be expected to produce more and thus have the potential for earning a greater profit. The same can be said of the size of the livestock herd.

The coffee project was designed specifically to help producers increase the size of their units. Improved seeds were made available in most associations, and three associations established their own nurseries, where seedlings were grown and sold to farmers. Based on these efforts, 968 mz of coffee was planted[16] in 1995, and it is estimated that an additional 845 mz will be planted in 1996. This the total of the two years represents 3.5 percent of the total coffee area of the association members. It amounts to an average of 0.32 mz per farmer.

Of the 12 coffee growers interviewed in the rapid survey carried out for this evaluation, 11 had planted additional coffee area over the past two to three years. The average per grower was 2.62 mz. Perhaps these growers were atypical, but it also suggests planting of new coffee area may have been greater than project statistics indicate. National statistics on coffee indicate that plantings were increased by 11 percent between 1994-95 and 1995-96[17].

There is also solid evidence of increases in the size of the production unit in livestock. Recently, Pourraid conducted an evaluation of the nine original livestock subgrants, including an examination of the production records of 24 farms. The study shows that during the first year of the project the total number of cows increased by an average of 15 percent and that the number of cows being milked increased by 31 percent[18]. These numbers are consistent with what was reported by the eight cattlemen surveyed for the present evaluation.

In the rice sector, the evidence of increases in the size of production unit is more limited. Of the nine farms interviewed, only two indicated increases in the area being devoted to rice production. On one of these two farms, the increases were attributable to factors other than participation in the UPANIC supported rice projects. National statistics indicate that rice area increased significantly from 1992-93 to 1993-94 and after, but that change is too early to be attributed to the rice projects.

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16 The term commonly used is "renovated" because farmers are typically replanting some older area which has previously been abandoned, or where production is so low that it is no longer profitable.

17 Statistics of the Central Bank of Nicaragua indicate that from 1994-95 to 1995-96 the coffee area expanded from 108 thousand to 120 thousand manzanas, which is 11 percent. It would seem that the UPANIC Project statistics related to the renovated area which can be directly attributed to the project.

18 Pourraid, Gustavo, op. cit.

Increases in productivity. It is difficult to fully assess increases in productivity attributable to these projects, because all of them involve some activities that require more than one or two years to be effective. It takes two years, for example, before a new coffee planting starts to produce, and it does not come into full production until after the fourth or fifth year. In contrast, the effects of increased fertilizer and pesticide use on established plantings are registered in the same year in which such measures are initiated.

Most of the coffee growers interviewed were heavily involved in new plantings. As a result, several of them had actually experienced reduced production since the project started. This is to be expected and is only temporary. Of the seven who had clear records for their established coffee areas, however, four reported significant yield increases, with one grower more than quadrupling her yield. The average yield increase for the seven growers was 82 percent over a two year period.

The growers and agronomists working in the three coffee associations visited for the evaluation were confident that they will ultimately be able to achieve great yield increases once the new plantings come into production. Thus, the project's goal of doubling coffee yields seems to be realistic, but this will still take several years. One of the reasons that it will be possible to achieve such a great increase is that the prevailing yields were so low at the time the project started[19].

In the case of livestock, the productive impacts of genetic improvement from artificial insemination take several years to work their way through the herd. However, the effects of improved feeding, animal health, and other management practices occur more rapidly.

There is strong evidence that the effects of the project are already occurring through increases in the productivity of milk and in production of meat animals. For the 24 producers in the Pourraid study, from 1994 to 1995 the average daily production of the cows being milked increased from 3.9 liters/day to 4.6 liters/day (up 18 percent), while the number of days being milked increased from 240 to 258 days. The calving rates in the 24 herds studied by Pourraid increased from 59 percent to 63 percent. The number of steers sold increased by 20 percent, and their average weights increased by more than 7 percent[20]. The milk yields reported by the producers contacted for the present evaluation averaged 29 percent, which is somewhat higher than Pourraid's finding, but the sample was smaller.

Rice presents a similar situation: the effects of improved production practices are fairly immediate, whereas the introduction of improved varieties (better genetics) takes more time.

Although the rice outreach program (PMPA) did not start until late 1995, there is already evidence of increased yields. Frank Gorrez's recent report of the results of nine participating growers indicates

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[19] For the seven growers with useable records, the average yield before the project was 5.75 qq/mz, whereas it was 10.50 qq/mz for the 1995-96 crop.

[20] Pourraid, op.cit.

that yields increased by about 57 percent from 1995 to 1996[21]. However, the 1996 yields are based on limited areas and in some cases on "expected" harvests. A recent study of the PMPA program by Guillermo Somarriba cited yield increases in some zones which are comparable to those cited in Gorrez's report, but it pointed out that the effects of PMPA have not yet had time to be felt in several of the zones which were more recently incorporated in the program[22]. The rapid survey conducted for the present evaluation included nine rice farms that had been in the PMPA program since the beginning. Two of these were Rice Association (ANAR) member farms that had also participated in the ANAR rice validation trials, which were supported by a subgrant of the project. Average yields could be verified for six of these farms as a whole. They had been 72.5 qq/mz prior to participating in the projects, and they averaged 93.2 qq/mz during the current year. This is an increase of 29 percent.

rice

Changes in product price. Several of the project's activities have had an impact on product prices received by participating farmers. Three growers contacted in the rapid survey, who have participated in the block coffee marketing system of the Masatepe Coffee Association, indicated that their prices were improved by from 10 percent to 23 percent over what they would have been under their previous marketing arrangement. Growers contacted in Matagalpa reported that they sold organic coffee for a net return of $135 per qq last year while they were receiving about $100 per qq for their ordinary coffee. That is a 35 percent advantage.

There was block marketing of coffee in several of the other areas which were not visited for this evaluation. However, while these results are encouraging, they are still far from universal. Only three of the coffee associations engage in block marketing. The sales of organic coffee involved only 250 sacks last year, although the plan is to sell 2000 this year.

