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PROJECT PAPER

RURAL TECHNOLOGY TRANSFER SYSTEM
Amendment No. 3

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Project Number: 518-0032
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Rural Technology Transfer System
Project Paper Supplement

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I. SUMMARY AND RECOMMENDATION

A. Summary

Project Title: RURAL TECHNOLOGY TRANSFER SYSTEM
Project Number : 518-0032
Date of Initial Obligation: 8/27/80
Total Obligations to Date: \$5,300,000(grant) \$2,600,000(loan)
PACD - Original: 9/30/85
- Revised: 9/30/88

Goal of Project: USAID's goal is to increase food production, employment, and incomes and otherwise improve the well-being of the rural poor. The project will contribute to the goal by strengthening agricultural/rural development research, extension, and technical training appropriate for increasing food production and improving the economic welfare of small farmers.

Project Activities: The current project provides support to four private producer associations to assist in the development of their capabilities to develop and disseminate technologies appropriate to the needs of small farmers and the agricultural sector in general. The initial phases of the project focused on institutional development and technology generation. The extended project will focus on extension and the establishment of a self-sustaining technology validation and transfer system.

B. Recommendation

It is recommended that the USAID/Ecuador Mission Director approve this Project Paper Supplement and amend the Project Authorization for the Rural Technology Transfer System Project (518-0032). This amendment will: (a) extend the PACD by almost 23 months to August 26, 1990, giving a 10 year Life-of-Project from the date of initial obligation and (b) increase the Life-of-Project grant and loan funding level by US\$1.9 million (\$1,150,000 grant; \$750,000 loan).

II. BACKGROUND AND JUSTIFICATION

A. Background

The Rural Technology Transfer System Project (RTTS) was designed to: (1) strengthen rural institutions so that they are able to serve the sector effectively; (2) develop and disseminate technologies appropriate to the needs of small farmers and the agricultural sector in general; and (3) support the establishment of a mechanism (RTTS) to address the technological and related constraints facing the sector on a continuing basis.

The GOE National Science and Technology Council (CONACYT) was originally selected to administer the project and channel financing to a series of subprojects designed to address technological and related institutional constraints in the rural sector. A key aspect of the project strategy was to establish linkages between the RTTS subproject institutions and Title XII Universities to facilitate the process of technology transfer and institutional strengthening. The core contract for the lead university was competitively awarded to the University of Florida. The University of Florida subcontracted with Utah State University in 1985 after the project was redesigned.

By 1983, 12 subprojects were being implemented by various public sector rural development agencies and Ecuadorian universities. Two major evaluations in March 1983 and July 1984 found merit in the overall project concept and in some of the subprojects but recommended that the implementing mechanism be changed. Progress on most of the projects was very slow and there was an aversion on the part of the GOE implementing agency to use foreign technical assistance. Some useful training for technicians was accomplished but very little appropriate technology was transferred. Thus, on August 31, 1984, one of the first actions of the new Government of Leon Febres Cordero was to transfer the implementing authority for RTTS from CONACYT to the Ministry of Agriculture (MAG) pending project redesign. The redesign was completed in December 1984 and the Project amended in December 1985. The purpose remained the same but a different strategy with a private sector focus was employed to implement the project. Only four of the original subprojects were continued, two of which have since terminated and the other two are phasing out. Four new subprojects (Coastal Livestock Improvement - MEGALIT, Dairy Production Improvement - AGS/HF, Sheep Production Improvement - ANCO, Integrated Pest Management - APROCICO) were designed in 1985 with LOPs of five years*, approved in early 1986, but not initiated, due to various delays, until mid to late 1986. Greater emphasis was also given to training under a new training subproject. Although not documented, it is assumed that the Mission intended to evaluate the new subprojects, just prior to the PACD of September 30, 1988

* Back-up design documents for each subproject indicate that these subprojects were 5-7 year activities and that funding under the RTTS amendment would constitute the first phase of these activities.

(after 2 to 3 years of implementation), to determine the advisability of extending the subprojects another two years.

The amended project is channeling almost all of the project resources through private rural associations (POs). The rationale for this focus is that private associations: (1) are better aware of farmers needs and problems; (2) can more effectively reach them with improved appropriate technology; (3) can provide essential services such as technical assistance, input delivery, marketing; and (4) can articulate the interests of their commodity group to the GOE. Public sector participation in the redesigned project has shifted to one of a support role to the private associations via financial support from PL-480 and provision of Ministry extension agents, office space and farms. This focus on private sector organizations is in line with the priorities of the present GOE administration and AID policy to increase the role of private initiative in the development of the agricultural sector. Efforts to strengthen private agricultural service delivery structures are called for in the CDSS, as part of an overall strategy to increase private sector participation in Ecuador's development process.

In December 1987, an evaluation was conducted of the four active subprojects working with the private sector. The evaluation team assessed the progress made on each subproject and emphasized the social impact of each. The general conclusion was that this first experience in Ecuador to integrate the public and private agricultural sectors to transfer technology is achieving positive results despite the limited time in implementation (1 1/2 years). The social and economic impact of the overall project has been positive with new technology being adopted in many cases. The technologies being generated and transferred are considered valid for conditions in Ecuador and adequate for all levels of producers with significant acceptance by small/medium producers. The evaluators pointed out the benefits to small producers and positive social impact of reduced cost of pest control, increased quantities of milk available, and increased quantity and improved quality of sheep. The team recommended that:

1. All subprojects be extended.
2. More attention should be directed toward strengthening institutions.
3. Training for technicians and MAG extensionists should be intensified.
4. More technicians and MAG extensionists should be provided to reach more beneficiaries.
5. Extension efforts should be intensified.

Status of Sub-Projects

This section discusses, for each active subproject, its progress to date, its impact on small farmer beneficiaries, problems that have occurred during project implementation and other project concerns.

A problem endemic to all the subprojects is the dependence on the MAG to provide extension agents to work with Association technicians. The agents receive low salaries which is a disincentive. The Associations are currently developing legal methods to compensate for low GOE salaries such as providing higher per diems, etc.

Another common project concern is the ability of the POs to sustain project activities after AID assistance ends. This concern is addressed in greater detail in Section III.

(1) Short Cycle Crops Improvement (APROCICO):

The purpose of this subproject is to increase the incomes of small/medium producers of short cycle crops (corn, soybeans) in the Quevedo area (168,000 ha) by reducing the costs of pesticide use and crop loss. This is being accomplished primarily through wide-scale introduction of integrated pest management techniques (IPM).

- Progress to Date: Substantial progress has been made in institution building and in the organization of an extension program. Accomplishments to date include; (1) strengthening the capacity of the Asociación de Productores de Ciclo Corto (APROCICO) to diffuse IPM techniques to APROCICO members and non-members alike through bulletins, field days and seminars conducted by the project-funded IPM specialist and counterparts; (2) establishment of a well functioning entomology lab which is operating at or near capacity; (3) training of technicians who are working closely with the National Agricultural Research Institute (INIAP) on adaptive on-farm research in plant pest control through IPM; and (4) initiation of an IPM consulting service which is already reducing pest control costs for soybeans by up to 10% for cooperating farmers.

The U.S. technical advisors and local technicians are continuing to identify additional pests and developing biological controls as well as economic thresholds for spraying. The technical assistance is also providing limited advice on a range of other agronomic problems such as disease control and soil fertility. Most of the efforts to date have focussed on identifying and formulating controls for insect pests on soybean. APROCICO is now starting to look at additional soy pests such as viruses and nematodes and to work with additional crops such as rice and corn.

- Impact on Small Farmer Beneficiaries: While APROCICO membership consists largely of medium to large farmers, it is progressively orienting services toward small farmers and is considering establishing memberships for small farmer organizations. Services and activities from which small farmers benefit include: talks, field days and seminars conducted by the IPM specialist and counterpart; extension publications; marketing services which provide small farmers more favorable prices. The recent evaluation concluded that the subproject is working with scale-neutral technology and is benefitting all levels of producers regardless of membership in APROCICO.

- Problems/Concerns: One major area of concern is APROCICO's ability to market their IPM services to make this program self-financing. While initial clients were paying for the services, many are now doing their own scouting for pests. Additionally, the newer, smaller clients are generally not charged. Short-term technical assistance is being sought to assist APROCICO to establish an equitable marketing system, to expand coverage and recover costs.

Another area of concern is the short time-frame allowed for project implementation under the existing project. Due to various delays such as late signing of agreements with MAG, slow provision of MAG support and PL-480 funding, and arrival of the long term technical advisor in the summer of 1986, the project has only been under implementation for one and a half years. An additional two years of technical assistance and PL-480 support past the PACD is required to allow the project to meet its objectives.

(2) Coastal Livestock Improvement (MEGALIT):

The purpose of this subproject is to increase production of meat and milk from cattle in the Littoral. This will be accomplished by strengthening the role of producer organizations in the process of developing and transferring technology to cattle producers and assisting members to market their products more efficiently.

- Progress to Date: One of the most notable achievements of the project has been the establishment of a new institution (Mejoramiento de la Ganadería del Litoral - MEGALIT) composed of 8 widely-dispersed producer organizations. The process initially was hampered by the insistence on the part of the lead organization, Asociación de Ganaderos del Litoral (AGL), composed of medium to larger ranchers, to control the project. After a year of intense discussion and short-term assistance in institutional development, the eight smaller POs finally agreed to participate when they learned more about the organization's benefits and were given more of a voice in project implementation. In late 1987 workplans were initiated for each group and representatives from each PO have recently started meeting every two months to review progress and establish priorities.

Due to problems discussed below, most other notable project achievements have occurred within the last few months. The acquisition of three additional vehicles has allowed for a more ample coverage of the extensive project area. This, coupled with the start of the rains, importation of improved seed from CIAT and help from students working on research theses (año rural) has resulted in an increase in technology validation activity. On-farm trials are underway on grazing systems (5), dry season feeding using several legume species and drought resistant grasses (12), controlled breeding to synchronize calving, and parasite/disease control. The results from these trials (Spring-Summer 1988) will be used for demonstrations, field days and fact sheets for distribution. Improved management through herd production records is being introduced on selected farms in Arenillas and Balzar. Copper deficiency in animals was discovered by University of Florida technicians and

is now being corrected by the manufacturers of livestock mineral blocks. In the area of marketing, several studies have been conducted on the marketing and credit systems for livestock and a market news/information system initiated. Plans were developed for several livestock marketing centers, one of which will be financed by the IDB at a cost of US\$600,000. A technical newsletter to disseminate the initial results of marketing studies and the few earlier trials on pastures, production and animal health is being produced and distributed on a monthly basis. As a result of the evaluation, the newsletter is being modified to be more responsive to the needs of smaller producers. A series of technical fact sheets is also planned. The MAG continues to provide 8 veterinarians to assist the membership of each PO in disease control, improved management, nutrition and record keeping.

- Impact on Small Farmer Beneficiaries: Although the Asociación de Ganaderos del Litoral (AGL), the primary private agency implementing the MEGALIT subproject, is composed of medium to larger livestock producers, the members of the AGL are not the sole beneficiaries in this project. AGL is being used as a base to reach the smaller producers. Three of the eight participating producer organizations have average herd sizes of 20 or less. Another three have average herd sizes of 50 head or less. The least economically viable herd size for a pure rancher is 20-25 head, while for a subsistence farmer, with other agricultural income, the number is 10 head. Hence, as a recent evaluation team concluded, the project is benefitting primarily medium to small farmers.

