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Final Report  
Appropriate Technology for Rural Women Project  
Interamerican Commission of Women, Organization of American States  
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## Glossary

CIM - Inter-American Commission of Women  
GOB- Government of Bolivia  
IBTA - Bolivian Institute of Agricultural Technology, the extension arm  
of the Ministry of Agriculture  
LAC - Latin America and Caribbean Bureau of the U.S. Agency for  
International Development  
MAG - Ministry of Agriculture and Livestock  
NGO - Non-Government Organizations  
OAS - Organization of American States  
PTAMC - Project for Appropriate Technology for Rural Women in Latin America  
PTAMC/E - Project for Appropriate Technology for Rural Women in Ecuador  
USAID/B - United States Agency for International Development in Bolivia  
WID - Women in Development

## Project Data Sheet

Project Title: Appropriate Technology for Rural Women

Project Number: LAC 598-0600

Date: 1979-1985

Amount: \$687,000

Goal: To create women-based community organizations, which by introducing appropriate technology and managerial skills will help poor rural women in 1) agriculture and animal husbandry; 2) cottage industries, and 3) performance of home tasks. The technology and organization are to expand the options to improve the quality of the lives of rural women. The project was implemented first in Bolivia and Ecuador and then extended to other Latin American Countries.

Implementing Agencies: Inter-American Commission of Women, Organization of American States.

### EXECUTIVE SUMMARY

The Appropriate Technology for Rural Women Project (PTAMC) of the Inter-American Commission of Women of the Organization of American States (CIM) was designed to create women-based organizations as a mechanism to introduce appropriate technologies for 1) agriculture and animal husbandry, 2) cottage industries, and 3) performance of home tasks. Through those technologies, the women and men of the communities involved could better perform their daily production and domestic tasks and expand possibilities for improving the quality of their lives. Funds from the \$687,000, five year project were used for salaries and training of local promoters who organized selected communities and linked them with the technologies and other development resources needed by the communities. In addition, regional and national staff refined and disseminated organizational methodology and worked to institutionalize it within existing agencies and programs. The institutional base in each country was the Ministry of Agriculture. The project was implemented first in Bolivia and Ecuador, then extended to other Latin American countries..

Women in Ecuador and Bolivia have always been active in agricultural production, but in recent decades their decision-making activity has increased due to periodic male migration for wage labor. The indigenous cultures are relatively egalitarian internally, although contact with Hispanic culture has tended to give men greater access to education; production resources, including land, credit, and technology; and wage labor opportunities. High levels of rural poverty in both countries mean that women's domestic chores are heavy and that women absorb much of the family shock from economic instability and natural disasters endemic in the Andean region.

In its first stage, the project formed organizations in six communities in two different settings -- highlands and subtropics -- in each country. In the course of three years, approximately 350 families were directly involved and derived a variety of benefits from improved agricultural technology, home gardens and small income generation projects. The best projects integrated agricultural improvement with income generation and local marketing opportunities. In the income generation projects, marketing proved a consistent bottleneck. A second problem was the acquisition of purchased inputs in a period of high inflation and recurring scarcity.

At the end of the first stage of the project, community organization process was codified into two manuals, one on organization and a second on appropriate technologies that had proved effective. The methodology has nine steps:

- 1) Selection and training of promoters
- 2) Selection of the zones and communities
- 3) Motivating the community
- 4) Organizing community groups
- 5) Community analysis
- 6) Selection of appropriate technologies
- 7) Elaboration of micro-projects based on appropriate technologies
- 8) Implementation of micro-projects
- 9) Evaluation and follow-up.

In the second stage, the methodology was expanded in both countries, and new communities were included in collaboration with various institutions. To date, 34 communities have been reached directly by PTAMC. The importance of a women-inclusive, community-based methodology of agricultural development was demonstrated for the counterpart

institutions, which have incorporated all or part of the methodology into the redesign of technology delivery in rural areas.

Financially, the income generation projects which resulted from PTAMC organizational efforts tended to yield a small surplus. The best projects were based on a gender analysis of the agriculture cycle and avoided competition with the many other activities that women are involved in throughout the year. Because cash tends to be controlled by males and projects which successfully industrialize the production process are often taken over by males, many of the groups preferred to receive their earnings in material goods, rather than cash. Some projects paid above market prices for raw materials sold to them by members, providing income opportunities throughout the production process.

PTAMC has had a positive impact on community development and on institutional innovation. The projects implemented, the organizations formed, and the methodology developed have, on balance, 1) served broad developmental goals, 2) met the production and domestic needs of rural women, 3) generated effective organizations, and 4) proven replicable in other areas.

## Introduction

The project Appropriate Technology for Rural Women (PTAMC) was chosen for field study because it has successfully increased rural women's access to technology and facilitated a broad spectrum of quality of life improvements through community organizations that provide collective and individual access to appropriate technology for poor rural women. The project was centrally funded (by the Latin American Bureau), originated as an unsolicited proposal, and involved very small amounts of money (less than \$50,000 a year in each country where it was implemented).

After a brief introduction to the project context, this report describes PTAMC and the implementation efforts made by Bolivian and Ecuadorian communities, presenting several case studies drawn from the 19 communities analyzed in the evaluation. It then analyzes activities and discusses project strengths and weaknesses.

### Project Context

The country projects were undertaken during times of rapid political and economic change, with shifts of government, policy thrusts, and USAID approach in both Bolivia and Ecuador.

Both Bolivia and Ecuador are Andean countries with widely varying terrain and great potential for agricultural production. In both countries there is little infrastructure in rural areas and both have high rates of rural to urban migration.

Ecuador has developed a more effective government structure than Bolivia, which has historically been the most politically unstable country in Latin America. Ecuador has greatly benefitted from its oil bonanza, allowing the government to gain prestige by investing oil revenue in public works projects. Ecuador also exports a variety of traditional and non-traditional agricultural products, from bananas to shrimp. Bolivia's main export, on the other hand, is coca, the major ingredient in cocaine. Because it is illegal and cannot be taxed or controlled, the public sector is further weakened and delegitimized.

The economic situation in each country is difficult, although the situation of inflation and devaluation is much worse in Bolivia. Inflation in Bolivia, according to the Wall Street Journal of August 13, 1985, reached 2,000 percent in 1984 and is expected to reach 8,000 percent in 1985 by official count. Ecuador, while economically more stable, has devalued its currency extensively during the period of project implementation. In both countries peasant agriculture is highly unstable. Both countries suffered natural disasters - floods and droughts - in the project areas during the life of the project.

When the project began in 1979, the Bolivian government actively sought to integrate women in the development process at all levels. Succeeding military governments of Bolivia showed little concern for women in their programs. The Siles Suazo government (1982-1985) showed greater interest by naming a feminist to the CIM, but had no specific policies regarding women. In the face of appalling economic conditions in Bolivia, the Siles government took a reactive, rather than active stance to policy development and implementation.

The 1980 Bolivian coup involved major changes in the policies of both USAID/B and the GOB. USAID assistance was sharply cut back. It is currently oriented to 1) fighting coca production and its transformation into cocaine, 2) strengthening the private sector, both by attempting to inform Bolivian government policy and through direct investment, and 3) disaster relief, particularly related to the difficult 1983-84 agricultural season that produced disastrous floods in some parts of the

country and droughts in other parts.

None of these programs are directed at women as actors in the development process, although mission personnel state firmly that none of the projects discriminate against women. Mission regards PTAMC positively, but does not see it as related to any of its other activities. USAID/B has pressured NGOs receiving commodities under PL480 to shift from food give-aways to food-for-work programs that more nearly recognize women's economic functions. However, neither agricultural credit programs nor private enterprise development sponsored by USAID/B explicitly recognize women's economic contributions and design them into project implementation. Since Bolivian women participate actively in agricultural production, it is assumed they automatically have an important say in how it is done and control over the product. That women are socially and linguistically separate and that women rarely assume leadership positions in male or community organizations are not seen as problems.

In Ecuador there have been four governments since initial project approval, resulting in abrupt shifts in policy. After a change from military dictatorship to democracy, the death of the first couple in a 1981 plane accident ended a strongly populist, almost feminist interest in PTAMC. The Social Christian government, elected in 1983, has less concern for equity than previous administrations.

