INNOVATIVE APPROACHES TO AGRICULTURAL EXTENSION:

AN OVERVIEW OF AID EXPERIENCE

Gerald M. Britan, Ph.D.

AID/PPC/CDIE

May 1987

TABLE OF CONTENTS

In his 1985 speech at Michigan State University, Administrator M. Peter McPherson outlined AID's evolving extension strategy. While noting that AID has reduced its "initial emphasis on extension as a primary means of increasing agricultural production," Administrator McPherson argued that more targeted extension efforts have a continuing role in agricultural development. He particularly emphasized the potential of innovative extension techniques--mobilizing the private sector, applying modern mass communications, and selectively strengthening public extension--to more effectively transfer improved agricultural technology to farmers in the developing world.

This study examines the development of AID's extension strategy in relation to the activities of other donors, the history of U.S. extension, and the wider extension literature. In particular, it assesses AID's experience with innovative extension approaches based on an analysis of documentary information from 266 extension projects intiated between 1975 and 1984. The study found that

- Most of AID's extension activities during the past ten years have sought to strengthen existing extension systems or create parallel extension organizations through relatively traditional training and technical assistance.

- Despite AID's experience with local participation and agricultural cooperatives, and despite the historical involvement of farmers' groups in U.S. extension, few of AID's extension activities have focused on farmer organizations or farmer self-help.

- AID's earlier emphasis on providing decentralized extension services through agricultural universities may warrant reconsideration. Recent Impact Evaluations of Agricultural Higher Education suggest that AID played a key role in establishing successful agricultural research and teaching institutions in a number of countries. While few of these universities yet provide major extension services, they now offer a solid academic base for future technology transfer activities.

- Many of AID's extension activities seek to improve extension performance without clearly articulating how planned improvements relate to broader agricultural development strategies and processes. Extension is only one constraint, and usually not the most critical, to agricultural growth. The impact of extension activities depends on other elements--research results, inputs, policy incentives--in the larger agricultural technology system.

- Although the World Bank's Training and Visit (T&V) extension system has enhanced agricultural productivity in some settings, it has been less effective in countries with heterogeneous agro-ecological conditions. T&V's emphasis on centralized, national extension bureaucracies also seems inconsistent with AID's larger development strategy and involves recurrent costs that are beyond the means of many host countries.

- Recent project documents indicate that a number of more innovative extension activities are now being planned and implemented, but evidence on the nature, effectiveness, and impact of these activities remains sparse. Limited field studies of promising extension projects could therefore provide a useful basis for additional mission guidance.

INTRODUCTION

Although agricultural development has remained a key component of AID's development assistance strategy for more than thirty years, AID's approach to agricultural extension has varied markedly over time. During the 1950's and early 1960's, AID and its predecessors mobilized thousands of extension professionals to establish and expand American-style extension institutions throughout the developing world. After peaking in the early 1960's, however, AID's support for national extension systems declined rapidly. By the early 1970's AID, for the most part, had abandoned its attempts to transfer American extension models directly to third world settings. Instead, AID began emphasizing the dissemination of specific research results, most often as part of geographically focused agricultural and rural development projects.

By the late 1970's, other donors--most notably the World Bank with its training and visit system--had taken the lead in promoting large scale extension system reform. However, AID continued to support a variety of more focused extension activities, initiating more than 1,085 projects with extension components between 1975 and 1984 (See Appendix III). Extension was a major activity in at least 266 of these projects. Between 1980 and 1985 such extension projects received more than $302 million in AID funding (averaging about $50 million per year), representing nearly 7% of the Agency's Agriculture, Rural Development, and Nutrition budget.

During the 1980's, AID's extension portfolio became more diverse and missions began experimenting with new extension approaches involving the private sector, the use of modern mass communications, and the selective strengthening of public extension institutions. The importance of these new extension initiatives was recognized in Administrator McPherson's 1985 speech at Michigan State University and his subsequent worldwide cable to AID missions.

Despite all this activity, many AID officers still perceive extension as "something we used to do." The present paper is intended to dispell this notion and to suggest future extension strategies and priorities. The paper analyses AID's extension experience and relates it to the activities of the World Bank, the development of U.S. extension, and the wider extension literature. It examines, in particular, AID's use of more innovative extension approaches that mobilize private enterprise, mass media, and public bureaucracies to more effectively transfer improved agricultural technologies throughout the developing world.

AID'S EXPERIENCE IN AGRICULTURAL EXTENSION

AID's extension experience falls into two major phases. During the 1950's and 1960's, extension was a high priority and AID provided broad support for the development of national extension systems. By the early 1970's, however, AID had largely abandoned efforts at wider extension system reform and turned to more focused extension initiatives, particularly through geographically targeted agricultural and rural development projects. In the 1980's, a third phase is emerging in which targeted extension system improvements are part of a wider agricultural development strategy that includes support for policy reforms, agricultural research, private sector growth, and rural resource mobilization.

Developing National Extension Systems (1955-1970):

During the decades following the Second World War, most development experts believed that existing Western technology could substantially increase agricultural production in developing countries. The major task, the experts felt, was teaching local farmers to use modern tools and techniques. AID's early agriculture strategy therefore emphasized the development of national extension systems to transfer improved technology to developing country farmers. AID's model--ostensibly at least--was the American land grant system.

In the 1950's and 1960's, AID and its predecessors played a prominent role in expanding extension systems throughout the developing world. Starting nearly from scratch, AID helped create national extension systems in nearly a dozen Latin and Central American countries. Throughout Asia, Africa, and Latin America, AID built new agricultural universities, trained and assisted indigeneous extension workers, expanded national extension systems, and provided direct extension services to farmers.

Many of AID's activities significantly influenced agricultural practices. In Ghana, for example, AID helped initiate rubber production and played a major role in expanding rice cultivation. Throughout the world, AID introduced new crops, modern fertilizers, poultry production, animal traction, and a variety of other agricultural techniques.

Many of the agricultural improvements that AID introduced were never widely adopted, not because extension failed, but because of other constraints to agricultural change. Sometimes improved technologies did not work as experts predicted. Often, complementary inputs--fertilizer, credit, storage, marketing, or processing--were unavailable. Typically, host government policies created adverse economic environments for agriculture, reducing the profitability of farming and diminishing incentives for agricultural growth.

Many of AID's most successful extension activities relied on expatriate technicians who were highly trained, well equipped and supplied, and in high ratio to farmers. Direct-hire AID technicians, living and working in farming communities, were often particularly effective at "focusing and concentrating" extension resources by identifying progressive farmers and using them to demonstrate and disseminate new farming practices. Unfortunately, sustaining such extension services proved well beyond the human and financial resources of most host governments.

Another important element in AID's early extension strategy was support for indigenous agricultural universities which were expected to play key roles in improving local farming practices. In the short term, however, few developing country universities were able to gain sufficient resources or expertise to mount effective extension initiatives. Over the longer-term, the payoff has been more significant. Recent impact evaluations of agricultural higher education suggest that AID's support has been an important factor in the development of successful agricultural research and teaching institutions in a number of countries (for example, see Eriksen et al 1986 and Gamble et al 1986). While few of these universities yet provide major extension services, they now offer a much solider academic base for future extension activities.

By the late 1960's, AID's extension-oriented agricultural development strategy was being increasingly questioned. Few farmers were adopting improved technology and indigenous extension systems were widely perceived as ineffective, inefficient, and irrelevant.

Despite AID's large investment, extension services in most developing countries continued:

- o to be overly centralized and politicized;
- o to have limited contacts with farmers;
- o to have indadequate linkages with researchers, private industry, and other agricultural participants;
- o to rely on poorly trained, inexperienced, and overworked extension agents;
- o to encompass numerous non-extension responsibilities;
- o to use ineffective and outmoded methods; and
- o to have little technology of practical value to offer.

In part, these problems reflected the difficult conditions, limited resources, colonial legacies, inappropriate policies, and inadequate management of host governments. In part, they reflected the inappropriateness of most existing technology--and the absence of much new technology--for developing country agriculture. In part, they also reflected AID's own extension approach--an emphasis on national extension bureaucracies, communications process over technological substance, and an oversimplified view of U.S. extension experience.

Integrating Extension in Rural Development (1970-1981):

The publication of Rice's 1971 report on "Extension in the Andes" marked the end of AID's ambitious attempts at comprehensive extension reform. Rice summed up the failures of AID's support for national extension systems and suggested an alternative strategy grounded in particular programs of agricultural change and rural development. This approach was reflected in numerous extension activities that AID implemented in the 1970's as part of geographically focused agriculture and rural development projects.

Integrated agricultural development projects provided farmers with a coordinated range of inputs and services--marketing, credit, transportation, fertilizer, seeds, and so forth. More ambitious integrated rural development projects added health, education, and social welfare services intended to promote a broader process of social and community growth. Most of these projects included clearly delineated agricultural extension components.

The strengthes and weaknesses of such integrated rural development (IRD) projects are by now well known. They were based on the simple (and often valid) premise that multiple and interconnected social and economic barriers to development had to be simultaneously lowered for growth to occur. Hence, IRD projects sought to provide a range of complementary services through existing public bureaucracies, newly created quasi-public institutions, or private

and voluntary organizations. Often, an overarching development authority was created to coordinate the diverse inputs.

The major failing of most IRD projects was their lack of a technologically sound basis for improving rural incomes. However much services were improved, little sustainable progress could be achieved unless better farming technologies were available for adoption. Effective coordination also proved difficult and many IRD projects failed to deliver the promised range of services: Extension agents visited, but had little useful information to offer. Improved seeds were available, but no fertilizer to grow them. New crops were harvested, but marketing roads remained unbuilt.

Even when IRD projects delivered planned services and provided improved technologies that enhanced the immediate well-being of beneficiaries, their long-term impact was often minimal. Most host governments simply lacked the resources to maintain project services or to replicate them elsewhere. As a result, when project funding ended new organizations and services often just evaporated (See Kumar 1986).

Still, a number of IRD projects did increase agricultural production and income in particular geographic areas. They demonstrated that poor, small farmers would alter their agricultural practices when appropriate information and services were provided. They showed the effectiveness of PVO's in reaching the poorest and most isolated farmers. They created special, geographically focused extension

units that effectively transmitted agricultural knowledge. IRD projects did not, however, improve national extension institutions or provide a sustainable basis for broader agricultural improvement.

During the 1970's and early 1980's, some AID projects continued to focus on national extension systems. Rather than seeking broad extension reform, however, most of these projects sought to selectively strengthen existing extension institutions by providing training, technical assistance, equipment, and commodities. While a few projects included innovative mass media, private industry, or institutional linkage components, most accepted existing extension structures and practices as givens. Many improved human resources

on the margins, but most ignored deeper problems of extension systems that remained overstaffed, undertrained, poorly focused, and out of touch with farmers and researchers.

An Overview of AID's Extension Portfolio (1975-1984):

A search of AID's Development Information System (DIS) identified 1,065 projects initiated between 1975 and 1984 that included at least some agricultural extension activities. An initial examination of project summaries revealed 386 projects in which extension appeared to be a major concern. A more detailed review of project documents eliminated 120 additional cases in which extension components were either too indirect or in which the primary orientation was towards agricultural research. A descriptive analysis of available documents for the remaining 266 projects revealed a diverse extension portfolio covering a wide range of project emphases.

The scope of the vast majority of the 266 projects (81.5%) was on extension activities within a single country. However, this ranged from projects operating in a single locale (e.g., establishing a new extension center in northeast Thailand) to projects supporting entire national extension systems (for example, in Malawi). Another 8% of the projects had a multinational focus (for example, the Eastern Caribbean), while 5.7% covered all developing countries (primarily centrally managed Science and Technology activities). About 3.3% of the projects were conducted entirely within U.S.

universities, another 1.1% were conducted within international institutions (such as IRRI), and for one project (.4% of the cases) the scope of activity could not be determined. (See Table 1)

The choice of implementing organization--the entity directly responsible for conducting project activities--strongly favored governmental institutions. More than 64% of the projects were implemented by national government entities, including line ministries, departments, and offices. Private voluntary organizations (PVO's) implemented 13.5% of the projects, universities implemented 7.0%, and quasi-independent institutes implemented 5.6%. For three projects (1.1%) the implementing organization could not be determined from available documents. (See Chart 2)

Nearly half of the projects focused on improving the institutional capabilities of implementing organizations. In this regard, about one-third of the projects provided support for existing extension services, while 16.5% established new extension centers or programs. While various national government organizations remained the primary implementers of extension projects throughout the period, emphasis shifted over time towards increased use of PVO's.