The MEGALIT subproject is benefitting small producers in the following ways:

- a. Scale-neutral technologies are being validated in pasture varieties, health, feeding trials and management;
- b. Field days have included participants of all sizes from the associations and efforts will be made to invite non-members with less than 15 head and promote membership drives for smaller farmers;
- c. The marketing centers are open to all farmers (can bring one cow) which leads to their ability to receive market prices;
- d. The market information system (bulletin, radio) reaches all interested producers regardless of size;
- e. The marketing studies will benefit all livestock producers;
- f. Some advice has been provided to small farmers in health and production.

- Problems/Concerns: This subproject has experienced numerous problems which have hindered progress in institution building and technology validation and transfer. Start-up problems such as the late signing (October 1986) of the MAG-MEGALIT Agreement and delays in hiring counterparts (late 1986 to mid 1987) delayed implementation for almost one year. This also caused the project to miss the 1986/87 rainy season, postponing the majority of technology validation trials until the 87/88 rainy season (beginning in December).

Both the evaluation of the entire project conducted in December 1987 and the evaluation of the MEGALIT subproject conducted by the University of Florida described a series of problems which initially diminished the effectiveness of project efforts and considerably slowed progress. The Florida evaluation highlighted poor leadership and a lack of priorities as the major problems holding up progress. The Ecuadorian evaluation identified poor leadership, as well as the following, for a lack of interest and participation by POs and for limited validation and transfer activities in production:

- Poor coordination between technical advisors and counterparts;
- Insufficient field visits by the production technical advisor;
- Poor coordination between POs and MEGALIT;
- Excessive geography being covered by the limited MEGALIT staff with limited transport.

The following recommendations were made to deal with these deficiencies:

- Prioritize project activities to deal with key problem areas;
- Publish a series of fact sheets and alter the monthly newsletter to be more useful to small-medium farmers;
- Develop more cohesive subproject leadership;
- Introduce a modified farming systems approach;
- Improve coordination between technical advisors and counterparts and MEGALIT and POs.

As a result of the evaluations the University of Florida and MEGALIT developed and initiated an action plan to address the concerns and recommendations cited above. The long-term production advisor was removed from the project since it was judged that his Ecuadorian counterpart was capable of continuing activities with only short-term technical assistance. The Technical Director of MEGALIT is receiving management training and the remaining long-term advisor has become more involved in defining institutional procedures for transferring technology. The new action plan will focus on the primary constraints facing livestock production on the coast which are: nutrition; and marketing for smaller producers. Corresponding to an increase in validation activities a series of fact sheets and on-farm demonstrations is planned for this year. The newsletter is also being modified. The MEGALIT POs have initiated bi-monthly meetings to improve coordination. A modified farming system approach is already being used in the subproject in on-farm trials.

The AID Mission agrees that the MEGALIT subproject has been overly ambitious and supports the reduction of activities to focus on key constraints. It also believes that the local counterpart will be able to continue a reduced level of activities with only short-term support under the extended project.

(3) Dairy Production Improvement (AGS):

This subproject's purpose is to increase milk production in the Sierra by developing a system for generating and transferring appropriate technology to dairy producers in the areas of disease control, nutrition and management.

- Progress to Date: As in the case of APROCICO, this project began working with already well-established institutions, Asociacion de Ganaderos de la Sierra (AGS) and Holstein Friesian Association (HFA). The first year of the project has been used primarily to validate technology on farms. Although formal extension efforts have not begun, improved technology and management techniques are being demonstrated via field days, bulletins, farm visits and farm demonstrations. Farms using the new validated technologies report up to 30 percent increases in milk production. Twenty farms are now using calf hutches which drastically reduce calf mortality from about 25 percent to near zero. Disease control programs were initiated on 21 farms. The long-term technical advisor has diagnosed three new viruses in Ecuador and initiated a pilot control program which should substantially reduce abortion rates. Good results are being achieved using milk replacer to feed calves which releases up to 30 percent more fresh milk for human consumption. Some pasture trials to improve nutrition have been initiated.

- Impact on Small Farmer Beneficiaries: The technology being developed in this subproject is scale-neutral. Although medium to larger farms are being used to validate technology, it has already been shown that small farmers are benefitting. This was also confirmed by the evaluation. Since no added fixed investment is required for any of the improved technology being introduced, the added variable costs can be spread over however many cows the producer has. Examples of how small farmers are benefitting are:

- a. Calf hutches are being used by small farmers including a small farmer cooperative;
- b. Milk replacer and calf management techniques are being adopted by small farmers who have attended field days and demonstrations;
- c. The subproject is beginning to work with private sector cooperatives of small to medium farmers (Centros Agrícolas) to institutionalize extension programs. This is in addition to working with the two Sierra Livestock Associations; and

- d. The evaluation also pointed out that technology is being transferred in many cases to laborers with two or three cows by working on larger farms which are adopting new technology as well as getting their own cows treated.

As a by-product of the project urban consumers may also benefit by paying less for milk due to increased production. This assumes of course that market forces will be allowed to determine price.

- Problems/Concerns: The major problem in this subproject centers on the inability to institutionalize the participation of small producers who are not members of the AGS or Holstein-Friesian. While transfer of technology to small farmers has occurred, it has taken place through the efforts of the Utah State Advisors instead of the AGS. The associations have the tendency to preferentially provide services to their membership comprised of about 3,500 farmers of predominantly medium-sized operations. The project is intended to serve most of the small to medium producers (about 42,000) in the Sierra.

Several alternatives currently are being explored to expand the number of beneficiaries to include a greater percentage of small producers. The Mission is considering assistance from Land O'Lakes to help establish a Dairy Council with representatives from the AGS, HFA, pasteurizers, cooperatives and Centros Agrícolas (CA). This would be the ideal solution since it would provide greater coverage than any other alternative. The next best alternative is for the AGS, HFA and the two producer-owned pasteurizers in the Sierra, all of which share board members and have already agreed to work together, to establish a joint technology transfer program and enter into agreements with Cooperatives and CAs. A third alternative is to transfer project implementation responsibility to the producer-owned pasteurizers who appear to have the greatest motivation to increase production of milk from all sectors. The Quito Pasteurizer is also very socially conscious as demonstrated by its program of subsidized milk for the urban poor (without government assistance).

In order to expedite the formation of a Dairy Council to implement the subproject, it is proposed that the Land O'Lakes consultant(s) arrive in April/May to prepare a proposal for the formation of the Council, indicating how much each member would contribute. Funding would be provided via the existing University of Florida contract. This proposal would be reviewed by AID and the dairy organizations in June with the aim of forming a Dairy Council by July 1988.

Another problem hindering progress is the absence of laboratory capacity to perform viral analysis in Ecuador. The three viruses recently diagnosed had to be sent to the U.S. for analysis. Delays were caused by the requirement for USDA clearance. In addition, the viruses had to be hand-carried rendering a more extensive program prohibitive due to transport costs. The revised project is therefore budgeting funds to upgrade a local lab.

Finally, the subproject encountered a six month delay in the signing of the agreement between MAG and AGS with a corresponding delay in MAG support.

Thus, active implementation did not begin until mid-1986. Initially, there was also very little appropriate technology available to transfer so that preliminary efforts focused on technology validation with some limited extension taking place. Extension efforts are now beginning to intensify, but only a small percentage of the potential benefits will be achieved with such a short time devoted to technology transfer. Additional time is required to continue some validation work in health and nutrition and to mount an intensive extension effort. Institutional arrangements will need some adjusting to allow for expanded beneficiary coverage and sustainability.

(4) Sheep Production Improvement (ANCO):

The purpose of this subproject is to increase production of sheep and sheep by-products (wool, pelts) by generating and transferring technologies to producers and by improving marketing channels and incentives. The National Association of Sheep Producers (ANCO) is being strengthened to enable it to develop and transfer technology and provide other needed services to sheep producers. It is expected that by the end of the subproject, the total number of sheep will be increasing by five percent per year, and wool imports will be significantly reduced.

- Progress to Date: ANCO has increased its membership from zero at the initiation of the project to 8,000 and is operating three sheep stations owned by MAG. Improved management on the stations has led to a 46 percent increase in lamb production and drop in mortality from 46 percent to 8 percent in one year. Technology is being validated on reproduction, nutrition, health, breeding and management. The subproject has begun holding field days (7), farm demonstrations and seminars (17) and produced several extension bulletins (5). The technology that has already been validated and transferred is being rapidly adopted by farmers to the point where the demand exceeds the ability of the subproject to supply. A more intensive extension effort is now being mounted. The association has begun selling improved sheep to its members. This is its major income generator. Six thousand breeding animals have been imported from New Zealand to improve the national flock.

- Small Farmer Beneficiaries: Almost all of the participating farmers are considered small holders. The project coverage has been excellent with 36 communities currently benefitting. This will be expanded to cover the whole Sierra.

- Problem/Concerns: The primary problem with this subproject is ANCO's financial situation, which raises serious questions about project sustainability. The debt incurred from importing sheep, exacerbated by the recent drought which has set back sales projections due to a drastic reduction in reproduction, will probably keep the Association in a deficit position for the next two years. Thereafter they will be able to cover an increasing portion of project recurrent costs but will probably require continued outside support until 1993. An additional financial burden arises from the desire of ANCO to become less dependant on the GOE for sheep stations (currently on no-cost, long-term leases) and station managers. It is currently seeking grant funding from the Junta Monetaria to purchase one farm.

Another problem is that this subproject also experienced long delays in attaining MAG support due to the late signing of the Agreement between MAG and ANCO. In addition, MAG did not turn the sheep stations over to ANCO until late 1986. Thus, the project has only been operating for fourteen months. Efforts to date have concentrated on improving management of the sheep stations along with some adaptive research and limited extension. As in the case of the other subprojects, technology transfer activities will begin in earnest in early 1988, thus allowing only several months prior to the PACD to transfer the validated technology. An additional two years of technical assistance and five years of PL-480 support are required to adequately promote and institutionalize an extension effort.

B. Project Financial Status

To date US\$5,300,000 in grant funds and US\$5,000,000 in loan funds have been obligated. Following the 1984 evaluation, US\$2,400,000 in loan funds were deobligated. Expenditures as of February 29, 1988 were US\$ 4,372,000 and US\$2,400,000, respectively leaving a total of US\$1,128,000 in unexpended funds. At the current expenditure rate of US\$155,000 per month, it is anticipated that almost all (US\$1,085,000) of the unexpended balance will be spent by the current PACD of September 30, 1988. The amount reserved for evaluations and audits (US\$50,000) will be carried over to the extended project. Although one long-term advisor has been terminated on the MEGALIT subproject, saving three months of technical assistance, the Utah State University contract will be extended to September 1988 under its current contract with an unanticipated increased level of effort of eight person months.

C. Justification

Despite the problems with each remaining private-sector oriented subproject, there has been good progress in a relatively short time-frame. There is ample justification to extend the RTTS project for another 23 months to August 27, 1990 and obligate an additional US\$1.9 million to complete the subprojects for the following reasons:

- (1) RTTS is the first attempt in Ecuador to integrate the public and private sectors for rural technology transfer. The concept of providing extension services is foreign to most producer associations and it has therefore taken a longer period of time to establish. The original designers of the subprojects anticipated that at least five years would be required to institutionalize private extension services. However, the project was extended for only three years rather than five. It is assumed that the Mission wanted to evaluate the project midway to determine the advisability of extending the various subprojects. Although the subprojects were designed in 1985, they were not approved until 1986 and implementation delayed until mid-late 1986 due to the late signing agreements with the MAG, slow PL-480 disbursements and slow provision of technical assistance. Therefore, by the PACD of September 30, 1988, the subprojects will have had only about two years of

implementation activities, most of which have been devoted to institution building and technology validation, which deal with the first two purposes of the project. The extended project will focus on the second two purposes -- extension, and establishment of self-sustaining technology validation and transfer mechanisms.