Ecuadorian governments have been consistently concerned about rural productivity. Temporary male migration is very common in rural Ecuador, and women are often left in charge of producing the major food crop (except rice, which is raised in the lowlands on large estates). MAG has done away with home economics extension, and there are few women agronomists working in MAG. One of the few is assigned to PTAMC.

In both Bolivia and Ecuador PTAMC staff are women with extensive grassroots experience. The country director in Bolivia was college trained and had directed the Bolivian Girl Scouts.

The country director in Ecuador had experience with grass roots organizing through a series of non-formal education projects, including the USAID-funded University of Massachusetts project, and a distinguished career in the Ministry of Education. Her strategy of organizing contributed to the development of the regional methodology, which used empowerment through education as the base on which to introduce appropriate technology.

In Bolivia, IBTA (Bolivian Institute of Agricultural Technology, the extension arm of the Ministry of Agriculture,) served as the counterpart institution. In Ecuador, MAG (the Ministry of Agriculture and Livestock) as a whole provided counterpart support.

PTAMC in Bolivia was first located in the Women's Office, directly under the presidency. Under the 1980 coup the independence of the project was threatened, and PTAMC quickly dissociated from that office. AID/B provided temporary space and logistical support until new, independent space was found. IBTA provided technical and organizational assistance throughout the project.

The MAG in Ecuador is relatively well funded and provides office space, transportation, secretarial help and two MAG employee counterparts assigned to PTAMC. On the local level, MAG technicians cooperate with PTAMC to teach agronomic and animal science skills. Memoranda of agreement (convenios) have been signed with provincial MAG offices where the project is being implemented.

#### Project Methodology

The methodology consists of nine steps. The first is the selection

and training of promoters. The women chosen to be promoters are expected to have had previous experience in grass roots organizing in rural areas, willingness to live in those areas and to travel, and, when necessary, ability to speak the indigenous language as well as Spanish. The promoters in Ecuador had college training, experience in conducting non-formal education, and Quechua speaking ability (learned at the university). The three Bolivian promoters had grade school educations, spoke indigenous languages, and had extensive organizing experience.

The second step in the methodology is to select the zones in which to work and tentatively identify participating communities. PTAMC deliberately sought project sites in different ecological zones to test the degree to which its organizational methodology was generalizable. In Bolivia, six communities were initially identified in the highlands, subtropics, and mountain valley regions. PTAMC had to leave the two communities in the mountain valley region when it was occupied by the military in 1981. Two communities in a different area of the highlands were chosen to replace them. In Ecuador, six communities were chosen in the highlands and subtropics, based on representativeness and ease of access.

Step three is motivation stage. Community activities in step three are designed to motivate the community to want to participate in an organization and work together toward meeting realistic community goals. All activities are carried out in the first language of the women--Aymara, Quechua, or Spanish. In this step, the promoters make clear what PTAMC can (and cannot) deliver and what is expected of the community. That is achieved through dialogue in community meetings, house to house visits, small group meetings, short courses, and implementation of small, discrete projects.

The motivation phase is designed to train community members in specific areas that later may become projects of the community organization. Training in the motivation phase includes skills in agriculture and animal husbandry, home industries and handicrafts, and community services, such as vaccination campaigns or literacy classes.

After project-oriented motivation and training, step four, the process of organization, begins with great care taken to link with existing community structures. Organization involves a dialogue between PTAMC and community members who continue to be interested after motivation and training. That dialogue develops the structure and functions of the organization and shows the need for participation by all the members.

The PTAMC methodology encourages all community members to participate in the organization, which is women focused but not women-exclusive. In the most successful organizations, men are quite active. Those successful organizations are viewed as working for the community through women, rather than just for women. Based on the social action theory of community organization, the PTAMC methodology stresses a community consensus approach, rather than a conflict model which sets segments of the community against each other.

The organization is geared to facilitate women's access to appropriate technology, which includes techniques of group management. It decides upon, plans, and implements projects, with material and organizational assistance from PTAMC.

Step five in the methodology is community-based "research" of existing needs and possibilities to help define potential projects. In Bolivia, the diagnostic analysis of each community was made by an interdisciplinary team consisting of a social scientist and an agronomist.

It produced an excellent description of women's and men's work in domestic and agricultural production. Through systematic development of an agricultural calendars by activity and gender, the diagnostic has provided an excellent basis for determining which women's activities should be improved and in which time periods no group activity should be undertaken. The specificity of that study, based on observation and interaction with community members as co-investigators rather than on quantification, is an important tool for project implementation. If the cyclical nature of production activities had not been identified, there might have been problems of time conflict between project and agricultural activities.

In Ecuador the diagnostic study was rich in detail regarding cultural activities and beliefs crucial for the organizational stage of the project, but weak in agronomic analysis of who does what and when in each community. At the insistence of MAG, the Ecuadorian social scientist consultant hired to carry out the diagnosis used a highly quantitative methodology, which tended to limit the organizations' participation. The methodology yielded strange results, such as sex ratios of 160 for children under 11 in several of the analyzed communities. The conclusions were general -- women do everything, as men tend to migrate temporarily. The results helped to show the importance of women in production and their time consuming domestic activities, but it offered little on the precise timing and distribution of those activities. Without such data, some of the projects, particularly in the subtropics, demand high inputs of female labor just when it is needed for agricultural production.

Step six is the selection of appropriate technologies. Early projects in Bolivia stressed the "technology" in appropriate technology over "appropriate." Technologies based on technician-generated low input construction such as windmills and greenhouses were selected.

Simply constructed windmills and greenhouses were introduced into all highland projects in Bolivia early in the development of PTAMC. They did not work or only yielded marginal returns to the communities. The relatively costly initial investments in the windmills and green houses needed to be consistently supplemented with repairs and redesign, making these early attempts the least successful and most mechanistic efforts of the project. In Ecuador technologies related to knitting and weaving initially were introduced in each community, but with adaptive flexibility and variety.

Step seven involves the elaboration of projects based on those technologies. During steps six and seven, linkage with technical expertise from a variety of sources is provided and the women's organizations learn to identify and approach the organizations which provide information and technical assistance.

Market analyses for the income generation projects were primitive and generally carried out after a project had been decided on (at the completion of step seven, elaboration of projects based on appropriate technology), rather than before. In the first year, a professional worked in PTAMC to carry out market analyses in both Bolivia and Ecuador. There is no documentation of her methodology, but her recommendations are recorded. There is little evidence that market analysis was taught to the women's organizations. The women generally discuss what they would like to or could make, where they could sell it for how much, and where they could get need inputs.

Step eight is implementation of the projects. Project financing has become an important if implicit part of PTAMC methodology for step eight. The community organization generally puts up about half the initial

project investment in the form of labor, materials, and weekly member's fees. A joint "take-off capital" (an initial cash investment by PTAMC generally matched by the community) has proven easier to administer and more effective than credit in insuring participation. It is also more acceptable to the women's organizations, as Latin American peasants have long distrusted credit because of its usurious nature in peasant economies. Determining individual responsibility for a collective loan has been difficult for male peasant organizations. Credit repayment demands often become foci of peasant-lender conflicts and deflect energy from productive activities.

The community inputs can be viewed as interest paid in advance. PTAMC provides capital as materials procured rather than cash. Use of those materials has been closely supervised by the promoters and by the technical assistants PTAMC has provided through IBTA, MAG and other agencies with which PTAMC has technical assistance agreements. As a result, a very high percentage of the money destined for community projects actually has been invested in those projects.

Step nine involves evaluation and follow up. By building in mechanisms to constantly assess project success, PTAMC, was able to re-evaluated the meaning of appropriate technology and concluded that is must

emerge from community needs and input.

Later projects in the PTAMC communities overcame technological determinism in project selection. In part, this resulted from step nine, the evaluation and follow up, and in part through expanding the network of technicians PTAMC could call on to provide technical assistance to the community organizations. PTAMC became part of the Appropriate Technology Network in Bolivia and linked with an appropriate technology institute in Ecuador, which gave them access to a wider range of potential technologies. At the same time, PTAMC shifted to a multi-faceted, problem responsive approach that, while emphasizing quality of life in all the communities, imposed no single "off the shelf" technology on each project. This shift represented recognition of the limits of a technology-driven project in peasant circumstances. Instead, PTAMC returned to step five to analyze the needs and resources of each community. Based on that on-going reanalysis, each community organization could derive technology projects truly appropriate to the community's major developmental constraints and consistent with their abilities to overcome them. Steps six through nine--selection of appropriate technologies, project elaboration, project implementation and evaluation--were then reinstated.