Relatively traditional approaches towards improving public extension predominated during the 1975-1984 period (See Tables 3 and 4). The major extension component in most projects (56%) was short-term technical training for extension agents, subject-matter specialists,

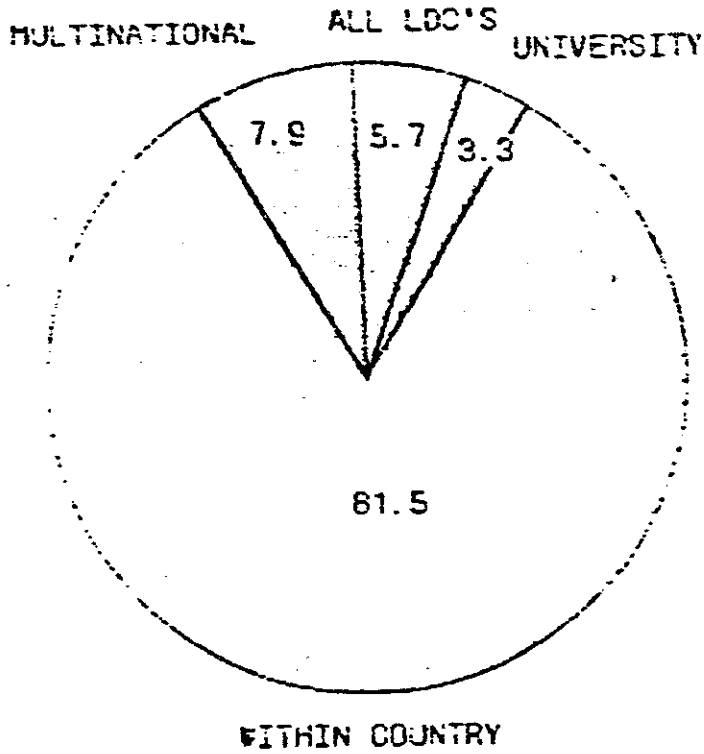
MULTINATIONAL
ALL LDC'S
UNIVERSITY
7.9
5.7
3.3
81.5
WITHIN COUNTRY

CHART ONE

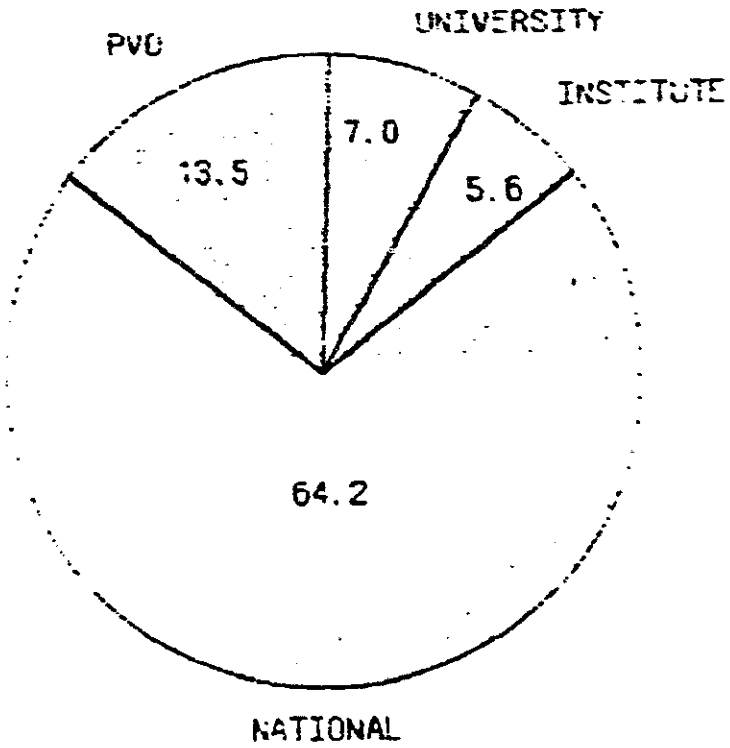

CHART TWO

AGRICULTURAL EXTENSION (%)

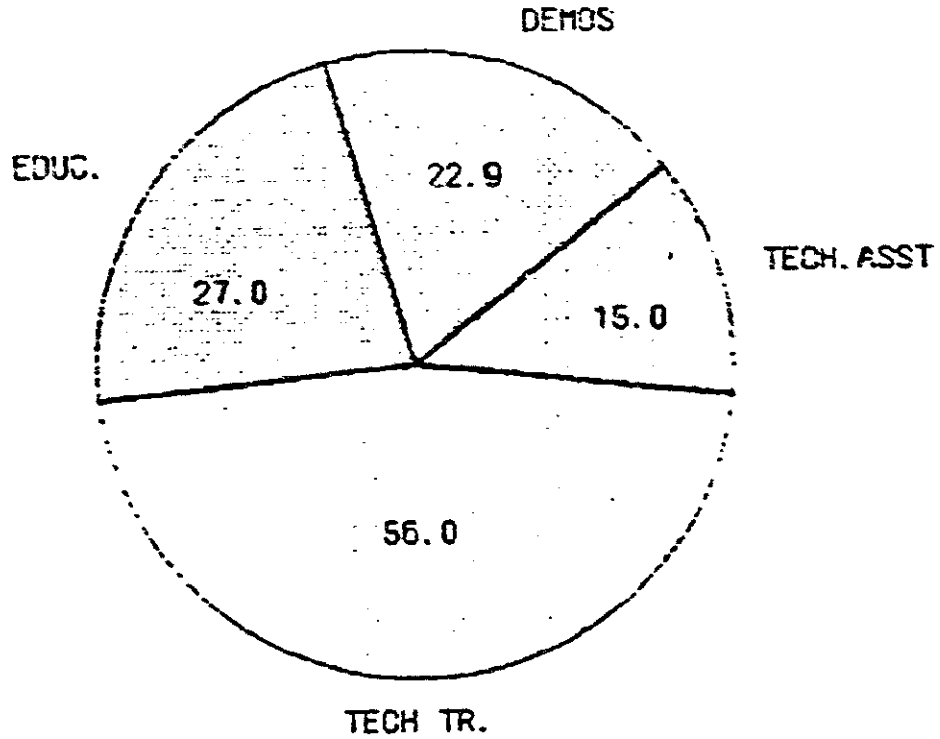

CHART THREE

AGRICULTURAL EXTENSION (%)

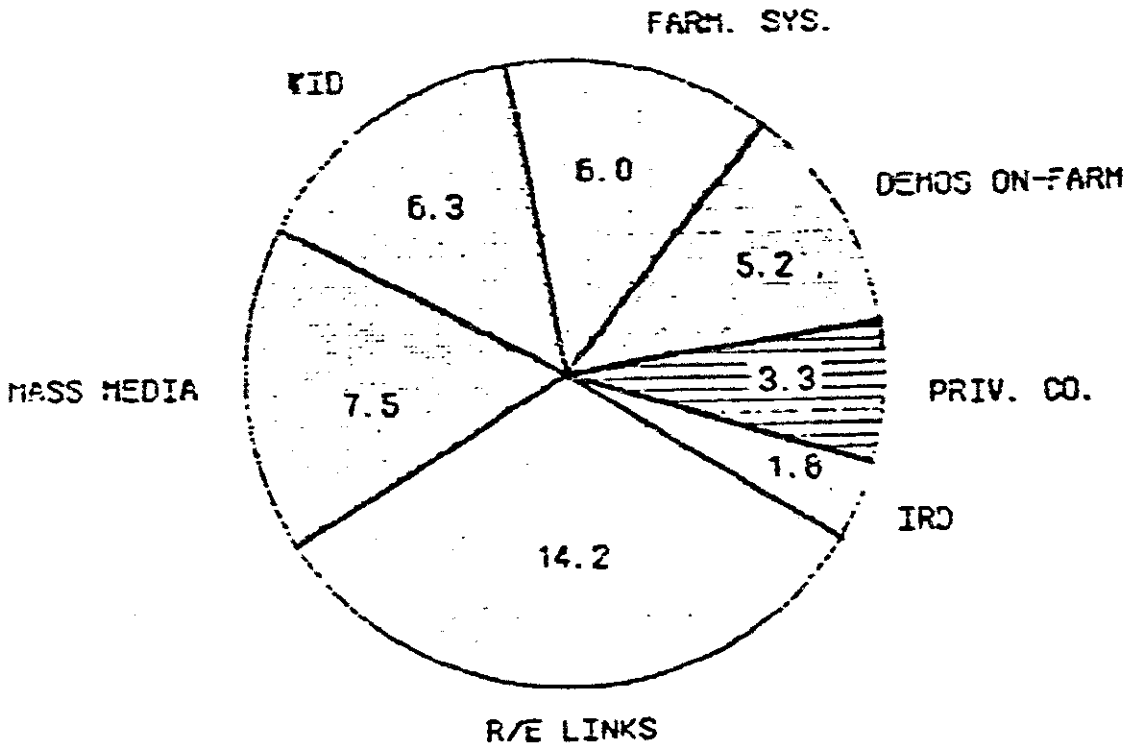

CHART FOUR

and farmers. The second most common component, utilized in 27% of the projects, was formal education for extension workers. Demonstrations of new farming techniques at universities or research institutes were conducted in nearly 23% of the projects, while various forms of direct technical assistance were provided in 15% of the cases. (Since many projects utilized more than one method or approach, the percentages sum to more than 100%.)

Relatively few projects included innovative extension activities. The most common approach, utilized in 14.2% of the cases, involved attempts to improve research and extension (R&E) coordination, usually through new organizational structures or committees. About 7.5% of the projects included mass media (usually print media) components. Just over 6% of the projects included activities specifically oriented towards the needs of female farmers. Another 6% of the projects implemented some kind of farming systems research and extension approach, while "on-farm" demonstrations were used in 5.2% of the projects. Private firms were involved in only nine projects (3.3%). In all, only 65 of the 266 projects (24.4%) made use of what could be considered "innovative" extension approaches.

Extension in the '80's:

During the 1980's, AID has recognized that extension alone will not increase agricultural production unless new technologies are developed, complementary inputs are available, and appropriate economic incentives are in place. AID has therefore increasing

promoted policy changes that improve the larger economic environment for agricultural growth by increasing the profitability of farming. At the same time, AID has also invested more heavily in agricultural research, particularly in Africa, to ensure that appropriate new technologies are developed. And AID has addressed the broader process of technology management, working to ensure that all of the factors necessary for agricultural change are available.

Within this framework, extension still has an important role to play as part of a sustainable technology transfer system. AID, today, rarely supports geographically focused extension activities, which may benefit specific farmer groups, but which cannot be replicated or maintained. Nor does AID often support large-scale extension system reform, given the high costs and bureaucratic constraints, and the greater pay-offs from other agricultural investments.

AID's recent extension activities have sought to improve the efficiency and effectiveness of extension within the larger technology transfer process. Over the past five years, AID has continued to support selective improvements in public extension

institutions, particularly the increased use of mass communications technology. AID has also sought to more effectively mobilize private sector involvement in agricultural extension activities. AID has not yet, however, clearly delineated what public sector extension improvements are most desirable or how private sector participation can best be increased.

INNOVATIVE APPROACHES TO AGRICULTURAL EXTENSION

In his opening address at the Michigan State University Conference on "The International Role of Extension," on March 31, 1985, AID Administrator M. Peter McPherson noted that

> In the face of harsh realities in developing countries, and based upon a better understanding of our own evolutionary experience, the initial AID emphasis on extension as a primary means of increasing agricultural production has been substantially modified. Recognizing that improved technology is simply not available in many cases, we have increased our support for research. There are now relatively few AID projects that focus exclusively on organized public extension efforts. We are [now] exploring several new approaches intended to test the effectiveness of technology transfer to Third World farmers.

Administrator McPherson went on to outline an extension strategy emphasizing support for private sector initiatives, the use of mass media techniques, and the selective strengthening of public extension institutions.

During the summer of 1985, AID's Working Group on Agricultural Technology Management began examining ways in which AID missions could implement these recommendations. The Working Group examined a wide range of extension activities conducted by AID, other donors,

host governments, and non-governmental organizations, and prepared a report outlining a number of new extension opportunities. The major findings of this report are summarized below.

Stimulating Private Sector Extension:

The agricultural private sector is extremely diverse, encompassing individual small farmers and vast corporate estates; itinerant tool peddlers and multinational manufacturers; farmer self-help groups, cooperatives, and industry associations. Despite their differences, all of these enterprises share a common market orientation, striving to make profits, or at least break even, by selling goods and services. Private sector organizations become involved in extension either to increase their profits, enhance their survivability, or provide other economic benefits for their members and owners.

Successful private sector extension requires appropriate host government policies (including an economic and regulatory environment that allows private firms to set competitive prices and obtain acceptable returns), adequate infrastructure, and supportive public agencies. Even so, the private sector's role in extension remains circumscribed. Private firms are oriented primarily towards commodities that can be sold profitably in cash markets and are more likely to provide extension services when they are selling products for which they have a competitive edge because of patent, trade secret, or marketing advantages. Private firms are also more likely to promote higher cost inputs--hybrid seeds, chemical fertilizers,

and machines--that produce higher value commodities. Within these limitations, however, private firms have important extension roles to play.

One of the most common reasons that private firms become involved in extension is to promote the sales of their products. Private producers in developing countries, as in the United States, often provide information to help farmers take maximum advantage of the products (seeds, fertilizers, tools, and services) they are selling. Sometimes private firms will promote a broader range of improved farming practices intended to increase the overall security and income of their farm household customers. Numerous examples of such private sector extension can be found all over the world. In Thailand, for example, a private seed company provided farmers with extensive extension support in marketing new rice varieties developed through AID-funded research. In Indonesia, farm machinery and service providers supplied farmers with a variety of information on mechanized farming techniques. Similar extension services have been provided by agricultural feed companies, fertilizer providers, cooperatives, and credit institutions throughout the world.

Private firms also become involved in agricultural extension in order to ensure the quality and supply of the agricultural commodities they process and market. In some countries, large agribusinesses have organized groups of small farmers to whom they sell inputs, offer credit, and provide technical advice, and from whom they purchase crops. Sometimes these activities involve

independent satelite farms, sometimes corporately owned agribusiness cores, and sometimes just loosely organized farmer groups. Often, extension services include a range of food and subsistence crops as well as industrial agribusiness commodities. Examples include ALCOSA vegetable processing and marketing in Guatemala, CBIAC vegetable production in the Dominican Republic, AMUL dairy operations in India, PINAR milk processing in Turkey, CHAROEN POHPHAND pig raising in Thailand, BOODER sugar processing in Kenya, and BRITISH-AMERICAN TOBACCO operations in Kenya, Sri Lanka, and elsehwere.

Another reason that private firms provide extension services is to develop and protect their farm investments. Commercial banks, farmer cooperatives, producer organizations, and farmer self-help groups that provide credit to farmers may also provide extension services. Examples include the Agricultural Development Bank in Northeastern Thailand (an IFAD/World Bank project), the National Rice Growers Federation in Colombia, the CEPLAC cocoa producers organization in Brazil, and the FONAGRO cotton and corn producers association in Peru.

In numerous other situations where private sector organizations lack sufficient incentives or resources to provide extension services alone, they can still usefully complement public extension activities or provide contracted services more efficiently. Private firms, for example, sometimes cooperate in joint training programs with public agencies or provide corporate sponsorship for academic

programs. PVO's and NGO's are often hired by public extension agencies or local development authorities to provide specialized extension services to particular target populations. Another, thus far untested, extension approach would use local merchants and itinerant peddlers to disseminate extension information, particularly to poor farmers in isolated locales (see Solem 1985). Finally, private firms can play major roles in extension activities involving mass communications. In the Massagana 99 project in the Philipines, for example, a private firm was hired to conduct a national social marketing campaign aimed at increasing rice production.

While the Working Group cited numerous examples of private sector extension, few of these cases involved AID support. The Working Group noted that "AID's current portfolio includes varied, but isolated, examples of agricultural research, credit, marketing, and extension projects that involve various forms of private sector participation." The Working Group suggested that missions could encourage more future private sector involvement by supporting improved host government policies; making extension training more relevant to private sector needs; funding feasibility studies, investment guarantees, short-term financing, and management consulting; and otherwise encouraging public and private sector cooperation.

