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Lessons Learned:

A Review of USAID/Pakistan Activities in Commercial Agribusiness Development

Technical Report No. 7



**Regional Agribusiness Project
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LESSONS LEARNED:

A REVIEW OF USAID/PAKISTAN ACTIVITIES IN COMMERCIAL AGRIBUSINESS DEVELOPMENT

by

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EXECUTIVE SUMMARY

Asia Regional Agribusiness Project consultants Joseph T. Pietrus and Kenneth A. Swanberg visited Pakistan from April 29 to May 12, 1994, to review the agribusiness activities of the U.S. Agency for International Development Mission there. The objective of the consultants' review was to identify key lessons learned from the conduct of these programs that could be applied in the design and implementation of USAID agribusiness programs elsewhere. The timing of the assessment coincided with the directive to end Mission activities by the end of 1994.

The lessons the consultants derived from their review and the contributions they believe the activities made to USAID goals are stated below. The key lesson is that a comprehensive agribusiness effort with initiatives integrated into a variety of food system programs can have a significant and wide-ranging impact on a Mission's progress toward USAID's goal of sustainable development.

Lessons Learned

1. Well-chosen use of the Commodity Import Program can have a significant impact on the local situation and address USAID's goals and Congressional interests in fostering U.S. exports.
2. Small dollar interventions at critical points in key, often traditional, industries can have a very large impact.
3. Effective commercial agribusiness activities can be incorporated into a broad spectrum of traditional production agriculture projects.
4. The needs of agribusinesses and farmers should be linked to agricultural research efforts in order to increase the probability of useful results.
5. Efforts to attract U.S. agribusinesses to establish subsidiary operations or collaborative ventures with local companies must have a realistic view of the proposed ventures' local and/or international competitive position.
6. Activities that seek to develop new industries must have a realistic level of funding and an adequate level of technical and management support, and must draw on local skills in integrating the new ideas and technology into the agricultural and cultural milieu of the host country.
7. Policy reform achieves its greatest progress under a government favorably inclined to reform. However, policy reform projects need to be a continuing effort so that needed analyses, recommendations, action plans, and support are in place when the environment is conducive to change.
8. A project that develops, organizes, and disseminates detailed industry knowledge, where that information has been unavailable, sensitizes government, financiers, and private agribusiness to the opportunities, problems, and needs of agribusiness development and, by itself, acts as a policy reform instrument.
9. Effective change involves competent local organizations.

10. Employing U.S. agribusinesses under reward-or-penalty compensation schemes for projects that have measurable business results should be tried.

11. Sound pre-activity planning and post-activity follow-up are required to optimize the effectiveness of technology transfer activities such as training foreign nationals abroad and using International Executive Service Corps volunteers.

12. Projects dedicated to the development of nontraditional crops for export must consider the potential for sales in the local market.

USAID Goals Addressed

The projects under review contributed to the following USAID goals:

Democracy

- Structuring of policy and agricultural reform efforts to inform and involve affected private sector Pakistanis — from farmers to processors — in dialogue with government decision makers;

Health and Population

- Introduction in and commercialization of food production and handling practices that increase food safety and reduce production and processing costs;

Economic Growth

- Creation of new employment and income opportunities in rural Pakistan, many of which were realized by micro and small enterprises and small farm families;
- Policy reform that fosters market-led changes in the food system economy; and

Environment

- Introduction of environmentally sensitive agricultural production techniques.

INTRODUCTION

Objective

Asia Regional Agribusiness Project consultants Joseph T. Pietrus and Kenneth A. Swanberg visited Pakistan from April 29 to May 12, 1994, to review the agribusiness activities of the U.S. Agency for International Development Mission there. The objective of the consultants' review was to identify key lessons learned from the conduct of these programs that could be applied in the design and implementation of USAID agribusiness programs elsewhere. The timing of the assessment coincided with the directive to end Mission activities by the end of 1994.

Methodology

The consultants reviewed project papers, program evaluations, documentation files, and various studies and analyses and interviewed key participants in Mission agribusiness activities. Consultants also met with USAID staff throughout the visit, capped by an extensive end-of-visit discussion of findings. Visit logistics were arranged by (Ahmed) Jameel, Agribusiness and Training Project Officer in the Office of Agriculture and Rural Development. Mr. Jameel also accompanied Messrs. Pietrus and Swanberg on visits to project sites and participant offices in Islamabad, Karachi, Lahore, and Swabi. The visit schedule is included as Annex A.

The review methodology generally followed that of the Center for Development Information and Evaluation (CDIE) multicountry agribusiness assessment. Information collected and analyzed covered the issues of project design, implementation, and impact, as well as factors that promoted successful implementation or impeded progress. Unlike the CDIE assessments, the review did not restrict itself to individual agribusiness projects. It also examined agribusiness activities across a range of programs. Hence, this report focuses not on individual projects, but on types of activities within and across projects. One of the interesting results of this approach is that some activities, in different combinations, yield more than one lesson.

Some of the lessons learned are directly tied to program activities that can be related to USAID goals. Some have had an impact that the RAP team has quantified. Other lessons result from the way in which programs were designed or implemented and are related to project success factors rather than to goals and impact. In all cases, it should be recognized that the intent of the review was to identify broad lessons learned across several projects rather than complete a CDIE-type individual project evaluation. It should also be noted that the analysis does not attempt to comment on every conceivable lesson that might have been learned. Rather, it focuses on key lessons emerging from the Mission's broad array of agribusiness programs and initiatives.

Country and Mission Setting

In the mid-1980s, the Pakistan Mission determined that a strong agribusiness sector was essential if Pakistan was to make the transition from low-income agricultural production to the early stages of industrialization. The Mission determined that more agribusinesses were needed to maximize the value of agricultural resources and outputs, recognizing that agriculture and agribusiness accounted for 50 percent of the country's GDP, 55 percent of its industry, and 70 percent of employment. In addition,

agriculture and agro-based products accounted for a substantial portion of Pakistan's international trade: 50 percent of export earnings emanated from agro-based products such as cotton, rice and textiles; 45 percent of imports were for farm machinery, agricultural processing machinery, fertilizers, pesticides, edible oils, and tea.

In 1987, the Mission established an Agribusiness Office. Every year until 1990, the Agribusiness Office designed and implemented one major project, two significant activities within other major projects, and several agribusiness initiatives within other Mission projects. The agribusiness thrust was supported by the activities of the Mission's Private Sector Office, established in 1989. In 1989, a decision was made to develop a major project in 1990 that would build on the accomplishments of various agribusiness projects and project components initiated during the previous years. However, that plan and all other program activities were curtailed by the Pressler Amendment. As a result, no new Mission initiatives were begun after 1990, and all Mission program activities were to be phased out before 1995.

Programs on which the 1990 initiative was to build, and that were included in this assessment, were the following:

Agricultural Sector Support Program (ASSP): 1987-1994

The Mission's major agribusiness program, ASSP, identified constraints, capabilities, and opportunities to stimulate private sector agribusiness growth. Activities included analysis of six key agribusiness industries, development of policy reform recommendations, training and technical assistance in agricultural production forecasting, private sector training, promotion of identified agribusiness opportunities, and development of a horticultural export development program.

Commodity Import Program: 1982-1993

Funds from this program were used to support initiatives in bulk wheat handling, frozen kinnow (orange) juice processing, and certified seed production, as well as the building of a poultry disease identification laboratory.

Management of Agricultural Research and Technology Project (MART): 1984-1994

A small portion of MART funds was used to license to private companies the technology developed in government agricultural research projects.

Other Agribusiness Initiatives

An extensive private sector program provided technical training to more than 500 individuals, primarily in food processing, dairy, and poultry. A program implemented by the International Executive Service Corps provided operations improvement assistance to companies in textile, sugar, agriculture machinery, dairy and animal nutrition, and paper and paperboard.

Small agribusiness initiatives were carried out in a number of other agriculture projects. A packaging operation was developed for increased date production resulting from an irrigation systems management project. High-value horticultural crops were produced for urban markets, and small poultry projects for women were started as part of regional development projects. Commercial forestry and nursery initiatives were launched in a forestry planning and development

project. Design and implementation of an agribusiness curriculum were achieved in an agricultural university research and education project.

Additional information on these projects can be found in Annex B, containing material from a publication provided by the Mission on its agricultural and agribusiness activities.

USING THE COMMODITY IMPORT PROGRAM

Lesson

Well-chosen use of the Commodity Import Program can have a significant impact on the local situation and address USAID's goals and Congressional interests in fostering U.S. exports.

Background

USAID's Private Sector Commodity Import Program was used to encourage two U.S. agribusiness companies to establish operations in Pakistan. Assistance provided was in the form of soft loans to Cargill, Inc. and Pioneer International, Inc. for the purchase of equipment to produce frozen kinnow (orange) juice concentrate (Cargill) and hybrid seed (Pioneer). Each loan resulted in exports of U.S. equipment and an immediate impact on Pakistan agriculture.