The participation of all members of the community organization are important in all of these steps, and mechanisms to insure member participation are included in the methodology for each step.

Using the methodology with its emphasis on continuing evaluation and follow up, women-based community organizations developed a variety of projects, including improved methods of animal husbandry; improved pastures and better cultural practices in crop production; health promotion projects, such as latrines and vegetable production; and income generation projects that generally either used local inputs, met a local need, or did both.

### Projects and Their Environment

#### The Bolivian Highlands

The highlands of Bolivia is one of the most traditional areas in Latin America. The indigenous women of the area maintain Aymara cultural identity through monolingualism and dress--the customary pollera (full skirt) and the derby hat. Men are more culturally integrated, speak Spanish and dress like mestizos, Bolivians of Spanish heritage. Men link the family to the larger society.

#### Intra-Household Dynamics

##### Production

While most women ultimately marry, marriage is often delayed among traditional Aymara women, who are important economic contributors to the parental family. It is not uncommon for a man to marry a woman older than himself, once she has proven to be a good worker. Fertility is high. Both men and women are involved in the nurturing of children. Nursing children accompany parents to their fields, so that both parents participate together in field activities. Although males are the recognized decision makers, many decisions among the Aymara are made jointly, based on both community and household considerations.

Financial responsibility is shared. Besides contributing to family production activities, women seek their own sources of income. Women's income tends to be spent for food and education, as well as small production-increasing purchases. Men's income, which is considerably larger due to their participation in the wage labor market as agricultural and construction workers, is invested in agricultural

production and male leisure activities.

#### Control of Resources

Women's cultural isolation limits their control and management of resources, while male's greater linkages facilitate their access to resources. The Bolivian universal male draft sends young men to regions different from their own and requires them to learn basic Spanish. That skill advantage is furthered by the tendency to send boys to school for longer periods than girls.

Differential access to education by gender among the Aymara was in some degree remedied during the economic prosperity of the late 1960s and mid-1970s. However, the current economic crisis in Bolivia is once again causing fewer girls than boys to go to school. Once resources are scarce, boys get preferential access to them.

Men are more likely to work as wage laborers than are women. They generally will migrate in times of economic difficulty to the Amazon or to the urban areas to work on a daily wage basis, leaving women in charge of agricultural production (principally broad beans, quinoa, a type of millet, barley, potatoes and other root crops), animal husbandry (cattle, sheep and in some areas llamas), and handicrafts based on those agricultural products.

Women may sell in the local markets items they produce or buy for resale, but men are more likely to sell in larger regional markets, giving them more access to cash than women.

The land reform in Bolivia, carried out after the 1952 peasant- and miner-led revolution, was a far-reaching one. The beneficiaries were primarily males. Widows with dependent children were also to be given land, but this did not happen very often. It is not clear whether or not single female heads of household had access to land, but married women clearly have no rights to land on their own merit even after land reform (Deere, 1985: 7). Men and women own livestock individually and as a household. Often men may own the livestock, but women will own (in terms of being able to sell them and retain the profits) the products, such as milk or wool. Women transform those products through home industry and sell them in local markets, but often feel disadvantaged in interacting with intermediaries.

Credit systems are linked to land title, and thus are oriented toward men. A current AID-funded credit scheme with repayment in kind goes almost entirely to men. Women may benefit from this credit, but more as unpaid family laborers than as managers.

Non-formal education also bypasses women in the highlands. Previously available home economics extension was assessed to not meet the needs of peasant women active in agricultural production. The technical services and training in the villages go to men. The

agricultural agents are all male, and when they organize groups for informal instruction, participants are almost always male. Even when the agricultural agent speaks Aymara--and only about half the agents in the area do--women are unlikely to participate in extension activities.

#### Labor Constraints and Opportunities

The PTAMC project areas are predominantly those of small holder agriculture. Some production activities are carried out through labor exchanges, but most are family based. Child care is not defined as a constraint to women's productive activities. Aymara women take their children with them to the field and to meetings.

Data from other Aymara regions suggest a belief that menstruating women might negatively affect the growth of crops. While this may have limited women's agricultural activities in the past, temporary male migration seems to have changed this taboo.

#### Other Developmental Interventions

In the mid-1970s, a time of relative economic prosperity, the Bolivian government greatly expanded its activities in the highlands. Recent financial problems have restricted these activities, and in the 1980s the communities are reached only irregularly by government technicians and other development programs. In the vacuum left by the absence of government programs, a variety of NGO projects have sprung up, including an experimental "appropriate technology" village by German volunteers and a radio literacy and non-formal education program by the Catholic Church. PTAMC coordinates with both these efforts and also links the communities in which they work with government technicians. The U.N. World Food Program, in coordination with the International Labor Organization, has set up mothers clubs to distribute food relief (Duran-Sandoval, 1985). PTAMC made an agreement with the Mothers' Clubs to attempt to transform them into income generating projects; however, only one of the four clubs with which they agreed to work was able to transform the recipient mentality that free food generates (CIDEM, 1985. See below.).

Some of the PTAMC projects visited and analyzed in the highlands and tropical areas of Bolivia are described in the following pages.

#### Illustrative Cases

##### Centro Belen (Highlands)

About three hours from La Paz on secondary roads, this dispersed agricultural community is composed of about 35 families, all dependent on agriculture. High community solidarity has been maintained ever since residents provided tenant labor to the large estate which encompassed Centro Belen prior to the land reform. Now both men and women participate intensively in the community organization for women organized by PTAMC.

The windmill and greenhouse technologies introduced by PTAMC into Centro Belen were problematic. With much repair and revision, the greenhouse now grows tomatoes and cucumbers, but without the project's anticipated replication on individual peasant plots, as the cost was far higher than anticipated, due to the need to substitute the original plastic roof with fiberglass material that was able to withstand the harsh highland conditions. The windmill has been converted to a hand pump, which can be used to move water to the disinfecting tank for sheep and other animals. In addition, a community hall was improved and a handicraft center was built on land donated by the community. The community organization has experimented with improved pastures, vegetable gardening, and has recently purchased a pregnant cow.

The value of the community inputs, including labor, materials, and

cash, have exceeded those of PTAMC in these efforts. It is difficult, if not impossible, to come up with an approximate dollar or even peso totals for these projects, due to the enormous inflation in that period. PTAMC's direct capital investment, not counting costs of the promoter or other technical assistance, could not have exceeded \$1,200.

Income has been generated by 1) selling vegetables, 2) charging for animal dipping, and 3) selling weavings and decorative woolen objects. Members can either produce at home and sell through the organization, with a proportion discounted to cover the organization's costs, or the organization can provide inputs, loom and spinning wheel, with the members producing in the shop, paid on a piece basis. The organization generally buys the wool from members, which gives a further income to some. Currently, members are ceding their labor costs to the organization in order to recapitalize it. According to the minutes of the meetings (which have to be kept by the men, since few of the women write in Spanish), this decision was reached after much debate and discussion.

During the period of drought, crafts were key in providing income to the community. However, in the current political-economic situation, crafts are not selling. The craft market has declined because 1) tourism in Bolivia has declined, 2) the world market in handicrafts is becoming saturated, and 3) the parallel exchange rate, in a time of very high inflation, is generally four times the official exchange rate. As export dollars must be changed at the official exchange rate, Bolivian exports must be priced abroad four times higher than domestically if they are to pay for costs. This effectively has priced Bolivian handicrafts out of many markets. The elimination by the Paz Estonsoro government (1985-present) of an officially set exchange rate may revitalize craft exports.

The current concern of the organization is to analyze new areas of income generation, both for the organization and for individual women. The new strategy is to sell items of direct household usefulness, particularly basic food items, locally and in La Paz. In addition, both basic production and value added through processing are being considered.

#### Corapata (Highlands)

Corapata (population 1,500) is located on a main highway less than an hour from La Paz. It is a small trading center, with both agriculturalists and merchants in residence. Larger than the other PTAMC communities, Corapata has more constant interaction with the capital city. It was chosen at the insistence of the IBTA agent for convenience of access, rather than through the normal methodology.

In response to the initial motivational efforts by a PTAMC promoter, a community group was formed consisting primarily of young women who were anxious to generate income and much less interested in organizational and expenditure-replacing activities. The group was small, with little male participation, although the promoter sought to include men. PTAMC finished a health post for the community with minimal community input.