Mass Media Extension:

Extension organizations most often disseminate information through direct contacts between extension agents and farmers. While such one-to-one extension services can effectively disseminate new agricultural techniques, they are not particularly cost-effective. AID has therefore supported a number of projects aimed at using mass communications (primarily print and radio) to reach large numbers of farmers simultaneously. However, more sensitive, comprehensive, and better integrated mass communication initiatives could further increase the coverage and impact of extension efforts.

Promising approaches identified by the Working Group include:

- Open Broadcasting. Daily or weekly radio broadcasts of informational programs for farmers are already common in developing countries. With a few exceptions (such as the Developing Countries Farm Radio Network based in Canada), most consist of dull, and mostly irrelevant, studio talks by panels of agricultural technicians. However, open radio and television broadcasting can be an effective extension vehicle, given adequate resources and training and effective coordination with other communication techniques and agricultural services.

- Advertizing and Social Marketing. Social marketing uses mass media advertizing to influence the acceptability of socially beneficial beliefs and to encourage the adoption of socially beneficial practices. In the United States, social marketing has promoted a variety of causes, ranging from increased use of seatbelts to decreased smoking. AID has already applied social marketing to successfully promote contraceptives and oral rehydration therapy throughout the world. With a few exceptions, such as the Massagana 99 campaign in the Philipines, social marketing has rarely been used to pormote new agricultural practices.

- Print Media. Materials such as posters, fliers, manuals, booklets, and newspapers have been used as extension agent handouts, instructional aids, in farm forums, and within advertizing and social marketing campaigns. When used well, print media can provide a graphic reminder of extension messages and have a multiplier effect as messages are passed from hand to hand. Like open broadcasting, however, print media are best used as components of a more comprehensive communications system.

- Multiple Channel Systems: The Campaign. Specific media are best used as part of more comprehensive communications systems involving a variety of information channels, including face-to-face contacts. Some programs have consciously taken advantage of multiple channels by

organizing broad communication campaigns focused on particular issues, such as health, nutrition, family planning, and literacy. Social marketing activities generally fall within this category.

- Multiple Channel Systems: Distance Teaching. Distance teaching generally combines an open broadcasting program with formal instruction using a variety of teaching materials. In its use of multiple communication channels, distance teaching is a calmer corolary to national campaigns. One of the best known uses of distance teaching in agriculture is the INADES-FORMATION program in West Africa, which has provided correspondence programs for extension agents and farmers since 1962.

- Comprehensive Communications Systems. Although there are many examples of piecemeal applications of mass media to agricultural extension, few agricultural programs have developed comprehensive communications systems. One exception is the Basic Village Education project in Guatemala which experimented with a variety of radio, face-to-face contact, farmer forums, and other communications techniques as part of a broad support system for agricultural extension.

Mass communications activities have been included in a variety of extension projects, but rarely as systematically planned

communications components. The Working Group recommended that future extension projects include mass communications as an integral part of project design, use mass communications as a catalyst for change, and draw on a variety of available technical assistance (including in S&T's centrally funded "Communication for Technology Transfer in Agriculture" project) to assess the feasibility of mass communication metnods.

Strengthening Public Extension:

Nearly every developing country has some form of public extension system and public extension institutions will continue to play a major role in agricultural development and change. However, public extension in most developing countries continues to face an adverse environment (inappropriate policies, a lack of "farmer-ready" technology, inadequate inputs, and insufficient infrastructure) and a variety of internal weaknesses (poor linkages with research, inadequate training, limited contact with farmers, insufficient resources, and fragmented authority).

One approach to solving these problems would be to encourage broadly-based extension system reform. However, despite AID's early attempts to establish effective university-based systems, extension in most developing countries remains centralized in ineffective national bureaucracies. While the World Bank's "Training and Visit" extension system involves extensive management reform, T&V has not yet achieved significant results in Africa and Latin America (see

below). Similarly, AID's efforts to sidestep national bureaucracies through special extension organizations created new problems of sustainability and reintegration. The Working Group concluded that policy dialogue should be AID's primary approach to overall extension system reform.

Since at least the early 1970's, a number of AID projects have focused more narrowly on selectively strengthening public extension institutions. The Working Group concluded that such projects should emphasize efforts to

1. Improve communication, coordination, and cooperation among extension institutions and other important agricultural participants, including researchers and farmers, by

   --linking research and extension through new organizations or multi-agency planning groups;

   --applying the farming systems research and extension approach; and

   --linking the private sector with extension by including private farmers and agribusinesses as major contributors in planning, coordinating, and implementing public extension activities.

2. Develop human resources by providing formal education, on-the-job training, or technical assistance to enhance the skills, training, and experience of extension agents and managers.

3. Improve the mix of extension methods and complement traditional one-to-one extension agent/farmer contacts by

   --making better use of extension volunteers and paraprofessionals;

   --initiating direct farmer-to-farmer exchanges;

   --utilizing mass communications, including radio, film, print, and other organized communication campaigns (including social marketing techniques), to reach large audiences at low cost; and

   --using modern information techniques (microcomputers and specialized agricultural information databases) to get more accurate and relevant information to extension agents in the field.

4. Organize farmers to help themselves through farmers organizations; cooperatives; credit societies; water user associations; and other groupings based on gender, age or other common characteristics.

The Working Group also listed typical public extension problems and suggested specific activities that AID could support to alleviate them. However, the Working Group emphasized that any efforts to strengthen public extension should be based on prior assessments of agricultural development prospects and realistic expectations that targeted improvements would produce meaningful results.

Remaining Questions:

Extension is only one element, and rarely the most critical element, in agricultural development. The impact of extension on agricultural production depends not only on the quality of extension, but also on the characteristics of the larger agricultural system. Effective extension may accelerate growth, but successful agricultural development also requires appropriate government policies, improved technologies, functioning markets, available inputs, and sufficient farmer motivation. The Working Group emphasized that extension activities should only be supported as part of a broader agricultural development strategy based on a careful assessment of wider opportunities for agricultural growth.

Although the Working Group provided interesting descriptions of innovative extension practices, few of the examples involved AID projects. As we have seen, relatively few of the extension projects AID initiated between 1975 and 1984 included innovative components. Indeed, an in-depth analysis of a sample of "innovative" projects revealed that most, upon closer examination, were far less

innovative than summary documents suggested (see Appendix I for project descriptions). It is not surprising, therefore, that the Working Group provided only limited practical guidance for mission action and left many unanswered questions about the specific kinds of innovative extension activities AID should support.

A number of more recent AID projects--generally at the design or early implementation stage--do propose more innovative private sector and mass media activities (see Appendix II for project abstracts). Although these projects thus far have only very limited documentation (e.g., project papers), brief case studies (including short site visits) could well provide useful information for further mission guidance.

OTHER EXTENSION EXPERIENCE

Agricultural Extension in the United States

According to conventional wisdom, AID's efforts to transfer American extension approaches overseas failed because the land-grant model simply does not work in developing countries. In fact, most of the extension systems that AID supported differed dramatically from extension in the United States. American extension never involved the kind of centralized, national bureaucracies characteristic of most developing countries, nor was American extension a vehicle for imposing progress on resistant or ill-informed farmers. Rather, the development and application of agricultural science in the United States was accomplished through a unique partnership among federal, state, and local governments--a decentralized research and extension system encompassing federal laboratories, land-grant universities, extension offices, farmers, and a variety of other public and private institutions.

The federal government plays an important, but not a dominant role in this agricultural research and extension system. The nearly billion dollar USDA Science ard Education budget represents only a relatively small portion of America's total annual investment in scientific agriculture. Indeed, most federal funds are used to support state and local research and extension activities that are only loosely monitored by the federal bureaucracy. This is

especially true for the cooperative extension system, which employs about 200 federal professionals, but includes nearly 10,000 state and local extension agents and more than a million extension volunteers.

Organized attempts to diffuse and apply scientific agriculture have a long history in the United States that far predates the establishment of a national agricultural research and extension system. Until the twentieth century, these agricultural extension activities remained the responsibility of independent state and local groups. Initially, these groups were dominated by larger and wealthier farmers, but America's smaller farmers were also pioneers who believed in their capacity for self-improvement. During the first half of the 19th century, their local agricultural fairs become forums for exchanging new methods and ideas. Soon, grass roots agricultural improvement societies were springing up, especially among increasingly prosperous farmers in the northeast and north central states (Scott 1970:10). Agricultural education and self-study became popular and hundreds of agricultural journals and newsletters were founded (Goodwin 1980:1185, Waggoner 1976:222-23). By 1858, the United States contained more than 900 local agricultural societies (Scott 1970:11).

Although state boards of agricultural were established in some regions to meet farmers' demands for better information, a separate federal department of agriculture was only created with the passage of the Morrill act in 1862. The Morrill Act also gave each state an

acreage of federal land which would provide the income to support a college or university of agriculture. The American land grant system was born.

It would be more than 50 years, however, before a nation-wide program of agricultural extension would become a part of this system. Indeed, few of the new agricultural colleges offered much that was of immediate practical value to farmers and many commentators viewed the first 20 years of the land-grant experiment as a disappointing failure: "With few exceptions, enrollments in agriculture were so small as to be almost nonexistent, faculties were weak and often incompetent, and even enthusiasts could not agree as to what should be taught" (Scott 1970:27). It was not until the final years of the 19th century, especially after passage of the Hatch Act in 1887 providing funds for state agricultural experiment stations, that research oriented agricultural universities emerged. Meanwhile, farmers were organizing themselves, and much of the later shape of agricultural extension reflected this political activity.

For American farmers, the later half of the 19th century was an era of rising populist discontent. As the frontier expanded, more people began farming more acreage, more intensively, with more mechanical equipment, and total agricultural production rose sharply. Unfortunately, prices fell even faster. Soon farmers began organizing to protest their difficulties. In less than 10 years, the National Grange grew to 750,000 members. During the 1880's and 1890's, the Farmers' Alliance grew even faster.

By the end of the 19th century, most of this populist anger had abated and the Farmers' Alliance and the National Grange refocused their attention on rural self-improvement and education. Reading circles and libraries were established throughout the countryside, agricultural fairs increased in popularity, and the number of farm journals grew rapidly. One byproduct of this new found interest in education was the growth of Agricultural Institutes--traveling lectures that placed agricultural experts in direct contact with everyday farmers. This "Institute Movement" gained increasing momentum in the 1890's. By the turn of the century, agricultural institutes were being held all over the country, often under the sponsorship of State Agriculture Departments and land-grant universities.

By 1913, more than 3 million people were participating in Institutes across the country each year (Scott 1970:105). Local programs were increasing coordinated with regional and state-wide efforts--including seminars at agricultural colleges, "corn clubs," and special interest groups. Seed companies, equipment manufacturers, railroads, and other agricultural participants were sponsoring "institutes" as well. The stage was set for the development of a more formal national extension system.

Although the early 20th century saw major advances in agricultural science, little information was being transferred effectively to the broad mass of farmers. Land grant colleges and state experiment stations were devoting increasing resources to original research, but

had little funding for extension and farmer education. Although state and federal scientists generated hundreds of research bulletins, most were ignored by practicing farmers. Indeed, as in much of the developing world today, a large portion of these farmers remained illiterate (Bittner n.d.). While the Institute Movement brought agricultural scientists into the countryside, farmers remained skeptical about the practical value of the recommendations they heard. Soon, however, a number of new extension initiatives emerged that demonstrated the practical benefits of scientific agriculture to a much larger audience of farmers.

One of the first large-scale agricultural extension efforts was Seaman A. Knapp's emergency program to control the threat of the cotton weevil in the South beginning in 1903. Although the cotton weevil could not be eliminated with available technology, USDA researchers developed new cropping practices that minimized its spread and impact. To be effective, however, the practices had to be adopted by large numbers of poor, ill-informed, and often illiterate farmers. Knapp built upon his earlier experience with experimental farms to recruit a team of local agents who began a series of "demonstrations" with local farmers themselves.

The experiment was a resounding success. Knapp's program gained wide publicity and rapid increases in funding. The new extension system, with county agents at least partly supported by local resources, spread throughout the South and Southeast. As the system grew in size, it also expanded in scope, focusing on a wider range

of farming problems and developing programs and clubs for rural boys and girls.

Meanwhile, more affluent farmers in the Eastern and North Central states continued to demand more and better information. In 1905, the USDA established an Office of Farm Management, headed by William J. Spellman, to develop demonstration projects in these regions in cooperation with State Experiment Stations. Soon, Spellman and the State Experiment Stations began enlisting district agents to work directly with farmers. By 1912, these agents were being placed in individual counties with the bulk of their salaries paid locally.

Most of the pressure to hire county agents came from local farmers. In 1911, for example, in what is often cited as the first application of the modern extension approach, the "Farm Bureau" in Binghampton, New York, hired a recent agricultural graduate from Cornell University to help diffuse innovations to farmers. Part of the agent's salary was paid by the local railroad and part was paid through donations from farmers. Soon these donations were institutionalized as annual memberships in the local farm bureau (see Rogers 1976:22).

Practical demonstrations by local extension agents proved far more effective at diffusing agricultural innovations than farmer's institutes, lecturers, or publications. In 1914, Congress passed the Smith-Lever Act, combining Knapp's and Spellman's offices and formalizing the basis for continuing cooperation among federal,

state, and local extension efforts. Over the next few years, county agents (and supporting farm bureaus) spread across the country. By 1920 more than two-thirds of America's 3,150 counties had at least one extension agent; by 1935 virtually every county was covered.

From the beginning, funds for extension came from federal, state, and local sources through a variety of matching arrangements. Over time, the federal share of extension funding has increased (initially local sources predominated), although federal funding still remains substantially less than state and local contributions. Beginning in the mid-1930's, extension activities also began to expand substantially beyond production agriculture. By the late 1960's, extension had become deeply involved in more general community development, home economics, financial planning, and even urban services. The number of state level "subject matter specialists" also grew, and now nearly equals the numbers of county agents. Over time, the extension service has increasingly emphasized its expertise not in farming per se, but in the "technology" of technology transfer.

The mature U.S. agricultural extension system to which AID turned in the 1950's and 1960's, differed greatly from the extension system that existed at earlier stages in America's agricultural development. Many of the features that AID borrowed from this mature system--an emphasis on communication techniques, community development, subject matter expertize, and non-production topics--were appropriate to mid-20th century America, but less

relevant to the developing world. When these extension approaches were coupled with weak research institutions, top-down planning, overly centralized bureaucracies, inadequate inputs, and limited markets, it is not surprising that "American extension" failed in most of the developing world.