These activities addressed USAID goals by creating a large number of farm jobs and opportunities for micro and small enterprises in rural Pakistan, introducing improved agricultural husbandry and chemical practices, and promoting catalytic investments in new industries that encourage local production and foreign exchange earnings. In addition, all of USAID's financial support to these activities was used to purchase equipment from U.S. manufacturers.

Comments

Some argue that USAID assistance was not a deciding factor in an investment by a large multinational company. The RAP team regards that as speculation, at best, and believes that the possibility of USAID's participation was a significant investment factor, perhaps the deciding factor, in the decision to purchase U.S. equipment. The team believes the USAID-private sector cooperation engendered through this project and projects in other countries, if properly publicized by USAID, will result in the other catalytic development projects in which private sector participation is vital to achieving USAID goals; the establishment of a second frozen kinnow juice concentrate plant by local investors just outside the kinnow supply range of Cargill's plant is one example.

Kinnow Juice Processing

Kinnow is a major fruit crop in Pakistan. However, because the country had no processing facilities, demand was restricted almost entirely to the domestic market. In the late 1980s, Cargill, Inc., which had long-established trading ties to Pakistan in other products, examined the feasibility of establishing a frozen kinnow juice concentrate processing plant in Sargodha. This operation was desired to supplement the company's operations in Brazil and Florida, allowing blending to suit specific market tastes and minimize costs, spreading the risk of adverse weather conditions, and establishing a sourcing capability close to the potentially large Asian market.

Cargill sought and received a USAID loan of \$3.0 million to purchase U.S. processing equipment for a \$6 million plant with a crush capacity of 500 metric tons per day employing 45 permanent staff. The plant, which began operations in 1992, was the first of its kind in Pakistan. Since that time, a plant with

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750-metric ton capacity was constructed 20 miles from the Cargill location, largely outside the Cargill sourcing area. This plant, built by Pakistani interests, received Asian Development Bank financing.

Pakistan's orange season is approximately 150 days long, of which the kinnow variety covers approximately 120 days. Cargill operated its plant 101 days in 1992 and 114 days in 1993. The plant did not operate in 1994 because a drought halved production, resulting in local fresh market prices that exceeded world market prices.

The impact of Cargill's plant is far greater than the company's plant employment numbers and export earnings indicate. Because all of Cargill's production is exported, inputs to production — 50,000 metric tons of kinnow — are effectively removed from the local market. As a result, kinnow production can profitably expand to meet domestic demand. Expansion will be achieved through a combination of increased yields (Cargill is introducing improved horticultural techniques) and increased production area. At maximum probable yields (20 metric tons per hectare versus the current 11 metric tons per hectare), approximately 2,500 hectares of additional production will be required. Prevailing practices for this amount of land will require an additional 4,000 full-time orchard workers, an increased market for tree seedlings, increased demand for seasonal labor, provision of kinnow pulp residue for cattle feed, and increased economic activity associated with exports. Using 1993 prices, the RAP team estimates direct annual benefits for a 150 day operating year at \$2.5 million in farm gate revenue and \$3.8 million in export sales.

Cargill also has plans to produce other orange varieties and is looking at other crops for juicing. It is also conceivable that Cargill may use its processing operation as the base from which to launch a fresh fruit export business.

Hybrid Seeds

Pioneer International received an \$8.3 million loan to establish hybrid seed operations in Pakistan. The company used \$8 million of the loan to purchase seed-conditioning equipment from the United States for installation in a new \$12 million processing plant in Sahiwal. The balance was used for seed imports from the United States. Operations were begun in 1987. Sales of hybrid seed have been less than expected. The principal problem has been learning how to market hybrids in Pakistan rather than achieving breeding success or increased productivity among hybrid users. Cargill, which sells only imported seed, apparently is experiencing similar problems. Although Pioneer continues to produce and condition seed in Pakistan, it has stopped its local breeding program until further commercial success is achieved.

Pioneer's seed-breeding efforts covered corn, sorghum Sudan grass, grain sorghum, and sunflower. The principal activity has been in corn, and the RAP team limited its evaluation to corn. In 1993, 899,000 hectares of corn were planted in Pakistan, producing a harvest of 1.18 million metric tons. Virtually 100 percent of seed used to obtain this production is open pollinated. As expected, comparisons of open-pollinated and hybrid seed use are startling (Table 1):

TABLE 1

COMPARISON OF OPEN-POLLINATED AND HYBRID SEED USE

Statistic	Open Pollinated	Pakistani Hybrid
Seeding rate - kg per ha	37.5	25.0
Seed cost - Rs* per ha	185.0	1,250.0
Yield - MT per ha	2.5	5.5
Value of yield -Rs	11,250.0	24,750.0
Cost of production - Rs	5,000.0	7,500.0
Net profit per hectare - Rs	6,250.0	17,250.0

* Pakistani Rupees; exchange rate at the time of the visit approximately Rs30 to US\$1

Also as expected, the principal problems in converting farmers from open-pollinated to hybrid seed are the farmers' lack of resources and credit to finance the higher cost of production, and the lack of a developed distribution system. Cargill and Pioneer differ in their estimates of the current and potential markets for hybrid corn, but reasonable estimates seem to be 1,500 metric tons and 80,000 metric tons, respectively (Table 2).

TABLE 2

CURRENT AND POTENTIAL MARKETS FOR HYBRID CORN

Statistic	Current Market	Potential Market
Area Planted (000 ha)	60	3,200
Hybrid Seed Sold (MT)	1,500	80,000
Corn Produced (000 MT)	330	17,600
Added Value of Hybrid Seed (\$000)	2,130	113,600
Incremental Farmer Profit (\$000)	22,000	1,173,333

The impact of these estimates on this relatively limited market is phenomenal and will, of course, be amplified if adoption of hybrids can be extended through more widely available input credit programs.

Additional benefits include the full-time labor employed by the hybrid seed companies, full-time labor employed by their producers, the establishment of farmer-dealer microenterprises, and the increased number and viability of microenterprise fertilizer and pesticide dealers.

GAUGING THE IMPACT OF SMALL INTERVENTIONS

Lesson

Small dollar interventions at critical points in key, often traditional, industries can have a very large impact.

Background

USAID/Pakistan funded a number of relatively small interventions that had or have the potential for impact far exceeding the dollar amount expended. These interventions included loans, grants, and technical assistance. The key to their impact was their placement at critical points in industries of major importance to Pakistan's total agricultural system.

The aforementioned assistance provided to Cargill (frozen orange juice concentrate) and Pioneer (hybrid seeds) demonstrates the impact a small intervention can have. Two other examples the RAP team investigated are the Bulk Wheat Program and the Broiler Disease Identification Laboratory.

The activities reviewed below furthered USAID goals through the production of safer and lower-cost food and through the improvement of the financial health of two basic food system industries.

Comments

Bulk Wheat Handling

Pakistan is a major producer and consumer of wheat and wheat products. Recent production has averaged 14.5 million metric tons, and imports are estimated at 1.75 million metric tons. Annual consumption, primarily in the form of breads, approximates 300 pounds of wheat per capita.

Traditionally, harvested and imported wheat are packed and moved in 100-kilogram jute bags. Wheat is manually dumped into storage silos and repacked for movement to flour millers. This system results in costs for bags, losses to pests, and multiple incidences of manual handling of heavy weights (with resulting injuries) that are not incurred in a bulk handling system.

In 1993 USAID initiated a project with the Food Department of Punjab Province to address these problems through the use of bulk handling and storage techniques at selected assembly points. The project selected five demonstration sites, made necessary modifications to storage silos, imported specialized bulk handling equipment, fostered the design and local manufacture of other needed equipment, and provided training and technical assistance to implement the program. Total program cost to USAID was \$4.8 million, of which \$3.1 million went to technical assistance (largely provided by staff of Kansas State University); \$0.9 million to import specialized equipment from the United States; and \$0.8 for local fabrication of equipment, provision of office and training equipment and materials to the Food Department, and other costs.

The program goal for 1993 was to clean and deliver 25,000 metric tons of wheat in bulk to flour mills. Initially skeptical of the weighing system, which relies on weighing truckloads rather than bagged product, 14 flour millers soon recognized the benefits of bulk handling, which resulted in increased demand. In all, 65,000 metric tons were delivered in the first program year - 40,000 metric ton more than the program goal but 55,000 metric tons less than millers desired to purchase. The Food Department's 1994 goal is 100,000 metric tons.

The RAP team estimates that the impact of bulk wheat handling was a 4 percent reduction in the miller's cost of wheat. Food Department sources reported that part of this savings was passed on to the consumer. The major factors in reducing the cost were wheat cleanliness and elimination of the jute bag. The experience of one representative miller was that foreign material declined from 6.25 percent in bagged wheat to 2.4 percent in bulk wheat, a savings of Rs114 per metric ton at the prevailing wheat price of Rs4,000 per metric ton. Elimination of the jute bag saved another Rs200 per metric ton, and elimination of manual handling and other costs another Rs100-200 per metric ton. Total savings, therefore, approximate Rs414-514 per metric ton of wheat. Missing from these savings is an estimate of "wheat not lost" — wheat that would have been lost to pests such as rats and to deterioration without the effective fumigation practices introduced at the Food Department's assembly and storage facilities. A conservative estimate of savings resulting from these practices is 2-4 percent of the total amount of wheat stored.