- (2) The recent project evaluation concluded that the project concept is viable in Ecuador and providing good results. The technology being validated and already transferred is in most cases appropriate for conditions in Ecuador and suitable for any size farmer. Although some subprojects exceed others in technology transferred, others have developed stronger institutional bases. The evaluation therefore recommended an extension for all four remaining RTTS subprojects to allow sufficient time to institutionalize all the technology transfer systems being developed and expand beneficiary coverage.
- (3) All four subprojects are poised to begin producing substantial benefits to the economy as technology transfer activities intensify.
 - a. Integrated Pest Management (APROCICO): Pest control costs for soybean, are already being reduced by 10 percent for participating farmers. Extended beneficiary coverage and expanding the crops to include rice and corn could have a significant impact on stabilizing production in an era of rapidly rising costs of other production inputs. The long term effects are also environmentally positive as reduced pesticide use decreases damage to beneficial insects such as predators and bees, resulting in a more effective pest control system.
 - b. Coastal Livestock Improvement (MEGALIT). Improved health and nutrition could increase cattle weights by 20 percent and milk production (for dual purpose cattle) by up to 50 percent on participating farms. As technology is transferred in an extended project this could result in an estimated overall increase in beef production on the coast of about 10 percent depending on adoption rates. (With an extension, the project should reach 20% of the 1,000,000 animals in the project area). The per capita consumption of meat in Ecuador is about 10 kilograms per year (kg/yr) below the recommended levels of 22 kg/yr so that increased beef production remains a priority.
 - c. Dairy Production Improvement (AGS/HF). A 50 percent increase in milk production on participating farms is feasible and, depending on the extension coverage, the subproject could increase total production in the Sierra by about 15%. Three very simple technologies already validated under the project could increase milk production from one billion liters per year to 1.15 billion liters if all targeted project beneficiaries adopted them. Adoption rates, with a minimal extension effort are already high and are rewarding participants with production increases of up to 30 percent per

technology in some cases. Milk production continues to be a national priority in Ecuador as human consumption figures, at 77 liters per capita, are far below the recommended 120 liters per capita. There is currently a production deficit of about 30 percent which is partially met by imports.

- d. Sheep Production Improvement (ANCO). The potential exists to double production of mutton on participating farms and increase national production by about 30% depending on adoption rates and extension coverage. This can be achieved through improved breeds which could double meat production; an increase in lambing rates of up to 50 percent and a decrease in mortality of up to 30 percent. An increase in wool production and quality is also expected as a by-product of the subproject.
- (4) All subprojects are building the foundations necessary to establish private sector extension systems which can be used as a model if successfully completed.
 - (5) Most of the early problems with the subprojects have been or are being resolved. APROCICO is expanding coverage to small farmers and working to improve its IPM marketing system. MEGALIT is developing into a functional institution and the provision of technical assistance (US and Ecuadorian) to POs is becoming more efficient. Under MEGALIT, technology is now being validated and the program becoming more focused on the priority area of nutrition. The dairy subproject is reaching the small farmer and a mechanism to institutionalize their participation is now actively being sought. The financial burdens on ANCO are sustained over time as ANCO increases sale of improved sheep and begins marketing wool. With A.I.D. assistance, these burdens should decrease.

In conclusion, the project is now poised to take advantage of the foundation established during the first two years of implementation. The technology already validated in each subproject has contributed to the information base for each commodity and a limited amount of technology has already been transferred and adopted. However, terminating all activities at the PACD of September 30, 1988 would negate most of the accomplishments to date on the redesigned project, as the associations will not be prepared to take over and continue activities and improved technology will have reached only a small portion of the project's target beneficiaries. An additional 23 months are needed to help assure that the project meets all of its objectives since the second phase will focus on technology transfer and sustainability of project activities by the private sector. The alternative to successful private sector technology validation and transfer programs in the various associations of producers is to revert to a relatively inefficient public sector research and extension system and stagnated production for the commodities in question.

III. DESCRIPTION OF PROJECT ACTIVITIES

While the types of activities proposed in the amended technical assistance plan remain the same, the scope of technical assistance has been modified to address the need for stepped-up extension activities and the need to establish self-sustaining technology validation and transfer mechanisms. There will also be more of an effort in the amended project to better coordinate research activities with the Government research institution (INIAP) and a private Ecuadorian agricultural research foundation, FUNDAGRO. Some coordination is already occurring between APROCICO and INIAP and the Dairy subproject and FUNDAGRO. The amended project described below will require US\$1.9 million of A.I.D. funding and an extension of 23 months. A complete budget for the extension appears in Annex A.

The technical assistance requirements for each subproject under the extended project as well as each subproject's prospects for financial sustainability are discussed below. Annex B provides greater detail on each subproject's recurrent costs and estimates counterpart contributions over the life of the extended project. Estimates of recurrent costs were derived from historical financial data for each program. An increase in salaries by 5% and an increase in inflation by 1.0% was estimated for each subsequent year. The table for each PO indicates who will be paying a specific recurrent cost at both the beginning and end of the project extension. It should be noted that the PL-480 funds proposed to support each activity have already received preliminary approval by the PL-480 Advisory Committee. Formal programming of PL-480 funds for these activities should take place within a month. The Mission supports this programming and does not foresee any problem in obtaining GOE agreement.

The income projections for each association are based on actual revenues and anticipated increases in sales and services from existing business activities for the next few years. Each association also has plans to initiate new income generating activities. ANCO is planning to market wool, APROCICO to market grains and MEGALIT is planning a series of services. Regarding dairy, USAID has initiated discussions with the Caja de Crédito Agropecuario on a possible line of credit using PL-480 funds, supervised by either FUNDAGRO or a new umbrella dairy institution such as a Dairy Council. A portion of the credit will be for technical assistance which may help finance the technology transfer system of the dairy subproject. The project plans to bring in a short-term specialist in May/June of this year to help refine income projections, establish benchmarks and refine development plans for existing and anticipated income-generating activities. The same person would return periodically to measure progress, recommend changes, and help draw up scopes of work for specialty activities. The revised project budget allows for a short-term specialist in business management under each subproject.

A. APROCICO

(1) Technical Assistance Requirements:

Since most of APROCICO's efforts to date have focussed on identifying and formulating controls for insect pests on soybeans, the extended project will look at additional soy pests such as viruses and nematodes and start working with the other major crops in the area, rice and corn. Also, it will expand the coverage and intensify extension efforts in the area and provide additional training for the extensionists, insect scouts and laboratory staff. An additional year of long-term technical assistance in IPM coupled with three person-months of short-term technical assistance the following year are required.

(2) Sustainability:

APROCICO is a solid organization with a competent, secure staff, information center, laboratories for pest, soils and pathological analysis, finance department, marketing department and a supply store that generated about S/.350,000,000 in sales in 1987. It has also been charging for its IPM services; however some of the farmers are no longer willing to pay for insect scouting and have been performing these services themselves. The smaller farmers are also not currently being charged. APROCICO has requested assistance to help them better market this service to provide more income. Between the supply store and IPM services, APROCICO's 1987 net income was about S/.22 million and is expected to increase to about S/.30 million in 1988 and S/.40 million in 1989. They are also planning to initiate grain marketing activities which will generate even more income. Therefore, APROCICO should soon be in a position to handle an increasing level of support to the IPM program whose costs are estimated to range from S/.22 million to S/.24.5 million between 1988 and 1991 (See Annex B). It is proposed that PL-480 contribute a total of S/.28,500,000 for the next two years on a declining basis.

With another twenty-three months of technical assistance and training past the current PACD, the program will also be able to function effectively from a technical and administrative perspective without external assistance. The technical director and lab personnel have progressed to the stage where they are basically operating the program now. Continued technical assistance is primarily required to help technicians develop biological control programs and establish economic thresholds for spraying for corn, rice and soybeans. The scouts (promoters) and extension agents will also continue receiving training from technical advisors until 1990 and from the Technical Director thereafter.

B. MEGALIT

(1) Technical Assistance Requirements:

The current long-term livestock production technical assistance position was terminated in March. It was judged that the Ecuadorian counterpart could continue production-related research and technology transfer activities

without any further long-term support. The marketing counterpart will continue to require support from the University of Florida marketing advisor until 9/88 to complete various studies on beef and milk marketing for several of the POs and provide the necessary technical marketing input for cattle markets being established. The marketing technical advisor will also assist in establishing input stores in the POs and continue training the relatively new (3 months) marketing counterpart. He is also supervising four students on their theses.

During the extended project, only short-term technical assistance will be provided to support the Ecuadorian MEGALIT technicians in specific problem areas which they can't handle themselves. The technology validation program will be more focussed on nutrition, which is the principal constraint affecting all livestock producers on the coast. Marketing-related problems, which pose a major constraint to smaller farmers, and herd management will continue to receive some attention. Appropriate transfer mechanisms will receive more emphasis. Income-generating activities to sustain the MEGALIT institution and its technology transfer program will also be assisted in the extended project.

To make the subproject more manageable, several PO's may be grouped together for purposes of technical assistance and efforts concentrated on three or four groups instead of eight. The technical newsletter will also be modified to more appropriately serve the clientele.

(2) Sustainability:

The MEGALIT institution, composed of eight independent producer organizations, will continue to function as a conduit for transferring technology to the livestock sector of the Littoral. The continued financial support for MEGALIT is to be provided by the eight POs, including the financially-sound AGL. Each PO is expected to develop at least two income sources and contribute a percentage of profits to support MEGALIT. Some of the POs already have input supply stores and vaccination services which are used as a basis to project expected earnings for MEGALIT. All the participating POs are in the process of expanding their income sources. Other income-generating activities now being tested are breed registration, bull performance testing and beef and milk marketing. Experience from other Ecuadorian institutions will be tapped to develop these activities. For example, the AGL is planning to evaluate the HFA Breed Registration System. The following table illustrates the earning potential of MEGALIT based on informal agreements reached with this organization. Future PL-480 agreements with MEGALIT will reflect these informal agreements.

- That the POs will have input stores and at least one other income source operating in the first year of the extension.
- Stores will enjoy the same success as the Los Bancos store which predominantly serves small farmers (current net income of S/.4,000,000/yr.).

- That POs will provide an increasing amount of store profits to the MEGALIT project.
- That POs will provide 80% of their profits from vaccination services to MEGALIT.

		<u>EXPECTED EARNINGS FROM 7 POs</u>						
		<u>SUCRES (000)</u>						
		<u>FY-89</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
%	profits to MEGALIT (from stores)	0	30	40	50	60	70	80
	INPUT store Profits	1.200	1.680	2.150	2.666	3.200	3.712	4.570
	To MEGALIT	0	504	860	1.333	1.920	2.598	3.656
	Vaccination Service Profits	530	1.060	1.325	1.590	1.855	2.120	2.385
	To MEGALIT	<u>0</u>	<u>848</u>	<u>1.060</u>	<u>1.272</u>	<u>1.484</u>	<u>1.696</u>	<u>1.908</u>
	Subtotals of contribution per PO	0	1.352	1.920	2.605	3.404	4.294	5.564
	x 7 POs (excludes AGL)	0	9.464	13.440	18.235	23.828	30.058	38.948

In addition, MEGALIT can also count on the continued financial support from the AGL which is expected to contribute at least S/.4'018.000 in FY-89. These funds would be generated primarily from its input store. The AGL is also currently in the process of establishing a breed registry service with proceeds going to support MEGALIT as well. Per Annex B, MEGALIT's recurrent costs will increase from S/.36 million to S/.53.4 million over the next five years.