Similarly, four livestock associations have begun to sell animals through the local sales yards they have developed. So far, however, while the results have been encouraging, the sales have been infrequent. Based on the one sale they have had to date (29 animals), producers in Nagarote think that their net gain amounted to a 10-15 percent increase in the value of the animal. Part of this is due to the greater competition among buyers at such a sale, whereas part is also due to having a scale at the sale yard, to ensure accurate weights. The yard at Rivas appears to be used more for weighing of animals than for actual sales.

Differences in cost. While the technologies and services of the subgrant projects are increasing production and are resulting in improved prices in some instances, the value of these increases must be weighed against any changes in cost which are required to implement the new practices. If costs were to increase significantly, they could outweigh the benefits of increased production.

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21 Gorrez, Frank, "UPANIC/USAID Rice Program Quarterly Report #3, April 1 to June 30, 1996." The weights cited are field weights for unmilled and undried paddy rice.

22 Somarriba, Guillermo, "Proyecto de Validación Tecnológica ANAR/UPANIC/AID; Programa de Manejo de Producción de Arroz UPANIC/AID," consultant report, Junio-Julio 1996.

Coffee is a case where the improved practices result in increased production costs. The required practices include additional fertilizer, planting new seedlings in between the older established trees, and increased labor for pruning and selecting shoots on the older trees. Of course, when yields increase, the cost of labor for picking also increases. Based on discussions with Jimmy Zambrana, the Coffee Coordinator, and with technicians in the field, it is estimated that the improvement of an existing coffee planting costs $151 per manzana for replacement plants, fertilizer, and labor, plus an added $14 per quintal for picking costs.

Livestock production costs are also increased in following the practices recommended in the project. This includes the cost of artificial insemination to improve herd genetics, dry season feed supplementation with silage or hay and mineral blocks, extra vitamins, the use of concentrate feeds for milk animals, and vaccinations necessary to improved animal health. The total cost of this program is estimated to be US $19 per cow per year.

The rice technology being introduced in the program is interesting in that in some cases it results in cost reductions rather than increases. The recommended technology mainly involves differences in the timing and composition of fertilizer applications, rather than net additions of fertilizer, plus differences in the way that land preparation and leveling are carried out. Farmers interviewed in the rapid survey affirmed that there is probably no net cost increase for fertilizer. Improved seed does have a cost, and there is a cost to building the leveling implement which Gorrez's system uses. The consultant estimates that the combined cost of these two items is $7.80 per mz per year.

Net effects of project on profits and income in coffee production. Based on elements identified in the preceding discussion, Table 4 provides an estimate of the annual net profits which are generated for coffee growers who participate in the project.

First, based on observations during the evaluation field visits, and information provided by the Coffee Coordinator, it is estimated that the improved practices have a diffusion of about 45 percent among the members of the associations which are involved. Thus, of the more than 43 thousand manzanas of coffee owned by association members, it is estimated that improved practices are being implemented on some 19,478 manzanas.

Based on the evaluation field visits and on information from national coffee statistics[23], it is estimated that yields at the time the project started were around 5.75 quintals per manzana (qq/mz). Information from farmers contacted in the field visits, as well as from project coffee agronomists, indicate that yield increases of about 80 percent have been achieved by participating farmers to date. This represents increased annual production of 89,598 qq, with a total value of $8.5 million at the recent average market price of $95 per qq, net to the grower. The cost associated with producing this additional amount of coffee is $4.2 million, which represents both the cost of improved growing practices as well as the additional picking costs that will be incurred[24].

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[23] Banco Central de Nicaragua, Indicadores Económicos, Vol 11, No. 6, June 1996.

[24] The costs of selective replanting are amortized over 10 years at the current rate of interest being charged by banks, which is about 36 percent. See Appendix F for details.

The net increment in income (grower profit) resulting from the program is $4.2 million, which averages to $222 per mz which is impacted. Field observations indicate that these net benefits will increase with time, due to further production increases which will be realized from new plantings, and as the improved technology is diffused to a greater number of growers.

The calculation in Table 4 does not take into account the benefits which are being created by block marketing of coffee. In the case of the Masatepe Association, this is estimated to have been about $7,000 per year for each of the past two years, based on a 15 percent gain in selling price.

Table 4. ANNUAL PROFITS AND INCOMES GENERATED BY COFFEE PROJECTS.

Value of increased production:		
Total area project associations (mz)	43,284	
X Estimated diffusion to date	45%	
= Estimated area impacted to date (m	19,478	
X Increase in yield (qq/mz)	4.6	(see footnote)
= Increased production (qq)	89,598	
X Price (US$/qq)	$95	
= Gross value (US$)		$8,511,799
Added cost of increased production:		
Total area impacted (mz)	19,478	
X Added cost/unit (US$/mz)	$151	
= Added production cost (US$)	$2,941,148	
Increased production (qq)	89,598	
X Added harvest cost/unit ($/qq)	$14	
= Added harvest cost (US$)	$1,254,370	
Total added cost, production + harvest ($)		$4,195,518
Annual increased farm profits		$4,316,280
Annual increased profit per manzana impacted		$222

Note: Increased yield is based on 80 percent over a base of 5.75 qq/mz.
See Appendix F for further explanation of details in this table.

Net effects of project on profits and income of livestock producers. Table 5 presents estimates of the economic impacts on livestock producers. The 11 original associations which received subgrants are estimated to have a total cow herd of more than 58 thousand head[25]. Here. the consultant finds that the diffusion of technology is 40 percent, which is slightly lower than in the coffee sector.

The added value of milk and meat produced in the improved system is estimated to be $85 per cow per year. Most of this value comes from increases in milk production, which is estimated to have increased by about 0.9 liters per cow per day during the lactation period. The increase in cost of $19 per cow per day is based on the estimated cost of improved nutrition, additional vitamins, better animal health, and artificial insemination. The total value of the additional annual production is almost $2 million, while the total increase in cost is estimated to be $446,000. The net gain in profit is thus $1.6 million, or $66 per cow benefitted per year.

This estimate probably understates the overall benefits of the project once the full effects of artificial insemination and improvement of herd genetics are registered. But this will still take several years. It is expected that, in the longer run, milk production will actually increase to about 6 liters per day, which is about 1.3 liters higher than in the current circumstances. The longer-run benefits of the livestock program could be twice as much as indicated in Table 5.