USAID intended that the Food Department would charge a premium for the cleaned, bulk-delivered wheat. This could easily have been done given the reduced level of foreign material. The resulting differential could be used to finance added equipment purchases and silo modifications required to expand the program. Although it is not clear that a premium was charged consistently, it is clear that the program could sustain itself by charging the premium.

Identified savings in 1993 approximated \$1 million. Given that the amount of wheat handled by the program was less than one-half of 1 percent of Pakistan's total wheat production, the potential impact of the program is enormous.

Broiler Disease Identification Laboratory

Commercial broiler production experienced major growth since its introduction in the early 1970s. Production now exceeds 150,000 metric tons, with average annual growth exceeding 7 percent over the past five years. With per capita consumption less than 2 kilograms, the potential for increased demand is great.

Disease is a major problem for the industry, including hydropericardium syndrome, apparently a disease specific to Pakistan; infectious bursal disease; Newcastle; and colosepticaemia. As a result, it is estimated that industry survival rates are 85 percent for broiler parents and 75 percent for broilers — well below the national goals of 95 and 96 percent, respectively. Disease is also a problem for commercial egg operators, though less significant. Survival rates are 85 percent for layer parents and 80 percent for layers, compared with national goals for 90 percent and 96 percent, respectively.

Financial constraints halted public sector investment in diagnostic and treatment services for poultry disease. The laboratory at the University of Karachi Poultry Research Institute, established with USAID assistance, has ceased to operate because of lack of funds.

Faced with this situation, K&N Poultry Companies, Pakistan's first and largest commercial broiler producer, approached USAID in 1989 with the idea of establishing its own diagnostic laboratory. K&N proposed offering, through the not-for-profit laboratory, fee-based diagnostic services to any grower who requested them. K&N would benefit, its owners reasoned, through increased demand for poultry, induced by lower costs resulting from reduced mortality rates. USAID, through collaboration with the Pakistan Agricultural Research Council, provided K&N \$70,000 for the purchase U.S. laboratory equipment. The facility was opened in 1993 and has achieved widespread acceptance among commercial broiler growers for the early detection and subsequent remedial treatment or isolation of disease.

K&N has ambitious plans for its work in poultry disease prevention, detection, and treatment, all based around the laboratory. These include establishment of small basic service laboratories in other parts of the country, establishment of a degree program in conjunction with the University of Karachi, and research on poultry diseases and their treatment. It is too early to measure the actual impact of the laboratories activities. However, the potential for impact can be estimated by projecting the effects of achieving the stated mortality goals (Table 3).

TABLE 3

PROJECT EFFECT OF ACHIEVING POULTRY MORTALITY GOALS
THROUGH K&N DIAGNOSTIC LABORATORY ACTIVITIES

Action	Est. Value
Achieve broiler mortality goal	
Total projected savings	\$35.1 million
Per kilogram savings - U.S. cents	16.0
Percent of total broiler cost	19
Achieve layer mortality goal	
Total projected savings	\$2.5 million
Savings per dozen eggs - U.S. cents	1.5
Percent of total egg cost	4

Source: K&N Poultry

INCORPORATING AGRIBUSINESS ACTIVITIES IN AGRICULTURAL PROJECTS

Lesson

Effective commercial agribusiness activities can be incorporated into a broad spectrum of traditional production agriculture projects.

Background

The USAID focus on the market as a development force in the 1980s led to the establishment of both commercial agribusiness and private enterprise initiatives. In Pakistan, commercial agribusiness components were added to a broad range of Mission activities whose primary objectives were not commercial agribusiness. Some of these commercial agribusiness initiatives were small, others fairly large. Cumulatively, they involved a significant number of program beneficiaries in the local market economy.

USAID goals addressed through inclusion of an agribusiness component in a broad array of food system projects are as varied as the agribusiness components themselves. In the Pakistan projects, USAID goals related principally to promotion of microenterprise opportunities for owners of small farms, linking farmer input needs and new production initiatives to market needs, and agribusiness education.

Comments

Rural Development Projects

Three rural development projects were undertaken by the Mission: Balochistan Area Development Project (BALAD), Northwest Frontier Area Development Project (NWFADP), and Tribal Areas Development Project (TADP). Common goals of these projects were improvements in irrigation and water systems, schools, clinics, and roads. Additionally, each had its own particular focus — for example, the elimination of poppy production in NWFADP. Another common theme was the introduction of commercial agribusiness activities for microenterprises. These included the introduction of high-value horticultural crop production to increase family income, the training of women in poultry production as an income-generating activity, and the establishment of a date-packing and -marketing operation in conjunction with an irrigation project. These "mini-projects" focused on specific market opportunities to take advantage of a program result — underground water channels for date production in BALAD — or provide new opportunities for income generation — poultry production in NWFADP.

Education

The Transformation and Integration of the Provincial Agricultural Network (TIPAN) Project supported major improvements at the Agricultural University in Peshawar. More than \$55 million was invested in facilities, outreach services, provincial research stations, graduate training, and management assistance. During the course of the project, a small initiative was carried out to design and put in place courses in agribusiness management. Following successful implementation of the initiative, other

universities called on the Agricultural University for assistance in developing their own agribusiness management curricula.

Research

The Management of Agricultural Research and Technology (MART) Project had as its objective the strengthening of Pakistan's national agricultural research network. Its principal components were to address management deficiencies; strengthen linkages between national, provincial, and international research institutes; develop technology packages with the participation of farmers and agribusinesses; train Pakistani scientists and researchers; and provide research support in specific agricultural practices and crops.

In 1990, the project established a Directorate of Agribusiness Relations at the Pakistan Agricultural Research Institute. The Directorate involved the private sector in the government's research through collaborative research agreements with the National Agricultural Research Center (NARC) and through a program to license NARC research results to agribusiness companies. Results include the development and marketing of peanut threshers, poultry disease vaccines, and zero-tillage drills by private manufacturers using NARC research. The long-term impact of these collaborative efforts is to focus the attention of researchers on practical problems that can be solved using NARC's capabilities and the production and marketing skills of the private sector. The next section of this report covers the MART experience in more detail.

Forestry

The Forestry Planning and Development Project was a major effort to reverse the trend toward deforestation in Pakistan. Forestry policy recommendations were developed and incorporated into the Asian Development Bank's master forestry plan for Pakistan, training was provided for forestry students, saline land was reclaimed, and farmer-end user linkages were created to facilitate marketing and promote demand. As demand for trees developed, private sector nurseries were established.

LINKING RESEARCH TO AGRIBUSINESS NEEDS

Lesson

The needs of agribusinesses and farmers should be linked to agricultural research efforts in order to increase the probability of useful results.

Background

Formerly, agricultural research in Pakistan had little or no link to practical end uses. Many research projects were designed within the confines of the laboratory because they were interesting problems. When practical problems were addressed through research, there was no link between the research institution and the private sector to transmit the new technology or product to the farmer.

The Management of Agricultural Research and Technology project (MART) sought to develop mechanisms to increase the private sector's participation in identifying research needs, conducting research, and using and disseminating research results. The project established a Directorate of Agri-Business Relations within the Pakistan Agricultural Research Council. The Directorate's activities focused on marketing technologies and processes developed by various government research organizations, and included the agribusiness sector in planning and setting research priorities for these organizations.

MART addressed USAID goals by involving farmers in determining research initiatives to be undertaken by national and provincial governments. It also led to the commercialization of products that benefited farmers, consumers, and the environment.

Comments

The Directorate pursued its objectives in many ways. It identified and disseminated a list of products and technologies developed at government research institutes. The Pakistan Agricultural Research Council had already established an initiative to sell research results to the private sector. This initiative had achieved some results, which were furthered by the establishment of the Directorate. Additionally, the Directorate prepared feasibility studies for business ventures that could use technologies developed by government researchers, and provided technical training in equipment manufacture, seed production, and kinnow production.

The Directorate was established in late 1990. By the end of 1993, 18 agreements had been signed between the Pakistan Agricultural Research Council and individual agribusiness companies to license a government-developed technology, solve a specific agribusiness need, or provide training. Table 4 lists these agreements.