In order to meet the gap between MEGALIT's earnings and recurrent costs over the next five years, it is proposed that:

- PL-480 support be provided over the next three years on a declining scale.
- The MAG continues to support the program at a rate of about 16-17%/year.

- MEGALIT POs (excluding AGL) pick up an increasing share of the financial burden each year.
- AGL continues to finance the remaining recurrent costs of the MEGALIT project. The AGL contribution should increase until year 4 after which the POs should be able to finance a majority of the costs.

From a technical standpoint all of the MEGALIT technicians should be able to continue implementing the technology validation and transfer activities with only additional short-term technical assistance and training for the extension period of 23 months. Thereafter, the technicians will be able to function without any additional technical assistance. They will provide any necessary training to MAG extensionist and supervise the año rural students in research for their theses.

C. DAIRY

(1) Technical Assistance Requirements:

In the extended project, emphasis will be placed on: increasing the quality and quantity of milk production through extension of validated technologies in management and health; expanding extension coverage and working more with Centros Agrícolas and dairy cooperatives; continuing validation work in disease control such as for mastitis, new viruses, micronutrient deficiencies, etc.; and expanding research and extension on nutrition through improved pastures.

There is therefore a need to continue long-term technical assistance for two years in dairy health, extension and pastures/soils. The extension position and the pastures/soils position will be shared with the Sheep Improvement Project. The pastures/soils position is essential to improve pastures in the Sierra, therefore improving the nutrition for both dairy and sheep. A lesser amount of assistance will be required in agricultural economics and dairy management and can be covered by short-term technical assistance. The agricultural economics position will also be shared for the first year of the extension with the Ecuadorian project specialist position in the Administrative Unit. The current long-term management advisor would return for two months each year to support the national technicians continuing the program. Short-term technical assistance will also be needed for work in milk quality, institutional development, business management, etc.

(2) Sustainability

The current implementation arrangement for the subproject with the AGS and HFA has been hindering the extension of project activities to smaller non-member producers in a subproject intended for all dairy producers in the Sierra. As discussed previously, the AGS has exhibited a tendency to preferentially provide project services to its members, which are predominantly medium to larger farmers. Therefore, although the AGS and HFA are well established, and would probably be able to sustain the project with two years additional

support from USAID, a new institutional arrangement must be developed with a mandate to provide technical assistance to all dairy producers in the region. The project will continue to encourage, through PL-480 funding and the Utah State technical advisor, the broadening of the institutional base of this subproject to include small farmers. As described earlier, several alternatives are being explored with the preferred one being the formation of a Dairy Council comprised of the AGS, HFA, pasteurizers, cooperatives and Centros Agrícolas. The AGS and Quito Pasteurizer currently generate sufficient income from supply stores (10), milk processing and a small tax on milk (5 cents/liter) to support a limited technical assistance program for their clientele. The AGS input stores generated about S/.260,000,000 in sales in 1987 with a profit of about S/.10,000,000 after all AGS costs were covered. The Quito pasteurizer generates about S/.70,000,000 per year in profits which is used for renovations, its milk subsidy program and services to its suppliers (veterinary, inputs at reduced costs). The above serves to illustrate the potential of the two most wealthy members of the proposed council to contribute to a joint technology transfer system which will hopefully incorporate several small farmer organizations that are less able to contribute. Since the Dairy Council has not yet been formed, the potential members have not committed themselves to contributing any specific amount. It is proposed that each of these organizations contribute a portion of their income at an increasing rate to support a joint technology transfer unit which systematically provides services to smaller producers. The recurrent costs and anticipated funding sources for such a Unit as explained in Annex B are:

	<u>Sucres (000)</u>			
	FY-89	FY-90	FY-91	FY-92
Costs	30.979	34.597	36.863	40.306
Funding Provided by PL-480	21.979 (70%)	13.835 (40%)	10.000 (27%)	0
MAG	6.000 (20%)	6.928 (20%)	4.800 (13%)	5.280 (13%)
Proposed Dairy Council Assistance	3.000 (10%)	13.834 (40%)	22.063 (60%)	35.026 (87%)

In order that the project attain financial self-sufficiency, it is proposed that PL-480 funds be provided for three years and that MAG support continue indefinitely. By year 4, it is anticipated that the Dairy Council will be able to cover most costs with a small amount of support from the MAG.

The technical director and technicians in health and production should be able to continue the validation and transfer of technologies without additional foreign technical assistance after 1990. They will work more closely with FUNDAGRO (see discussions of linkages between this subproject and Mission's REE project in Section IV) and INIAP on validating technology and continue to supervise students and train MAG extensionists.

D. ANCO

(1) Technical Assistance Requirements:

As in the case of the other subprojects, technology transfer activities will begin in earnest in early 1988. An additional two years of long-term technical assistance are required to adequately promote an extension effort. This position will be shared with the Dairy subproject. There is also an urgent need for a pastures specialist to validate and transfer technology to improve pastures for better nutrition. This position will also be shared with the Dairy subproject. Continued assistance will be required in sheep management, but only on a short term basis. The current management specialist from Utah State University will return for three months each year to develop management systems for improved imported sheep. Short-term technical assistance will also be required in business management, resource generation and wool marketing.

(2) Sustainability:

Despite being a young organization (2 years) ANCO has recently incurred a large debt for the importation of breeding stock. Although they will be earning income from the sale of improved sheep, they will be in a deficit financial position in both FY-88 and FY-89. Also, the ANCO administration has also expressed the desire to become less dependent on Government of Ecuador support, and would like to buy their own farms (rather than lease from GOE) and hire their own station managers (rather than depend on MAG). They will therefore need assistance with income-generating activities such as sheep sales, wool marketing, input supply store, etc. Short-term technical assistance will assist with these efforts.

The only source of income that ANCO currently has is from the sale of improved sheep to members. The table below provides projected income over the next five years. ANCO's projected sales are essentially nil the first year as a result of the recent drought which has drastically reduced lambing.

	<u>ANCO INCOME PROJECTIONS</u>				
	Sucre (000)				
	<u>FY-89</u>	<u>FY-90</u>	<u>FY-91</u>	<u>FY-92</u>	<u>FY-93</u>
Income (Sheep Sales)	0	22.350	59.893	80.405	78.594
Debt service	<u>15.008</u>	<u>15.008</u>	<u>15.008</u>	<u>15.008</u>	<u>15.008</u>
Total	(15.008)	7.342	44.885	65.397	63.586

The total estimated recurrent costs for the technology transfer program and anticipated funding for the subproject, as further detailed in Annex B, are provided below:

	SUCRES (000)					
	FY-89	FY-90	FY-91	FY-92	FY-93	FY-94
Costs	34.011	36.554	38.028	42.932	47.230	51.940
Funding Provided by PL-480	29.259 (86%)	24.317 (66%)	15.000 (39%)	10.000 (23%)	5.194 (11%)	0
MAG (In-kind)	4.752 (14%)	5.487 (16%)	1.664 (4%)	1.830 (4%)	1.889 (4%)	2.218 (4%)
ANCO	0	6.750 (18%)	21.364 (57%)	31.102 (73%)	40.147 (85%)	49.722 (96%)

Operating costs of the program will increase gradually (about 10% per year) each year as will ANCO's contribution. In year 2 ANCO will start paying a portion of operating expenses. In year 3 it will start paying for the manager, station directors, two extension agents and office staff.

It is proposed that financial sustainability can be obtained through provision of declining PL-480 support over a five year period. MAG support would also continue. The MAG contribution would drop off in FY-91 as ANCO picks up the salaries of station managers and one of the MAG agents. ANCO's contribution would increase to almost 100% in 1994. Although ANCO's income projections indicate that they can cover a higher percentage of costs starting in 1991, the deficit from FY-88 and FY-89 will need to be spread over the out years.

From a technical standpoint, ANCO management and technicians should be able to continue implementing the program after August 1990 without any further technical assistance. An ANCO technician, who is expected to complete his MS degree in 1989, will probably serve as technical director and continue validation and extension activities with assistance from trained agents.

E. Training

The training subproject, which encompasses all training activities under the continuing subprojects, will continue to operate with a total funding increase of \$50,000 for the extended project. This includes short-term specific training for association and MAG-supplied technicians, enabling them to implement the programs after AID assistance terminates. It also includes funding for some direct training of producers. One short course of benefit to all of the RPIIS associations is a proposed training of trainers activity.

IV. RELATION TO OTHER AID-SUPPORTED PROJECTS

A. Agriculture Research, Extension, Education Project (REE)

The RTIS project is directly strengthening the capacity of the dairy private sector to validate and transfer technology using the public sector research and extension agencies as a support base. RTIS is also providing the institution building necessary to sustain technology transfer activities through the private sector.

The Mission has recently approved an Agricultural Research, Extension and Education (REE) project to be implemented by a private agricultural research organization, FUNDAGRO. This organization has already been receiving PI-480 funding support for five months and has initiated Priority Commodity Programs (PCPs) in coffee, yuca and dairy. FUNDAGRO's role under the REE project is to function as a catalyst to link research, extension, and education agencies of the public sector with well-established private sector organizations involved in specific commodities to improve the transfer technology. FUNDAGRO does not provide direct support to institutionalize technology validation and transfer programs in private associations, as does RTIS. It provides indirect support by funding priority research and extension activities through INIAP and existing extension and education programs. As mentioned previously, one of FUNDAGRO's Primary Commodity Programs under this project is the dairy sector. In order to implement this PCP, FUNDAGRO needs an established private organization, representing all levels of producers, with which to cooperate. The RTIS Project is making the effort to establish the private sector entity that FUNDAGRO could work with to form part of the Dairy Research Extension Linkage Unit (RELJ). The proposed Dairy Council should have the capacity to validate and transfer technology with help from the public sector extension and research institutions and incorporate a majority of dairy producers (small to large) in the RTIS and FUNDAGRO project areas.

Other areas of cooperation in the dairy sector between the two projects are with technical assistance and education. RTIS advisors in dairy management and health have been participating with INIAP in several research and training activities. Some of the technology validated under RTIS is also being used by FUNDAGRO technicians to upgrade educational facilities and train small farmers. In the project extension, RTIS will provide long-term specialists in health and pastures/soils which will continue to complement research, extension, and educational activities coordinated by FUNDAGRO. The specialists will be available to train RELJ technicians and assist with certain research projects to an even greater extent than they are already doing. RTIS will also continue to serve as an information base for FUNDAGRO for technologies already validated (See Annex C for further details).

It will be FUNDAGRO's responsibility to continue coordinating and provide partial funding for national dairy programs in Ecuador. RTIS is helping to build the necessary private sector base for future programs and will help to develop the FUNDAGRO dairy PCP.

B. Calf Milk Replacer Project (COORSA)

The Calf Milk Replacer Project is already cooperating with the RITS project and will continue to do so in an extended project. RITS specialists from Utah State University are supervising various nutritional studies related to the introduction of improved calf milk replacer and calf starter into Ecuador.