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[25] This is based on the estimate of Luis Piuzzi, the UPANIC Livestock Coordinator. His estimate is for a total herd of 117,450 head, of which about half would be cows. Dr. Piuzzi also provided useful information on changes in input costs and on the amount and value of outputs. See technical notes in Appendix F for more details.

Table 5. ANNUAL PROFITS AND INCOMES GENERATED BY LIVESTOCK PROJECTS.

Value of increased production:		
Size of herds, 11 associations (cows):	58,725	
X Estimated diffusion to date	40%	
= Estimated animals impacted (cows)	23,490	
X Added value milk & meat (US$/cow)	$85	
= Value of increased production (US$)		$1,996,650
Added cost of increased production:		
Total animals impacted (cows):	23,490	
X Added cost inputs per head (US$/cow)	$19	
= Total added production cost (US$)		$446,310
Annual net profit generated (US$)		$1,550,340
Annual increase in profit per cow impacted		$66

Note: See Appendix F for notes on basic data for calculations.

Net effects of project on profits and income of rice producers. The situation regarding rice is quite different from that of coffee and livestock because the number of production units that must be reached is considerably smaller. The large growers in ANAR are relatively few and easy to reach. and so far they account for about 11,000 mz. Most of the small growers, accounting for about 8,000 mz in the outreach program. are organized into production cooperatives where they work together jointly, as a single farm (see Appendix E). This means that many small growers can be reached in a single stop by the rice technicians. Thus, the total number of extension contacts that must be made in the rice program is limited in comparison to the livestock and coffee associations. For this reason. the consultant estimates that about 75 percent of the growers in the program are utilizing the improved technology and benefitting from it. The figure would be higher, except that the program has only recently been extended into some of the dryland farming areas.

The net increase in annual incomes due to the rice project is shown in Table 6. The estimated increase of 11.6 qq/mz of rice is based on a 29 percent increase on an initial yield of 40 qq/mz. The 29 percent was the average increase reported by rice growers contacted in the field interviews, whereas the 40 mz is an average of the pre-project yields of both irrigated and dryland producers. The estimated increase is lower than increases shown in Dr. Gorrez's quarterly reports, but those reports tend to come from a relatively few larger farmers.

As shown in Table 6, the total increased revenue for 16,941 mz is $2.2 million. The estimated cost of using improved seed, and the annual amortization cost of an improved leveler make up the total $7.80 per mz increased cost to the farmer for better seed — either buying "certified" seed or growing his own pure stand — and leveling. The total cost of this program is $132,000, which implies a net profit of $2.0 million or $122 per mz benefitted.

As noted earlier, some growers in this program indicated that they have actually experienced net overall cost reductions due to the better land leveling it entails. Such cost reductions are not taken into account in Table 6 because it is not known how widespread they are. Such savings would increase the estimate of net profit.

Finally, it must again be emphasized that the above calculations of impacts on incomes do not capture the full benefits of the projects in the following ways:

- They do not account for the incomes being generated by increased herds and coffee plantings.
- They do not account for the longer-term improvements which are yet to come in all three sectors. Improved genetics in livestock and rice. Ultimately, the effects on livestock could be doubled.

Thus, the impacts of the project on farmer incomes will be larger in the long run than is stated above.

Table 6. ANNUAL PROFITS AND INCOMES GENERATED BY RICE PROJECTS.

Value of increased production:		
Area served by outreach program (mz)	18,823	
X Estimated diffusion to date	75%	
= Area impacted by the program	16,941	
X Increased yield, milled rice (qq/mz)	11.6	
= Increased production (qq)	196,516	
X Price (US$/qq)	$11.18	
= Gross value (US$)		$2,196,351
Added cost of increased production:		
Total area impacted (mz)	16,941	
X Added cost seed, leveling (US$/mz)	$7.80	
= Added production cost		$132,140
Annual increased farm profits		$2,064,211
Annual increased profit per manzana impacted		$122

Note: See Appendix F for notes on basic data for calculations.

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6. FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS.

This project demonstrates that it is possible to greatly strengthen existing farmer organizations through subgrants which provide both institutional support and resources for productive activities. The project has demonstrated its ability to channel outside resources to local farmer organizations and to obtain worthwhile productive results.

Net Benefits are High and will Be Greater

The net economic benefits of the UPANIC Project are substantial. The level of activity in the coffee and livestock projects has now reached the point of providing increased annual incomes of $4.3 and $1.6 million, respectively, to participating producers. Although operating for a shorter period, the consultant estimates that the rice outreach project will generate net profits of $2.0 million within the coming year.

Annual benefits of this magnitude — totaling almost $8 million per year — are impressive for a project which has had a total budget of $6.9 million. They indicate that the overall benefit-cost ratio for the project is quite favorable.

Based on field visits during the evaluation, the consultant estimates that coffee yields have increased by an average of 80 percent, or 4.60 qq/mz (quintals per mz) for more than 2,500 growers. This results in a net increase in income of $222 per mz, which is more than $800 per year for a typical small farmer in the project.

Milk yields have increased by about 18 percent so far, and lactation period and calving rates are also up. The consultant estimates that the net gain in profit due to milk and meat sales to be $66 per cow, which results in increased income of $660 for a typical small producer with a herd of 10 cows.

In the longer run, as genetic improvements in livestock and in rice germplasm have a chance to make their effects, and as new coffee plantings come into production, the annual impacts of the project will be even greater than is stated above.

Sustainability of the Farmer Associations and UPANIC

While some of these benefits would continue even if the project were to end now, sustaining many of the improved production practices, which have been introduced through the project, will require continued technical support for farmers. It will also require that the farmers have continued access to input supplies and credit. Thus, it is essential that the associations continue to function effectively.

The evaluation has found numerous ways in which UPANIC and the member associations have been institutionally strengthened by the projects. In the coffee and livestock associations, which make up the bulk of UPANIC membership, more than 4,200 new members have been added in the first two years of the project. This represents a gain of 142 percent. A high proportion of the new members are small farmers, particularly in the coffee sector.

During the past year, the national peanut growers' association (APROMANI) has joined UPANIC, thus adding representation of an important commodity group.