TABLE 4

TECHNOLOGY-LICENSING AGREEMENTS BETWEEN THE PAKISTAN
AGRICULTURAL RESEARCH COUNCIL AND THE PRIVATE SECTOR
(1990-1993)

Name of Agreement	Purpose
Shafco (Pvt) Ltd., Islamabad (1990)	Production of Virus-Free Seed Potato through Tissue Culture
Bio-Labs (Pvt) Ltd., Rawalpindi (1990)	Production of Hydropericardium Vaccine for Poultry
K&N's Poultry Farms, Karachi (1990)	Establishment of Poultry Disease Diagnostic and Feed Testing Laboratory
Al-Younus Agro Industry, Rawalpindi (1990)	Manufacture of Groundnut Thresher
Jaffar Brothers, Karachi (24-12-90)	Seed Potato Production
United Agro-Engineers, Daska (1990)	Manufacture of Rice Thresher
Agritec, Multan (1991)	Manufacture of Precision Planter
B.S. Insecticides, Rawalpindi (1991)	Testing and Evaluation of NICOCIDE-40
Neelibar Feed Industry, Lahore (1991)	Production of Low-Cost High-Nutrition Animal Rations
Makka Engineering, Fatehjang (1991)	Manufacture of Groundnut Thresher
National Engineering, Nawabshah (1992)	Manufacture of Paddy Thresher
Green Land Engineering Daska (1992)	Manufacture of Zero-Till Drill
National Engineering Nawabshah (1992)	Technical Assistance Groundnut Thresher
Nowshera Engineering Co. Ltd., Nowshera (1992)	Farm Machinery
Indian River, Quality Breeder, Rawalpindi (1992)	Livestock Education and Extension and Diagnostic Lab
Al-Madina Engineering and Dairy Equipment (1992)	Milking Machine
Zubair Associates Karachi (1993)	Farm Machinery
Farm Aid Group of Pakistan (Pvt) Ltd. (1993)	Poultry Vaccine

Source: MART project documents

Information available from the Mission on the impact of PARC's agribusiness linkage program is somewhat confusing. However, the data in Table 5 appear to be reliable, indicative estimates. Estimated results for other technologies (groundnut digger, groundnut thresher, sugarcane planter, hybrid sorghum seed) have not been included because of data limitations.

TABLE 5
 SELECTED IMPACT DATA ON PAKISTAN AGRICULTURAL RESEARCH COUNCIL
 TECHNOLOGY-LICENSING PROGRAM
 1989- 1993

Technology (Year Licensed)	No. Farmers Adopting	Number of Units Sold	Sales Value (million Rs) ¹
Reaper/Windrower (1983)	15,000	7,500	157.00
Rice Thresher (1991)	40	20	0.90
No Till Drill (1993)	10	5	0.13
Sadabahar Seed (1991)	900	9,000 kg	0.26
Potato Seed (1992)	580	580 MT	5.22
Hydropericardium Poultry Vaccine (1990)	7,500	348,000 bottles	34.80
Animal Feed (1991)	105	36,000	4.32

¹ Not converted to U.S. dollars because of changing foreign exchange rates.

Source: MART project documents

Although most of the results are modest, it is noteworthy that two marked successes have been achieved — the reaper/windrower and the poultry vaccine. It is also significant that far more technologies offered for license were left on the table — an indication of how removed from practical needs government research has been. The MART-formed Scientific Technical Committee and Agribusiness Relations Committee, composed of government researchers and agribusiness representatives, will likely screen research proposals with little practical potential and focus on those that address real farmer needs.

ATTRACTING U.S. AGRIBUSINESS INVESTMENT

Lesson

Efforts to attract U.S. agribusinesses to establish subsidiary operations or collaborative ventures with local companies must have a realistic view of the proposed ventures' local and/or international competitive position.

Background

Two of the Mission's programs specifically sought to attract U.S. agribusiness investment in Pakistan: the Agricultural Sector Support Program (ASSP) and the Commodity Import Program loan fund. ASSP was proactive in identifying and presenting to U.S. agribusinesses opportunities for their consideration. The Commodity Import Program was reactive, responding to requests for assistance from companies that had identified and wished to pursue viable opportunities.

Successful efforts to attract investments by U.S. agribusinesses address USAID goals by introducing new, cost-efficient, and environmentally sensitive technology; creating new industries and employment; and providing opportunities for micro and small enterprises that provide support services.

Comments

The activities initiated under the Commodity Import Program have already been discussed.

ASSP prepared documents to highlight opportunities in oilseed processing and tomato processing and made U.S. companies aware of these opportunities. The document prepared for tomato processing was completed by an experienced business executive and addressed the local issues in an investment decision. The oilseed study was more of an academic industry study, and the information a business executive would want, when it was there, was difficult to discern from the mass of information and data.

Neither of the analyses recognized the lack of a sound competitive position on which to base a U.S. company's involvement. The tomato-processing analysis did not recognize the much more competitive position of other countries; the oilseed analysis did not recognize the situation of the industry in Pakistan itself.

Lessons can be learned from the decisions of Cargill and Pioneer to invest in kinnow juice and seed operations and from Cargill's decision not to invest in oilseed processing, in which it has a much bigger stake worldwide and experience in the Pakistan situation. Although the RAP team did not contact representatives of either company to ascertain the reasons behind these decisions, the following were undoubtedly factors. First and foremost, the return on investment was good for kinnow juice and seed. Worldwide economics of oilseed and tomato processing, in contrast, cast doubt on returns on investment in those industries. Second, the investment required in both kinnow juice and seed was much lower and thus less risky than that required for tomato or oilseed or oil processing. Third, the kinnow juice and hybrid seed opportunities could be pursued only within Pakistan; the oilseed opportunity could have been (and was) pursued by selling the oilseeds and oils themselves to Pakistani companies, and tomato

processing could have been developed in any number of countries. Had these factors been identified at the outset, it would have been clear that U.S. investor interest was unlikely. Non-investment forms of collaboration with U.S. companies should have been considered.

ENSURING ADEQUATE RESOURCES AND LOCAL CULTURAL INTEGRATION SKILLS

Lesson

Activities that seek to develop new industries must have a realistic level of funding and an adequate level of technical and management support, and must draw on local skills in integrating the new ideas and technology into the agricultural and cultural milieu of the host country.

Background

The Agricultural Sector Support Program (ASSP) included a component designed to develop a nontraditional agricultural export crop sector. The Horticulture Export Development Project (HEDP) developed marketing intelligence profiles, production and postharvest technology training manuals, and training videos; identified constraints to the development of the industry and proposed solutions; and recruited and worked with growers, export service organizations, and potential buyers. The project did not achieve its goal, and the activities that were started have largely disappeared.

Successful industry development programs address sustainable development goals in the same way that fostering U.S. investment in the local economy does — by introducing new, cost-efficient, and environmentally sensitive technology; creating new industries and employment; and providing opportunities for micro and small enterprises providing support services.

Comments

The project failed because of three significant flaws in its design: (1) it was significantly underfunded for the ambitiousness of its goal, (2) it did not have a resident expatriate technical advisor, and (3) it did not have local expertise to adapt techniques that had been successful elsewhere to the Pakistani situation.

The project budget was \$1.2 million. This amount was simply not adequate to finance the myriad of complex and time-consuming activities required to successfully launch a new industry, especially one as complex as the production of new crops for distant and very quality-conscious markets. The PROEXANT project in Ecuador, which had the same goal — the development of a horticultural crop export industry — had a budget of \$12.5 million.

A second design flaw was the failure to include on the project team a resident expatriate technical advisor. Instead, a part-time expatriate technical advisor stationed in the United States made visits to Pakistan as deemed necessary. The successful introduction of new crops that are difficult to produce and must be of high quality requires continuous provision of technical advice. Whereas regular visits by a part-time advisor can adequately address certain technical training and implementation issues, they are inadequate for timely and effective handling of issues and problems that arise as the crop is being grown and that often require an inordinate amount of time, effort, and knowledge in a short period.

The third flaw was in not integrating in the project's design Pakistani expertise in horticulture and in the culture of the local agricultural community. This expertise is required to complement the technical

assistance provided by expatriates, who know the crops in other settings but do not know how to adjust production to local agronomic and cultural factors to achieve the best results.

It was pointed out to the RAP team that the project contractor was given a free hand in designing the project, including the budget level. The fact that the contractor had engaged in at least one similar project was taken as an indicator of its credibility for the HEDP design, even though the contractor was not familiar with Pakistan. Design of such ambitious projects should include a "reality check" with others experienced in the business to be developed. This step is invariably taken in the private sector and is a practice well worth the relatively minor expense involved. Further, projects should be implemented through performance-based contracts with U.S. agribusinesses engaged in the business being developed.

SUSTAINING POLICY REFORM EFFORT

Lesson

Policy reform achieves its greatest progress under a government favorably inclined to reform. However, policy reform projects need to be a continuing effort so that needed analyses, recommendations, action plans, and support are in place when the environment is conducive to change.

Background

The Agricultural Sector Support Program (ASSP) included a component that was a direct attempt to change Government of Pakistan policies that discouraged private sector agribusiness development. The component sought not only to remove those constraints, but also to establish government policies that would encourage private sector agribusiness action conducive to growth.