At the insistence of the young women, the project chosen was handicraft knitting. Raw materials were purchased by the promoter, who did the marketing and invested extraordinary amounts of her time in these activities. She also designed the objects to be made, with little community participation. The quality of the knitted items in the project varied enormously.

Tightening market conditions for hand knitted items due to currency exchange policies made export difficult, so an attempt was made to industrialize the product. PTAMC and the community organization signed a contract with a private handicraft dealer, who agreed to teach machine

knitting and to lend machines to the project. The young women originally wished to purchase their own machines, but not enough surplus could be accumulated. With the contract, the promoter no longer bought inputs or marketed. Instead, the dealer took on these functions.

After two years the organizational component had degenerated into getting together occasionally to knit. PTAMC withdrew from the community and the young women continued to knit on a putting out basis for the dealer. They have, in effect, become industrial workers in the informal sector. In terms of PTAMC, the project was a failure. Nevertheless, the incomes of the young women and their families has been raised as a result of the project.

#### Muruamaya (Highlands)

Muruamaya (60 families) is a dispersed agricultural community located along a secondary road about an hour and a half from La Paz.

This community organization was "delivered" to PTAMC in 1984 during the institutionalization and expansion stage of project funding. It had been started as a Mothers' Club in order to receive food from the World Food Program. Under that program, women formed groups and elected officers who received the food and sold it to the members below market costs. Profits from the sales were deposited in an account for the Mothers' Club to be used for community benefit. Unfortunately, high inflation and an unwillingness of the central Mothers' Club organization to allow the community organization access to the money rendered the savings worthless. Five thousand Bolivian pesos that might have been worth \$100 dollars U.S. when put into the account were devalued to less than a dollar.

The Muruamaya group wanted to start a bakery but lacked capital resources. After expanding the organization to include men and other women in the community, PTAMC and the community organization worked to construct a bakery. As soon as PTAMC became involved, it worked to get official flour rations from the GOB, because rationed flour is about a third the cost of black market flour. To date, those efforts have been unsuccessful. Baking techniques, marketing, and pricing have been taught, but in order to make a small profit, the community must charge more than bakeries which have the flour ration. The new Bolivian government, inaugurated after the field work was completed, has eliminated subsidized, rationed food, which may increase the competitive position of the bakery.

PTAMC will donate working capital for the first flour needed for production, if the community can raise the money for the other ingredients and promises to reinvest in flour and to continue working for a flour ration.

#### Chawirapampa (Highlands)

This highly solidary, nucleated farming community of about 120 families in the rich farming area near Lake Titicaca requested early on to participate in the project, having heard about it from other communities. It, too, went through the problematic greenhouse and windmill technologies. The greenhouse no longer functions, while the windmill, operated by hand, does help take advantage of the high water table to provide water for the main income generating activity, cheese making.

This area has traditionally produced milk and cheese, with cheese making an arduous daily task of the women. PTAMC invested heavily in equipment to industrialize the procedure and hired a Swiss technician to train the women to make cheese. The technician had worked many years in Andean countries, but this was the first time he had trained women in cheese making. Always a female activity when performed domestically, the

process has almost universally become male when industrialized. The technician was surprised by the speed with which the women learned and reported that they taught him a number of helpful techniques.

Men have been appointed managers of the cheese factory because of facility with language. The first manager was very able, while the current one is less skilled. The community feels strongly that the post should rotate (but among the men), in order to maintain its participatory character.

Currently each of the 30 organization members (all women, single and married) works twice a month making cheese in two-day shifts. At the end of the two days, one of the members or her husband takes the cheese to La Paz to be marketed at the offices of the ministry of Agriculture, UNICEF, and PTAMC itself--offices community members got to know in the course of project development. This marketing strategy has certain limitations due to the dependence on the good will of a few key bureaucrats, but in an economy that is primarily informal, such direct marketing has major advantages in avoiding intermediaries. Cheese curds are sold locally to school children and members of the community.

Women are not paid for making cheese, nor does the male manager receive a salary. Rather, money made is for the organization. To capitalize the organization, pesos gained in the sale of cheese are changed to dollars to avoid the impact of rapid currency devaluation. Members do make money from the sale of milk to the cheese factory. All member's families own cows, although some of the unmarried women sometimes get only a small portion of the family product to sell to the factory. Those who sell milk to the factory are mainly women members, although one does not have to be a member to sell milk.

Cheese making has opportunity costs. Women still like to control their own production, despite the hard daily work cheese making at home entails. Thus many women enter and leave the organization, going from individual to collective cheese making according to their own wishes and those of their husbands.

The quantity of cheese produced thus far has been limited only by the availability of milk. Since pasture is limited and can only support a certain number of cows, pasture and herd improvement were introduced as complementary activities.

The members are keenly aware of the variability of economic conditions and are constantly repricing the cheese and milk. In the first five months of 1985, those prices changed seven times. A better bookkeeping system could help in this process, although the degree of community involvement in these economic decisions is impressive.

A 1983 PTAMC-commissioned evaluation estimated a profit of \$43,500 Bolivian pesos a month, even when labor was paid. At this rate, the organization could repay the costs of equipment and installation in six months (Myers, 1983). (Equipment and installation costs were in fact shared by PTAMC and the community.) The radical alternation of the financial situation has decreased the level of profits, but the enterprise remained profitable at the time of study.

#### Sub-tropical Bolivia

The sub-tropics are areas of recent colonization, largely by immigrants from the highlands. Males often return to the highlands for planting and for harvest. Women appear more culturally integrated, and the younger women speak Spanish. Men and women are active in almost all aspects of agricultural production, including citrus, coffee and cacao. The introduction of coca as a cash crop has involved women highly. In

particular, women are responsible for preparing coca leaves for market in the ever-spreading area where it is grown. In times of economic difficulty, men are more likely to migrate.

#### Intrahousehold Dynamics

As families have become more Hispanicized, women's power in decision making regarding production has declined. Men have financial responsibility for investing in and expanding production, and they pursue separate leisure activities.

#### Control over Resources

In the colonization areas land has been titled to men. Credit is also oriented to men, and training by the extension agents has been male oriented in practice.

#### Labor Constraints and Opportunities

There are few wage labor jobs in the immediate vicinity. Males migrate to work in seasonal crop harvests in rural areas and for marketing and day work in urban areas.

#### Illustrative Case

##### Chacopata (Subtropics)

Chacopata (30 families) is located across a wide river some five hours from the La Paz. When the river is high, which is most of the year, the only access to the community is a steel cable. A pulley and hook are bolted to the cable, and people and goods are attached to it and pulled across the river. Community members are first and second generation colonizers from the highland areas. The older women speak only Aymara; younger women are more fluent in Aymara than Spanish. Major crops are citrus, coffee and cacao. Minor crops include rootcrops, corn and rice. Citrus and coffee are seasonal, but cacao produces all year long.

PTAMC's activities in Chacopata include improving and diversifying the fruit varieties, introducing gardens, building a community center, and setting up a marmalade factory with a rudimentary water system. PTAMC has worked with the newly formed community organization to get materials to build a foot bridge across the river.

Marmalade has been relatively profitable for the community, although wide variations in the price of sugar make production somewhat risky. Different kinds of packaging and marketing strategies have been tried. The plastic jars with printed labels allow for better transportation and storage than the cartons previously used. Women members market directly to the county seat about an hour and a half away, and male members or relatives take the product to La Paz. Customers are generally middle class.

The organization has formed linkages with poor urban women's groups and taught them marmalade making skills.

#### Impact of the Projects on the Members and the Communities

In Bolivia, PTAMC conducted steps 1-3 (through motivation) activities in 18 communities and the complete nine steps of the methodology in 12 communities during the five years of the project. In each community where PTAMC has instituted the complete methodology, there are visible signs of progress in that a community building has been built or improved. In some of the communities, new agricultural techniques, including animal vaccination, pasture improvement, and use of improved varieties, have been introduced to men and women. Improved preventative health care for animals is particularly important in the highlands.