UPANIC has broadened its representational activities in support of private farmer interests. Together with its member federations UNCAFENIC and FAGANIC, it has served as an effective expression of farmers' views on new tax proposals. UPANIC is now consulted regularly by MAG on current agricultural policy matters, and it has established a working relationship with UNAG.

To sustain these activities it is necessary for UPANIC to develop adequate sources of revenue. While UPANIC's income from membership dues has grown, it is still not sufficient to cover the organization's operating costs. UPANIC has considered various new income-earning activities but has yet to find anything that is sure to provide the additional sources of revenue which it needs.

The individual associations have greatly expanded the services they offer to members, particularly in the area of technical assistance, which has been the basis for expanding the use of improved technologies through the project. Other services such as the manufacture and sale of feeds, the provision of artificial insemination for livestock, and block marketing of coffee and livestock have been integral parts of this same effort.

The associations have been greatly strengthened by the computer and accounting systems they have been provided through the project. This gives them the ability to monitor financial results more readily, and develop better management information.

While the individual associations have registered dramatic increases in revenues from sales through their input stores and other activities such as feed manufacturing and product marketing, the gross margins which they earn from these activities are too low in many cases. Many of the associations do not yet have a workable approach to pricing and to ensuring the overall profitability which will enable them to survive and to continue to serve their members. To become sustainable, they need more assistance in business management and in assessing the feasibility of entering into new areas such as coffee processing.

A number of the associations have started in marketing activities, namely in block sales of coffee and in developing livestock sales yards. While the initial results are encouraging, these activities have, on the whole, been slow to start. They are now at the point where they might benefit from technical support of outside marketing specialists.

Provision of (in-kind) credit to their members is another very promising area in which the associations have made progress. They have expanded lending based on their own capital. They are also learning how to get credit from input distributors, which they then use to expand credit to their own members. This is all the more important in Nicaragua now since the main source of agricultural credit, the Rural Development Bank (BND), is in bad financial condition and has greatly curtailed its lending programs. Thus, the start which the associations have in credit needs to be strengthened and expanded.

Recommendation. The consultant recommends that UPANIC expand the TA that it is providing to the subgrant institutions to include support in business management and pricing of services. In some cases, this same assistance should include support for evaluating the feasibility of potential profit-making activities such as coffee processing.

The TA should also include economists who can provide the associations with specific guidance in coffee marketing and livestock sales. Improving their credit programs is another area where some associations may benefit from outside support.

UPANIC needs to secure TA for its own organization, to examine the question of how to expand its own revenues and to investigate the feasibility of new ventures that it has been considering. For this, management consultants, who specialize in business advice to non-profit farm organizations, should be contracted.

National Level Technical Coordination

One of the valuable institutional services which UPANIC has provided through the project has been national level technical coordination. Dr. Luis Piuzzi, the Livestock Coordinator, and Jimmy Zambrana, the Coffee Coordinator, have not only acted in an administrative and monitoring capacity for the subgrants in their respective areas, but they have also coordinated the technical activities in the associations by holding periodic meetings of the commodity specialists, and by providing information on outside sources of technical support. This has included supporting linkages to other national and international technical organizations such as INTA, CATIE and the research-extension branches of UNICAFE. In some cases they have organized training activities for all of the association technical specialists.

In rice production, Frank Gorrez has provided strong technical support, training and coordination at the national level for the rice technicians which the outreach program has located in each production region.

When the project finishes in 1998, the continuance of this same type of coordination will be essential if the associations are to continue to maintain competent technical support for their members. There are various ways in which national level coordination might be provided. In coffee and livestock production, the logical approach is for UNCAFENIC and FAGANIC — the national grower federations for these sectors — to hire technical coordinators when the UPANIC/USAID Project is completed. However, these organizations must first clearly identify the need to do this and then be sure that they have the funds to pay for it.

In the case of rice, continuing national coordination would appear to present greater challenges, because there is no single umbrella organization that serves the interests of all of the farmers who are involved in the rice project. It is not even clear how the local area rice specialists might be employed to continue in that capacity after the project is completed.

Recommendation. UPANIC and project management must begin taking measures now to plan and ensure that adequate national level technical coordination is continued beyond the end of the project.

This process can begin by being sure that FAGANIC and UNCAFENIC recognize the need, and then by helping them to develop funds to support it.

The same planning effort should evaluate the somewhat different circumstances of the rice program, to determine whether or not there is a way to institutionalize the technical support which the UPANIC Project now provides for rice. In planning for the continued rice support, UPANIC should continue to strengthen the joint efforts of the National Rice Growers Association (ANAR) and the National Farmers Union (UNAG). The cooperation which has already been achieved between these two organizations is due to the commendable effort of UPANIC.

Extension of Support for the Rice Outreach Program

The rice outreach program under Dr. Gorrez started in the latter part of 1995, well after the other activities of the UPANIC Project. This program is currently funded only through September 1997. The initial results of this program are impressive, as the analysis in Chapter 5 indicates. However, two years is a very short time to expect such efforts to be fully realized or consolidated. It leaves little time to address the longer term institutional issues identified above.

Recommendation. It is recommended that UPANIC and USAID extend the rice outreach program until the UPANIC Project ends in 1998.

UPANIC Project Administration

The administration of the project under UPANIC has been successful. The PMSO has developed effective subgrant preparation, monitoring and auditing procedures. It has developed a good system for obtaining needed technical assistance from outside consultants, and to prepare and monitor subgrant projects. This system has also worked to provide technical support to the individual associations which receive funds through the project.

The volume of subgrants which UPANIC has prepared, awarded and administered over the past three years — some 35 grants totaling more than C$36 million ($4.8 million) — is indicative of the administrative capacity which has been developed within UPANIC and the PMSO.

To follow the progress of the sub-projects, UPANIC has developed a detailed monitoring system. It was developed at the beginning of the subgrant process, before there were any productive impacts to be detected. The system therefore concentrated on measuring attendance at training and TA events. Now it is time to shift the focus of this system so that it measures productive outputs. For example, this would include the regular collection of data on crop and livestock (milk) yields, actual area under improved practices, the number of growers involved in block marketing, and the prices received by participating growers.