At the same time, many of the features that enabled extension to play a key role in American agricultural growth received less emphasis in developing countries. These include:

- High levels of farmer participation and farmer self-help, including substantial local payment of extension costs;
- Strong local farmer control over extension agents;
- Strong farmer demand for agricultural innovations;
- An existing mass of improved technology and apppropriate institutions for generating new technology;
- An emphasis on practical, on-farm demonstrations; and
- Participation by a wide range of agricultural groups, including farmers, extension agents, researchers, universities, cooperatives, local governments, and private industry.

The World Bank's Training and Visit System

Just when AID was abandoning large-scale extension efforts in the early 1970's, the World Bank was beginning a major new extension initiative. Pioneered by Daniel Benor in India, the "Training and Visit" system (T&V), as it came to be called, recognized that extension in most developing countries offered little of value to farmers and that broad reforms were needed. T&V emphasized improved management at all extension levels, regular training for extension agents, frequent scheduled visits to farmers, and specific technical recommendations to increase agricultural productivity and farm incomes. This would be accomplished through a hierarchically organized extension bureaucracy focused solely on improving agricultural practices.

Key features of the Training and Visit system include (adapted from Benor & Baxter 1984: 8-11):

- A Field and Farmer Orientation. The T&V approach mobilizes a large number of "Village Extension Workers" (VEWs) and assistants who are in direct contact with farmers. Farmers are divided into groups and each group is visited by a VEW on a fixed schedule once every two weeks. Extension workers at higher levels--subject matter specialists, researchers, trainers, district extension officers, and senior staff, are also expected to vist the field often.

Reporting requirements are kept to a minimum to ensure that time in the field is spent productively.

- Regular and Continuous Training. Each Village Extension Worker participates in a regular training program with district subject matter specialists once every two weeks. At this session extension agents are taught specific technical recommendations ("impact points") to pass on to farmers over the next two weeks. The training sessions also provide an opportunity for Village Extension Workers to discuss recommendations, modify them to fit local conditions, bring special farming problems to the attention of subject matter specialists and researchers, and learn about new research findings. Subject matter specialists provide this training to about ten different groups of VEWs each fortnight. Zone, district, and subdivisional extension officers and subject matter specialists participate in similar training sessions and in workshops with researchers each month.

- Specific Technical Messages and Time-bound Work. Village Extension Workers provide farmers with specific technical recommendations ("impact points") every two weeks. Recommendations for each area are taught to Subject Matter Specialists at regular monthly workshops and passed on to Village Extension Workers at fortnightly training sessions.

- Linkages with Research. Subject Matter Specialists and senior extension staff communicate farmers' problems to researchers for investigation and solution. Extension and research staff participate in seasonal and monthly workshops and joint field trips to ensure that production recommendations are modified, as necessary, to make best use of specific local environments and farming resources.

- Concentration of Effort. All extension staff work only on agricultural extension. All extension staff perform specific duties that are intended to complement the activities of extension workers at other levels. Each staff position has has its own clearly defined and realistic job responsibilities, without duplication of effort, aimed at supporting Village Extension Workers. VEWs concentrate solely on agriculture, and only on those crops and practices that are relevant to a particular season and locality. Through training, attention is concentrated on a few major recommendations aimed at increasing production and overcoming specific constraints that farmers face.

- Single Line of Command. T&V extension is organized under a single line of technical and administrative command, commonly within a Ministry or Department of Agriculture. The line of command normally extends from a Director of Agriculture, through the Director of Extension (and senior

Subject Matter Specialists), Zone Extension Officers, District Extension Officers (and district Subject Matter Specialists), Subdivisional Extension Officers (and Subject Matter Specialists), Agricultural Extension Officers, Village Extension Officers, and contact farmers. Although support is required from teaching, research, and agricultural service organizations, extension workers are responsible to a unit within only one department, which should be solely accountable for the operation of the extension system.

- o Professionalism All of the previous characteristics define extension as a professional organization, with well trained workers, well informed about current research, able to relate to farmers and communicate their problems, and with sufficient resources and support to provide farmers with appropriate advice.

By the mid-1970's, World Bank sponsored T&V extension claimed remarkable success in increasing agricultural productivity and farmer incomes in India and parts of Asia. During the late 1970's and 1980's, however, as experiments with T&V diffused more widely, claims became more muted. T&V, it seemed, was proving more difficult to implement successfully in Latin America and Africa.

Variations in success have reflected, at least in part, differences in the agricultural systems in which T&V has been implemented. In

India and Asia, where field crops such as wheat, maize, and rice predominate, agricultural conditions are relatively uniform across large geographic areas, and recommendations developed at the national or regional level were relevant to large numbers of farmers. In Africa and Latin America, on the other hand, agriculture is characterized by a wide range of crops adapted to a diverse micro-environments. In these regions centralized extension bureaucracies, even better managed ones, have found it exceedingly difficult to develop specific technical recommendations tailored to the wide variety of farming systems and problems.

Cost has also been a factor. While large numbers of field agents, a manageable ratio of agents to farmers, and adequate support services may be desirable, many countries cannot afford them. As a result, "modified" T&V systems, with fewer, less mobile, agents, serving larger numbers of farmers have become the rule rather than the exception.

T&V has also faced difficult organizational problems in establishing responsive bureaucracies in countries with long histories of bureaucratic inertia and overcentralization. Not surprisingly, many newly reorganized extension systems continue to respond sluggishly to farmer needs, lack current research information, and ignore local farming conditions. In Malawi, for example, extension recommendations must be approved by a single national review board, which requires two to three years for deliberations, before they can be disseminated through the modified T&V system.

Finally, T&V systems are explicitly designed to deliver a relatively small number of specific technical messages to farmers. Despite planners' intentions, Village Extension Workers tend to learn these messages by rote. And, it has proven very difficult for centralized T&V bureaucracies to encourage extension agents to respond flexibly to the needs of local farmers.

T&V seeks to make inefficient and ineffective extension systems more relevant and better managed. T&V begins by assuming that extension should be the responsibility of a national extension bureaucracy. T&V's goal is to improve extension management so that centrally determined farming recommendations can be disseminated more effectively.

An alternative extension approach would place greater emphasis on farmer participation and farmer demand. This would require extension agents who were more independent and more responsive to local farmers. It would require regional agricultural universities that combine research and extension capabilities in working directly with farmers. It would encompass farming systems research, bottom-up planning, private sector participation, and limited central coordination. It would not concentrate on reforming national extension bureaucracies, but rather on developing a decentralized extension system, more affordable to host governments, more in tune with AID's experience and expertise, and more closely resembling American extension as it historically evolved.

SUMMARY AND CONCLUSIONS

The initial goal of this study was to identify replicable models for innovative extension activities based on a review of AID's documented extension experience. This goal, unfortunately, has not been realized. The documentary evidence did not reveal much in the way of past innovative extension activity and most new extension initiatives have not yet been routinely reported or evaluated. While the extension report prepared by the Agricultural Technology Management Working Group suggested some interesting approaches, it provided few examples based on AID experience and only limited guidance for mission action.

Overall, our review of AID's extension experience found that:

- Most of AID's extension activities during the past ten years have sought to strengthen existing extension systems or create parallel extension organizations through relatively traditional training and technical assistance activities.

- Despite AID's experience with local participation and agricultural cooperatives, and despite the historical involvement of farmers' groups in U.S. extension, few of AID's extension activities have focused on farmer organizations or farmer self-help.

- AID's earlier emphasis on providing decentralized extension services through agricultural universities may warrant reconsideration. Recent Impact Evaluations of Agricultural Higher Education suggest that AID played a key role in establishing successful agricultural research and teaching institutions in a number of countries. While few of these universities yet provide major extension services, they now offer a solid academic base for future technology transfer activities.

- Many of AID's extension activities seek to improve extension performance without clearly articulating how planned improvements relate to broader agricultural development strategies and processes. Extension is only one constraint, and usually not the most critical, to agricultural growth. The impact of extension activities depends on other elements--research results, inputs, policy incentives--in the larger agricultural technology system.

- Although the World Bank's Training and Visit (T&V) extension system has enhanced agricultural productivity in some settings, it has been less effective in countries with heterogeneous agro-ecological conditions. T&V's emphasis on centralized, national extension bureaucracies seems inconsistent with AID's larger development strategy and involves recurrent costs that are beyond the means of many host countries.

- Recent project documents indicate that a number of more innovative extension activities are now being planned and implemented, but evidence on the nature, effectiveness, and impact of these activities remains sparse. Limited field studies of promising extension projects could provide a useful basis for additional mission guidance.

REFERENCES CITED

[TO BE COMPLETED]

APPENDIX I

EXAMPLES OF "INNOVATIVE" EXTENSION PROJECTS

Our analysis of AID's extension portfolio indicated that only a relatively small proportion of the projects initiated between 1975 and 1984 included innovative extension components. Based on a preliminary review of project abstracts, twenty-nine more "innovative" projects were chosen for further study. However, many of these projects were still being implemented, had not been evaluated, or lacked crucial information. Only eight projects had sufficient documentation available from the Development Information System to permit an adequate assessment. This small number of well-documented projects reflects, at least in part, lags in project reporting. Many innovative extension activities (including farming systems research and private sector initiatives) have only been initiated within the past few years and few documents, other than design papers, are available. Appendix II contains abstracts of some of the most interesting recent projects for which only limited documentation was available.

Given the small size of the sample, projects were analyzed individually and cannot be considered representative of more general extension approaches. The projects did, however, encompass a range of innovative extension activities: three included mass media components, seven sought to strengthen research and extension linkages, two focused on women in development, and one involved a private company. Upon closer examination, however, nearly all proved less innovative than summary documents suggested.

Aquaculture Development in Egypt (#2630064)

(Period: 1978-1984; LOP Cost: $27,500,000)

This project sought to increase capabilities for sustained development of the Egyptian fish farming industry through improved institutions for planning and coordination, applied research, training, and extension. The project included four main components aimed at selectively strengthen public extension: 1) the establishment of a new National Aquaculture Center to coordinate aquaculture research and extension activities; 2) the establishment of a National Committee for Aquaculture development; 3) the establishment of demonstration aquaculture plots to educate farmers and serve as models for fish farming expansion; and 4) the development of formal and informal extension training programs that would support the establishment of an additional 5,000 feddans of fish farms throughout the Sharkia-Ismalia area.

Unfortunately, the project encountered severe implementation problems. By 1982, four years after initiation, the project was already two years behind schedule. Construction of the Aquaculture Center was just beginning and planned technical assistance was not yet being provided. Indeed, a 1982 audit report recommended that the project be terminated if implementation problems could not be resolved quickly. By early 1986, the project was still being implemented, but was falling further behind schedule. Thus far, little, if any, improvement in research and extension coordination has been realized.

Fish Production System Development in Jamaica (#5320059)

(Time Period: 1979-1984; LOP Cost: $4,107,000)

This project sought to increase food production, income and employment by establishing a regional training program in fish production. The project's major extension components included short and long-term training for 90 new extension agents, training in fish production for 920 farmers, advanced aquaculture training for 45 students at the Jamaica School of Agriculture, and establishment of a fish hatchery/demonstration facility with 20 acres of ponds.

Overall, this aquaculture project accomplished a great deal more--especially in terms of production--than the Egyptian project. By the mid-term evaluation, 450 new fish farms were operating and many additional farmers had applied for assistance. However, the project's extension components did experience problems, raising questions about how essential extension really is in this kind of technology transfer. For example, only 49% of the farmers targeted for direct training prior to the mid-term evaluation--the most innovative extension element--actually received training. Formal education for extension agents lagged even further behind schedule, and the primary training facility, the Jamaican School of Agriculture, had closed. Yet farmer demand for aquaculture was high, fingerling production facilities were well established (in part, through an earlier project), and fingerling distribution to farmers was proceeding ahead of schedule.

Education Media for Women in the LAC Region (#5980574)
(Project Period: 1978-1983; LOP Cost: $845,000)

This project sought to increase agricultural participation by low-income rural women by developing and testing a systematic approach to providing these women with farming, marketing, agricultural services, and food processing information. The implementing agency (the Interamerican Institute of Agricultural Sciences (IICA)) was expected to gather baseline data on how rural women received agricultural information and to use this information to develop improved communications strategies (particularly using mass media) for reaching them.

The project was proceeding successfully, in some respects, by its mid-term evaluation. According to a 1980 Project Evaluation Summary (PES), initial field surveys in the Dominican Republic indicated that "appropriate new economic activities for women were developed, promotional visits and training meetings were held, and necessary supplies were distributed." However, the original mass media focus of the project had been abandoned. The PES noted that IICA did not fully appreciate the project's intention to explore low-cost media based extension strategies. As a result, an IICA project manager was hired who did not have media experience and a site was selected in which farm women had little access to media. Indeed, according to the mid-term evaluation, the project field manager "persistently argues that communication media cannot teach effectively." Thus, while the project successfully focused extension activities on women, it failed to test innovative communication strategies.

Agro-industrial Export Development in Honduras (#5220120)
(Time Period: 1976-1981; LOP Cost $1,700,000)

This project sought to involve private companies in developing and marketing agricultural export products, particularly processed and fresh fruits and vegetables, by providing training and technical assistance both for farmers and agribusinesses. Although the project's extension components were not particularly strong, this was the only project that included well-documented private sector extension activities.

The private company selected to develop the processed vegetable component of the project was Mejores Alimentos. Phase I of this component called for farmers to plant 325 hectares of tomatoes under contract for sale to Majores Alimentos at a fixed price. Production credit would be disbursed directly from the National Development Bank. Technical assistance was to be provided by a team composed of AID contractors, Majores Alimentos employees, and GOH extension agents.

This component of the project was plagued with problems from the start. When implementation began in 1977, only one Mejores Alimentos' specialist had any experience growing tomatoes and few participating farmers had ever grown the crop. Farmers were required to buy inputs from Mehores Alimentos (the National Development Bank was billed directly) and to pay for transporting tomatoes to the company's plant. Losses in the first year were heavy, farmers waited up to two years for payment, and

implementation ground to a halt. According to the mid-term evaluation, the major problems were that farmers bore all of the risks of expanding tomato production and the company was not sufficiently committed to AID's goals of assisting small farmers and promoting exports.

The project's fresh vegetable production component fared better. After experimenting with a variety of crops, the Standard Fruit Company successfully contracted with small farmers to grow cucumbers for export. However, the number of participating farmers was only a fraction of those envisioned in the project paper. The final evaluation also criticized Standard Fruit (and the Government of Honduras) for providing insufficient technical assistance, training, and extension to small farmer producers.