The period of project initiation and institutionalization included a time of massive national economic disruption and wide fluxation in conditions for agricultural production. Several poor agricultural years

were followed in 1985 by an excellent year. Without control communities and the existence of baseline data, it is difficult to judge the economic impact of the wide variety of technologies that were introduced and applied at the level of the family farm enterprise because of these intervening variables. However, the new collective enterprises which have been successfully introduced seem to have provided income options for men and women that do not conflict with their other responsibilities. The most successful projects are those which do not need government rationed and subsidized inputs and which meet immediate survival needs of local populations, such as food or building materials. The most risky projects depend on exports or tourist markets.

Of particular importance is the chance for women to work with machinery. In most development projects, men assume the mechanized tasks, furthering the differentiation of skill by gender, but with the exception of the windmills, technology has not been male oriented in most of the PTAMC communities.

Women and men have learned participatory skills in community decision-making, choice of community project, and structuring of such projects. Better access to and understanding of economic data would greatly aid such decision-making activity.

But is it enough to deliver these benefits to the twelve communities, with approximately 30 members per community, that the project is now serving? If one counts six family members per member, that still has meant investing about \$100 per beneficiary over the life of the project in Bolivia, or \$20 per year. If the community organization and improved agriculture practices could be factored in, the return to the community exceeds the investment of PTMAC. Already the communities have experienced a positive return to their own investment.

#### Institutionalization in Bolivia

The effectiveness of the project must be evaluated in terms of its replicability and implementation beyond the initial six, then twelve communities in which all steps of the methodology were carried out. It is in this area that the project seems more cost effective. The project has served as a demonstration catalyst to: 1) cause the agricultural extension service to restructure its delivery system specifically integrating women as users of agricultural technology. PTAMC will design the diagnostic instrument used by IBTA to implement its new "focal strategy", based on the family, rather than the individual male farmer; 2) inspire a number of IBTA's all male extension staff to organize women's groups on their own (they found that women did not attend the men's groups, but men do attend the women's groups) and to request seminars on the application of PTAMC's women's organization methodology on a regional basis in order to make those groups more effective; 3) work with the PL480 Title III committee in Bolivia to provide the logistic (although not the salary) funds to continue working with IBTA in their extension effort, particularly in the coca growing areas; 4) bring together organizations and individuals, both governmental and private, to meet regularly to consider strategies regarding the integration of women in the development process, including such major issues as the impact of free food and the best way to organize women's micro-enterprises; 5) get funds from the U.N. Voluntary Fund to organize an artificial insemination project in order to implement a herd improvement program based on multi-faceted women's groups.

### Sustainability: The Community Level

Will the projects continue once funding ends? Given the precarious economic situation of Bolivia, this is difficult to determine. PTAMC has provided and continues to provide capital at key junctures that allow for shifts in the type of project undertaken or for further mechanization and streamlining of production processes. However, PTAMC's greatest contribution is provision of information, counsel, and linkages to other entities, both public and private. In particular, their aid in marketing is important, as well as the legal status they help provide for the women's groups. Two of the six groups visited are well-organized enough and diversified enough for the project to continue without PTAMC, although, particularly in the case of Chawirapampa, efficiency may decrease. Three of the others are diversified and well-organized, but without a clearly profitable economic activity. Muruamaya, the most recently attempted PTAMC project, is more questionable. If it gets its flour ration, it will continue, for a good organizational base has been laid. Without it or an elimination of the rationing system, it is in serious difficulty with or without PTAMC's aid.

### Sustainability: The National Level

The nine step methodology and the promoters of PTAMC appear to be having an impact on official government structures (IBTA), on international governmental entities, particularly the International Labor Organization, and on a variety of NGOs in Bolivia. The handbooks and courses on the methodology are being requested with increasing frequency. There is a growing recognition among all these entities that women can be a crucial element in rural development and can be mobilized effectively as part of the community. There is a possibility that when the current project funding terminates in September of 1985, the salary of one promoter will be paid on a contract basis by IBTA, and the other promoters paid by another external grant. It is not clear that the organization itself as it has been constituted and known is sustainable on its own in the current Bolivian economic situation.

## Ecuador

### The Role of Peasant Women in Ecuador Highland Ecuador

Indigenous traditions are strong in highland Ecuador. Quechua is the primary language, and women more than men tend to be monolingual. Integration into the national culture is greater than in Bolivia, especially for males.

#### Intrahousehold Dynamics

Women marry young in highland Ecuador, generally to men older than themselves. Childbearing begins early and continues until menopause. Men engage in some nuturing activity, and nursing children accompany parents to the field. Children as young as five or six are involved in the care of animals and younger siblings. Women carry out the labor-intensive aspects of production for potatoes and other root crops, beans, corn and barley, as well as the processing and minor marketing of agricultural products (Haney, 1985: 36). They care for and manage family livestock, generally a few cattle and sheep, and raise poultry and guinea pigs for home consumption

Male dominance in decisions regarding production is also more common than in Bolivia, particularly regarding the use of communal lands, although in general men and women participate jointly in decision making. Finances are normatively a primarily male responsibility, because males have access to the cash as wage laborers in agriculture and construction and as marketers of major agricultural products. Yet men are viewed as somewhat irresponsible in the handling of money and a good wife should be able to manage finances. Further, long term male migration leaves women in charge of day today financial transactions. Women are responsible for feeding the family by using cash or subsistence production.

Because men often squander cash for ritual drinking on social occasions, women prefer income in goods to cash, which can more easily be appropriated by men.

#### Control of Resources

Men have more access than women to formal schooling. Because of military service, men learn Spanish, which facilitates integration into the larger society. Women maintain traditional dress, but men's dress is not distinctive, except for the use of ponchos.

Land reform in 1964 and in 1973 gave titles to individuals and to collectives. In both cases, men were the formal beneficiaries, as land owners or members of the comunas. Women have access to the benefits of the agrarian reform only through their men, although widows do inherit their husband's place in the comuna. While women typically provide labor for cooperative crop and livestock production, they have no direct control over any cooperative production decisions and policies (Haney, 1985: 35). Further, Ecuadorian law explicitly states that husband and wife cannot both be members of the same cooperative, a law that results in women's exclusion from these important economic groups (Phillips, 1985). When land is passed on intergenerationally, it goes to a son.

Extension agents and agricultural researchers have a high degree of technical preparation and tend to speak only Spanish, which limits women's access to technical assistance.

Historically, agriculture technical assistance in Ecuador has been oriented to large farmers and export crops. In 1980, Ecuador did away with its home economics extension service. The technical assistance small farmers do get is often from pesticide and fertilizer salespeople who encourage overuse in unsafe amounts. Because women are highly involved in

agricultural production, they have adopted many of the input-specific techniques, such as fertilizer or insecticide. Women depend on men for access to mechanization. Credit programs are oriented to men as the titular land holders.

#### Labor Constraints and Opportunities

Temporary male migration is common, as small holder agriculture is risky and men have access to wage work, particularly in the construction industry. Men and women both engage in handicraft production of useful and ornamental household objects by weaving local fibers, such as wool and hennequin, as well as synthetic fibers. Men tend to dominate the decision making and manufacture of these crafts, which are sold in local markets. Men also tend to control semi-industrialized transformation of agricultural products for the market. Mechanized farm labor activity, such as tractor driving, is exclusively male. Work on the family farm is usually supplemented with temporary agricultural wage labor, which is almost exclusively male (Haney, 1985), except on traditional dairy farms, where women are employed as milkmaids and in horticultural areas, where women do daily wage work. In areas where land holdings are particularly small, women often hire out temporarily as piece workers in textile or handicraft industries.

#### Other Development Interventions in the Highlands

In the highland communities where PTAMC operates, a number of governmental development activities are also being implemented, such as tubed water and occasional adult literacy programs. In one community where PTAMC worked for two years, a bakery now is being built as step seven of the methodology with USAID small project funds. Only after motivation, organization, community analysis, technology selection and project planning including market analysis, were the outside resources mobilized.

Water, the key for agricultural development in the area, is a male domain. Men are active in water committees and inter-communal decision-making, despite women's responsibility for supplying water for domestic use. In the project communities, as in others, water installation includes communal laundry facilities. Women and men take part in literacy programs in a small way, with few concrete results, although PTAMC tried to help organize courses. Women do participate with the men in the bakery project.

Occasionally extension agents reach such communities, and PTAMC is the major link between those agents and women. Highland communities also are reached by health promoters, male and female, who give out food supplements for malnourished children.