The USAID Advisor, Charles Oberbeck, has been with the project since its inception. This has provided great continuity to the administration of the project and undoubtedly has contributed to its success. Oberbeck's appointment is scheduled to finish at the end of 1996, after which time the full

responsibility for the project will rest with the UPANIC Executive Secretary, Alejandro Raskosky.

Mr. Raskosky has worked in the project since its beginning and has served as UPANIC Executive Secretary since May 1995. He has now assumed responsibility for directing the PMSO and the project.

Considering that the project is still operating at a high level of activity, with 11 new subgrants just starting and about 20 older subgrants still continuing, the project and the PMSO staff would benefit by having the continued periodic support of short-term consultants after Oberbeck's departure.

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APPENDICES

APPENDIX A. WORKPLAN FOR THE EVALUATION

APPENDIX B. MINI-SURVEY QUESTIONNAIRE AND GUIDE FOR KEY INFORMANT INTERVIEWS

APPENDIX C. LIST OF PERSONS CONTACTED AND ORGANIZATIONS VISITED

APPENDIX D. FARMER ASSOCIATION ACTIVITIES BY TYPE, COVERAGE AND STATUS

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APPENDIX A
EVALUATION OF UPANIC COOPERATIVE AGREEMENT UNDER PAS PROJECT 524-0315

WORKPLAN

The purpose of the evaluation is to assess how well the needs of different customers (member farmers) are being met under the UPANIC Cooperative Agreement.

The evaluation will consist of a series of interrelated activities designed to measure the benefits and impacts of the project on UPANIC, its member associations, and their member farmers.

The activities to be evaluated are described in Section I of the attached evaluation outline. These include activities which were intended to be carried out under the original project design, and spin-off activities which occurred spontaneously as the project was implemented.

Insofar as possible, quantitative measures will be obtained for project outputs. The areas to be quantified are listed in Section II of the outline.

The survey techniques will include a mini-survey of 26 producers and a series of key-informant interviews, as indicated in Section III of the outline. The activities of seven producer associations which received sub-grants under the project will be covered. Member producers of these associations in seven different areas of the country will be visited and surveyed.

The time schedule for carrying out the various study activities is as indicated in Section IV of the outline.

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I. Activities, outputs and impacts to be covered by the evaluation:

Technical assistance
- Technicians in UPANIC and member associations
  - Basic grains (rice)
  - Livestock & feed production
  - Coffee

Technical validation trials

Promotion and Introduction of Improved Practices

Training

Improved input availability and supply

Land titling
- Improved access to credit/Land Improvement

Dry season feeding practices

Artificial insemination

Seed production (basic grains)

Nursery stock production (coffee)

Improved marketing facilities (storage), procedures and channels; use of block marketing and other group marketing activities

Institutional strength of UPANIC & participating associations
- Gains in membership
- Greater participation of members
- Administrative and technical capabilities
- Strengthened commercial activities
- Improved income generation and sustainability
- Involvement in spin-off activities
- Leveraging funds (e.g. PL-480 and Siuna basic grains)

Impacts on related organizations
- FAGANIC
- UNCAFENIC
- UNICAFE
- UNAG
- Agrarian Reform Coops

II. Quantification.

Through a mini-survey and key informant interviews, quantitative information will be sought in the following areas. In some cases this will be a confirmation of information which UPANIC has already collected through its data collection and monitoring process. Insofar as possible, participants will also be classified according to gender and size of holding.

- Employment
- Yields (production)
- Area planted
- Production of basic grains (rice), coffee, livestock, forage
- Income

- Use of technology
  - Artificial Insemination
  - Dry season feeding
  - No. of participants
  - No. animals involved
  - Use of related techniques
    - Mineral blocks
    - Baled hay
    - Feed concentrates
  - Purchased crop inputs and veterinary products
  - Improved seeds and nursery stock
  - Use of fertilizers

- Farm input sales by associations

- Increases in association membership

- TA Visits

- Participation in training

III. Data/Information Collection Methods and Sources:

1. Key informant interviews
   Association technicians and/or managers (6)
   Association leaders (12)

2. Mini-survey of 26 producers who are association members and participants.

3. Key informant interviews of leaders, managers and technical personnel will also be conducted in the following organizations, headquartered in Managua:

   UPANIC
   - President
   - Executive Secretary
   - Coffee technician
   - Livestock technician
   - Rice advisor (ANAR)
   - Technical advisor

   FAGANIC, UNCAFENIC, UNICAFE, UNAG

NOTE: The key informant interviews and mini-surveys indicated in items 1 and 2 above will be conducted in the following organizations and locations:

Rice production (basic grains):

ANAR	Managua
Coop Omar Torrijos	Sebaco
Finca Santa Lasterina	Malacotoya
Farmers (8)	Sebaco/Malacotoya

Livestock production:

Associations (3)	Nagarote
Cattlemen (9)	Camoapa
	Rivas

Coffee production:

Associations (3)	Boaco
Farmers (9)	Mastepe
	Matagalpa

IV. Schedule of Evaluation Activities.

August 13-15 Initial meetings with USAID and project officials; develop workplan.

August 16-28 Field visits to associations(*);
Key informant interviews;
Mini-survey of member producers;
Visits to related organizations;
Tabulation of information gathered in visits.

August 28- September 2	Analysis of results; Preparation of draft report.
September 2	Delivery of draft report to USAID and UPANIC
September 3-4	Refine draft.
September 5	Presentations to UPANIC and USAID.