V. SUMMARY COST ESTIMATE (Extension)

A. AID Resources

The total estimated cost to extend the RPTS project for almost 23 months is US\$1,900,000. Per the budget in Annex A, the principal costs are for continuation of five subprojects (including a training subproject) and administration. AID funding will be used primarily for the provision of technical assistance, training and materials. A summary budget is provided below:

<u>PROJECT TOTALS</u>	<u>Grant</u>	(\$US)	
		<u>Loan</u>	<u>Total</u>
Administration	441,393	0	441,393
APROXICO (IPM-Short Cycle Crops)	110,346	35,000	145,346
MEGALIT (Coastal Livestock)	75,067	35,000	110,067
Dairy	318,669	450,000	768,669
ANCO (Sheep)	194,196	180,000	374,196
Training	0	50,000	50,000
T O T A L	<u>1,139,676</u>	<u>750,000</u>	<u>\$1,889,676</u>
	rounded to		rounded to
	US\$1,150,000		US\$1,900,000

B. Counterpart Contribution (Extension)

The GOE and private associations are required to finance technicians and operating costs. GOE resources will be provided via PL-480 funds and in-kind contributions of extension agents, veterinarians and sheep station managers, office space and sheep stations. In-kind contributions are estimated as follows:

	<u>FY-89</u>	<u>SUCRES (000)</u>	
		<u>FY-90</u>	<u>FY-91</u>
Extension agents	12.144	14.012	14.528
Technicians	2.400	2.772	0
Veterinarians	1.440	1.664	1.920
Stations Managers	2.880	3.327	0
Office Space	720	720	0
Sheep Stations	<u>7.824</u>	<u>7.824</u>	<u>7.824</u>
Totals	27.408	30.319	24.272

Estimated PL-480 funding needs are as follows: (See Annex B)

	SUCRES (000)				
	FY-89	FY-90	FY-91	FY-92	FY-93
APROCICO	17.500	11.000	0	0	0
MEGALIT	26.500	17.000	10.000	0	0
DAIRY	22.000	14.000	10.000	0	0
ANCO	29.500	24.500	15.000	10.000	5.000
ADMIN.	17.000	18.500	0	0	0
T O T A L	112.500	85.000	35.000	10.000	5.000

As explained in the sections on sustainability for each subproject, it is expected that the private associations will contribute a higher percentage of resources each year so that by project termination they are covering most of the costs. Some will require continued PL-480 support for a third year and in the case of ANCO for 5 years. MEGALIT is currently financing one of the three technicians and all office costs. In year two of the extension they will start picking up the other technicians and operating costs. APROCICO is currently financing office and laboratory costs and one technician. They should also begin financing operating costs and other technicians on an increasing scale. The AGS (Dairy) has been providing office space and salaries of one counterpart technician but should begin financing operating costs through regular contributions to the proposed Dairy Council. ANCO has not been providing financial resources to any great extent to the subproject due to lack of funds, but will be able to start contributing in the second year of the extension when improved sheep sales begin.

Total private contributions per year are estimated at:

	Contributions from Private Sector Sucres (000)				
	<u>FY-89</u>	<u>FY-90</u>	<u>FY-91</u>	<u>FY-92</u>	<u>FY-93</u>
APROCICO	2.507	10.920	21.966*	24.162*	26.579*
MEGALIT	4.018	16.931	26.314	40.366*	44.403*
Dairy	3.000	13.834	22.063	35.026*	38.528*
ANCO	<u>0</u>	<u>6.750</u>	<u>21.364</u>	<u>31.102</u>	<u>40.212</u>
Totals	9.525	48.435	92.207	130.656	149.722

* A.I.D. and PL-480 support terminated, POs are expected to support programs with own resources.

Project totals for the extension including GOE and private sector contributions for the 23 month extension are:

	<u>Sucres (000)</u>	<u>Dollars (000)</u>
USAID		1.900
MAG	57.727	144.3 equivalent
PL-480	196.554	491.4 equivalent
Private	<u>57.960</u>	<u>144.9 equivalent</u>
Totals	312.241	2.680

Note: Current exchange rate S/.400 = US\$1.00

The total GOE contribution for the extension amounts to the dollar equivalent of US\$635,700, which represents about 33% of the A.I.D. contribution. The total private contribution amounts to the dollar equivalent of US\$144,900 or about 8% of the total A.I.D. contribution and about 23% of the total GOE contribution. The year following project termination the GOE will still need to provide S/.35,000,000 in PL-480 and S/.24,272,000 in-kind contributions. It is anticipated that the private sector organizations will provide about S/.93'572.000 or about 61% of total project costs that year. This percentage will increase each year as the associations are able to pay salaries for extension agents and veterinarians from MAG and as ANCO has the ability to acquire their own sheep farms. ANCO is currently in the process of securing grant funding to buy one farm.

C. Amended Financial Plan

The additional US\$1,900,000 in A.I.D. funds (\$1,150,000 grant; \$750,000 loan) to finance the 23 months project extension raises the total dollar budget to US\$9,800,000 (US\$6,450,000 Grant; US\$3,350,000 Loan). The total counterpart contribution increases by the dollar equivalent of US\$635,700 from GOE resources and US\$144,900 from private associations. The new total counterpart contribution figure is the equivalent of US\$3,267,000 in sucres which represents 25% of the total project cost of US\$13,067,000.

VI. IMPLEMENTATION AND MONITORING

The MAG will continue administering overall project activities with continuing support from the University of Florida. Subproject associations will play large roles in administering their own funds supplied by PL-480 funding and reducing the administrative burdens of MAG/UF. The administrative staff will be reduced from 9 employees to 5, which will include a Chief of Party, an agricultural economist/administrative assistant, accountant, secretary and driver. The administrative unit will also undertake some technical responsibilities in the project extension. The Chief of Party will continue administering five subprojects and long and short-term technical assistance, procure project commodities, coordinate training activities, perform reporting and evaluation functions, and coordinate the MEXALIT subproject which will have no long-term Technical Advisor. The economist will perform on-going evaluations of subprojects, serve as administrative assistant and agricultural economist for all subprojects and provide a liaison with MAG, INIAP, agricultural colleges, FUNDAGRO, etc. He will also assist the associations in administering their own PL-480 funds and in developing income-generating capacities. The position is budgeted for one year.

Justification for non-competitive procurement will be prepared to extend the University of Florida/Utah State University Contract per attached memo from the Administrator (Annex E).

The individual producer associations will continue to implement their own programs with support from long and short-term technical advisors. They will also begin administering more of their own PL-480 funding.

The University of Florida administrative staff and USAID will perform on-going informal evaluations and contract for special evaluations of subprojects as required. A final evaluation will be performed following project termination in August/September 1990.

(0666M)

ANNEXES

ANNEX A

Budget of Extension

Administration

	<u>PM</u>	<u>\$</u>	
1. <u>Salaries</u>			
Off Campus Long term Professional			
Chief of Party	23	104,422	
Proj.Econ/Admin.Assist.			
Assist.	12	36,000	
TOTAL OFF-CAMPUS		140,422	OFF
On-Campus: Contract Coordinator	6	30,000	
Contract Secretary	8	17,023	
TOTAL ON - CAMPUS		47,023	ON
TOTAL SALARIES		187,445	
2. <u>Fringe Benefits (24%)</u>			
Off-Campus (Proj.Econ. 8%; COP 24%)		27,941	OFF
On-Campus		11,286	ON
TOTAL FRINGE		39,227	
3. <u>Allowances</u>			
Post Differential (15%)		15,663	
Housing		29,095	
Education		15,620	
R&R		4,000	
TOTAL ALLOWANCES (OFF-CAMPUS)		64,378	OFF
4. <u>Travel and Transportation</u>			
Unaccompanied baggage		1,200	OFF
Storage		1,440	OFF
Home leave		4,773	OFF
Administrative International Travel		4,000	ON
LTTA International Travel		2,000	OFF
LTTA Local Travel		2,910	OFF
Administrative per diem		3,660	ON
Long Term personnel per-diem		10,000	OFF
Off-Campus Subtotal		22,323	OFF
On-Campus Subtotal		7,660	ON
TOTAL TRAVEL AND TRANSPORTATION		29,983	
5. <u>Materials and Equipment</u>		3,000	OFF

6. Other Direct Costs

Data Processing (All subprojects)	3,000	
Printing copying, photos (all subprojects)	4,000	
Medical exams	400	
Passports and Visas	100	
Mail, cable, telephone, ship materials (all subprojects)	11,500	
TOTAL OTHER COSTS	19,000	ON

7. Total Direct Costs

Off-Campus	258,064	OFF
On-Campus	84,969	ON
TOTAL	343,033	

8. Indirect Costs

On-Campus (45%)	38,236
Off-Campus (23.3%)	60,129
TOTAL INDIRECT	98,365
TOTAL CORE CONTRACT	441,398

PROJECT TOTALS

Administration	441,398
APROCICO	145,346
MEGALIT	110,067
Dairy	768,669
Sheep	374,196
Training	<u>50,000</u>
TOTAL	1'889,676 rounded to US\$1,900,000

APROCICO

	<u>PM</u>	<u>\$</u>	
1. <u>Salary</u>			
Off Campus: Pest Management Spec.	12	38,715	
TOTAL OFF-CAMPUS		38,715	OFF
On-Campus: Short Term Professional (3 PM x 4,500/mo)	3	13,500	
TOTAL ON CAMPUS		13,500	ON
TOTAL SALARY		52,215	
2. <u>Fringe Benefits (24%)</u>			
Off-Campus		9,292	OFF
On-Campus		3,240	ON
TOTAL FRINGE		12,532	
3. <u>Allowances</u>			
Post Differential (20%) OFF-CAMPUS		7,743	
Temporary Quarters		2,160	
Housing		12,100	
Education		3,500	
TOTAL ALLOWANCES		25,503	OFF
4. <u>Travel and Transportation</u>			
A. Transportation			
International Travel (6 RT)		6,000	
Domestic Travel		500	
International Per Diem (3 x 30 x 50)		4,500	
SUBTOTAL ON-CAMPUS		11,000	ON
B. Long term Personnel per diem		4,000	
C. Mobilization			
All except HHG Storage covered under original contract		720	OFF
Subtotal Off-Campus		4,720	OFF
TOTAL TRAVEL AND TRANSPORTATION		15,720	
5. <u>Other Direct Costs</u>			
Laboratory Equipment and Supplies		4,000	OFF

6. Contractual Services

Equipment Maintenance	500	OFF
Medical Exams	--	
DBA Insurance (2.2% S&W)	1,149	
Cargo Insurance	150	
OFF-CAMPUS	500	
ON-CAMPUS	1,299	ON
TOTAL	1,799	

7. Miscellaneous

1,000 OFF

8. Total Direct Costs

Off-Campus Direct	83,730	OFF
On-Campus Direct	29,039	ON
TOTAL	112,769	

9. Indirect Costs

On-Campus(45%)	13,068
Off-Campus(23.3%)	19,509
TOTAL	32,577
SUBPROJECT TOTAL	145,346