This project showed that successful private sector extension for small farmers requires a "hands-on committment by the core company and intensive managerial, technical, and field-level supervision" (Agricultural Technology Working Group 1986). This, in turn, means that a company must participate in extension not merely as a project contractor, but because the company sees a long-term interest--and profit--in providing extension services. This committment was lacking in the case of Mejores Alimentos and weak even in the case of Standard Fruit.

Nonformal Vocational Education in Thailand (#4930295)

(Time Period: 1980-1983; LOP Cost $500,000)

This project sought to strengthen public extension institutions in an economically depressed area of Thailand. The most innovative aspects of the project involved the use of mobile extension teams, the development of new audiovisual materials, and the use of indigenous settlers/trainers as extension channels. Although the project paper viewed the use of such settlers/trainers as "new and frankly experimental," Thailand has a long history of volunteerism among the rural poor. The project, unfortunately, failed to achieve most of its goals, and was terminated ahead of schedule.

According to the Project Audit Report, major problems included:

1) reluctance on the part of many Thai officials to accept the concept of non-formal education for trainers/settlers and farmers;
2) lack of commitment by the Director of the Northeast Regional Training Center to the project;
3) failure to utilize the mobile teams as originally planned to train local settlers/farmers; and
4) development of curricula and texts that were too complex to be easily understood by farmers.

Without a final project evaluation, it is impossible to determine why mobile teams were not utilized as intended or how training materials were inappropriate. This makes it difficult to gauge the potential of similar efforts to mobilize local farmers as extension participants.

Integrated Regional Rural Development in Jamaica (#5320046)
(Time period: 1977-1984; LOP Cost $15,000,000)

This project sought to improve the standard of living of farmers in Jamaica by providing improved agricultural services, roads, housing, electricity, and water. In particular, the project sought to develop and diffuse new farming techniques that could increase agricultural production and control soil erosion on small hillside farms in the Pindar/Two Meetings Watersheds. The project included a major component intended to establish a "model" extension system encompassing a farming systems perspective, improved coordination with research, and increased farmer participation.

In the first phase of the project thirty extension agents were trained, particularly on technical topics related to soil erosion control. After this training was completed, five demonstration and training centers and fifty small-farm subcenters were to be established to demonstrate the benefits of land terracing and multiple and continuous cropping techniques. Extension agents were expected to assist participating farmers in developing farm plans and selecting and using appropriate crop and cultivation methods. The extension agents were also expected to advise farmer organizations, such as the Jamaica Agricultural Society and the People's Cooperative Banks, and to work closely with farming systems research specialists.

According to the 1980 evaluation, although the project met some of its soil erosion goals, it failed to achieve its broader extension

aims. Indeed, overtime the project became increasingly oriented towards soil conservation issues, while information on agricultural production techniques remained deficient. As the evaluation noted, "what must be understood and continually repeated, is that this is supposed to be a development project with a strong soil conservation component, not a soil conservation project with development aspirations.

The major criticism of the project involved the "de-linking" of research and extension components." According to the evaluation, researchers were "developing their own agenda while extension activities proceed apart." Although extension agents were helping farmers treat their land for soil erosion, they were providing little if any information about other farming improvements, credit availability, or marketing opportunities. Extension agents also failed to make a serious effort to work with small farmer organizations or to encourage their participation in the project.

Adaptive Crop Research and Extension in Sierra Leone (#6360102)

(Time Period: 1978-1987; LOP Cost $9,000,000)

This project sought to increase smallholder productivity by developing a food crop adaptive research and extension system more responsive to the needs of rural smallholders. It included major components intended to strengthen public extension institutions by establishing a cooperative research and extension center, training extension workers, disseminating more appropriate farming technologies, and completing a ten year countrywide research/extension plan. One of the main objectives of the project was to "develop an efficient and effective extension system that can be replicated throughout Sierra Leone."

The project sought to actively involve rural smallholders in the research and extension process and to directly link research and extension activities. More than 675 farmers were selected to receive field demonstrations of new farming techniques and crops. An additional 20,000 farmers were provided with "minikits" consisting of planing material/seeds, cuttings, fertilizer, and cultivation instructions. To support these activities, thirty extension technicians were to be trained in field data collection, cropping systems, basic agronomic studies, soil fertility, farm management, and extension communication techniques. The project included a mass media component (radio farm forums and the development of audiovisual materials) as well as activities specifically targeted at female smallholders.

A midterm evaluation in 1982 found that while data collection activities were proceeding as planned, the lack of coordination between research and extension was worrysome. However, a project audit report in October of 1984 was much more optimistic. Despite labor shortages, insufficient storage facilities, and crop losses from insects and pests, the project had:

- fielded a U.S. technical assistance team that was providing effective support for local research institutions and coordination with international centers;
- trained 50 extension agents and established an extension system to transfer research results to farmers;
- involved 675 farmers in research and demonstration of new crops and techniques; and
- distributed minikits to nearly 20,000 additional farmers.

The project was criticized, however, for insufficient monitoring and evaluation. Although the 675 participants in on-farm trials had substantial increases in farm yields, no comparisons were made with farmers outside the program. Nor was information collected on the experience of the 20,000 farmers who had received minikits. Following the audit report, a study of farmers who received minikits was initiated. The project does appear to have increased agricultural production, but little information is available concerning the project's innovative farming systems, research coordination, or on-farm testing components.

Senegal Cereals Production II (#6850235)

(Time Period: 1979-1984; LOP Cost:)

This project sought to increase agricultural productivity to help Senegal meet long-range food self-sufficiency goals and to improve the well-being of farm families. The project followed a major cereal production project implemented during the 1970's. When the new project was initiated there was still substantial disagreement within AID whether the earlier project had achieved its goal of increased millet production.

One of the primary aims of Senegal Cereals Production II was to strengthen public extension by improving research/extension links, targeting extension services to female farmers, using more effective mass communication techniques, and upgrading the skills of extension staff. One major component was the establishment of an audiovisual center to develop more effective extension materials. Despite some construction delays, the audiovisual center was producing a variety of improved extension materials by project completion.

Another major project component was the establishment of a "Women in Development" (WID) extension unit. Although the WID component was merged with other extension activities early in implementation, the mid-term evaluation noted that initiatives targeted at women--communal fields, sheap fattening, woodlots, and poultry raising--were proceeding effectively. However, a later Impact Evaluation report concluded that these activities were less than

fully successful, in part because the USAID project manager "tended to neglect the WID component."

Although the project was intended to train extension workers in agricultural topics, the implementing agency (SODEVA) reoriented this training towards functional literacy. In any case, the training component had little impact on the quality of extension messages or the effectiveness of extension activities.

In the end, Senegal Cereals Production II failed to achieve its goal of increased millet production. External conditions were major factors, including poor rainfall, high input prices, and insufficient availability of credit and fertilizer. According to the midterm evaluation "the supply system for the factors of production and the agricultural product purchasing organization virtually disappeared" during the course of the project. However, the project's implementing agency also experienced extensive personnel turnover and had serious conflicts with AID over financing. Although the project ultimately produced some agricultural radio programs, tightened research and extension links, and developed better extension materials, implementation problems prevented most extension messages from reaching targeted farmers.

The Technology Development and Information Feedback Systems in Agriculture (#)

(Time Period: 1984-1988; LOP Cost: $1,732,000)

Although this project was not included in the original sample, it has a direct bearing on the development of new extension initiatives. The project, implemented by the International Program in Agricultural Knowledge Systems (INTERPAKS) at the University of Illinois, was intended to develop guidelines for "model" extension systems based on assessments of extension practice in the field. INTERPAKS quickly decided, however, that a single "model" of agricultural extension would not be appropriate in all settings and that extension was only one factor in transferring improved agricultural technology. The project was therefore refocused to develop a diagnostic tool for broader assessments of agricultural technology transfer systems in developing countries.

At this stage, a preliminary diagnostic model has been developed and is being field tested. While the model's specific criteria (publications per researcher, farmers per extension agent, percentages of gross agricultural product spent on research and

APPENDIX II

ABSTRACTS OF RECENT INNOVATIVE EXTENSION PROJECTS

The following relatively recent projects include some of the most interesting uses of innovative extension techniques. However, the documentation available from the Development Information System is generally limited to design papers. These projects would be good candidates for limited site visits to gain additional information for mission guidance.

Agricultural Extension II: West Indies-Eastern Caribbean (#5380068); 1982-1986

This follow-on implements plans developed in project 5380017 to upgrade agricultural extension systems in six Eastern Caribbean States and Belize and to strengthen regional institutions supporting such systems. The project is being conducted by the Midwest Universities Consortium for International Activities (MUCIA) and the University of the West Indies (UWI). The project will provide a wide range of academic and inservice training and subregional workshops for all levels of extension staff. Research and extension linkages will be promoted through a Technical Joint Action Committee, composed of representives from the project, the UWI, and two regional research organizations and through a Regional Coordinating Committee composed of representatives from countries, regional organizations, private commodity associations, farmers, and donors. The project will also establish extension communications

and information units within each country and a Regional Extension Communications Unit at the UWI. Private sector extension institutions will participate widely and a number of specific activities will be developed to strengthen farmer and private sector involvment in extension planning. An amendment of 4/2/86 extended the project for 35 monthes, with particular emphasis on supporting frontline extension of location-specific farming systems and technologies.

Farming Systems R&D (West Indies-Eastern Caribbean Regional) (#5380099); 1983-1988.

This project seeks to develop an effective and sustainable farming systems research and development program responsive to the agricultural needs of participating countries. The implementing agency, the Caribbean Agricultural Research and Development Institute (CARDI), will work with public and private extension organizations (especially the Caribbean Agricultural Extension Program (CAEP)) and participating Ministries to develop a joint and systematic approach to transfering improved technologies throughout the region. A related project, St. Vincent Agricultural Development (#5380101), implemented by CARDI, the St. Vincent Ministry of Trade and the Organization for Rural Development, is using a farming systems approach to identify and disseminate optimum levels of fertilizer use and other cultural practices to farmers.

Seed Development II: Thailand

(#4930326); 1982-1987.

This follow-on to project 4930270 seeks to improve the access of Thai farmers to high-quality seed by improving the institutional capacities of the Department of Agricultural Extension's Seed Division and by supporting private sector seed development, promotion, and marketing efforts. Seed Division personnel will train 500 extensionists in seed awareness, and seed centers will prepare mass media campaigns in coordination with the private sector to promote seed awareness among farmers.

Farming Systems Research: Tanzania

(#6210156); 1982-1986.

This project seeks to increase food production in Tanzania by introducing an adaptive farming systems research (FSR) system and improving linkages between agricultural research and extension institutions. The project was expected to train 20 FSR officers and establish FSR programs in three major ecological areas comprising 15 of Tanzanias 82 districts. The FSR programs would conduct farmer surveys and FSR trials in 60 villages representing 54,000 farmers and develop 13-17 "technology packages" that would be extended directly to 18,000 farmers.

Highlands Agricultural Development: Jordan

(#2780264); 1985-1992

This project seeks to stimulate agricultural development in Jordan's highland areas through applied research, extension, and institutional development. The project will build a National Center for Agricultural Research and Technology Transfer (NCARTT) and four Regional Agricultural Service Centers, which will work with NCARTT to diffuse new crop and livestock technologies to farmers. Extension activities include organized on-farm demonstrations of new technologies and technical assistance to encourage participation by the Jordan Cooperative Association, the Agricultural Credit Corporation, and a variety of private agro-enterprises. At the institutional level, the project will form a public/private Agricultural Development Council to coordinate agricultural policy, research, and extension activities.

Diversified Agricultural Research: Sri Lanka

(#3830058); 1984-1992

This project seeks to strengthen the institutional capacity of the Sri Lankan Department of Agriculture (DOA) by upgrading the DOA's research, extension, and management capabilities and improving its seed production and distribution activities. DOA extension activities will be expanded to cover both subsidiary field crop and farming systems research approaches. Long and short-term training will be provided for extension subject matter specialists, including enhanced use of the farm broadcasting program and other mass media.

The project also seeks to improve private sector seed production and distribution capabilities.

Fertilizer Distribution Improvement II: Bangladesh

(#3880060); 1984-1989

This follow-on to project 3880024 seeks to increase fertilizer use in Bangladesh by encouraging the development of large-scale private sector fertilizer wholesalers, increasing marketing and distribution efficiency, and supporting dealer development/sales promotion efforts. The project will also support the Bangladesh Agricultural Development Corporation's Dealer Development and Training Program, aimed at increasing retailers technical fertilizer knowledge and their ability to advise farmers on fertilizer use. This will include semiannual 2-day courses for 21,000 fertilizer dealers, the creation of fertilizer demonstration plots, and technical assistance in producing and distributing promotional materials.

Rural Technology Transfer System: Educador

(#5180032); 1980-1988

This project seeks to promote the transfer of rural technology in Ecuador by developing a national-level "Rural Technology Transfer System" and by undertaking other activities aimed at developing and disseminating appropriate rural technologies. An amendment in FY 1986 revised the project strategy to place greater emphasis on the use of private sector technology development and transfer mechanisms. The project is being implemented with the assistance of a U.S. Title XII University.

Coffee Leaf Rust Control: Ecuador

(#5180054); 1986-1988

This project seeks to mitigate the impact of leaf rust on coffee production in Ecuador by introducing improved production technologies on small coffee farms. The project is intended to help the private sector National Federation of Coffee Cooperatives develop demonstration plots and an extension service, provide credit for renovation and nursery loans, and improve its members' administrative capabilities.

Agricultural Outreach Development: Haiti

(#5210187); 1987-1995

This developing project is intended to strengthen private and public sector agricultural extension institutions in Haiti and to implement a series of extension activities oriented towards improving small farm incomes. No other information is yet available.

Agricultural Research Foundation: Honduras

(#5220249); 1984-1994

This project seeks to make Honduran agricultural research more responsive to the needs of farmers by supporting the development of a newly created private, non-profit Honduran Agricultural Research Foundation (FHIA). When fully established, the FHIA will conduct project-related research and establish outreach and technical service programs. To improve technology dissemination, an FHIA

Communications and Development Directorate will establish links to national and international agricultural research institutions; producer, processing, trade, and other private sector entities; the National Extension Service; and potential funding sources. The Directorate and the Ministry of Natural Resources (MNR) will co-establish a modern National Agricultural Communications Network that will produce materials in various media; improve the training of FHIA, MNR, and private sector extensionists; and develop a computerized research data and information service.