ASSP's policy reform activities carried on as the project was implemented included base analyses by the principal contractor; use of a global project (Agricultural Policy Analysis Project) for other specialized analyses; dialogues involving public and private sector decision makers; and creation of the AgriBusiness Cell, a unit within the Ministry of Food, Agriculture and Cooperatives to ensure the inclusion of agribusiness concerns and issues in the Ministry's planning and decision-making processes.

Policy reform projects such as ASSP address USAID goals by increasing the role of private sector participants in policy development and reform, and by linking economic decisions to the market.

Comments

ASSP activities began in 1987 and were concluded in 1994. Activities targeted at agribusiness policy reform included preparation of analyses highlighting government-imposed constraints, establishment of policy-change goals in specific agribusiness sectors, and dissemination of this information to government and private sector interest groups.

Although the Pressler amendment curtailed planned program actions in 1993-1994, agribusiness activities aimed at policy change were carried out under three governments: those of Benazir Bhutto, Mian Mohammed Nawar Sharif, and the returning Benazir Bhutto. People interviewed agreed that the Sharif government was most receptive to policy reform fostering commercial agribusiness but were unanimous in their opinion that the Sharif government's actions were expedited by the groundwork laid by ASSP during Benazir Bhutto's first term. Hence, although some policy reform was accomplished during the initial Bhutto term, the ASSP's work and accomplishments during this period developed the rationale, critical base of support, and initial successes that led to even greater accomplishments during the Sharif government.

Our visit to Pakistan came shortly after Benazir Bhutto regained office. The attitude of many people the RAP team encountered in the agribusiness sector was that desired policy reform had slowed, but that this could very well change under the next Prime Minister. This feeling was coupled with the conclusion that USAID-initiated policy analysis and coalition-building should continue during the Bhutto rule to facilitate rapid change if her policies change or when a new government assumes power.

ADVANCING INDUSTRY KNOWLEDGE AND POLICY REFORM

Lesson

A project that develops, organizes, and disseminates detailed industry knowledge, where that information has been unavailable, sensitizes government, financiers, and private agribusinesses to the opportunities, problems, and needs of agribusiness development and, by itself, acts as a policy reform instrument.

Background

The ASSP began with a series of industry analyses to identify government policy and regulatory constraints to the development of a dynamic agribusiness sector and recommend actions to remove or alleviate those constraints. These analyses were contained in a series of industry reports disseminated to both public and private sector decision makers with a stake in those industries.

These activities were powerful actions, bringing those affected by poor government policies into the policy reform process, a key USAID sustainable development goal.

Comments

The analyses prepared under ASSP were the first comprehensive industry studies ever conducted in Pakistan. They included key sectors such as oilseed processing, hybrid seed, farm equipment, fertilizer, and processed foods. The analyses covered the points traditionally detailed in industry studies — demand, industry capacity and structure, cost structure — but went further by identifying industry problems and their causes, focusing especially on how government policies and regulations inhibited the further development of the industry.

Our interviews revealed that even the executives in the industries analyzed gained from the breadth and depth of the analyses. Perhaps the executives knew much or even most of the information presented, but the logical and rigorous model employed in the analyses — organizing and analyzing heretofore known but scattered information into a cohesive, usable form — clarified issues and solutions. Moreover, the analyses sensitized both private- and public-sector decision makers to the problems, opportunities, and needs of the industries concerned, and led them to seek reforms.

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INVOLVING LOCAL ORGANIZATIONS

Lesson

Effective change involves competent local organizations.

Background

Most of the projects (and subprojects) reviewed by the RAP team included cooperation with or the creation of an organization headed and staffed by Pakistanis. The Bulk Wheat Program utilized the Grain Management Cell of the Government of Punjab Food Department; the Agricultural Sector Support Project created the AgriBusiness Cell; the Management of Agricultural Research and Technology Project created the Directorate of Agribusiness Relations; and the Broiler Disease Identification Laboratory project used the foremost poultry company in Pakistan. The exceptions were the successful Cargill and Pioneer investments, both headed by expatriate managers (but also using Pakistani staff), and the unsuccessful Horticulture Export Development Project (HEDP).

The Mission promoted USAID's goals in democracy in the aforementioned activities by placing the responsibility for change-oriented activities with Pakistanis, including public and private sector parties positioned to achieve project goals.

Comments

The RAP team met with those who headed the aforementioned projects that relied on an existing Pakistani organization or created one to undertake or assist in project implementation. The team did not meet with the heads of the Cargill and Pioneer operations, both of whom were out of the country, but did meet with a key executive in each organization — both Pakistanis. In every instance, the team was impressed with the evident quality of the person who headed the project and, where the team met them, their support staff. They were knowledgeable of the details of their projects, had thought about the reasons for the project's success, and had also thought about how the successes achieved could be extended. Interviews with other people familiar with the projects brought forth opinions that coincided with those of the team.

The case of the AgriBusiness Cell is most instructive of the successes achieved because it operated in both the public and private sector on sensitive policy and regulatory issues. The Agribusiness Cell's principal activity was to advise the Government of Pakistan on economic policy matters affecting agroindustry development. Executives in the public and private sectors, when interviewed, were unanimous in their agreement that the principal factor in the Agribusiness Cell's success was the Chairman, Dr. Imtizaj Husain. Dr. Husain was a career Ministry executive, a respected agriculturalist and researcher, and someone seen by the private sector as understanding the impact that policy and regulatory reform could have on agroindustry development. All those interviewed believed the Agribusiness Cell would have failed in its government advisory role without Dr. Husain's ability to perceive the needs of both government and the private sector and to formulate and lead the dialogue necessary to negotiate positions that provided important incentives to increased private sector investment in agribusiness.

The cases of Cargill, Pioneer, and the HEDP strengthen the argument for a strong local organization. All were, in effect, new business ventures. The two private sector ventures established themselves in the way a multinational organizes a new, foreign investment. They appointed as manager an expatriate career employee, who created an organization that included as many highly competent local staff as possible. HEDP, on the other hand, relied on a foreign-based expatriate project manager backing up a Pakistani project coordinator who had little or no experience in producing and handling products for demanding export markets. As noted above, HEDP, in introducing a new business into Pakistan, should have organized along the foreign investment model, relying on a proven, field-based expatriate resident manager backed by Pakistani staff who could adapt the technical and managerial success factors from other countries to the local situation.

USING AGRIBUSINESS COMPANIES AND REWARD-OR-PENALTY COMPENSATION SCHEMES

Lesson

Employing U.S. agribusinesses under reward-or-penalty compensation schemes for development projects that have measurable business results should be tried.

Comments

The RAP team believes the Horticulture Export Development Project (HEDP) would have had a good chance of success if USAID had contracted its design and implementation to a successful U.S. horticulture company under a reward-or-penalty compensation scheme. This would have brought to HEDP the skills of a company with demonstrated success in horticultural production and marketing.

The reward-or-penalty compensation scheme is essential to this arrangement because it will provide the successful contractor a new profit center or require it to incur a penalty for failure. In the event of success, USAID would be able to recoup part or all of its actual cash outlay or channel it to other project activities. The penalty could be structured along the lines of other performance contracts USAID has begun to use, tying specific payments to the achievement of objective, measurable, and meaningful accomplishments. Another benefit of the performance approach is the reaction USAID will receive from private companies approached to consider projects. If no U.S. agribusiness wants to take on a project, USAID can take that as an indication of the project's poor prospects, and drop it.

PRE- AND POST-ACTIVITY ACTIONS FOR TECHNOLOGY TRANSFER PROJECTS

Lesson

Sound pre-activity planning and post-activity follow-up are required to optimize the effectiveness of technology transfer activities such as training foreign nationals abroad and using International Executive Service Corps volunteers.

Background

The Pakistan Mission trained a relatively small number of Pakistanis in commercial agribusiness through overseas instruction for individuals and through the use of International Executive Service Corps volunteers to work with Pakistani businesses on defined problems.

Comments

The RAP team's review of Mission training programs was limited to reading program evaluation documents and meeting with five people who had participated in dairy training programs. On the basis of this very limited examination, the team recommends the following changes in the programs to increase their effectiveness.

- Training programs should be designed on the basis of the participant's background and needs. In some instances, trainees have not been sufficiently interviewed to ascertain their background and true needs, and the resultant training program has missed the mark. Further, because trainees often lack a full appreciation of what they need until they have been exposed to some training, there should be some flexibility in the program after its commencement.
- Training groups should be composed of people with similar backgrounds and needs to allow interchange of issues before and after training. In some instances, commonality might be something other than the industry involved. For example, it might make more sense to group dairy-processing trainees with other food-processing trainees than with dairy production trainees.
- Training in hands-on operations will be more beneficial if it allows participants a lengthy stay at one facility rather than moving them around. A facility must be chosen that will transfer knowledge applicable in Pakistan.
- Training should be conducted in a climatic setting somewhat similar to Pakistan. For example, it makes sense to send livestock trainees to a state with a warm climate rather than, say, Minnesota.
- USAID should take stronger steps to form effective alumni associations of returned trainees. Such associations can help participants reinforce what they have learned, expose them to new knowledge brought back by other trainees, and form the base for strengthened industry associations and their initiation of education and policy and regulatory reform programs.