MEGALIT

1.	<u>Salary</u>		
	Short term Professional	36,000	
	(8 PM at 4,500/mo)		
	TOTAL SALARY	36,000	ON
2.	<u>Fringe Benefits (24%)</u>		
	On-Campus	8,640	ON
	TOTAL FRINGE	8,640	
3.	<u>Travel and Transportation</u>		
	A. Transportation		
	International Travel (13 RT)	13,000	
	Domestic Travel	1,000	
	International per diem	12,000	
	(8 PM x 30 days x \$50)		
	TOTAL TRAVEL & TRANSPORTATION	26,000	ON
4.	<u>Other Direct Costs</u>		
	Laboratory Equipment and Supplies	3,500	OFF
5.	<u>Contractual Services</u>		
	Equipment Maintenance	0	
	Medical Exams and Immunizations	500	
	DBA Insurance (2.2% S&W)	792	
	Cargo Insurance	150	
	OFF-CAMPUS Portion	0	
	ON-CAMPUS Portion	1,442	ON
	Subtotal	1,442	
6.	<u>Miscellaneous</u>	1,000	OFF
7.	<u>Total Direct Costs</u>		
	Off-Campus Direct Costs	4,500	OFF
	On-Campus Direct Costs	72,082	ON
	TOTAL	76,582	
8.	<u>Indirect Costs</u>		
	I.C. Off-campus (23.3% x I.C. Base)	1,048	
	I.C. On-Campus(45% x I.C Base)	32,437	
	TOTAL INDIRECT COSTS	33,485	
	SUBPROJECT TOTAL	110,067	

DAIRY

	<u>PM</u>	<u>\$</u>	
1. <u>Salary</u>			
Off Campus Long term			
Dairy Health Specialist 23		120,750	
Pasture/soils Specialist 23		95,833	
TOTAL OFF-CAMPUS		216,583	OFF
On-Campus: Short term			
Dairy Management 4		18,000	
Agricultural Economist 2		9,000	
Other 5		22,500	
Technical Coordinator (.125 time) 3		10,000	
Administration 2		6,000	
Secretary (.167 time) 4		5,000	
TOTAL ON CAMPUS		70,500	ON
TOTAL SALARY		287,083	
2. <u>Fringe Benefits (32%)</u>			
Off-Campus		69,307	OFF
On-Campus		22,560	ON
TOTAL FRINGE		91,867	
3. <u>Allowances</u>			
Post Differential (15%) OFF-Campus		32,487	
Temporary Quarters		6,480	
Housing		58,190	
Education		27,900	
Educational Travel		3,000	
R&R		7,000	
Furniture		2,000	
TOTAL ALLOWANCES		137,057	OFF
4. <u>Travel and Transportation</u>			
A. Transportation			
International Travel (10 RT)		12,000	
Domestic Travel		1,000	
International Per Diem (11 x 30 x 72)		23,760	
Subtotal		36,760	ON
B. Long term personnel Per diem		24,000	

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C. Mobilization			
Unaccompanied Air freight	2,400		
HHG Shipment (2500 x 1 x \$2.20)	5,500		
HHG Storage	4,320		
Auto Shipment	2,000		
Passports and Visas	600		
Excess Baggage	1,000		
Home Leave	4,773		
Subtotal	44,593	OFF	
TOTAL TRAVEL AND TRANSPORTATION	81,353		
5. <u>Other Direct Costs</u>			
Laboratory Supplies	10,000	OFF	
6. <u>Contractual Services</u>			
Medical Exams	800		
DBA Insurance (2.2% S&W)	5,854		
Cargo Insurance	200		
TOTAL	6,854	ON	
7. <u>Miscellaneous</u>	1,000	OFF	
8. <u>Tctal Direct Costs</u>			
Off-Campus	478,540		
On-Campus	136,674		
TOTAL	615,214		
9. <u>Indirect Costs</u>			
On-Campus(37%)	50,569		
Off-Campus(21.5%)	102,886		
TOTAL	153,455		
SUBPROJECT TOTAL	768,669		

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SHEEP

	<u>PM</u>	<u>\$</u>	
1. <u>Salary</u>			
Off Campus: Long term Professional Livestock Extension Specialist	23	86,250	
TOTAL OFF-CAMPUS		86,250	OFF
On-Campus: Technical Assistance Sheep Management	6	27,000	
Wool Classification	2	9,000	
Technical Coordinator (.125%)	4	10,000	
Secretary (.167)	4	5,000	
TOTAL ON-CAMPUS		51,000	ON
TOTAL SALARY		137,250	
2. <u>Fringe Benefits (32%)</u>			
Off-Campus		27,600	OFF
On-Campus		16,320	ON
TOTAL FRINGE		43,920	
3. <u>Allowances</u>			
Post Differential (15%) OFF-CAMPUS		12,938	
Temporary Quarters		2,160	
Housing		29,095	
Education		16,004	
R&R		4,000	
TOTAL ALLOWANCES		64,197	OFF
4. <u>Travel and Transportation</u>			
A. Transportation (Short term)			
International Travel (6 RT)		7,200	
Domestic Travel		500	
International Per Diem (8 x 30 x 72)		17,280	
SUBTOTAL ON-CAMPUS		24,980	ON
B. Long term personnel per diem		12,000	
C. Mobilization			
All cost covered under original contract except HHG Storage		1,440	
Home leave		4,773	
Subtotal Off-Campus		18,213	OFF
TOTAL TRAVEL AND TRANSPORTATION		43,193	

5.	<u>Other Direct Costs</u>		
	Laboratory Equipment and Supplies	3,500	OFF
6.	<u>Contractual Services</u>		
	Medical Exams	--	
	DBA Insurance (2.2% S&W)	2,690	
	Cargo Insurance	100	
	TOTAL	2,790	ON
7.	<u>Miscellaneous</u>	1,000	OFF
8.	<u>Direct Costs</u>		
	Off-Campus	200,760	
	On-Campus	95,090	
	TOTAL	295,850	
9.	<u>Indirect Costs</u>		
	On-Campus (37%)	35,183	
	Off-Campus (21.5%)	43,163	
	TOTAL	78,346 78,346	
	SUBPROJECT TOTAL	374,196	

TRAINING

A.	Subproject Related	21,000
	1. Domestic Courses	24,000
	2. Training Abroad	
B.	Non-Subproject Related Training	5,000
	1. short courses	50,000
	TOTAL	
	TOTAL PROJECT	1,889,676

ANNEX B

ASSOCIATION:		ANCO	RECURRENT COSTS		SUCRES (000)		
I T E M			10/88- 9/89	10/89 9/90	10/90 9/91	10/91 9/92	
<u>SALARY AND BENEFITS</u>			<u>16068</u>	<u>18555</u>	<u>21432</u>	<u>24757</u>	
Manager	P		2280	2633	3041	A	
Station Director	M		960	1109	1281	A	
Station Director	M		960	1109	1281	A	
Station Director	M		960	1109	1281	A	
Driver	P		480	554	640	A	
Extension Agent	M		624	720	832	A	
Extension Agent	M		624	720	832	M	
Extension Agent	M		624	720	832	M	
Extension Agent	P		624	720	832	A	
Laborers (14)	P		6216	7179	8292	A	
Accountant	P		792	915	1056	A	
Secretary	P		660	762	880	A	
Messenger	P		264	305	352	A	
<u>COMMUNICATIONS</u>	P		<u>583</u>	<u>641</u>	<u>300</u>	<u>300</u>	A
<u>REPAIRS & MAINTENANCE</u>	P		<u>2300</u>	<u>2530</u>	<u>2783</u>	<u>3061</u>	A
<u>PER DIEM & TRANSP.</u>	P		<u>5072</u>	<u>5576</u>	<u>6136</u>	<u>6750</u>	A
Manager			634	697	767		
Station Director							
Station Director							
Station Director							
Driver 2							
Extension Agent			634	697	767		
Extension Agent			634	697	767		
Extension Agent			634	697	767		
Extension Agent			634	697	767		
Laborers			634	697	767		
Messenger			634	697	767		
Other							
Other							
<u>OFFICES</u>	P		<u>2228</u>	<u>2450</u>	<u>2696</u>	<u>2966</u>	A
<u>TRAINING</u>	P		<u>1300</u>	<u>1000</u>	<u>500</u>	<u>500</u>	A
<u>VEHICLES</u>	P		<u>3000</u>	<u>2000</u>	<u>0</u>	<u>0</u>	A
<u>EQUIPMENT & SUPPLIES</u>	P		<u>1740</u>	<u>1914</u>	<u>2105</u>	<u>2315</u>	A
<u>VEHICLES OPERATION</u>	P		<u>1720</u>	<u>1888</u>	<u>2076</u>	<u>2283</u>	A
<u>T O T A L</u>			<u>34011</u>	<u>36554</u>	<u>38028</u>	<u>42932</u>	<u>47225</u> <u>51947</u>
	P		<u>29259</u>	<u>24317</u>	<u>15000</u>	<u>10000</u>	<u>5000</u> <u>0</u>
			(86%)	(66%)	(39%)	(23%)	(11%)
	M		<u>4752</u>	<u>5487</u>	<u>1664</u>	<u>1830</u>	<u>2013</u> <u>2214</u>
			(14%)	(16%)	(4%)	(4%)	(4%)
	A		<u>0</u>	<u>6750</u>	<u>21364</u>	<u>31102</u>	<u>40212</u> <u>49733</u>
				(18%)	(57%)	(73%)	(85%) (96%)

FUNDING PROVIDED BY:

P = PL-480

M = MAG (Also supplying 3 Stations)

A = Private Association

Note: 5% per year salary increase and 10% inflation factored

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ASSOCIATION: DAIRY RECURRENT COSTS SUCRES (000)

ITEM		10/88-9/89	10/89-9/90	10/90-9/91	10/91-9/92
<u>SALARY AND BENEFITS</u>		9180	10600	12188	13470
Counterpart Health	M	1200	1386	1600	Λ
Counterpart Product.	M	1200	1386	1600	Λ
Secretary	P	840	970	1067	Λ
Driver 1	P	540	623	720	Λ
Technical Director	Λ	1800	2079	2401	Λ
Extension Agent	M	540	623	720	M
Extension Agent	M	540	623	720	M
Extension Agent	M	540	623	720	M
Extension Agent	M	540	623	720	M
Veterinary	M	720	832	960	M
Veterinary	M	720	832	960	M
Other					
Other					
Other					
<u>COMMUNICATIONS</u>	P	583	641	400	407 Λ
<u>REPAIRS & MAINTENANCE</u>	P	3740	4114	4525	4977 Λ
<u>PER DIEM & TRANSP.</u>	P	7536	8308	9138	10051 Λ
Counterpart 1		1000	1104	1214	
Counterpart 2		1000	1104	1214	
Secretary					
Driver 1					
Technical Driver		634	697	767	
Extension Agent		1000	1104	1214	
Extension Agent		1000	1104	1214	
Extension Agent		634	697	767	
Extension Agent		634	697	767	
Veterinary		1000	1104	1214	
Veterinary		634	697	767	
Other					
Other					
Other					
<u>OTHER DIRECT COSTS</u>	P	1320	1452	1597	1756 Λ
<u>TRAINING</u>	P	1500	1650	400	400 Λ
<u>OFFICES</u>	Λ	1200	1320	1452	1597 Λ
<u>EQUIPMENT & SUPPLIES</u>	P	1320	1452	1597	1597 Λ
<u>VEHICLES OPERATION</u>	P	4600	5060	5566	6122 Λ
<u>T O T A L</u>		30979	34597	36863	40306 Λ
	P	21979	13835	10000	0
		(70%)	(40%)	(27%)	
	M	6000	6928	4800	5280
		(20%)	(20%)	(13%)	(13%)
	Λ	3000	13834	22063	35026
		(10%)	(40%)	(60%)	(87%)

FUNDING PROVIDED BY:

- P = PL-480
- M = MAG
- Λ = Private Association

Note: 5% per year salary increase and 10% inflation factored

ASSOCIATION: APROCID RECURRENT COSTS SUPPLIES (000)