#### Chingazo Bajo (Highlands)

When PTAMC entered this highland community, the primary agricultural product was hennequin, which male and female community members processed into hammocks through a complex and laborious procedure. Most of the men also migrated temporarily in order to gain cash income. The soil is of good quality, but water is the major factor limiting agricultural production and is a source of friction with neighboring communities.

PTMAC formed an organization with the young women of the community. Older women were already organized into a mother's club to receive food supplements and health care from a visiting nurse. However, after a year, most of the young women got married and moved away and the older women saw the advantages of the productive activities of the group, so the groups combined.

Projects include 1) gardens, the products from which are both sold and distributed, 2) guinea pigs, which are distributed and sold to community members to improve their domestic stock, 3) bee hives, the honey of which is sold and some distributed to members, who view it as an exceedingly healthy substance to give to their children, and 4) handicrafts made of hennequin in addition to the hammocks already made.

The diagnostic analysis of the area noted the presence of a disease in the hennequin plants, and early PTAMC activity involved working with the local agricultural technician to eradicate the disease. However, the remedy involved destroying the diseased plants, an expense the peasants were not able to assume. (In such cases, only a government intervention that pays for the plants destroyed and subsidizes a replacement project can be effective.) By mid 1985, all the hennequin plants were severely infected, yielding an inferior hennequin. The hennequin handicraft project, aimed at processing a local product, now relies on purchased hennequin.

After discounting materials and transportation, each woman receive one quarter of the price of the product she made, with three quarters going to capitalize the organization. That decision was made after intensive analysis of their situation by the women themselves. The women meet regularly and macramae bags, which use less hennequin than hammocks. However, according to the women, the market for bags is considerably smaller than for hammocks, despite PTAMC's efforts to get access to a handicraft distribution center run by the Church and to stalls at the Riobamba bus station. The hammock industry remains a home-based family income producer.

Both the vegetable gardens and the guinea pigs had the dual ends of increasing the nutritional level of the members and generating income for the organization and later for members who replicated in their own homes the techniques learned. Some members have taken up the gardens, despite difficulties with water. They have learned to use waste water from their household tasks. Improved guinea pig progenitors were given to members, who said they thought as a result their children were less malnourished than other children in the community. Nonetheless, many of the members still had malnourished children who received food supplements.

The guinea pig project experienced a set back in May of 1985, due to a "pest" that decimated all the herds in the village, including that of the organization and the individual improved herds of the members. PTAMC

went with the community to MAG to discuss the problem, but no cause could be found. However, MAG will aid with replacement of the lost stock. The rudimentary bookkeeping system shows no record of the guinea pigs which were born or died -- only those which were sold. PTAMC and the MAG provided the progenitors, both male and some females, and there was no record of those either. However, the treasurer's books do indicate that the guinea pig project made money.

Indicators of nutritional status and better bookkeeping includes capital accounting which would provide meaningful information for use in community decision-making processes.

The real money-maker for the organization was the bee project. Requiring minimal time and capital inputs, the women learned a new skill of which they are proud, for there is a strong and diverse market, both local and regional.

The Chingazo Bajo group has maintained its organization and enthusiasm. Few men participate because of high temporary and permanent male outmigration. Opportunity costs for women's time are low and do not conflict with their other duties. Meetings require only half a day, one day a week. Earnings from the project offset the direct investment of both the community and PTAMC, but there is little return to labor. The organization continues to explore options and currently feels that expansion of hives is the most feasible alternative. Interestingly enough, women are not anxious to receive cash for their labor. Instead they prefer annual disbursement of profits by the organization as useful objects, such as cookware. This way, they say, they have something they can keep and remember. This may also be a way to control their own earnings in a male dominated situation.

#### Tepeyac Juan Diego (Highlands)

This 15-year-old agricultural community in Chimborazo was founded as a result of the land reform instigated by the bishop of Riobamba, who distributed church lands, first to the huasipungueros, or debt peons who had traditionally worked the land, and then to groups recruited from land-short areas of the country. The group which settled in Tepeyac, although Quechua speaking, was evangelical, with the tight solidarity and strong discipline that such religious affiliation implies in Ecuador. Lands are poorer than the main hacienda lands, but provide pasture for sheep and a relatively good environment for potato production.

PTAMC entered the community amid some suspicion that they intended to convert the residents to Catholicism. However, PTAMC won the trust of the community in the motivational stage of the methodology through a project in basic handicrafts to produce necessary clothing items which were lacking.

At the time PTAMC entered, no one was weaving, although there had been a loom which men operated. PTAMC offered their usual technology mix: gardens, which were very successful, both for consumption and for sale; guinea pigs, with the same ends, and handicrafts. However, the group really wanted to learn to weave in order to manufacture their own clothes. A weaving project was initiated which served as a prototype for weaving projects in four other communities. Profits from all these projects have been substantial. Most of the products are purchased by community members. The group is just now beginning to process wool from their own sheep. At times there has been payment for labor; at other times, the organization has decided to accumulate capital and distribute profits at the end of the year. Once again, disbursement of profits in goods, rather than cash, seems to be preferred. All of these activities are profitable,

discounting labor, and provide options for use of time and expenditure replacement for community women. This is the only group that sells the profitable guinea pig manure.

The biggest money maker in the five years of the project has been potato growing. Experts in communal potato growing, community women decided to undertake it as an organization, and in 1984 the comuna rented them part of the collective holdings. Even with a small rent payment and the heavy inputs required by potatoes, they had the best yields in the community and made a substantial profit. In 1985, the comuna organization, controlled by male heads of household, refused them access to land (due to jealousy, according to the promoter), and they are renting land elsewhere. Despite the distance women must travel, potato production should be profitable again this year.

Even though potato production is more profitable, the members want to keep working in their other enterprises. They know the risks of agriculture and prefer to maximize the number of options available.

#### Subtropical Ecuador

This densely grown, hot, humid area is occupied by large agricultural enterprises nearer the coast and by small and medium holders further inland where PTAMC is active. It is an area of spontaneous colonization from the Chimborazo highlands. Many farmers do not have clear title to the land and are thus distrustful of outsiders. The area was badly hit by the 1983 flood, which washed out roads and bridges in the already relatively isolated area.

#### Intrahousehold Dynamics

Subtropical Ecuador is more Hispanicized than any of the other regions visited. Men dominate in intrafamily decision making and men's income is used outside the home for male recreation and expansion of land holdings. Women's income is used for children's education and domestic needs. Men may use extra income to form a second family resulting in many de facto female headed households. When there is a male head of household, production decision making is a male domain.

Sexual jealousy is high. Because women are viewed more as sexually vulnerable (although virginity itself is not stressed), their opportunities are curtailed for marketing and other activities which might require travel without their husbands. Many husbands do not let their wives work outside the home. These restrictions, rather than demands of child care, limit women's wider economic activities. Group solidarity is diminished by competition among women for men's attention and support.

#### Labor Constraints

Men work seasonally as day laborers. During the harvest season, women are also employed on a daily basis. Both receive the same pay. Men are more likely to migrate longer distances for extensive periods, leaving women to do field work.

#### San Pedro Pita (Subtropical)

This community of wage laborers in the province of Bolivar produces coffee, cacao, citrus and other fruits. While cacao can be harvested throughout the year, citrus is highly seasonal.

The PTAMC organization began with a vegetable garden, classes in various handicrafts, health, and refurbishing the community locale. Community participation involved a minimum input of labor. Quotas discussed for the refurbishing of the community house (on land donated from the school board) were never paid. The garden was run by one family, and, although some money for the organization was made from the sale of fruits and vegetables, members still view the garden as belonging to one

of the more aggressive members who seems to harvest it for her own use.

In the early years of the project, MAG personnel taught tree grafting to members, both men and women, so that they could then sell the grafted trees to improve the local citrus production. By 1985, the last trees brought in by MAG had been allowed to mature beyond the point that grafting could be effective.

Processing citrus, the major product of the area, seemed a natural basis for an income generation project. Marmalade production was chosen and the project, after careful identification of appropriate technologies, provided the appropriate tools and developed a cooking procedure that made good use of the firewood available. But citrus had to be processed before it rotted, which was when many women and men in the community worked as day laborers gathering fruit for local land owners. As a result, it was difficult for women who worked in the fields to also work in the factory. Labor was voluntary and hard, demanding that members spend most of one day each week making marmalade. To participate in project activities, members had to give up a day's wages, which, for the 1985 harvest, was \$400 sucres in that area. Thus membership was limited to the upper strata of the community. In previous years profits from marmalade had resulted in two disbursements of about \$1500 sucres each to members, suggesting that the opportunity cost of participation was high, especially for the poorest women and men in town. Understandably, the group has decreased substantially in size. It is about equally male and female, but men do most of the traveling, which is resented by women.