- Problems to be addressed by International Executive Service Corps (IESC) volunteers need better definition at the outset. Better definition of volunteer missions should increase the percentage of Pakistani company respondents indicating that technology transfer had taken place (55 percent); that their requirements had been completely addressed (60 percent), and that they were satisfied with the volunteer's advice (65 percent). The base numbers cited are unacceptable in private consulting, and they should not be acceptable in USAID-provided consulting.
- The issue of IESC volunteer preparation needs to be addressed. Forty-four percent of company respondents reported that their volunteer was unfamiliar with their business environment or had not been adequately briefed. In addition to being provided basic industry and company information, the matched company and volunteer should have a written question-answer interchange prior to the volunteer's arrival in country.

LOCAL DEMAND FOR NONTRADITIONAL EXPORT FOOD CROPS

Lesson

Projects dedicated to the development of nontraditional crops for export must consider the potential for sales in the local market.

Comments

The RAP team found no evidence that the Horticulture Export Development Project (HEDP) considered the domestic market potential for the new crops it intended to introduce — strawberries and asparagus. This potential must be considered; even if local demand for the product is related to its use as livestock feed; there will always be a need to dispose of product that does not meet export standards. The volume of such product will likely be high in the early stages of production and will continue no matter how sophisticated production becomes.

There is ample evidence to suggest that domestic markets may provide a significant and continuing source of revenue. Although HEDP ceased operations several years ago, there is a very profitable and growing market for the strawberries the project introduced into the country. There was also a market for asparagus, which, had it been more effectively addressed, might have resulted in wider continuing interest in asparagus production. In Sri Lanka, melons introduced for export markets as part of a USAID project are being completely absorbed by a domestic market that was previously unfamiliar with the product. In the Philippines, the local market for cut flowers has proven a boon to USAID-supported floriculture activities targeted for export markets.

The RAP team recommends that the design of a major project to introduce production of a nontraditional food crop for export include some market research to assess potential local demand. If local demand does not appear to exist, the project will have to make some provision for disposing of product that is not acceptable in the export market. Dumping the product on fields has little real economic value. If a local market exists or can be developed, selling the products there may bring in significant revenue to the farmers who have taken on the developmental risk.

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ANNEX A
RAP TEAM'S ITINERARY

Date/Time	Appointments
May 2, 1994	
09:00 A.M.	Meeting at the Mission
01:30 P.M.	Dr. Imtizaj Ahmed, Mr. Amer Raza Agribusiness Cell, Ministry of Food and Agriculture Islamabad
May 3, 1994	
08:30 A.M.	Mr. Ahsan Tayyab Project Implementation Officer Asian Development Bank Islamabad
May 4, 1994	
08:30 A.M.	Mr. Fazal Rehman Khan Swabi (fruit/asparagus farm, packing house)
May 5, 1994	
10:00 A.M.	Dr. Mumtaz Ahmad, Mr. Sultan Mahmood Khan National Agriculture Research Council (NARC) Pakistan Agriculture Research Council (PARC) Islamabad
05:15 P.M.	Depart for Lahore by PK-313
May 6, 1994 (Friday)	
May 7, 1994	
09:30 A.M.	Mr. Jehan Zeb (and members of Pakistan Dairy Assn.) Chairman Pakistan Dairy Association Lahore
11:30 A.M.	Eng. M. Gulzar A. Qazi Honorary Advisor Mr. Mohammad Sharif Additional Food Director Provincial Food Department Lahore
01:45 P.M.	Mr. Majid Abdullah (and members of Flour Millers Association) Chairman Pakistan Flour Millers Association Lahore

Date/Time	Appointments
04:00 P.M.	Mr. Enam Alee, Chairman Alee Strawberry Farm Lahore
May 8, 1994	
10:00 A.M.	Dr. Anwar-ul-Haq Production Manager Pioneer Pakistan Ltd. Lahore
02:00 P.M.	Dr. Abdul Rahman General Manager Cargill Pakistan Seeds Ltd. Lahore
Evening	Depart for Karachi by PK-305 at 1740
May 9, 1994	
09:30 A.M.	Ch. Bashir Ahmed, Chairman Dr. M. Mazhar Khan, General Manager Technical Services K&N Poultry Karachi Meeting followed by tour of poultry laboratory with Dr. M.S. Jaffrey
02:00 P.M.	Muslim Pervaiz (Mango Exporter) Karachi
May 10, 1994	
04:00 P.M.	Depart for Islamabad by PK-308
May 11, 1994	
10:00 A.M.	Mr. Syed Sadaqat Ali Senior Vice President Regional Development Finance Corporation Islamabad
May 13, 1994	
10:00 A.M.	Mission debriefing

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ANNEX B
PROJECT AND PROGRAM SUMMARIES

**SUMMARY OF AGRICULTURE AND RURAL
DEVELOPMENT SECTOR PORTFOLIO
1982-1994**

Programs & Projects	Total Project/Program Cost in US\$ (Millions)	Life of Project
Irrigation Systems Management Project (ISM) 391-0467	123.4	1983-1993
Agricultural Commodities & Equipment Program (ACE) 391-0468	559.5	1982-1992
Tribal Areas Development Project (TADP) 391-0471	27.0	1982-1994
Balochistan Area Development Project (BALAD) 391-0479	33.5	1984-1991
Forestry Planning and Development Project (FPD) 391-0481	27.5	1983-1993
Northwest Frontier Area Development Project (NWFADP) 391-0485	54.9	1983-1993
Gadoon Amazai	(38.3)	
Kala Dhaka	(4.9)	
Grant to UNDCP	10.0)	
DAPRC	(1.7)	
Transformation & Integration of the Provincial Agricultural Network Project (TIPAN) 391-0488	55.5	1984-1994
Management of Agricultural Research & Technology Project (MART) 391-0489	33.0	1984-1994
Agricultural Sector Support Program (ASSP) 391-0492	211.0	1987-1994
Commodity Import Program	(85.0)	
Sector Grants	(80.0)	
Training & Technical Asst.	(46.0)	
Total	1,125.3	

AGRICULTURAL SUSTAINABILITY, POLICY AND PRODUCTION PROJECTS AND PROGRAMS¹

AGRICULTURAL COMMODITIES AND EQUIPMENT PROGRAM (ACE)

**(391-0468) FY 82 — FY 92
Total Program Cost \$559.5 Million**

- GOAL** Promote the economic and political stability of Pakistan through the import of certain commodities and commodity-related services.
- PURPOSE** Increase productivity of the agricultural sector through the provision of needed imported commodities and equipment, and provide balance of payments support.
- AGENCIES** Ministry of Food & Agriculture (MINFA); Ministry of Finance, Provincial Irrigation Departments and others.

Procurement of commodities and equipment for the private and public sectors provides balance of payments support to the GOP. This supports policy dialogue and technical assistance efforts with the aim of increasing agricultural productivity. The program will be completed in April 1992 with procurement of commodities being completed under outstanding Letters of Credit.

Program Accomplishments

- Wheat and cotton imported to meet demand, following production shortfalls;
- Computers (120) purchased and installed at the University of Agriculture, Faisalabad, and research institutes for research, educational and administrative applications;
- Fertilizer imported in five tranches; and
- Private and public sectors supported through the importation of machinery, earthmovers and research equipment.

¹Goal, Purpose, and Agencies information taken from "Human Resources and Rural Development in Pakistan, 1984-1993" by Lance Lindoburg and Dr. S.M. Jafar, Academy for Educational Development, Inc. (draft); all other information from USAID/Pakistan booklet "Programs in Support of Agriculture and Rural Development."

AGRICULTURAL SECTOR SUPPORT PROGRAM (ASSP)

(391-0492) FY 87 — FY 94
Total Program Cost \$211 Million

- GOAL** Sustain economic growth in Pakistan through increased productivity in the agricultural sector.
- PURPOSE**
1. Provide balance of payments support to the GOP through commodity imports and sector grants.
 2. Remove key constraints to increased economic growth in the agricultural sector through policy reform and expanded private sector investment and participation.
 3. Strengthen the long-term capacity of the GOP in market based management of the agricultural sector and assist the GOP in developing the policy reform agenda.
- AGENCIES** Ministry of Food & Agriculture (MINFA); Ministry of Finance, Economic Affairs Division (EAD) and Federal Bureau of Statistics (FBS).

Policy reform and increased private sector participation in agriculture are promoted by the ASSP to strengthen the GOP's long-term ability to manage a market-based agricultural sector and to assist in agricultural policy analysis and food security.

As an umbrella follow-on to the successful Food Security Management Project (\$34.5 million) and the Agricultural Commodities and Equipment Program (\$559.5 million), the ASSP supports the Government of Pakistan's (GOP) policy reform program aimed at reducing agricultural subsidies, rationalizing agricultural prices, and reducing government competition and regulation of the private sector.