Agricultural Technology Transformation: Peru

(#5270282); 1987-1991

This follow-on to projects 5270192/0238 seeks to upgrade Peru's agricultural technology system by strengthening private and public sector agricultural research, extension, and educational institutions. The project will provide training and other inputs to improve academic and nonacademic teaching at the National Agrarian University and selected regional agricultural Universities and to improve the technical and managerial efficiency of the National Institute for Agricultural Research and Promotion. The project will also support a variety of technology generation and transfer efforts by farmer organizations and agribusinesses.

Seed Development II: Thailand

(#4930326); 1982-1987.

This follow-on to project 4930270 seeks to improve the access of Thai farmers to high-quality seed by improving the institutional capacities of the Department of Agricultural Extension's Seed Division and by supporting private sector seed development, promotion, and marketing efforts. Seed Division personnel will train 500 extensionists in seed awareness, and seed centers will prepare mass media campaigns in coordination with the private sector to promote seed awareness among farmers.

Farming Systems Research: Tanzania

(#6210156); 1982-1986.

This project seeks to increase food production in Tanzania by introducing an adaptive farming systems research (FSR) system and improving linkages between agricultural research and extension institutions. The project was expected to train 20 FSR officers and establish FSR programs in three major ecological areas comprising 15 of Tanzanias 82 districts. The FSR programs would conduct farmer surveys and FSR trials in 60 villages representing 54,000 farmers and develop 13-17 "technology packages" that would be extended directly to 18,000 farmers.

Highlands Agricultural Development: Jordan

(#2780264); 1985-1992

This project seeks to stimulate agricultural development in Jordan's highland areas through applied research, extension, and institutional development. The project will build a National Center for Agricultural Research and Technology Transfer (NCARTT) and four Regional Agricultural Service Centers, which will work with NCARTT to diffuse new crop and livestock technologies to farmers. Extension activities include organized on-farm demonstrations of new technologies and technical assistance to encourage participation by the Jordan Cooperative Association, the Agricultural Credit Corporation, and a variety of private agro-enterprises. At the institutional level, the project will form a public/private Agricultural Development Council to coordinate agricultural policy, research, and extension activities.

Diversified Agricultural Research: Sri Lanka

(#3830058); 1984-1992

This project seeks to strengthen the institutional capacity of the Sri Lankan Department of Agriculture (DOA) by upgrading the DOA's research, extension, and management capabilities and improving its seed production and distribution activities. DOA extension activities will be expanded to cover both subsidiary field crop and farming systems research approaches. Long and short-term training will be provided for extension subject matter specialists, including enhanced use of the farm broadcasting program and other mass media.

The project also seeks to improve private sector seed production and distribution capabilities.

Fertilizer Distribution Improvement II: Bangladesh
(#3880060); 1984-1989

This follow-on to project 3880024 seeks to increase fertilizer use in Bangladesh by encouraging the development of large-scale private sector fertilizer wholesalers, increasing marketing and distribution efficiency, and supporting dealer development/sales promotion efforts. The project will also support the Bangladesh Agricultural Development Corporation's Dealer Development and Training Program, aimed at increasing retailers technical fertilizer knowledge and their ability to advise farmers on fertilizer use. This will include semiannual 2-day courses for 21,000 fertilizer dealers, the creation of fertilizer demonstration plots, and technical assistance in producing and distributing promotional materials.

Rural Technology Transfer System: Educador
(#5180032); 1980-1988

This project seeks to promote the transfer of rural technology in Ecuador by developing a national-level "Rural Technology Transfer System" and by undertaking other activities aimed at developing and disseminating appropriate rural technologies. An amendment in FY 1986 revised the project strategy to place greater emphasis on the use of private sector technology development and transfer mechanisms. The project is being implemented with the assistance of a U.S. Title XII University.

Coffee Leaf Rust Control: Ecuador

(#5180054); 1986-1988

This project seeks to mitigate the impact of leaf rust on coffee production in Ecuador by introducing improved production technologies on small coffee farms. The project is intended to help the private sector National Federation of Coffee Cooperatives develop demonstration plots and an extension service, provide credit for renovation and nursery loans, and improve its members' administrative capabilities.

Agricultural Outreach Development: Haiti

(#5210187); 1987-1995

This developing project is intended to strengthen private and public sector agricultural extension institutions in Haiti and to implement a series of extension activities oriented towards improving small farm incomes. No other information is yet available.

Agricultural Research Foundation: Honduras

(#5220249); 1984-1994

This project seeks to make Honduran agricultural research more responsive to the needs of farmers by supporting the development of a newly created private, non-profit Honduran Agricultural Research Foundation (FHIA). When fully established, the FHIA will conduct project-related research and establish outreach and technical service programs. To improve technology dissemination, an FHIA

Communications and Development Directorate will establish links to national and international agricultural research institutions; producer, processing, trade, and other private sector entities; the National Extension Service; and potential funding sources. The Directorate and the Ministry of Natural Resources (MNR) will co-establish a modern National Agricultural Communications Network that will produce materials in various media; improve the training of FHIA, MNR, and private sector extensionists; and develop a computerized research data and information service.

Agricultural Technology Transformation: Peru

(#5270282); 1987-1991

This follow-on to projects 5270192/0238 seeks to upgrade Peru's agricultural technology system by strengthening private and public sector agricultural research, extension, and educational institutions. The project will provide training and other inputs to improve academic and nonacademic teaching at the National Agrarian University and selected regional agricultural Universities and to improve the technical and managerial efficiency of the National Institute for Agricultural Research and Promotion. The project will also support a variety of technology generation and transfer efforts by farmer organizations and agribusinesses.

APPENDIX III

CATEGORIZATION OF 1065 AID EXTENSION PROJECTS

EXTENSION PROJECTS

OI ID	COUNTRY	PROJECT NAME	COST (m $US)	SCOPE	IMPLEMENTING ORG.	PURPOSE	APPROACH	ORGANIZATIONAL LEVEL
630027	Egypt	Rice research	9 23.767	National	Government	Training farmers and extension agents	Tech. training/ Demos on farm	Support
630084	Egypt	Aquaculture Development	9 27.500	National	Government	Training fishermen / extension agents	Technical training and demonstrations	New organization
630070	Egypt	Major Cereals	9 47.000	National	Government	Improved R/E	Strength. ext. service, pilot ext. prog.	Support and new programs
630036	Egypt	Small Scale Ag. Activities	9 1.700	National	Government	Training farmers/ profes/ ext. agents	Formal educ. training on farm demos.	New extension programs
780241	Jordan	Jordan Valley Ag. Services	9 5.620	National	Government	Training farmers / ext. agents	Demos on farm, mass-media/ tech training	Support and new centers
780019	Yemen	Poultry Development	9 1.920	National	Government	Training farmers, ext. agents R/E Links	Demos/tech training	New centers
780030	Yemen	Sorghum and Millet Crop Imp.	9 3.300	National	Government	Improved R/E/ Training professionals	Technical assistance	New center
780052	Yemen	Ag. Development Support	9 41.333	National	Government	Training farmers/ profes/ ext agents	Demos/ Technical training	
660163	Afghanistan	Integrated Wheat Development	9 4.370	National	Government	Training farmers/ ext. agents. R/E	Demos, on-farm/tech training	New center
670102	Nepal	Institute of Ag. and Animal Sci.	9 5.484	Institute	Institute	Education and training professionals	Formal education	Support
670102	Nepal	Institute of Ag and Animal Science	9 5.484	Institute	Institute	Educ and training profs / ext. agents	Educ and tech. training	Support
670114	Nepal	Integrated Cereals	9 8.730	National	Government	Training farmers/profs/ext. agents	Demos, on farm/tech training	New center
670132	Nepal	Resource Center and Util. (Sub)	9 27.498	National	Government	Training extension agents/WID	Tech training	Support
670132	Nepal	Resource Cons. and Utilization	9 27.498	National	Govt/Univ	Educ and training ext. agents/ WID	Tech training	
670143	Nepal	Institute of Agriculture II	9 0	University	Univ/Institute	Training professionals/ ext. agents	Formal educ/ tech training	Support
630049	Sri Lanka	Agricultural Educ. Development	9 7.500	University	Univ/Institute	Training professionals	Formal educ and tech. training	Support
000475	India	Madhya Pradesh Social Forestry	9 14.000	National	Government	Training villagers/ profs/ ext. agents	Training/ educ/ inputs (e.g. trees)	New organization/ Support
000479	India	Maharashtra Social Forestry	9 38.000	National	Government	Ext. of R/E unit, training villagers	Tech asst. and training	New organization
000481	India	Maharashtra Irrig. Tech and Mgmt	9 47.000	National	Government	Training farmers	FS	
000051	Bangladesh	Agricultural Research Phase II	9 39.500	National	Government	Training farmers/ ext. agents	Demos on farm, FS/ Tech training	
910483	Pakistan	Dry Land Ag. Development I	9 600	National	Govt/AID	Training farmers / ext agents	Demos/tech training/R/E links	
910413	Pakistan	On-Farm Water Management II	9 27.500	National	Government	Training farmers	Demos on farm, mass-media	
910483	Pakistan	Sodium-Potash Area Development	9 38.000	National	Government	Training farmers/ext. agents	Demos on- farm/tech training	
910489	Pakistan	Farm and Integ of Ag. Network	9 35.500	National	Govt/Univ	Training ext. agents	Tech training, new center for training	New center
920005	Guyana	Grains and Oilseeds Production	9 39.000	National	Government	Training farmers/ profs/ ext. agents	Demos, Tech. training inputs(e.g. fert)	New info system Support
920068	Philippines	Aquaculture Production	9 885	National	Government	Training ext. agents	Tech training literature, R/E links	Support
920068	Philippines	Pest Control	9 5.000	National	Government	Training farmers/ ext agents/R/E	Demos, mass-media/tech training	New centers
920092	Philippines	Integrated Ag. Prod and Marketing	9 12.000	National	Govt/Univ	Training farmers		
920010	Philippines	Bicol Integrated Development II	9 3.800	National	Government	Training farmers/ ext. agents		
920022	Philippines	Fresh Fisheries Development	9 1.700	National	Government	Training fishermen/ext. agents/	Demos/tech training/FS	
920031	Philippines	Agricultural Ext. Outreach	9 2.500	University	University	Training professionals	Demos/tech training	
920048	Philippines	Farming Systems Development	9 3.000	National	Government	Training farmers	Formal education	New center
920068	Thailand	Thailand Ag. Development	9 5.000	National	Government	Training professionals, ext. agents	Farming systems	
930772	Thailand	Lam Nam On-Farm Development (Sub)	9 4.800	National	Government	Training farmers		
930780	Thailand	Ag. Extension Outreach	9 3.000	National	Government	Training farmers.	Demos, model farms, IPD	Support
930080	Thailand	Land Settlements	9 4.200	National	Government	Training farmers/ ext agents R/E links	Model farms: demos/ fr for tr/ diss info	
930234	Thailand	Highland Area Development	9 7.300	National	Government	Training farmers/ ext agents	FS/ Tech training	
930295	Thailand	Non formal Vocational Edu	9 500	National	Government	Training ext. agents, R/E links	Technical training	New center
							Technical training	

PROJECT ID	COUNTRY	PROJECT NAME	COST (M 000)		SCOPE	IMPLEMENTING ORG.
4930308	Thailand	NE Rainfed Ag. Development	$	12,000	National	Government
4930326	Thailand	Seed Development II	$	6,200	National	Government
4930332	Thailand	Khon Kaen Univ. Research Devel.	$	2,000	National	Government
4970218	Indonesia	Assistance to Agr-Fisheries Dev.	$	417	National	Government
4970253	Indonesia	Sumatra Agricultural Research	$	8,500	National	Government
4970266	Indonesia	Science and Tech. Res.Assist. Pr.	$	8,000	National	Govt/Univ
4970275	Indonesia	Professional Resources Deve. II	$	2,000	National	Government
4970279	Indonesia	Citarum II	$	27,000	National	Government
4970281	Indonesia	Citarum II (Sub)	$	27,000	National	Government
4970286	Indonesia	Small Scale Fisheries Develop.	$	3,000	National	Government
4970293	Indonesia	Eastern Islands Ag Educ Title XII	$	6,800	University	University
4970304	Indonesia	Secondary Food Crops Development	$	8,400	National	Government
4970311	Indonesia	Upland Ag. and Conservation Proje	$	16,540	National	Government
4930254	Asia Regional	AIDAB Commodity Development	$	705	Regional	AID
4930257	Asia Regional	Ag. Development Council II	$	444	Regional	PVO?
4930257	Asia Regional	Ag. Development Council II	$	444	Regional	PVO?
4930267	Asia Regional	So. Pacific Isl. Ag. Devel. (Sub)	$	1,000	National	University
4930267	Asia Regional	So. Pacific Isl. Ag. Devel (Sub)	$	1,000	National	University
4930267	Asia Regional	So. Pacific Island Ag Devel.	$	1,000	University	University
4930267	Asia Regional	So. Pacific Island Ag. Develop.	$	1,000	University	University
4930267	Asia Regional	So. Pacific Island Ag. Devel (Sub)	$	1,000	University	University
5040075	Guyana	Small Farm Dev-Black Bush Region	$	8,900	National	Government
5050005	Belize	Livestock Development	$	3,420	National	Government
5110053	Bolivia	Ag Development Sector I	$	8,200	National	Government
5110451	Bolivia	Basic Foods Prod. and Marketing	$	5,900	National	Government
5110643	Bolivia	Chapare Regional Development	$	28,650	National	Institute/priv
5130314	Chile	School-Family Garden Coop (CPG)	$	150	National	PVO
5140291	Colombia	Rural Develop. CRS (CPG)	$	879	National	PVO
5140226	Columbia	Ag. Training Program CPG-PVO	$	250	National	PVO
5150130	Costa Rica	Science and Technology	$	4,509	National	Government
5170110	Dominican Rep.	Agriculture	$	11,999	National	Government
5170116	Dominican Rep	Agriculture Sector Loan II	$	15,000	National	Government
5170126	Dominican Rep.	Natural Resource Mgmt (Sub)	$	11,200	National	Government
5170156	Dominican Rep	On-Farm Water Management	$	12,800	National	Government
5170162	Dominican Rep.	Inland Fisheries II	$	270	National	Government
5170169	Dominican Rep.	Ag. Research and Extension	$	0	National	Government
5180012	Ecuador	Integrated Rural Development	$	5,754	National	Government
5180032	El Salvador	Rural Tech. Transfer System (Sub)	$	11,308	National	Government

PURPOSE	ACTIVITY	ORGANIZATIONAL LEVEL
Training farmers/ ex. agents	Demos/ tech training	Support
Training farmers/ profs/ ext. agents	Demos, mass media/Educ/ tech transfer co	New center
Training farmers	Farming systems	
Training fishermen/ ext. agents	Demos/ tech training	
Training professionals	Education	
Training ext. agents	Educ, tech. training, dissem of info.	Support
Training professionals	Education	
Training farmers/ ext. agents	Demos/ Education	
Training farmers/ ext. agents	Tech training	
Train ext. agents/Est. of ext. service	Tech training/New programs	
Training professionals	Formal Education	
Training farmers	Demos	Support
Training farmers	Pilot FS program	Support
Education and training of farmers	Mass communications	
Educ and training profes/ ext. agents	Formal education/Technical training	Support
Educ and training profs/ ext. agents	Educ, training, R/E links	Support
Training profs/ ext agents/Imp. R/E	Technical training/ Dissem of info	New centers
Improved R/E	Formal education	Support
Educ and training professionals / R/E	Formal education	Support
Educ and training profs / ext. agents	Educ, training, R/E links	Support
Educ and training profs / ext. agents	Tech. training/ Dissem of info.	Support
Training ext. agents	Training and tech asst.	Support
Training farmers	Training and demos	
Training profs/R/E links	Education	
Educ and training farmers/profs	Education, training literature	Support
Training farmers/R/E links	Demos, priv. co. involvement	Support
Training rural students/farmers	Education/Demos	
Training farmers/ext. agents	Training tech asst.	
Training young farmers for extension	Training tech. assistance	
Str. R/E links/ Dissem of info	Demos, educ, /Literature	Support
Training farmers	Mass-media, ag. sector	
Training ext. agents		New unit
Training farmers		Support
Training farmers/ profs/ ext. agents	Demos, Literature, rural fams, Tech asst.	Support, New station
Strengthening ext. service	Training demos/Tech asst. Educ/training	Support
Training farmers/R/E links		Support
Training farmers, ext., agents	On Farm demos	
Training farmers/profs/R/E Links	Mass-media/tech asst, -SED	Support
	Training/ Dissem. of info.	