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* Specific field visit dates:

Friday, Aug. 16	Masatepe	Coffee growers
Monday, Aug. 19	Malacotoya	Rice growers
Tuesday, Aug. 20	Sebaco	Rice growers
Thursday, Aug. 22	Matagalpa	Coffee growers
Friday, Aug. 23	Boaco	Coffee growers
Monday, Aug. 26	Nagarote	Cattlemen
Tuesday, Aug. 27	Camoapa	Cattlemen
Wednesday, Aug. 28	Rivas	Cattlemen

APPENDIX B. MINI-SURVEY QUESTIONNAIRE

MINI-ENCUESTA a PRODUCTORES Fecha_____

Nombre_____ Número de teléfono_____

Sexo_____ Edad_____ ¿Trabaja fuera de finca?_____

Asociación_____ Arroz___ Café___ Ganado___

Municipio/comarca de finca_____ Vive en finca o pueblo?_____

1. Extensión (área) total de terrenos en finca _____

2. ¿Cuando se afilió a la asociación?(año/mes)_____

   ¿Cuál es su papel en la asociación? (socio, directivo, etc.)
   _____

3. ¿Conoce Ud. el proyecto de UPANIC con la asociación?_____

   ¿Cómo aprendió Ud. del proyecto? _____

   ¿Cómo se caracteriza el efecto o beneficios del proyecto para la misma asociación? _____

   ¿Qué va a pasar con la asociación cuando termine el proyecto? _____

4. ¿Ha participado Ud. en este proyecto? _____
   Tipo de participación: (dar algo de detalle)
   Inseminación artificial _____
   Alimentación de verano_____(explicar)
   Ensayo de validación_____(en su finca/vio en otro)
   Cursillos o talleres _____ (typo y número)
   Compra de insumos de la asociación_____
   Uso de semillas mejoradas_____
   Uso de almácigos para plantas mejoradas_____
   Uso de fertilizantes_____
   Otro _____

5. ¿Está activa la asociación en comercialización?_____
   ¿Ha vendido sus productos mediante la associación?_____
   Resultados/beneficios?_____

6. ¿Viene un técnico de la asociación a su finca?_____
   Frecuencia de visitas_____ Número total de visitas _____

<u>Uso de mano de obra</u>:

8. ¿Cuánto tiempo trabaja Ud. en su finca ahora, en comparación de antes del proyecto? (Menos/Igual/Más)

	Ahora	Antes
Usted (dueño)	_____	_____
Otros miembros de familia	_____	_____
Otros obreros	_____	_____

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Número de obreros, tiempo completo _____ _____
tiempo parcial _____ _____

Ganado vacuno:

9. Número total de ganado vacuno hoy en día _____
Vacas_____ Vaquillas____ Novillos_____Toros_____Terneros_____

Número de vacas en su rebaño antes del proyecto_____

10. ¿Cuántas crias ha logrado mediante IA durante los últimos 12 meses?_____ ¿Cuántas crias sin IA?_____

¿Cuáles son las ventajas de las crias de la IA?_____
_____

11. ¿Conoce los métodos de alimentación de verano? ____ ¿Los ha usado? _____ Explique los beneficios de usar estos métodos:

12. ¿Qué ha sido el beneficio principal del proyecto para su producción de ganado?

Cultivos (arroz o café):

13. Superficie total de cultivos sembrados durante los 12 meses pasados, en comparación al año antes del proyecto (todos los cultivos en todas las estaciones, incluyendo cultivos permanentes como café):

	Ahora	Antes	
Superficie:			
Arroz	_____	_____	mz
Café	_____	_____	mz
Otros	_____	_____	mz
Total	_____	_____	mz
Rendimiento:			
Arroz	_____	_____	(qq granza/mz)
Café	_____	_____	(qq oro/mz)
Leche	_____	_____	(litros/día)
Produccion:			
Arroz	_____	_____	(qq granza)
Café	_____	_____	(qq oro)
Leche	_____	_____	(litros/día)

Ingreso neto:

14. ¿Ha resultado de su participación en el proyecto en algún cambio de su ingreso?_____ ¿Cómo se puede estimarlo?
_____

15. Si hay mayores ingresos ahora, ¿en qué los ha usado o piensa usarlos? _____

APPENDIX B. GUIDE FOR KEY INFORMANT INTERVIEWS

ASOCIACION:
LUGAR:
PERSONAS ENTREVISTADAS:

1. PARTE INSTITUCIONAL:

A. Cuándo *comenzó* con el Proyecto de UPANIC
B. Cuándo se *organizó* su asociación
C. Cuántos *afiliados* tuvo antes de comenzar con el Proyecto y actualmente
D. Cuántas *mujeres* son afiliadas y cuántas había antes del Proyecto
E. Cómo se caracterizan los *principales grupos* de afiliados de antes y ahora, en cuanto a tamaño de su finca (mz) y tamaño de su actividad principal (mz o número de ganado)
F. Cómo es la *estructura asociativa y administrativa* u organigrama de su asociación y si ha cambiado desde que comenzó con el Proyecto
G. Cuán *frecuente* se reunen las diferentes partes de su asociación [greater participation]
H. Antes del Proyecto había *actividades comerciales* de la asociación (por las cuales se cobraba) y ahora
I. Cuáles eran los *resultados financieros* de las actividades comerciales antes y ahora
J. Si ahora hay *otras fuentes* de financiamiento para actividades fuera del Proyecto, cuáles, para qúe y desde cuándo
K. *Apalancmiento* de fondos de otras fuentes **[leveraging funds: PL480, Siuna]**

2. **SERVICIOS COMERCIALES (por las cuales se cobran)– Existencia y Volúmenes Antes y Ahora e Importancia de la Actividad:**

A. Tienda de insumos y productos veterinarios
B. Mercadeo -- infraestructura y/o facilitación
C. Producción en Vivero de Cafetos
D. Inseminación Artificial
E. Alimentación de Verano:
   - Manejo de pastos
   - Concentrados
   - Pacas de heno
   - Bloques minerales
   - Ensilaje en silos

3. **SERVICIOS TÉCNICOS – Existencia y Frecuencia Antes y Ahora e Importancia de la Actividad (su Impacto):**

A. Asistencia técnica en producción:
   - por la Asociación
     - en Tienda
     - en Finca
   - por otras fuentes
     - en Tienda
     - en Finca
B. Ensayos de validación técnica
C. Capacitación recibida (tipos -- cursillos, talleres, días de campo, viajes):
   - por la Asociación (hombres y mujeres)
   - por otras fuentes (hombres y mujeres)
   - dirigida a la participación de la mujer
D. Otra asistencia en:
   - Obtención de crédito
   - Titulación del terreno de la finca