Training and technical assistance are provided to agribusinesses and the public sector to improve agriculture-related skills, to strengthen government capability to collect and analyze agricultural data, and to strengthen the management of agricultural projects.

The availability of more precise data has led to more relevant and improved analysis of data. Accurate crop forecasts and storage requirement projections result in direct savings to Pakistan by forecasting when and how much storage is required and by providing a more accurate supply and demand picture, as a basis for market prices.

Short-term private sector agribusiness training courses and in-country graduate preparatory courses are provided through the training component of the project to upgrade prospective public sector trainees' language and academic skills.

USAID-funded studies of six key agroindustries in Pakistan led to a National Agribusiness Assessment which identifies constraints to agribusiness promotion in Pakistan. To address these constraints, USAID developed and presented a National Agribusiness Action Plan to the GOP. Ministry of Food, Agriculture and Cooperatives concurrence and implementation of the plan, in conjunction with

USAID, through its newly established Agribusiness Cell, will continue policy reform, leading to a larger role for the private sector.

The ASSP has demonstrated the feasibility of expanding the production and exportation of horticultural crops in Pakistan — it provides technical assistance and training in horticultural crop production, handling, and storage of mangos, asparagus and strawberries to promote their exportation.

Partly as a result of policy reforms, potential investments in citrus juice processing and commercial seed and edible oil production are expected to increase dramatically.

PROGRAM ACCOMPLISHMENTS

- Policy reforms include the elimination of the ration shop system; replacement of interest-free loans with 8 percent loans; increase in the price differential between the purchase and sales price of wheat; and increase in fertilizer prices by 10 percent;
- GOP implementation of National Agribusiness Action Plan initiated, in conjunction with USAID;
- Cost benefits of rehabilitating storage facilities rather than constructing new facilities demonstrated; rehabilitated facilities (575,000 ton capacity) and improved management practices reduced wheat losses by 3 percent annually;
- Subsidy reduction of wheat prices (a benchmark obtained through policy dialogue) resulted in a GOP savings of \$150 million;
- Over 200 private sector participants trained since 1986; numerous private and public sector persons trained, both in long-term and short-term agriculture-related courses.

FORESTRY PLANNING AND DEVELOPMENT PROJECT (FPD)

(391-0481) FY 83 — FY 93

Total Project Cost \$27.5 Million

- GOAL** Help Pakistan increase its energy supplies and achieve energy self-sufficiency; secondarily, reverse the process of deforestation in Pakistan and expand the extremely limited forest resource base.
- PURPOSE**
1. Strengthen the capacity of federal and provincial government institutions to formulate, implement and evaluate policies and programs for increasing the production of fuel wood and timber in Pakistan;
 2. Strengthen the involvement of private individuals and organizations in the production of farm forest products on private lands;

3. Demonstrate the economic, technical and social feasibility of producing tree crops on privately owned farm and range lands.

AGENCIES Office of the Inspector General of Forestry (O/IGF); Pakistan Forestry Institute (PFI), Provincial Forestry Departments.

Trees play an increasingly important role in Pakistan's economy — they supply half of the country's cooking and heating needs and provide fruit, timber, fodder, and prevent soil and water erosion.

Technical assistance and training are provided to encourage tree farming as a secondary activity on farms and to reverse the trend toward deforestation in Pakistan. Institutionalization of an on-farm tree production network is under way. Private tree nurseries are gradually developing their own markets and recent research indicates farmers' willingness to buy seedlings for fuelwood and cash crop production, as a result of project interventions.

Environmental concerns and awareness-increasing activities of various nongovernmental organizations are supported by the project. One program develops and distributes environmental pollution packets for primary school usage, through provincial workshops.

Forestry research activities are under way through the Pakistan Forest Institute, NARC and the Agricultural Universities. Pakistani men and women are being trained at the Pakistan Forest Institute with 25 percent of future training slots reserved for women.

PROJECT ACCOMPLISHMENTS

- USAID-organized Forestry Policy Seminar recommendations are being incorporated into the Asian Development Bank's Master Forestry Plan for Pakistan;
- On-farm tree production network established; former and end-user linkages facilitate marketing and promote demand;
- Increased farm production of wood to meet industrial demand for cricket bats and hockey sticks, formerly imported from England, saves foreign exchange;
- MS and BS students trained and office buildings and hostels constructed at the Pakistan Forest Institute;
- Employment provided to Tarbela Watershed residents and interest in tree cropping generated;
- Saline land reclaimed by use of tree belts to lower water table.

**THE MANAGEMENT OF AGRICULTURAL RESEARCH AND
TECHNOLOGY PROJECT (MART)**

(391-0489) FY 84 — FY 94 Total Project Cost \$33 Million

- GOAL** Improve the income of small farmers, sustain an increase in food and fibre production and conserve the natural resource base.
- PURPOSE**
1. Develop and disseminate improved technology and information through key institutions; and,
 2. Foster a collaborative relationship whereby research institutions serve private agribusiness and farmers and use the private sector to disseminate marketable, improved technologies.
- AGENCIES** Pakistan Agricultural Research Council (PARC); National Agricultural Research Center (NARC); Arid Zone Research Center (AZRI); Agricultural Research Institutes (ARI) at Faisalabad, Sariaab and Tando Jam; Sindh Agricultural University; Agricultural University at Faisalabad (AUF); and the NWFP Agricultural University (NWFP/AU).

With agriculture employing nearly 70 percent of Pakistan's labor force, research has played a major role in propelling the agricultural, economy, and in turn, the entire economy to impressive growth rates throughout the 1970s and 1980s. Investments in agricultural research have historically proven to be a low cost source of agricultural growth in Pakistan — varietal improvements in wheat, cotton and rice have yielded exceptionally high rates of return.

The MART Project, USAID's capstone to its long and productive assistance to agricultural research in Pakistan (it built the National Agricultural Research Center and trained many of its scientists), is strengthening the national agricultural research network through a three pronged approach. Management deficiencies are addressed and linkages between national, provincial and international research institutes are strengthened. Technology packages are developed and disseminated to farmers and agribusinesses, and Pakistani scientists and researchers are trained.

Private sector involvement in agribusiness, a central policy reform of USAID, is promoted through collaborative research agreements between the National Agricultural Research Center (NARC) and Pakistani agribusinesses and manufacturers. Several recent agreements have resulted in product development to meet agricultural needs — additional agreements are being initiated. Private sector research is promoted by a USAID grantee which provides sub-grants to Pakistani scientists for stressed land research.

Farming Systems Research, a successful, multi-disciplinary approach to agricultural research in Pakistan, is established and being institutionalized at the national and provincial levels.

PROJECT ACCOMPLISHMENTS

- Product development and marketing of peanut threshers, poultry disease vaccines and zero-tillage drills by high-yielding, disease-resistant wheat varieties;
- Management of the National Agricultural Research network improved;
- Institutionalization of Farming Systems Research, focusing on farmer-oriented problems, is under way;
- New germplasm developed and introduced, enabling scientists to research high-yielding, disease-resistant plant varieties;
- NARC Communication Cells established to package and disseminate agricultural technologies.

TRANSFORMATION AND INTEGRATION OF THE PROVINCIAL AGRICULTURAL NETWORK PROJECT (TIPAN)

(391-0488) FY 84 — FY 94
Total Project Cost \$55.5 Million

GOAL Increase NWFP's agricultural yields, agricultural production, farm income and rural employment; secondarily, to transform the agricultural technology transfer network in the NWFP.

PURPOSE Integrate agricultural research in the Northwest Frontier Province (NWFP) with agricultural education at the University level; improve the quality of education offered and research undertaken by the University; and strengthen linkages with agricultural extension through a problem-solving, farmer-oriented outreach program.

AGENCIES NWFP Agricultural University (NWFP/AU), University Grants Commission.

To support its successful investments in agricultural education and to create a dynamic, problem-solving center of teaching, research, and outreach, the TIPAN Project is making improvements at the NWFP Agricultural University in Peshawar. This will serve as a major catalyst for agricultural development in the Northwest Frontier Province (NWFP), and in so doing, will attempt to address a problem inherent to many countries; that is, integration of agricultural research with agricultural education at the university level.

The university curriculum is being upgraded along with reorganization of faculty and administration to improve teaching, research and outreach activities. Approximately sixty percent of the \$20 million university construction project for a plant science building, library, student/faculty center and experimental farm is completed.

A farmer-oriented outreach program (Farming Systems Research), linking the Agricultural University and its merged research capability with the NWFP's agricultural extension system, has been

designed to strengthen operational linkages, train outreach personnel and develop media programs for extending knowledge to extension personnel and farmers.

More than seventy NWFP Agricultural University faculty members and research scientists have received postgraduate training in the United States and, at any given time, approximately sixty faculty and staff are enrolled in degree programs. Current university leaders are increasing efforts to extend educational opportunities for women. Employment of women in research, teaching, and outreach at the university and in the government is likewise supported.