ITEM		10/88-9/89	10/89-9/90	10/90-9/91	10/91-9/92
<u>SALARY AND BENEFITS</u>		7365	8246	9525	
Technical Director	A	660	762	880	A
Lab. Tech.	P	1318	1370	1582	A
Secretary	P	722	770	889	A
Secretary	A	263	304	351	A
Driver 1	P	522	560	647	A
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	A
Promoter	P	346	400	462	A
Promoter	P	346	400	462	A
Promoter	P	346	400	462	A
Promoter	P	346	400	462	A
Other					
<u>COMMUNICATIONS</u>		P 509	560	100	A
<u>REPAIRS & MAINTENANCE</u>		P 2200	2420	2660	A
<u>PER DIEM & TRANSP.</u>		P 2640	2900	3190	A
Technical Director		264	290	319	
Lab. Tech.					
Secretary					
Secretary					
Driver		264	290	319	
Extension Agent		264	290	319	
Extension Agent		264	290	319	
Extension Agent		264	290	319	
Extension Agent		264	290	319	
Promoter		264	290	319	
Promoter		264	290	319	
Promoter		264	290	319	
Promoter		264	290	319	
Other					
<u>OTHER DIRECT COSTS</u>		P 748	822	750	A
<u>TRAINING</u>		P 1300	1430	600	A
<u>OFFICE/LAB</u>		A 1584	1742	1917	A
<u>EQUIPMENT & SUPPLIES</u>		P 3000	3300	2420	A
<u>VEHICLE OPERATION</u>		P 3000	3300	3300	A
<u>T O T A L</u>		22346	24720	24462	
	P	17343	10920	0	
		(78%)	(44%)		
	M	2496	2880	2496	
		(11%)	(12%)	(10%)	
	A	2507	10920	21966	
		(11%)	(44%)	(90%)	

FUNDING PROVIDED BY:

P = PL-480

M = MAG

A = Private Association

Note: 5% per year salary increase and 10% inflation factored

ASSOCIATION: MEGALIT RECURRENT COSTS SUCRES (000)

ITEM		10/88-9/89	10/89-9/90	10/90-9/91	10/91-9/92
<u>SALARY AND BENEFITS</u>		<u>14536</u>	<u>16609</u>	<u>19187</u>	<u>22160</u>
Technical Director	P	2564	2962	3420	Λ
Production	P	2218	2561	2958	Λ
Marketing	Λ	2218	2561	2958	Λ
Driver 1	P	599	637	736	Λ
Driver 2	P	599	637	736	Λ
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Extension Agent	M	624	720	832	M
Secretary	P	722	771	891	Λ
<u>COMMUNICATIONS</u>		<u>462</u>	<u>508</u>	<u>559</u>	<u>500</u> Λ
<u>REPAIRS & MAINTENANCE</u>		<u>1874</u>	<u>2062</u>	<u>2268</u>	<u>2495</u> Λ
<u>PER DIEM & TRANSP.</u>		<u>9630</u>	<u>10601</u>	<u>11563</u>	<u>12829</u> Λ
Technical Director		1000	1104	1214	
Production		1000	1104	1214	
Marketing		1000	1104	1214	
Driver 1		462	508	559	
Driver 2		462	508	559	
Extension Agent		634	697	767	
Extension Agent		634	697	767	
Extension Agent		634	697	767	
Extension Agent		634	697	767	
Extension Agent		634	697	767	
Extension Agent		634	697	767	
Extension Agent		634	697	767	
Extension Agent		634	697	767	
Extension Agent		634	697	767	
<u>OTHER DIRECT COSTS</u>		<u>818</u>	<u>900</u>	<u>990</u>	<u>900</u> Λ
<u>TRAINING</u>		<u>1400</u>	<u>1540</u>	<u>700</u>	<u>500</u> Λ
<u>OFFICE/ADMIN</u>		<u>1800</u>	<u>1980</u>	<u>2178</u>	<u>2178</u> Λ
<u>EQUIPMENT, SUPPLIES, PRODUCTION</u>		<u>2548</u>	<u>2802</u>	<u>3083</u>	<u>3000</u> Λ
<u>VEHICLE OPERATION</u>		<u>3036</u>	<u>3340</u>	<u>3674</u>	<u>4041</u> Λ
<u>T O T A L</u>		<u>36104</u>	<u>40342</u>	<u>44302</u>	<u>48603</u>
	P	<u>26470</u>	<u>16931</u>	<u>10000</u>	<u>0</u>
		(73%)	(42%)	(22%)	
	M	<u>5616</u>	<u>6480</u>	<u>7488</u>	<u>8237</u>
		(16%)	(16%)	(17%)	(17%)
	Λ	<u>4018</u>	<u>16931</u>	<u>26814</u>	<u>40366</u>
		(11%)	(42%)	(61%)	(83%)

FUNDING PROVIDED BY:

- P = PL-480
- M = MAG
- Λ = Private Association

Note: 5% per year salary increase and 10% inflation factored

ADMINISTRATION

SUCRES (000)

ITEM	10/88-9/89	10/89-9/90	
<u>SALARY AND BENEFITS</u>	<u>3725</u> <u>880</u>	<u>4125</u> <u>940</u>	
Accountant	940	1085	
Secretary (Bilingual)	1156	1210	
Driver	629	674	
Clerk typist	1100	1156	
<u>COMMUNICATIONS</u>	<u>1155</u>	<u>1270</u>	
<u>REPAIRS & MAINTENANCE</u>	<u>1100</u>	<u>1210</u>	
<u>PER DIEM & TRANSP.</u>	<u>5538</u>	<u>6091</u>	
Project Specialist	2518	2769	
Accountant	1510	1661	
Secretary			
Driver	1510	1661	
Extension Agent			
Other			
Other			
Other			
<u>OTHER DIRECT COSTS</u>	<u>1250</u> <u>1520</u>	<u>1350</u> <u>1452</u>	
<u>TRAINING</u>	<u>902</u>	<u>1100</u>	
<u>CONTINGENCIES</u>	<u>1000</u>	<u>1000</u>	
<u>EQUIPMENT & SUPPLIES</u>	<u>900</u>	<u>1000</u>	
<u>VEHICLE OPERATION</u>	<u>1320</u>	<u>1397</u>	
<u>T O T A L</u>	<u>17000</u>	<u>18500</u>	

ANNEX C

Relationship between FUNDAGRO and RPTS

The development of the Dairy industry continues to be of primary concern in Ecuador and has therefore been selected as one of the priority commodity programs (PCP) under the Research, Extension, and Education (REE) Project (518-0068) being implemented by a private Ecuadorian agricultural research organization, FUNDAGRO. The GOE has also requested that the dairy subproject under RPTS be extended for two years with continued technical assistance from the University of Florida and Utah State University. The RPTS project has been working primarily through the Asociacion de Ganaderos de la Sierra (AGS) which represents mostly medium to larger farmers and some small farmers. Through the efforts of Utah State advisors the scale-neutral technology being validated is also reaching small farmers in Cayambe cooperatives and through several Centros Agrícolas. FUNDAGRO, which just began its dairy program in October 1987, has been working from the other end by focussing training courses and extension activities on subsistence level dairy farmers. Although there has already been some limited cooperation between these two AID-funded projects in the areas of research, extension and training it is the objective of AID that the two be joined institutionally and technically into one project. This process will continue to take place over the next two years as further described below. It is hoped that the strength of the private associations with which the RPTS project is working will help provide financial sustainability to a new institution (dairy council), further described below, which could serve to unite the dairy associations, pasteurizers and a greater number of smaller farmers through coops and centros agricolas. However, the formation of this umbrella organization with which FUNDAGRO could work has not yet evolved. AID is developing a strategy to encourage the establishment of the council. The disbursement of dollar funding for the FUNDAGRO Dairy PCP is being conditioned on the development of such an umbrella institution which would provide a private sector base for the proposed dairy research, extension, linkage unit (RELU) under the REE project. PL-480 funding would continue to support the dairy PCP. This will hopefully encourage FUNDAGRO participation in the formation of a dairy council. From its side, AID is approving the extension of the dairy subproject under the RPTS Project with the anticipation that the institutional base be broadened to include small farmer organizations. The project will no longer be implemented solely by the AGS and PL-480 support to AGS and other dairy sector organizations will be conditioned on their support for the council and efforts to broaden their constituency to include smaller producers. Land O'Lakes is being requested to help establish the dairy council.

From a technical standpoint the two projects also complement each other. To date, only a limited amount of cooperation has taken place primarily due to a mutual lack of understanding of each other's projects. This is presently

being resolved and cooperation will increase during the extension of the RTTS. The Utah State advisor will work more closely with FUNDAGRO-supported institutions in extension and education as well as with INIAP for research. A more specific description of the RTTS and REE projects and the existing and planned interrelation between them is presented below.

The RTTS approach has been to validate and transfer easily adaptable, appropriate technology directly through private sector producer associations with essential support from the public sector. This is proving to be an excellent model of public/private sector participation that is providing rapid direct economical benefits to producers. Ministry of Agriculture extension agents are used to maximum effectiveness as they receive training from foreign advisors, are in more direct contact with a larger number of producers and have proven technology alternatives to transfer.

The REE approach being developed by FUNDAGRO is similar to RTTS but much broader in scope. REE will emphasize the integration of all public and private research, extension and education entities involved in supporting the dairy industry on a more comprehensive national scale than RTTS. FUNDAGRO will also develop a longer term approach to research development by including some elements of basic research, such as breeding, in addition to adaptive, validation-type research. Technology will be transferred to smaller producers via public as well as private institutions. REE will expand on the private sector technology transfer system being developed by RTTS and provide a broader beneficiary coverage.

1. Private Sector Focus

RTTS is helping to develop the private sector base with which REE will work, including producers with a wide range of farm sizes. Private producer associations, cooperatives and other farmer organizations and the milk processing industry, as direct representatives of producers, are in the best position to identify priority problem areas, validate technology and extend appropriate economical technology. They, more so than the public sector, have the economic incentive to increase productivity through the validation and transfer of technology and are better able to provide adequate funds necessary to sustain activities. They also provide extension agents an excellent base from which to work. The REE project intends to link research and extension via Research Extension Linkage Unit (RELUs) which incorporate public and private entities. FUNDAGRO has already identified public REE institutions and begun working with them (INIAP, MAG, Universities, etc.) However, private organizations which represent the entire dairy industry have not yet been selected to serve as the private sector link to the dairy RELU. To date, only several communities representing about 300 small farmers around Machachi and Salcedo have been selected and are beginning to receive some training conducted by afro rural college students working on their theses. The RTTS project, on the other hand, has been working with the Asociación de Ganaderos de la Sierra (AGS) and the Holstein Friesian Association (HFA)

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representing about 4000 small to large farmers, but has not been able to develop the institutional capacity to sustain technology transfer activities and expand extension coverage to a wider array of smaller non-member producers. There is a need to form a new institution (such as a Dairy Council) that would include all Sierra dairy associations, pasteurizers, centros agricolas and cooperatives. (Note: The AGS has been reluctant to cooperate and the RTTS project is exploring various mechanisms, such as PL-480, to leverage greater outreach to the small farm sector.) Member associations would contribute to the Council's financial viability. A supervised credit scheme may also contribute funds to sustain the Council. The Council Board would be composed of representatives from the producer associations, cooperatives, Centros Agricolas, INIAP, FUNDAGRO, MAG and milk processors. The Council would collaborate with FUNDAGRO in the areas of technology validation and transfer and the establishment of a public/private partnership in dairy which is fundamental to the REE strategy. RTTS and FUNDAGRO will collaborate in the formation of a Council, or a variation thereof, which should be established by September, 1988. The health technician trained under the RTTS was recently hired by FUNDAGRO to coordinate the FUNDAGRO dairy PCP forming a bridge between the two projects.