APPENDIX C
LIST OF PERSONS CONTACTED AND ORGANIZATIONS VISITED

USAID, Managua

John Dorman, Deputy Director ERD, Project Manager for PAS
Jonathan Sleeper, Head of ERD
Charles Oberbeck, Advisor for UPANIC Project*
Paul, Greenhough, Budget and Evaluation Officer

UPANIC, Union of Agricultural Producers of Nicaragua

Eduardo Mena, President*
Alejandro Raskosky, Executive Secretary, Head of PMSO*
Luis Piuzzi, Livestock Coordinator*
Jimmy Zambrana, Coffee Coordinator*
Frank Gorrez, Rice Project Coordinator*
Araceli Solórzano Perez, Field Program*

UNCAFENIC, National Union of Coffee Growers of Nicaragua

Jimmy Zambrana, Executive Secretary*

ANAR, Nicaraguan Rice Growers Association

Mario Hanon, Jr., Member, Board of Directors*

FAGANIC, Federation of Nicaraguan Livestock Associations

Jose Ramon Kontorovski, President*
Alejandro Montealegre, Treasurer*
Carlos Teran, Member, Board of Directors*

ACAM, Masatepe Coffee Growers Association

Edgar Sanchez Garcia, Vice President*
Siomara Sanchez, Agronomist*
Eric Gutierrez, Manager*
4 Growers (Mini-survey)

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ASOCAFEMAT, Matagalpa Coffee Growers Association

Francisco Lanzas, President*
Julio Solórzano, Honorary President*
Omar Antonio Rios, Secretary, Comité Samulalí*
4 Growers (Mini-survey)

COCABO, Boacó Coffee Growers Cooperative

Noel Ortega, President*
Pedro Rojas, Agronomist*
Gilberto Sotelo, Member, Board of Directors*
Orlando Calero, Manager*
Jesus Mora Caballero, Member, Board of Directors*
Ramiro Espinosa, Secretary, Board of Directors*
5 Growers (Mini-survey)

ASOGANA, Nagarote Livestock Association

Juan Roa, President*
Abelardo Gallo, Member, Board of Directors*
Angel Gallo, Member, Board of Directors*
Zeledonio Sanchez, Member, Board of Directors*
Roberto Solis, Member, Board of Directors*
4 Producers (Mini-survey)

ASOGACAM, Camoapa Livestock Association

Daniel Aragon, President*
Mario Aragon, Member Board of Directors*
Ernesto Segueira, Livestock Technician*
Rufino Garcia, Member, Board of Directors
4 Producers (Mini-survey)

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* Indicates participation in Key Informant Interview; in many cases the interviews were done in groups.

Note: In addition to the numbers cited above for the mini-survey, five rice growers were surveyed in the Malacatoya district, and four growers and grower cooperatives were surveyed in the Sébaco district.

APPENDIX D

FARMER ASSOCIATION ACTIVITIES BY TYPE, COVERAGE AND STATUS

Legend: C - completed; I - initiating; O - on-going; P - prepared/ready for approval; * - under other activity group

	BASIC GRAINS PROJECTS	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)
1	Sorghum (national)				C	C						C										
2	Agriculture (Leon)				C	C	C					C										
3	Rice production (national)				C	C	C					O										
4	Corn and Beans (Matagalpa)	*	*	*	*	*	*		*	O	O											
5	Peanuts (Chinandega)							C			O											
6	Rice marketing (Siuna)	P	P	P	P	P	P	P			P											
	LIVESTOCK PROJECTS																					
1	Boaco			O	O	O	C		C				O	C	C							
2	Camoapa			O	O	O	C		C				O	C	C							
3	Chinandega				C	O	C		C				C	C	C	C	C					
4	Chontales				C	O	C		C				C	C	C		C					
5	Esteli			C	C	O	C		C				C	C	C	C						
6	Granada			O	O	O	C		C				O	I	I	I	I					
7	Leon			O	O	O	C		C				O	C	C	C		C				
8	Matagalpa			O	O	O	C		C				O	I	I	I	I	C				
9	Nagarote			O	O	O	C		C				O	C	C	C						
10	Rivas			O	O	O	C		C				O	C	C	C	C					
11	El Sauce			O	O	O	C		C				O	C	C							
12	El Ayote			I	I	I	I	I	I				I			I	I					
13	San Jose de los Remates			I	I	I	I	I	I				I	I	I			I				
14	Ometepe			P	P	P	P		P				P									
15	Siuna			P	P	P	P		P									P				
16	Jinotega			P	P	P	P		P				P					P				
17	Quilali			P	P	P	P		P							P						
18	Wiwili			P	P	P	P		P													
19	Somoto			P	P	P	P		P					P	P							
20	Ocotal			P	P	P	P		P							P						
21	Condega			P	P	P	P		P													
22	San Juan de Limay			P	P	P	P		P					P								
23	FONDILAC								C													
	COFFEE PROJECTS																					
1	Boaco	C	C	O	O	O	C		C										O	O		
2	Diriamba	C	C	O	O	O	C		C										O	O		
3	Esteli	C	C		O	O	C		C										O	O		
4	Jinotega	C	C	O	O	O	C		C										O	O		
5	Managua	C	C		C	C	C		C										O	O		
6	Masatepe	C	C	O	O	O	C		C										O	O	O	
7	Matagalpa	C	C	O	O	O	C		C										O	O	O	
8	Nueva Segovia	C	C	O	O	O	C		C										O	O	O	
	LAND TITLING PROJECTS																					
1	Jinotega	*	*	*			*															I
2	Matagalpa	*	*	*			*															I
3	Nueva Segovia	*	*	*			*															I

ACTIVITY SUPPORTED

(a) General Manager
(b) Bookkeeper
(c) Bookkeeping System and Training
(d) Production Assistance Technician
(e) Training in Production Techniq.
(f) Office Equipment Procurement
(g) Infrastructure Construction
(h) Input Supply Store Inventory
(i) Credit for Grain Production
(j) Grain Processing/Marketing
(k) Field Validation Trials
(l) Artificial Insemination
(m) Feed Concentrate Production
(n) Mineral Block Production
(o) Hay/Silage/Molasses/Elect.Fence
(p) Cattle Weighing/Auction Facil.
(q) Meat/Milk Processing and Sale
(r) Coffee Plant Nursery
(s) Coffee Demonstration Plot
(t) Coffee Block Marketing
(u) Legal/Surveying Assistance

APPENDIX E. MEMBERSHIP OF PARTICIPATING ASSOCIATIONS AND COOPERATIVES BENEFITTING FROM PROJECT; LAND AREA AND SIZE OF PLANTINGS IN COFFEE AND RICE.