PROJECT ID	COUNTRY	PROJECT NAME	COST (x 000)	SCOPE	IMPLEMENTING ORG.	PURPOSE	APPROACH	ORGANIZATIONS INVOL.
5190174	El Salvador	Intensive Small Farm Management	1,161	National	Government	Training farmers/ ext. agents	Demos/training	
5190184	El Salvador	Small Farm Irrigation Systems	6,100	National	Government	Training farmers/ ext. agents	Training and tech asst.	
5190217	El Salvador	Small Farm Natural Res. Mgmt.	160	National	Government	Training farmers/ ext. agents	Demos and training	
5190259	El Salvador	Agrarian Reform Support Tech Asst.	5,000	National	Government	Training profs/ext. agents	Technical assistance	
5190262	El Salvador	Agrarian Reform Org. (Sub)	23,173	National	Government	Training farmers/ Professionals	Training on-farm/Tech training	
5190265	El Salvador	Agrarian Reform Sector Support	34,930	National	Government	Training farmers/profs/ext. agents	Mass media/training/educ.	Support
5200255	Guatemala	Small Farm Diversification Sys.	6,100	National	Government	Training ext. agents/R/E links	Training tech. asst.	Support
5200267	Guatemala	Training School for Promotors	232	National	PVO	Training ext. agents		
5200274	Guatemala	Highlands Ag. Development	12,000	National	Government	Training farmers		
5200290	Guatemala	Small Fish Pond Development	343	National	PVO	Training fishermen/ ext. agents	Training and tech. asst.	
5210073	Haiti	Small Farm Develop. Proj. (Coms sp)	6,118	National	Government	Dev. of ext. activities	Literature, training, tech asst.	
5210078	Haiti	Integrated Ag. Development	18,895	National	Government	Training ext. agents/Str. ext serv/R/E		
5210122	Haiti	Agroforestry Outreach	19,500	National	PVO	Training farmers/ext. agents/ R/E links	Tech training	
5210173	Haiti	Coffee Technology Transfer	0	National	Government	Training farmers, Comm specific	Demos/training tech asst.	Support
5210174	Haiti	Radio Ag. Extension Programming	0	National	Government	Educ and tr farmers	Tech asst, dissem of info.	
5210175	Haiti	Seed Multiplication and Ext.	0	National	Government	Training profs/Distr. of seeds/R/E links	Mass media	
5210182	Haiti	Non-Governmental Org Support II	0	National	PVO	Training ext. agents	Tech asst/Private sec. involvement	Support
5220120	Honduras	Agro-Industrial Export Devel.	1,700	National	Government	Support for agribusiness		
5220123	Honduras	Small Farmers Technologies	7,042	National	Government	Training farmers, ext agents		
5220139	Honduras	Agricultural Research	2,750	National	Government	Training farmers/ext. agents/ R/E links	Demos, FB	
5220150	Honduras	Agriculture Sector II (Sub)	25,000	National	Government	Training professionals, MD	Demos/ training	
5220150	Honduras	Ag. Sector II Program	25,000	National	Government	Training professionals	Education and training	Support, New centers
5220175	Honduras	Small Farmer Coffee Imp. (Coms sp.)	2,550	National	Government	Training farmers and ext. agents	Education and training	
5220249	Honduras	Small Farmer Livestock Improv.	13,000	National	Government	Training farmers	Training mass-media/tech asst. training	Support
5240145	Nicaragua	Radio Educ. Eastern Nicaragua	150	National	PVO?	Training villagers and farmers	Est. of priv.pub co for tr. tech asst.	Support
5240205	Nicaragua	Appropriate Ag. Technology	305	National	PVO	Est. ext. centers, training villagers	Mass-media	
5250173	Panama	Agriculture	6,100	National	Government	Develop ext. centers		Support
5250195	Panama	Training of Rural Youth (CPC)	225	National	PVO	Training youth in farming		New center
5250216	Panama	Managed Fish Production	1,142	National	Government	Training profs.	Training, literature, priv sector invol.	Support, new centers
5250277	Panama	Ag Technology Transfer	1,500	National	Government	Training trainers/ext. agents	Tech asst, training	Support
5260103	Paraguay	Small Farmer Livestock Prod.	307	National	Government	Training farmers/ext. agents	Educ, tech asst. mass-media	Support
5260105	Paraguay	Farm Mgmt Service Small Farms	482	National	Government	Training farmers/ profs/ext. agents/R/E	Demos/training literature	
5260189	Paraguay	Small Farm Technology	6,000	National	Government	Training farmers/profs	Training, educ. literature	
5260198	Paraguay	Minifundia Crop Intensification	2,250	National	Government	Training farmers	Training, mass-media/Educ	
5270143	Peru	Campesino Para-Technician Training	100	National	Government	Training farmers / ext. agents	Mass-media and tech. asst.	Support
5270149	Peru	Soy and Corn Prod on Small Farms	2,302	National	Government	Training farmers	Technical training	
5270163	Peru	Devel. of Sub-Tropical Lands	18,800	National	Government	Increasing extension service	Demo. and training	
5270170	Peru	On Farm Water Management	490	National	Government	Training farmers	[illegible] on-farm	Support
								Support
								Support

EXTENSION PROJECTS

EXTENSION PROJECTS

PROJECT ID	COUNTRY	PROJECT NAME	COST (in 000)	SCOPE	IMPLEMENTING ORG.	PURPOSE	APPROACH	ORGANIZATIONAL LEVEL
5270192	Peru	Ag. Research, Ext. and Educ.	$ 14,100	National	Government	Training farmers/ext. agents/R/E links	Demos/Tech asst/New not ext. service	New ext. units
5270244	Peru	Upper Huallaga Ag. Develop.	$ 15,750	National	Government	Training farmers, ext. profs.	Demos on farm/educ/dissem of info.	Support
5260181	Uruguay	Uruguay-Ag Research/Tech Asst.	$ 4,850	National	Government	Training farmers, profs./ R/E links	Training/ Dissem. of info.	
5320009	Jamaica	Rural Educ Sector Loan (Sub)	$ 11,200	National	Government	Training professionals	Education	
5320030	Jamaica	Inland Fisheries Development (Sub)	$ 655	National	Government	Training fishermen/profs	Demos/Tech training	
5320045	Jamaica	Rural Comm Nutr-Income Improv.	$ 154	National	PVO	Training farmers	Training	
5320046	Jamaica	Integrated Regional Rural Dev.	$ 15,000	National	Government	Training farmers/ ext. agents	Demos, tech training, RED	
5320059	Jamaica	Fish Prod System Development	$ 4,107	National	Government	Training fishermen/ ext. agents	Demos, education	
5300017	Regional	Caribbean Ag Extension	$ 9,900	Regional	University	Training professionals/ RED	Education	
5300045	Regional	Caribbean Development Facility III	$ 10,000	Regional	Governments	Training farmers	Demos on farm/Ext ext. orgs	Support
5300060	Regional	Agricultural Extension II	$ 5,939	Regional	Governments	Training profs/ ext agents	Training, tech asst. R/E links/Priv. sec.	New ext. services
5300099	Regional	Farming Systems R & D	$ 7,740	Regional	Institute	Training profs/ext agents/App. tech tr	FS, Mass-media	Support
5300101	Regional	St. Vincent Ag Development	$ 2,000	Regional	Institute/PVO	Training farmers/ R/E links	FS	Support
5950059	Regional	Regional-Rural Agribusiness Devel.	$ 15,000	Regional	Bank	Dev. Agribusiness	Loans for dev. agribusiness	Support
5950083	Regional	Small Farm Production Systems	$ 8,000	Regional	Institute	Training ext., agents	Tech asst. training	
5950000	Regional	Regional Coffee Pest Control	$ 3,500	Regional	Institute	Training professionals	Education and literature	Support
5950110	Regional	Integrated Pest Management	$ 9,750	Regional	Institute	Training profs/ext. agents	Educ. training, dissem of info, lit. etc	
5980574	Regional	RAC Regional Educ Media for Women	$ 845	Regional	Institute	Training women in ag	Dissem of info, mass-media	
5980575	Regional	Ag. Devel. in Latin America	$ 983	Regional	Intl. Orgs	Training ext. agents/R/E links	Training/Dissem. of info.	
5980561	Regional	Media Comm. Services (Sub)	$ 2,030	Regional	Priv Co/Univ	Education of farmers-indirect.	Mass media	New org
5930584	Regional	Bird of Vertebrate Pest Crop Loss	$ 1,050	Regional	PVO	Training farmers/profs	Dissem of info/Educ	
6000003	Djibouti	Fisheries Development (Sub)	$ 3,211	National	Government	Training fishermen/educ for consumption	Training demos/Educ.	
6030015	Djibouti	Fisheries Development Phase II	$ 2,998	National	Government	Training fishermen	Demonstrations	
6000122	Morocco	Ag. Research and Training	$ 450	University	University	Education and training of professionals	Technical training and formal education	Support
6000135	Morocco	Extended Agricultural Development	$ 28,958	National	Institute	Training extension agents	Technical training	Support
6000145	Morocco	Range Management Improvement	$ 5,975	National	Government	Training farmers/ extension agents	Demonstrations/technical training	New organization
6110201	Zambia	Ag. Devel. Research/Ext.	$ 12,515	National	Government	Training profs/farmers/ext. R/E links	Technical asst. training, educ.	Support
6110204	Zambia	Chawa Rice Prod.	$ 1,167	National	PVO	Training farmers	Training and demos, comm. specific	
6110205	Zambia	West. Province Small Farmer Prod.	$ 664	National	PVO	Training beekeepers, comm specific	Training and tech. asst.	
6150172	Kenya	Arid and Semi-Arid Lands Dev.	$ 12,000	National	Government	Training profs/farmers	Training	
6150190	Kenya	On-Farm Grain Storage in Kenya	$ 7,000	National	Government	Training farmers/ext. agents	Training-demos on-farm	
6150226	Kenya	Rissere Sm. Enterprise Develop.,	$ 500	National	PVO	Training villagers/ profs	Education, training, literature	
6210135	Tanzania	Ag. Educ and Extension	$ 2,356	National	University	Training profs	Educ and training literature	
6210143	Tanzania	Arusha Plan and Village Dev. (Sub)	$ 31,184	National	Government	Training farmers/ext agents/RED	Training demos, /Educ	
6210156	Tanzania	Farming Systems Research	$ 2,000	National	Government	Training farmers/ext agents	Tech asst. AI, training, FS	New progs for women
6210160	Tanzania	Village Environ. Educ CFB (Sub)	$ 490	National	PVO	Training villagers to be ext. ags. RED	Education and training	
6210161	Tanzania	Training for Rural Devel. II	$ 5,965	National	Government	Training profs/farmers	Educ. training	
6250308	Regional	Regional Food Crop Protection	$ 45,950	Regional	Institute	Training farmers/prof/ext ag/R/E links	Demos, educ and training	New centers/Support