Oranges for marmalade were purchased locally; other inputs were purchased on the open market in small quantities and involved long trips by male members who purchased sugar or jars. There was little awareness of cash flow or planning of purchases. PTAMC arranged for marketing through state stores in addition to sales to local residents and stores and to development workers in the area. The organization increased prices from time to time, because "everything is getting more expensive", rather than as a result systematic calculations production costs.

Plan Internacional entered the community in 1983 with much needed disaster relief. In 1984, Plan Internacional (formerly Plan Padrino, or Foster Parents' Plan) signed an agreement with the community organization and with PTAMC to establish a larger project. PTAMC's only choice was to work with them. Over sixty children in the community now have godparents in developed countries that send money regularly. In addition, the Plan has made money available to the community to build a complete new kitchen, with expensive new equipment -- equipment that in fact can only tangentially be used to make marmalade and as a result is not used at all. (The fact that the simpler technology supplied by PTAMC is still being used suggest its appropriateness to the local situation.) The large infusion of outside funds has led to further disintegration of the PTAMC organization, as leaders, male and female, have appropriated more power to themselves. With the disbursements of profits and the appearance of the new kitchen, many residents thought that Plan Internacional was going to hire local people to make marmalade and wanted to become involved as wage workers. Although the president had just taken the groups's products to the agricultural fair in the regional capital, where a trophy was won, she had not yet presented it to the group when we visited. Like the garden, the factory was becoming the property of a few of the members and there seemed to be little participation and few profits.

Institutionalization

During the institutionalization phase (1984-85), PTAMC/E greatly

expanded its area of operation, consulting and participating in projects from Esmeraldas in the north to Lojas to the south. Especially important is PTAMC's participation with FODERUMA in the integrated rural development project in Central Lojas.

FODERUMA, created by the Ecuadorian government to work with marginalized populations, has a special credit arrangement through the Central Bank. FODERUMA has a women's section, which implements field projects with the assistance of PTAMC.

PTAMC has trained and placed four promoters to work with FODERUMA in 24 communities in Lojas, located over 20 hours from Quito along the Peruvian border. The promoters form women's groups both to coordinate with major development efforts, from road building to agricultural production and processing, and to carry out women-specific projects related to health and water. FODERUMA seems exceedingly pleased with this effort, in part because of the extra staffing it provides but even more for increased project effectiveness thanks to PTAMC methodology.

In Esmeraldas, the PTAMC effort is with a religious community which runs a charity project in an urban area -- not conditions under which PTAMC has had experience. The PTAMC methodology may not be adequate and will certainly need some adaptations. Nevertheless, the experience will probably be valuable.

PTAMC is tolerated within the MAG, and the extra field workers that promoters represent are welcome, but there is little attempt by MAG to emulate PTAMC methodology. Good cooperation has been achieved at the local level, where technicians see that male migration requires dealing with women and appreciate the PTAMC organized group as a basis for doing so. However, they do not seem to be adopting that methodology themselves. There is even tension with some of the MAG-appointed counterpart staff assigned to the PTAMC office.

Sustainability: The Community Level

In Ecuador, PTAMC has carried out steps one through three in 38 communities and all the nine steps in about 20. If the Lojas project is included, that number increases to about 40. Of the five new PTAMC projects visited, which are only at step six, only one is likely to continue without the aid of PTAMC. Implementation of the entire methodology is necessary for communities to become self-sufficient.

Of the six original projects visited in which the complete methodology had been applied, the two in the land reform area are diversified and well-organized enough to continue unaided, although only one will clearly continue to make a profit. In contrast, neither of the projects in the sub-tropics seem sustainable without outside financial support. One is small and uneconomic, with low participation; the other has been confounded by the entry of large and ill-spent sums of money from Plan Internacional that has further decreased an already low level of community initiative. The organizations in the hennequin area would continue with bee keeping if PTAMC were to withdraw. However, these organizations are still struggling to overcome a paternalistic dependence on PTAMC, despite continuous attempts by PTAMC to increase their self-reliance. There are indications, however, that the women are beginning to grasp the importance of the organization in the development of projects that go beyond the scale of household production.

The projects that can be sustained once the official project ends have sufficient capital investment to make the collective project more efficient than individual activity and the organizational base to provide flexibility and continuity to the various technologies the community

organization chooses to meet its needs.

Sustainability: The Institutional Level

MAG has recently officially established an entity for Approrpiate Technology for Rural women, although it is as yet unclear how it will be structured. Other national institutions, particularly FODERUMA of the Central Bank, have found the methodology and the trained promoters useful and are incorporating them into their integrated rural development

projects. In addition, church-related organization in Esmeraldas and several municipalities around the country are attempting to implement the PTAMC methodology.

PTAMC is attempting to disseminate its methodology by publishing small sections of it in an inexpensive format. They have put out pamphlets on organizational techniques and on some of the technologies with which they have experimented.

#### Analysis of Project Activity

##### General Project Strengths

##### Staffing

Unlike many women's projects, PTAMC is staffed by paid professionals rather than volunteers. This has allowed them to go beyond teaching traditional female skills and to interact as equals with the male change agents in other development projects.

In Bolivia, the shift of staff responsibility from CIM functionaries to development professionals, both as project and country directors, was key to project success. These women, all with extensive experience in participatory community organization, were able to build on that experience in selecting and training the promoters on whom project responsibility rests. They were able to pick female promoters who had:

1) A good mix of formal training and applied experience. In Bolivia, the three promoters have training that ranges from some primary school to post secondary vocational training. All had at least three years experience in rural development work with either NGOs or government agencies. In Ecuador, the three initial promoters and the four promoters in Central Lojas had some university education as well as applied experience in community development work.

2) Enough maturity to feel comfortable asserting themselves with male community leaders and technicians.

3) Agreed to either live in the project communities or to spend extended periods of time in them. As most of them had families, this was somewhat of a hardship. Yet even the promoters who were single heads of household made alternative arrangements for childcare. PTAMC did not assume that women promoters were limited by family responsibilities.

4) Command of the local languages. The women in both the Aymara and Quechua speaking areas continually stressed the importance of being able to run meetings and classes in their first language, so that misunderstandings could be immediately clarified.

Extraordinary stability in promoters' job tenure is the result of careful selection and systematic training in the use of PTAMC methodology--step two of the methodology. Enthusiasm for PTAMC was expressed by all five promoters interviewed. Further, the methodological step of selection and training has been developed to the point that when new promoters are hired, they are easily integrated.

##### Management Structure by USAID

Flexibility, in both project design and implementation, have been key in project success. Front-loading a project in the design phase may allow for efficient implementation and monitoring where clear guidelines and prior experience exists. In the case of this centrally-funded project, however, one purpose was to develop an effective project design and test it. The many questions raised by the Bolivia mission during the planning stage might have discouraged or deflected the project, but the LAC WID officer and the WID program officer in Bolivia were critical advocactes who worked with CIM to refine and improve project design and implementation.

### Project Flexibility

PTAMC projects have characteristics which often cause women's projects to "misbehave:" they are small, situation-specific, and use limited financial and technical resources (Buvinic, 1984: 4). Yet, in the highly unstable contexts of the projects, the risk reduction strategies employed have proven effective. Successful community projects keep a strong focus on economic goals. But at the same time, organizational aspects are crucial to keeping profits in the community with the women and their families. Multiple interventions with long term, multiple objectives contradict some of the conditions for successful project implementation identified by Cleaves (1980). For PTAMC, flexibility within a broad structure of concern for both social welfare and economic goals accounts for project success in some communities and failure in others.

Flexible provision of capital to enterprises that also utilize community capital has been important in acquiring inputs and infrastructure. By using mechanisms other than credit, which is usually highly subsidized in development projects, PTAMC was able to rapidly process requests and effectively monitor project implementation. This undoubtedly reduced the costs of administering capital for PTAMC. Targeting capital to organized groups has an important equity effect (Hunt, 1985: 16).

The intermittent nature of the labor demands of the income generating projects more nearly fits the needs of peasant women actively involved in agricultural production than do projects with higher profit margins but more regular demands on women's time.