Membership data for Coffee and Livestock Associations Receiving Subgrants in 1993-95:

	Initial Membership	Membership June 1996	Change	Percent Change
Coffee:				
Nueva Segovia	60	1,033	973	1,622
Boaco	130	192	62	48
Jinotega	95	2,607	2,512	2,644
Managua	75	80	5	7
Esteli	42	147	105	250
Diriamba	49	105	56	114
Masatepe	51	125	74	145
Matagalpa	1,038	1,356	318	31
Subtotal	1,540	5,645	4,105	267
Livestock:				
Chinandega	110	72	-38	-35
Leon	120	143	23	19
El Sauce	91	133	42	46
Nagarote	50	63	13	26
Rivas	80	97	17	21
Esteli	156	166	10	6
Boaco	140	175	35	25
Camoapa	314	324	10	3
Chontales	250	250	0	0
Matagalpa	75	84	9	12
Granada	48	57	9	19
Subtotal	1,434	1,564	130	9
Coffee + Livestock	2,974	7,209	4,235	142

Eight Coffee associations Receiving Subgrants:

	Members June 1996	Average Coffee Area (mz)
Urban	623	36.79 mz
Rural	5,022	4.05 mz
TOTAL	5,645	7.67 mz

Total area June 96 43,284 mz

APPENDIX (continued)

Farms participating in Rice outreach project, March 1996					
Area	Private Farmers	Rice Area (mz)	No. of Coops	Member	Rice Area(mz)
Sebaco	16	2,775	6	240	1,388
Malacatoya/Riv	15	3,830	3	120	500
Chontales/Gra	26	1,946	17	233	3,391
Chinandega	-	-	6	270	2,007
Jalapa	26	2,486	3	220	500
Total	83	11,037	35	1,083	7,786
Average per farm (mz)		133.0	Average per member		7.2

APPENDIX F. NOTES ON TECHNICAL CALCULATIONS FOR ESTIMATING INCOME IMPACTS.

COFFEE NOTES:

Diffusion of New Technology.

75% of members involved in program;
X 60% proportion who are adopters;
= 45% estimated diffusion.

Costs of improvement:	C$	C$
One time only, year 1:		
Labor: selection of shoots	60	
re-planting	105	
Total	165	
New plants	1,050	
Total (C$)	1,215	
Equivalent annual cost (10 years, 10%)		459
Other costs of improvement, contunuing annually:		
Fertilization labor	45	
Fertilizer	780	
		825
Total annual cost (C$/mz)		1,284
Dollar equivalent ($/mz)		$151
Harvest cost/qq, labor:	84	
food for workers	24	
Sacks/etc.	8	
Total harvest cost (C$)		116
Dollar equivalent ($/mz)		$14

Yield increase to date:		
Base yield	5.75	qq/mz (dry beans)
X percent gain to date	80%	
= Yield increase	4.60	

Note: Diffusion estimates based on the observations of Jimmy Zambrana, UPANIC Coffee Coordinator, and the consultant. Cost data provided by Zambrana. Yield estimate is the consultant's, based on mini-survey results and discussions with field technicians.

APPENDIX F.

LIVESTOCK NOTES:

Costs for herd of 30 cows:	Traditional	Improved
(Data of Dr. Luis Piuzzi, UPANIC Livestock Coordinator)		
Health	1,289	1,793
Reproduction	1,167	5,180
Labor	22,400	22,400
Feed	4,608	5,004
Total C$	29,464	34,377

Difference = cost of improvement C$	4,913
Cost of improvement per cow, C$/cow	164
Dollar equivalent cost, $/cow	$19

Value of increased sales from improved herd of 30:		
Milk (trad 3.8; impr. 4.7 lit/da	15,093	30;833
Meat	7,560	12,784
Cull cows	7,200	7,857
Total C$	29,853	51,474

Difference = value of increased sales C	21,621
Value of increase per cow, C$/cow	721
Dollar equivalent value of increase, $/co	$85

Consultant's estimate of value increase	$85

Note: The estimate of increase in value of production was made by the consultant. Information provided by Dr. Piuzzi was modified to reflect results of the evaluation mini-survey, in additions to the findings of the Pourraid study (1996).
The consultant's estimate is that a 24 percent average gain in daily milk yields has already been achieved by participating producers. Milk and meat yields are also affected by an increase in the lactation period, and increased calving rates.

Herd size:
Total herd size for 11 associations is 117,450 head, according to estimates of Dr. Piuzzi. Approximately 50 percent are cows.

APPENDIX F.

RICE NOTES:

Yield increase 40 qq/mz X 29% = 11.6 qq/mz

Diffusion rate of 75 percent is the estimate of the consultant. It is based on field observations and discussions with Dr. Frank Gorrez, the technical adviser and coordinator of the rice outreach program. It is higher than the diffusion observed in the coffee and rice programs because of the different way in which the project is organized.

Certified seed costs C$200 per qq compared to C$ 95 for common grain; split the difference as farmer's own cost of purifying his seed on his own land; Even if he does buy certified, it will last several years.

Certified seed cost C$/mz	200	
Less value of common gra	95	
Added cost of certified C$	105	
Cost to purify own seed	52.5	(1/2 of certified cost)
Dollar equivalent cost	$6.18	

Added cost of the leveling is the leveler itself:

Cost of field leveling implement C$	1,500
Annual equiv. cost (5 yrs, 36%), C$	688
Coverage of leveler, 50mz	
Cost per manzana	13.76
Dollar equivalent cost per acre	$1.62

Total cost, seed + leveler = 6.18 + 1.62 = $7.80