PROJECT ID	COUNTRY	PROJECT NAME	COST (x 000)	SCOPE	IMPLEMENTING ORG.	PURPOSE	APPROACH	ORGANIZATIONAL DEVEL.
6250937	Upper Volta	Accelerated Impact Program	$ 3,577	National	Government	Training villagers/ext. agents /WID	Training, tech asst.	Support
6310001	Cameroon	N. Cameroon Seed Multiplication Pr	$ 1,498	National	Government	Training farmers/ ext. agents	Mass media, literature/training	
6310002	Cameroon	Young Farm Family Tr Center OPG	$ 952	National	PVO	Training farm families	Education and training	New centers
6310004	Cameroon	North Cameroon Live & Ag. Dev	$ 5,439	National	Government	Training farmers	Educ, training, tech asst.	
6310015	Cameroon	Small Farmer Live/Poultry Dev OPG	$ 1,205	National	PVO	Training profs/ dissem of livestock	Education, training on US farm	
6310023	Cameroon	No. Cameroon Seed Multiplicat. II	$ 17,870	National	Government	Training profs/ext. agents	Education/training	
6310031	Cameroon	Agricultural Education	$ 26,861	University	University	Training professionals R/E links	Education, demos at univ.	Support
6320005	Lesotho	Farming Systems Research	$ 12,109	National	Government	Training profs in farming sys.	Training, dissem of info	Support
6330050	Botswana	Botswana Rural Manpower Develop.	$ 165	National	PVO	Training professionals		
6330215	Botswana	IVS Botswana Horticulture Dev. Proj	$ 411	National	PVO	Training farmers/ ext. agents	Training and tech. asst.	
6350200	Gambia	Mixed Farming and Res. Mgmt (Sub)	$ 9,600	National	Government	Training farmers	Training, demos, tech asst	
6350203	Gambia	Mixed Farm and Res. Mgmt (Sub)	$ 9,000			Training farmers/ext agents	Demos, training	
6350203	Gambia	Mixed Farm and Res. Mgmt (Sub)	$ 96,000	National	Government	Training profs	Education/Tech asst.	
6350203	Gambia	Mixed Farm and Res. Mgmt (Sub)	$ 9,000	National	Government	Training farmers in an. nutr.	Training in animal medications	Support
6350215	Gambia	Technical Skills Training OPC OICI	$ 705	National	Government	Training profs/WID	Education and training	
6360102	Sierra Leone	Adaptive Crop Research and Ext.	$ 9,100	National	Govt/Univ	Training profs/farmers/ext	Educ/Demos and training	New center
6410057	Ghana	Managed Input and Ag. Services	$ 38,070	National	Government	Training farmers/ext agents/ WID	Training, demos/tech asst.	
6410012	Ghana	Farmer Assoc and Agribusiness Dev.	$ 3,000	National	Government	Training, tech asst.	Support	
6410102	Ghana	Man. Inputs & Del of Ag Serv (Sub)	$ 21,117	National	Government	Training farmers/ ext. agents/WID	Training, demos, FS	
6450212	Swaziland	Swaziland Cropping Sys R &Ext Tr	$ 14,955	National	Government	Training ext. agents	Education and training	
6490101	Somalia	Ag. Extension, Training and Res.	$ 5,057	National	Government	Training farmers/ ext. agents	Demos, training	Support
6490112	Somalia	Agricultural Delivery Systems	$ 18,752	National	Government	Training profs/ext agents	Training	New center
6500010	Sudan	Sudan Ext Educ Tr for Human Reso.	$ 305	National	PVO	Educ for WID analysis of ext. services	Education	
6500018	Sudan	Blue Nile Ag. Development	$ 12,032	National	Government	Training farmers/ext. agents	Training, demos, tech asst.	
6500021	Sudan	Southern Manpower Development	$ 8,640	National	Government	Training profs/ext. agents	Educ, training in FS/tech asst	New center
6500103	Sudan	South Region Ag Rehab Devel	$ 150	National	Government	Training ext. agents in communications	Educ. and training	Support
6570005	Guinea Bissau	Small Scale Fisheries	$ 600	National	Government	Training fishermen	Demos	
6570009	Guinea Bissau	Rice Production II	$ 4,500	National	Government	Training ext. agents/WID	Training	Support
6600059	Zaire	North Shaba Maize Prod.	$ 22,125	National	Government	Training farmers/ext. agents	Training	
6600077	Zaire	Maniema Outreach	$ 4,500	National	Government	Training ext agents/R/E links	Education and training/mass comm.	
6610092	Zaire	Inelko Integrated Rural Dev PVO	$ 418	National	PVO	Training farmers	Training/WID	
6600091	Zaire	Applied Ag. Research and Ext.	$ 11,000	National	Government	Training farmers/R/E links	FSR/E	
6620002	Seychelles	Food Crops Research	$ 1,820	National	Government	Training farmers/R/E linkages	Training demos/conference	
6630102	Ethiopia	ADA Ag. Development Project	$ 2,176	National	Government	Training farmers	Education and training	Support, New centers
6630106	Ethiopia	Pulse Diversification and Imp.	$ 1,400	National	Government	Training ext. agents/R/E links	Training	New ext. system
6630170	Ethiopia	Agricultural Sector Loan IV	$ 15,000	National	Government	Dev. of ext. programs		Support
6630213	Ethiopia	OPG World Education	$ 1,205	National	PVO	Educ. in agriculture-WID	Education, training literature	
6630214	Ethiopia	Micro Regional Rural Development	$ 724	National	PVO	Training farmers	Training and demos WID	

PROJECT ID	COUNTRY	PROJECT TITLE	COST (x 000)	SCOPE	IMPLEMENTING ORG.	FOCUS	APPROACH	ORGANIZATIONAL LEVEL
6640293	Lesotho	Livestock Food Prod. Project	$ 2,497	National	Government	Training farmers / extension agents Training professionals New R/E System	Tech training/Demos and on-farm educ.	
6640304	Lesotho	Ag. Training and Tech. Transfer	$ 5,800	National	Government			
6640312	Lesotho	CRED Rural Ext and Outreach (Sub)	$ 28,612	National	Government	Strength. ext service,new center, demos		Support; new organization
6640316	Lesotho	IDAT Faculty Development	$ 390	Institute	Institute	Education and training of professionals	Formal education; research ext. links	
6690127	Liberia	Ag. Cooperative development	$ 1,400	National	Government	Training farmers/profs/ext	Training mass media/Education	Support
6690134	Liberia	Rural Information Systems	$ 17,700	National	Government	Training farmers/professionals	Mass media/technical training	
6690135	Liberia	Ag. Research and Extension	$ 4,997	National	Government	Training profs/ext. agents/R/E links	Education, training, literature	New center
6690139	Liberia	Upper Bong County IRD	$ 8,600	National	Government	Training ext. agents	Training IRD	New system
6690142	Liberia	Upper Lofa Rural Development	$ 5,000	National	Government	Training farmers/ext. agents	Training	New ext. service
6690153	Liberia	Rural Dev. Tr. Cuttington College	$ 4,755	National	Church	Training farmers to be ext. agents	Education	
6690154	Liberia	Nimba Rural Technology	$ 154	National	Government	Training farmers/ext. agents	Training in App. tech	Support
6750281	Guinea	Guinea Ag. Prod and Training	$ 14,400	National	University	Training profs/ext. agents	Education, training	Support
6760004	Cen Afr Rep	Fish Culture Extension	$ 118	National	Government	Dev of ext. system		New system
6760015	Cen Afr Rep.	Rural Development	$ 1,000	National	Government	Training fishermen/ext. ag/ R/E links	Demos (fish)training, tech asst (bees)	Support
6770002	Chad	Ag. Institutional Dev and Ext(Sub)	$ 5,400	National	Government	Training ext. agents	Education, training, tech asst.	Support
6770281	Chad	Chad Range & Live. Herder Tr (Sub)	$ 3,207	National	Government	Training villagers as ext. agents	Training	New system
6790001	Congo	Smallholder Ag Development	$ 2,000	National	Government	Training farmers	Demos, dissem of info	
6820204	Mauritania	Vegetable Production	$ 1,805	National	Government	Training profs/ext. agents	Education/Training	
6820207	Mauritania	Integrated Devel. of Oases	$ 5,991	National	Government	Training farmers	Training, demos	
6830285	Niger	Niamey Dept. Rural Dev. (Sub)	$ 4,998	National	Government	Training ext. agents	Training IRD	
6830225	Niger	Cereals Research	$ 10,600	National	Institute	Training profs/ ext. agents/R/E links	Educ/tech asst, training	Support
6850201	Senegal	Senegal Cereals Production	$ 8,748	National	Government	Training ext. agents/R/E links	Training	Support
6850202	Senegal	Senegal Range and Livestock Dev.	$ 5,825	National	Government	Training ext. agents	Training, tech asst.	
6850205	Senegal	Casamance Regional Development	$ 32,604	National	Government	Str. ext. services, R/E linkages		Support
6850224	Senegal	SODESP Livestock Prod. Project	$ 8,000	National	PVO?	Training ext. agents	Training and tech asst.	
6850235	Senegal	Senegal Cereals Prod. Project	$ 7,700	National	Government	Training farmers and ext. agents, IRD	Educ, training, demos, FSR,	
6860201	Upper Volta	Eastern CRED Non-Formal Educ.	$ 4,818	National	Government	Educ. ext. agents	Preparation of educ. materials for ext.	Support
6860202	Upper Volta	Upper Volta Seed Multiplication	$ 1,868	National	Government	Training profs/ext.	Tech asst and training	
6860212	Upper Volta	Onchocerciasis Control Fund	$ 2,173	National	Government	Training farmers/ext. ag. dissem of info	Training, educ, tech asst.	Support
6860221	Upper Volta	Ag. Human Resources Dev.	$ 9,093	National	Government	Training profs/ext. agents	Education and training	New center/Support
6870231	Upper Volta	Sequence Int. Rural Dev. CRED (Sub)	$ 5,958	National	PVO	Training farmers, villagers	Training and demos.	Support
6880244	Upper Volta	Eastern Region Food Prod.	$ 3,000	National	Government/IFAD/UNDP	Training profs/ext. agents	Education and training	
6880245	Upper Volta	Foundation Seed Production	$ 1,500	National	Government	Training farmers/ext. agents	Training, demos/tech.	Support
6880123	Haiti	Action SLE	$ 2,858	National	Government	Training farmers	Training, demos	Ext serv ext.
6880202	Haiti	Haiti Crop Production	$ 12,309	National	Government	Training farmers/IRD	Training	
6880281	Haiti	Haiti Livestock Sector Grant	$ 17,025	National	Government	Training herders		
6890210	Haiti	Operation Haute Valley (Sub)	$ 10,353	National	Government	Training farmers/profs/ext agents	Training, tech asst/Education	Support
6890218	Haiti	Livestock Sector II	$ 13,845	National	Government	Training farmers/ext agents/training, tec		Support

PROJECT ID	COUNTRY	PROJECT TYPE	CUBI (x 000)	SCOPE	IMPLEMENTING ORG.	PURPOSE	APPROACH	ORGANIZATION LEVEL
6600219	Mali	Semi-Arid Tropics Res INSIAT	0	558 National	Institute	Training ext agents/R/E links	Training literature	
6600220	Mali	Mali-Sun Pilot Fisheries Prod.	0	321 National	PVO	Training fishermen/ext. agents	Training demos.	
6600226	Mali	Semi-Arid Tropics Crop Res. II	0	4,718 National	Institute	Training professionals/ R/E links	Education	
6600233	Mali	Niger Valley Area Development	0	0 National	Government	Support of ext. service		
6930217	Togo	OICI Ag. Traing Production	0	1,000 National	PVO	Dissem of info		
6930218	Togo	Togo Animal Traction	0	3,139 National	Government	Training farmers	Training demos	New system/Support
6950181	Burundi	Basic Food Crops	0	8,915 National	Government	Training profs/ext agents	Education, training	Support
6950186	Burundi	Small Farming Systems Research	0	7,799 National	Government	Training profs/ext. agents in FSR&E	Education and training	
6950187	Rwanda	Local Crop Storage	0	2,873 National	Government	Training profs/ext. agents	Training demos	
6950189	Rwanda	Agricultural Education (Sub)	0	8,126 National	Government	Training women in ag science for ext.	Education	
6950112	Rwanda	Fish Culture	0	2,458 National	Government	Training profs/ ext. agents	Tech assit/ Training	
6950188	Chad	WID-Ir Farmer Women for Ag Prj	0	7,116 National	Government	Training women in ag prod	Education and training	New center
6950407	Swaziland	Improved Rural Technology	0	8,109 National		Training villagers/farmers	Training and demos.	
6950497	Tanzania	Improved Rural Technology (Sub)	0	8,100 National	Government	Training villagers in fish prod.	Training literature	Support
6930410	Guinea	Accelerated Impact Program	0	10,221 National		Training villagers/ext. agents	Training	
6930410	Togo	Accelerated Impact Program	0	10,221 National	Government	Training farmers/distr draft animals	Demos, training	
6930129	Africa Reg	West Africa Rice Development	0	8,729 Regional	Institute	Training ext agents/R/E links	Education and training	
6930144	Africa Reg	Farming Systems Research CDSWI	0	1,213 Regional	Institute	Training profs/ext. agents	Training in FSR	
6950581	Regional	SPARES-Formation PVO	0	700 Regional	Institute	Training farmers/ext. agents	Correspondence courses, some direct tr.	
9310042	LDC's	Fisheries Training Center	0	290 LDC's	University	Training profs/owner operators	Tech training demos.	Support
9310205	Regions	Contr-Weed Control Utilization	0	3,732 Regions	University	Training professionals, R/E links		
9311005	LDC's	Farming System R&D Methodology	0	1,200 LDC's	3 US Institutions	Training professionals	Education, literature, R/E links	
9311121	LDC's	Commercial Seed Industry Promotion	0	945 LDC's	PVO	Training professionals	Education, training, DC private co links	
9311144	LDC's	Farmer to Farmer Program	0	1,300 LDC's	Univ/AID	Training farmer trainers		
9311149	LDC's	Livestock Production Capability	0	955 LDC's	USDA/AID	Training professionals/ R/E links	Technical training, dissem of info	Support
9311229	LDC's	Soil Management Support Service	0	7,257 LDC's	USDA	Educ. and training of professionals	Education, dissem of info.	
9311300	LDC	Agribusiness Development and Supp.	0	754 LDC's	USDA/AID	Dev. of agribusiness	Dissemination of information	
9320041	LDC's	Intl Voluntary Services (AVS)	0	3,725 LDC's	PVO	Training profs/ ext. agents		
9320091	National	Development and Program Grant-ACPD	0	976 National	PVO	Training farmers	Tech training/mass- media, educ	Support
9320072	LDC's	Heifer Project, International	0	721 LDC's	PVO	Training farmers	Tech training dissem of investment opp	
9320115	Ethiopia	Agric/Comm Dev WIDA PVO	0	35 National	PVO	Training farmers/ ext. agents		
9364099	LDC's	Integrated Sys for Small Farmers	0	9,853 LDC's	AID	Training profs in FS methodology		
9364120	LDC's	Pre/Post Harv Rice Red Ctrl (Sub)	0	12,805 LDC's	PVO?	Training farmers, professionals	Education, literature	Support
9365519	LDC's	Forest Resources Management	0	22,171 LDC's	AID/USDA/Peace Corps	Training villagers	Demos, Dissem of info, tech training	Support
9365811	LDC	Rural Satellite Prog.-Dev. Comm	0	5,000 LDC	Contractors	Educ and training farmers/ ext. agents	Technical assistance, dissem of info.	
9380134	LDC's	Save the Children Comm Dev.	0	3,750 LDC's	PVO	Training professionals	Mass communications/b-h training	Support
9380149	LDC's	Goodwill Industries of America	0	442 LDC's	PVO	Training handicapped for crop dlive prod	Tech assistance, training, dissem of info	
9380151	LDC's	Heifer Proj Intl Matching Grant	0	800 National	Government	Training fishermen/profs/ext. agents	Est. of training schools	
							Demos, training/Educ/training	