Another link that FUNDAGRO could make with the private sector via the RTTS project is to hire the students currently being trained by Utah State scientists to work as extension agents with the Centros Agricolas in the region. FUNDAGRO could enter into a joint funding agreement with the participating CAs.

2. Technical Assistance

Technical assistance provided by Utah State University through RTTS and by FUNDAGRO will be used to mutually benefit both projects in the following ways:

a. Research

FUNDAGRO is providing funding to INIAP to carry out several research programs through año rural students and INIAP researchers in production and pastures and to publish research results from the last 10 years. RTTS advisors (Utah State) have been collaborating on several research projects being conducted in INIAP and providing some training through INIAP-sponsored courses to technicians of INIAP, MAG, universities, etc. During the extension, RTTS will provide long-term technical assistance in health and pastures/soils and short-term technical assistance in dairy management, economics and milk quality.

The RTTS project will continue to collaborate with INIAP and "año rural" students in these specialty areas to an even greater extent. The RTTS specialists will also serve as advisors to the REE milk RELU, of which the RTTS private dairy associations will be an integral part.

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FUNDAGRO plans to provide two Dutch technicians to INIAP for the Dairy PCP. They should be chosen to complement the USU team and initiate activities perhaps the second year of the RITS extension so as to only overlap for one year with the USU advisors. FUNDAGRO short-term specialists will also be selected to complement the USU Team. It is expected that INIAP will also cooperate closer with private associations to validate research.

b. Extension

The RITS project has begun transferring appropriate dairy technologies through the RITS participating associations and several cooperatives in Cayambe. FUNDAGRO has initiated extension activities using año rural students to conduct courses for several communities of small farmers around Machachi and Salcedo. Much of the validated technology from RITS is being utilized in the courses. It is expected that FUNDAGRO will continue to use the RITS and USU technicians as an information base for the whole dairy sector and expand extension coverage substantially. The RITS project could also use the results of socio-economic and agronomic studies performed under FUNDAGRO as well as extension materials already produced.

RITS will also be supplying an extension specialist to be shared between the Sheep and Dairy projects, who will cooperate as appropriate with FUNDAGRO supported extension entities in field days, seminars, publications etc.

3. Education

FUNDAGRO is currently and will continue funding training courses through INIAP for technicians and producers that RITS local personnel could attend. FUNDAGRO is also providing funds to upgrade dairy components of three agricultural schools and strengthening a dairy production and management course at Central University. The RITS project is assisting educational activities by providing the USU specialists to assist FUNDAGRO, as needed and available, with the development and implementation of INIAP and Central University courses.

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In conclusion, the RPTS project will continue striving to establish a self-sustained technology validation and transfer system in the private sector. The institutional base will be expanded with help from FUNDAGRO to include a larger percentage of smaller farmers than currently participate. Collaboration between the RPTS private sector and the public sector research and education entities will be strengthened. The FUNDAGRO dairy program will expand on the work initiated under RPTS and provide a more extensive technology transfer network through public extension agencies, INIAP and agricultural schools and universities. The Dairy Council technology transfer program, being established under RPTS, will serve as the private sector connection to the dairy RELU under FUNDAGRO and be in a position to provide the financing necessary to continue the RELU after FUNDAGRO support terminates.

In the interim the FUNDAGRO, INIAP and RPTS specialists will work together in certain key areas to attain maximum extension coverage and establish a research system capable of responding to immediate and long-term development needs of the dairy sector.

The two projects are assisting each other to attain the goal of increasing the productivity of the dairy industry through a self-sustaining research and technology transfer system serving all levels of farmers. Areas of mutual cooperation will be increasing as the two projects continue to evolve over the next two years, to the point where there will only be one project encompassing the best characteristics and results of both.

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RECIBIDO 13 ENE. 1988

Ministerio de Agricultura y Ganadería

Despacho del Sr. Ministro

Oficio No. 000018

Quito, a 12 ENE. 1988

Señor

Frank Almaguer
DIRECTOR DE LA AGENCIA INTERNACIONAL
PARA EL DESARROLLO AID
Avenida Colombia
Quito

Señor Director:

El Proyecto Sistema de Transferencia de Tecnología Rural, STTR, que ejecuta el MAG con financiamiento de la USAID y asistencia técnica de la Universidad de Florida y de la Universidad del Estado de Utah, continúa normalmente su ejecución a través de los cuatro subproyectos que mediante convenios con el MAG desarrollan varias organizaciones de productores del país.

Según los reportes de progreso trimestral del Proyecto STTR, los subproyectos se encuentran en plena producción de resultados. Importantes metas previstas en los programas de trabajo están siendo alcanzadas y se espera para 1988 el logro de muchas otras más. La estrategia de validación y difusión tecnológicas está ya institucionalizada y los aspectos de organización y manejo de las actividades continúan mejorando; la capacidad de las organizaciones para ejecutar los programas tecnológicos propuestos ha evolucionado a través de un proceso que evidencia un interés y compromiso crecientes para asumir la función que el Estado quiere desarrollar en el sector privado, para que sirva efectivamente como un mecanismo de desarrollo tecnológico del agro ecuatoriano. Múltiples ejemplos muestran el impacto que se está logrando a nivel de difusión y adopción tecnológicas en los sectores de producción que cubren los subproyectos, con visibles beneficios y alto potencial de impacto en el sector de pequeños productores.

No obstante lo anterior, existe preocupación en las organizaciones ejecutoras y en este Ministerio con respecto al logro efectivo e irreversible de los objetivos y metas a lograrse, pues el período de ejecución que resta hasta septiembre de 1988 resulta demasiado corto para completar el desarrollo institucional y tecnológico previstos.

Al respecto, dos hechos explicarían esta situación. Primero, el período de ejecución de dos años, comprometido en los convenios, desde un inicio fue considerado corto y se anticipó la idea de una eventual extensión, sujeta a los resultados que se logren en esta primera fase de ejecución. Segundo, la etapa de organización y operación efectiva de los subproyectos sufrió demoras imprevistas pero justificadas, tanto en la culminación de los convenios específicos entre el Ministerio y las organizaciones de productores y la subsecuente entrega del aporte del Ministerio (técnicos de contraparte, vehículos y otros recursos como los asignados en el convenio de comodato con ANCO), como en los arreglos de financiamiento y desarrollo del Proyecto LP-88U, que para entonces recién iniciaba su operación.

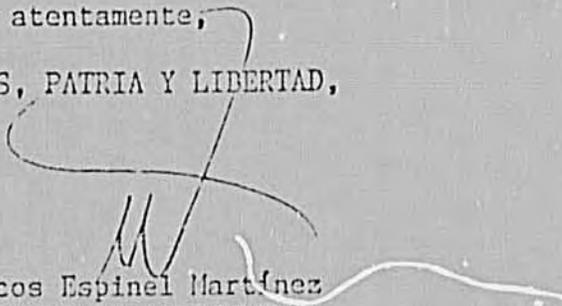
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COPIA*Ministerio de Agricultura y Ganadería**Despacho del Sr. Ministro*

Por todo lo anterior, y en apoyo al pedido de extensión de los subproyectos que está siendo expresado por las organizaciones ejecutoras, este Ministerio, en calidad de ejecutor del Proyecto STTR, solicita a usted, señor Director, y por su digno intermedio a la USAID, considerar la extensión del Proyecto STTR y del financiamiento requerido, para un período adicional de ejecución de dos años. El Ministerio de Agricultura y Ganadería estima que la aprobación del período de ejecución adicional solicitado garantiza el logro pleno de los objetivos y metas de este Ministerio a través del Proyecto STTR.

Muy atentamente,

DIOS, PATRIA Y LIBERTAD,


Marcos Espinel Martínez
MINISTRO DE AGRICULTURA
Y GANADERIA

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AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D C 20523

JAN 15 1997

MEMORANDUM FOR ALL CONTRACTING OFFICERS AND NEGOTIATORS

TO: Distribution List D-1A(LL)

FROM: M/AAA/SER, *John F. Owens*, Procurement Executive
CONTRACT INFORMATION BULLETIN 87-6

SUBJECT: Title XII Contract Extensions

Attached for your information is a self-explanatory memorandum from the Administrator concerning Title XII contract extensions. This supplements CIB 86-11 dated August 11, 1986 entitled "Prior Consultation With the Agency Competition Advocate When Using the Special Authority of AIDAR 706.302-70(b)(3)."

Attachment: a/s

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON D C 20523

OCT 27 1985

THE ADMINISTRATOR

MEMORANDUM FOR ASSISTANT ADMINISTRATORS AND MISSION DIRECTORS

SUBJECT: Title XII Contract Extensions

A major theme in the Mission responses to our recent survey of Title XII activities was the need for greater flexibility in extending university contracts or awarding Phase II contracts without competition. The Missions strongly felt that the Agency often has a clear interest in continuing to utilize the successful expertise of a particular university to achieve agriculture program objectives beyond the original contract completion date (e.g. a contract extension or a Phase II project).

I want to be sure that the Agency builds on its investment in Title XII institutions in these situations through careful planning and administration. Where a Mission's program strategy and project design contemplate an activity which will continue beyond the initial contract period, AID should reserve, in the solicitation and contract documents, an option to extend the contract for an additional period or periods, provided performance is judged successful. 8

Where such an option has not been established at the outset and a definitive contract period has been established which does not reflect the long term nature of the entire activity, a noncompetitive university procurement for a Phase II project or a contract extension may still be justified in special cases. I remind you of the authority which Assistant Administrators have under the AID Acquisition Regulation to determine, after consultation with the Agency's Competition Advocate, that full and open competition for a particular procurement would impair specific foreign assistance objectives. When circumstances warrant, I encourage you to exercise this authority.



M. Peter McPherson

ANNEX F
FINANCIAL TABLES
REVISED FINANCIAL PLAN
(\$000)

	GRANT FUNDS		Life-of-Project Budget	LOAN FUNDS	COUNTERPART
	Prior Obligations	Funds Added This Amend.		Life of Project Budget	
A. INSTITUTIONAL SUPPORT					
1. Technical Assistance	2,030.0	419.4	2,449.4	9.9	
2. Training	0.0	0.0	0.0	5.6	
3. Equipment/Materials/ Vehicles	96.5	3.0	99.5	10.3	
4. General Support	68.3	19.0	87.3	2.8	
SUBTOTAL	<u>2,194.8</u>	<u>441.4</u>	<u>2,635.2</u>	<u>28.6</u>	<u>1,712.5</u>
B. SUBPROJECTS					
1. Technical Assistance	2,396.0	652.2	3,048.2	1,602.7	
2. Training	414.1	20.0	434.1	721.7	
3. Equipment/Materials/ Vehicles/Gen. Support	245.1	26.1	271.2	247.0	
SUBTOTAL	<u>3,055.2</u>	<u>698.3</u>	<u>3,753.5</u>	<u>2,571.4</u>	<u>1,554.5</u>
C. EVALUATION/AUDIT	50.0	0.0	50.0	0.0	0.0
D. CONTINGENCIES		10.3	10.3	0.0	0.0
TOTAL	<u>5,300.0</u>	<u>1,150.0</u>	<u>6,450.0</u>	<u>2,600.0*</u>	<u>3,267.0</u>

* \$750,000 in incremental loan funds to be added for subprojects is subject to the availability of funds.

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