Project flexibility has been important in allowing PTAMC to survive military and civilian governments and protectionist and free market ideologies in both countries. Abrupt shifts in exchange rates, tariff policies, and import rules and regulations occurred in both countries, providing a difficult setting for all business ventures and often disproportionately affecting the poor. PTAMC's ability to remain viable and non-political in the midst of such change is remarkable.

### Creating, Rather than Redistributing Resources

In some WID projects, men assume that if women gain, they must lose. By focusing on community efforts and including men, PTAMC, has avoided this zero-sum situation. Neither has PTAMC addressed class problems of resource redistribution, which in either country would have politicized the project unnecessarily. The only actors who have lost because of the project are intermediaries -- typical villains in peasant societies.

Despite PTAMC's attempts to include men, gender jealousies have sometimes been generated. Men in several communities asked for men's projects to parallel the women's projects; in one community, men tried to subvert women's successful economic activity by denying them access to communal land.

Two major national institutions have chosen to institutionalize the PTAMC methodology. IBTA in Bolivia and FODERUMA in Ecuador are incorporating women and women's groups into ongoing institutional programs to make better use of limited government resources without adding a new program or redirecting scarce resources to new goals.

Good National and International Linkages

Unlike many women's projects (Buvinic, 1984:15), PTAMC has successfully sought linkages to similar groups and to groups that have resources to offer the women's groups within the countries in which they are located. The prestige of being connected with the OAS has undoubtedly helped. These linkages, which have been systematically cultivated by

PTAMC country directors, have enabled PTAMC to be an effective intermediary between women's groups and available resources. Linkages to mainstream development projects may ultimately institutionalize PTAMC, not as a project but as an approach to integrated rural development.

Another important result of these linkages is the increasing role of PTAMC as trainers for other development workers, such as the promoters of the Church-sponsored Center Maria de la Esperanza in Esmeraldas, Ecuador, and IBTA agents in different regions of Bolivia.

#### Community Participation

PTAMC has worked to avoid the paternalism common in community development projects by ensuring that communities also provide inputs. In a memorandum of agreement with PTAMC, each community agrees to provide 1) monthly contributions (quotas) from each member of the organization at a rate decided by the membership; 2) local construction materials; 3) labor for community construction projects; and 4) time devoted for training by each member. Where communities have not delivered these inputs, projects have not been successful. However, to avoid paternalism, community participation must go beyond provision of labor and materials to participation in decision-making. In some cases, distribution of profits and approval of projects are done with community input. In other particularly in Ecuador, PTAMC tends to present projects to the community for ratification, rather than systematically analyzing costs, benefits and alternatives with community members.

#### Project Weaknesses

### Too Much Spread

The flexibility that has allowed the methodology to develop might prove a weakness in further implementation and institutionalization. The flexible methodology works well among small holders in highly solidary communities, particularly when they are linked to larger integrated rural development efforts. But new applications in urban areas, among landless workers, etc., may be premature without specific and explicit analysis on how the methodology should be altered to fit the different social and economic conditions.

Lack of secure funding has led PTAMC in both countries to try to diversify in order to insert itself in funded projects. This is understandable, but tends to dilute PTAMC efforts.

### Lack of Appropriate Accounting Procedures

In both countries, only cash flow is recorded. There is no accounting for assets or evaluation of profitability for particular sub-projects within communities. Substantial attention should be given to developing appropriate capital accounting procedures, understandable by semi-literate women, as aids in organizational management and decision making processes. For example, a coffee roasting project in subtropical Ecuador had never calculated costs and benefits per bag of coffee sold. Upon calculating such costs with organizational members, we found that they were making less than four Ecuadorian cents per bag, without counting the costs of labor and transportation or discounting the wear and tear on the machinery, particularly the coffee grinder that regularly needed repairs and preventative maintenance. (When these calculations were made, it was clear that money was actually lost.) Volume was not high enough to make such a project profitable being in terms of return to labor.

### Lack of Business Training of Staff

The staff originally hired were strong in educational and organizational techniques, and, in Ecuador, had extensive training in handicrafts. Their rural backgrounds have also enabled the women promoters to teach agricultural technology effectively. However, promoters lack training in appropriate market survey techniques and in teaching entrepreneurial skills. PTAMC has called upon available experts in agricultural technology, appropriate technology for home and farm use, and development of transformation industries, but expertise in the area of peasant entrepreneurship is lacking.

### Limited Financial Resources

In both countries, the project was underfunded in the institutionalization period. In the first stage, during which the methodology was developed and the manuals written, the low supervisor to staff ratio was necessary. However, with institutionalization, country directors could have handled three or four times as many promoters but did not because of inadequate funding.

### Conclusions

Creating full time work was never a goal of PTAMC, which aims at increasing women's participation in rural development processes and in community decision-making. The focus is less on providing productive activities which address the need for women to have their own sources of income than on promoting the active participation of women in efforts to raise the overall development level of the community (Myers, 1983: 6).

In well selected communities which are chosen based on PTAMC criteria and which have gone through the nine steps of the methodology and where a cross section of women and men participate in the women's organization, such organizations have proven effective in 1) transferring agricultural

technology to women and men; 2) relating that agriculture technology to collective enterprises that decrease expenses and provide income for the organization; 3) increasing women's income, less through paying for labor than through providing a stable local market for the raw materials, including milk and wool, that women produce; and 4) increasing the status of women in the community, at least according to the accounts of the women and men involved.

The strength of the methodology and its appeal to women and men in the communities of the highlands and the subtropic areas lies in 1) its insistence on self-help and community participation; 2) defining appropriate technology in terms of the environmental, social and economic context, which included a recognition that economic shifts can make one technology more appropriate than another at different points in time; 3) focusing on women, but including men; 4) including both social and economic ends, which provide maximum organizational flexibility and maximum effectiveness.

Problems still exist. An accounting system that is both simple but allows for the inclusion of assets as well as cash should be devised and implemented. Indicators of individual and community well-being need to be derived, both for the project itself and for the communities to be better able to judge the impact of the various actions in which they engage. And, in Bolivia, funding for the project staff is still to be defined, as well as linkage to any regional organization, which helped nurture and develop the initial methodology.

On balance the projects implemented, the organizations formed, and the methodology developed have 1) served broad development goals, 2) met the productive and reproductive needs of women, 3) generated effective organizations, and 4) proven replicable in other areas with similar characteristics.

The project has been cost effective in that changes in community well being can be identified in a majority of the 55 communities where PTAMC has operated in the two countries.

## Appendix I Evaluation Methodology

The evaluation of PTAMC community organizations and the projects each organization developed is based on analysis of the diagnostic studies of the communities carried out by PTMAC at project initiation, PTMAC promoters' monthly reports during the three years of the first stage of the project, country director reports, internal PTMAC documents evaluating the first stage of the project, extensive interviews with promoters, country directors, and the regional director, and field visits in Bolivia and Ecuador to 13 communities of initial project activity and 6 communities where project activity was implemented during the institutionalization stage. During the field visits, carried out in May 1985, meetings were held with community organizations. Members described the plans, development, successes, and problems of the organization. Account books were analyzed as to methodology used and the cost and gains from each specific project (as best could be calculated given the high rate of inflation). The organizations' minutes were reviewed, projects visited, and, to the degree that time permitted, individual men and women were informally interviewed.

Analysis of the institutionalization stage was carried out by reading the AID mission and government documentation available, interviewing AID personnel and government officials in each country, analyzing the manuals produced, and interviewing CIM in Washington, D.C. No documentation on the institutionalization stage of the project was available in the LAC files. Observation of interactions, signed agreements with private and public government entities, and interviews with other entities with similar projects in each country contributed to analysis of this stage.

At the community level, I analyzed the account books in order to calculate costs and earnings of each project the community undertook, as well as returns to members. There were few records of the capital investments made by PTMAC or the counterpart national agencies. Costs are approximate, given the methods of disbursement and radical changes in local currencies. CIM has not separated country costs from regional costs, which should be further broken down into institutionalization versus expansion costs. It was therefore not possible to properly allocate cost to each community project, beyond initial capital outlay for specific infrastructure construction or equipment acquisition, and even those data are incomplete. Because the projects had time-saving, income replacing, and health increasing components that were at least equal in importance to the micro-projects aimed at income generation, cost benefit analysis was further complicated.

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