PROJECT ACCOMPLISHMENTS

- Twenty-two-building university construction project 60 percent complete;
- Outreach services provided to farmers utilizing Farming Systems Research;
- Educators and researchers received graduate degrees and management training;
- Provincial research stations computerized and strengthened;
- Plans developed for administrative and financial restructuring.

IRRIGATION SYSTEMS MANAGEMENT PROJECT (ISM)

(391-0467) FY 83 — FY 93

Total Project Cost \$123.4 Million

GOAL	Increase agricultural productivity and production through more efficient, reliable and equitable distribution of water.
PURPOSE	<p>Component 1 - General Institutional Improvement: Assist the four Provincial Irrigation Departments and the Federal Coordination Cell to develop the capacity for efficient management, operation and maintenance of rehabilitated irrigation systems.</p> <p>Component 2 - Research: Develop national capacity for research in irrigation and drainage and assist priority research program in farm water management, delivery system improvement, conjunctive use of ground and surface water, and reduction in salinity and water logging.</p> <p>Component 3 - Command Water Management: Develop replicable models which result in the provincial to farm-level institutional infrastructure necessary for effective and integrated agricultural management.</p>
AGENCIES	Provincial Irrigation Departments (PIDs); Federal Flood Commission, Ministry of Water & Power.

Irrigation, the major contributor to Pakistan's agricultural productivity, accounts for nearly ninety percent of the country's major crops. Maintenance of the deteriorating system is critical to continued agricultural growth. The Irrigation Systems Management Project improves the performance and condition of the world's largest contiguous irrigation system through its Institutional Development and Rehabilitation Sub-project.

In conjunction with the World Bank, this subproject is repairing deteriorated portions of canals, drains and barrage gates and is helping to improve overall water management skills at both the federal and provincial levels. Officials receive management training while information systems are being established to monitor performance and generate information needed to make decisions.

Policy reforms promoted by the project include increased government funding and increased water user charges to ensure sufficient funding to maintain irrigation systems.

The Research sub-project consists of a multidonor grant to the International Irrigation Management Institute (IIMI) for institutionalization of field oriented research, focusing on demand irrigation. Pakistani research organizations are provided subgrants to conduct research in water management practices and methods of combating waterlogging and salinity problems at the farm level.

At the user end of the system, the recently completed Command Water Management sub-project strengthened water user associations, trained farmers in the optimal use of water for crops, and lined over 1,200 kilometers of farmer-managed watercourses. The formation of water user associations was encouraged as a way of increasing farmers' decision making in the management, maintenance and repair of their irrigation systems.

USAID PROJECT ACCOMPLISHMENTS

- Watercourses lined — irrigation canals, drains and barrage gates rehabilitated;
- Heavy machinery, equipment and computers provided to irrigation agencies to rehabilitate and maintain irrigation systems and improve their management;
- Information centers, training units and computer cells established at Provincial Irrigation Departments (PIDs) to improve management and training capabilities.

RURAL DEVELOPMENT PROJECTS

TRIBAL AREAS DEVELOPMENT PROJECT (TADP)

(391-0471) FY 82 — FY 94
Current Project Cost \$27 Million

GOAL Accelerate the integration of the Tribal Areas into the socioeconomic mainstream of Pakistan and improve the quality of life for tribal inhabitants.

PURPOSE Component 1 - Tribal Areas: Strengthen the capability of government institutions to plan and implement development programs in the Tribal Areas through road improvement, irrigation, agricultural/forestry development and social service facilities.

Component 2 - Sarhad: Help develop Sarhad Rural Support Corporation (SRSC) into a fully operational, financially viable, well-managed independent entity to carry out community-based development program in the selected areas of Northwest Frontier Province.

AGENCIES Ministry of States and Frontier Regions (SAFRON); Federally Administered Tribal Areas Development Corp. (FATA-DC); Government of Northwest Frontier Province (GONWFP); Departments of Communication and Works (C&W), Planning and Development (P&D), Local Government and Rural Development (LG&RD), FATA-Agriculture and FATA-Education.

This project was the first attempt by any donor to promote development in the Tribal Areas, demonstrating that development projects can be successful despite harsh, difficult and isolated environments. Sustaining the momentum and improved living standards attained by the Tribal Area Development Project is crucial as USAID technical and planning support decreases. The challenge is to leave a self-sufficient system in place which is capable of continuing the flow of benefits to beneficiaries.

Institutionalization of one agency within the Planning and Development Department (P&D) of the Government of the Northwest Frontier Province (GONWFP) to coordinate and implement Tribal Area development activities, is being accomplished in several ways.

Project-funded socioeconomic profiles of Kurram, North Wasiristan and South Wasiristan provide data to be used for rational project selection and more equitable service delivery.

The provision of computers and staff training is strengthening development-oriented line agency and the P&D's capability to plan and manage development activities. TADP assistance resulted in the computerization of the GONWFP's annual development plan, the first province to accomplish this.

Sustained community development requires beneficiary desire for interventions and willingness to maintain activities by providing time and resources for their support and maintenance. Strategies are evolving to mobilize beneficiary participation and to prepare communities to continue activities with less support from line agencies and donors.

A participatory approach to development, established by the Aga Khan Rural Support Program, is being utilized by the TADP-funded Sarhad Rural Support Corporation in Kohat and Charsada Districts. Villagers form Village Organizations which serve as the focal point for the identification, funding and implementation of community activities.

- Kohat and Charsada District residents mobilized to establish participatory Village Organizations;
- Construction of project-funded roads increased access of area residents.

Technical and financial assistance is provided to Village Organizations to support implementation of project activities.

PROJECT ACCOMPLISHMENTS

- Computerization of the GONWFP Annual Development Plan; computer equipment and training provided to four line agencies to accomplish this;
- Socioeconomic profiles completed for three Tribal Agencies — data provides information for decision making and rational planning;
- Rural development infrastructure projects completed (irrigation and water systems, schools and clinics).

NORTHWEST FRONTIER AREA DEVELOPMENT PROJECT (NWFADP)

(391-0485) FY 83 — FY 93

Current Project Cost \$54.9 Million

- GOAL** Eradicate opium poppy production through rapid socioeconomic development in the remote areas of Pakistan. With the addition of support to a drug abuse reduction center, the project is also designed to contribute to the goal of eliminating drug abuse in Pakistan.
- PURPOSE** Component 1 - Gadoon-Amazai: Change the area economy from one based primarily on poppy production to a diversified agricultural and non-agricultural system with strong ties to the national economy.
- Component 2 - Kala Dhaka: Halt existing poppy production and prevent future increases through a development effort which combines project funding and community participation. This effort is aimed at drawing the region and its people into the national economy, allowing them to benefit from recent development trends.
- Component 3 - Drug Abuse Prevention Resource Center (DAPRC): Support and encourage local, provincial and national efforts to achieve a drug-free society through reduction of both drug demand and drug production; serve as a clearinghouse for distribution of accurate information on drug abuse prevention acceptable in the Pakistani context.
- AGENCIES** NWFP P&D: Special Development Unit; Project Coordinating Unit; Various Federal/Provincial Government Line Agencies. Regional Narcotics Education Project, Pakistan Narcotics Control Board, U.S. Embassy Narcotics Affairs Unit.

The Northwest Frontier Area Development Project serves as USAID's umbrella project for Pakistan's narcotics reduction and crop substitution goals. Initiated in 1983 to target Pakistan's major poppy production area, Gadoon-Amazai, infrastructure development, agro-forestry and off-farm employment and training are provided to area residents as the GOP continues its poppy enforcement. These efforts helped the GOP eradicate poppy production, increase wheat and corn yields, and convert the Gadoon Amazai poppy-based economy into a diversified farming system, similar to the adjoining irrigated areas of Swabi.

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Construction of roads, small infrastructure schemes, irrigation systems and the introduction of high value cash crops increases access to isolated villages, provides new windows of opportunity, and improves the living standards of area residents. Alternative income and off-farm employment activities, including the Gadoon-Amazai Industrial Estate, resulted in the employment of residents and the establishment of non-formal female education centers.

Strategies are evolving to increase beneficiary participation in the selection and maintenance of community development activities and to strengthen the Government of Northwest Frontier Province's (GONWFP's) capability to plan and implement development activities toward a sustained rural development system.

Due to the success of the Gadoon-Amazai project in eradicating poppy production, project interventions are extended to the United Nations multi-donor narcotics project (\$5 million), targeting Dir and Buner, and a neighboring area of Kala Daka (\$4.9 million), while the government continues to enforce its poppy ban.

USAID support of the National Drug Abuse Prevention Resource Center (DAPRC), Islamabad, (\$1.7 million), established by the Pakistan Narcotics Control Board (PNCB), provides a demand reduction approach to the narcotics problem in Pakistan.

PROJECT ACCOMPLISHMENTS

- Elimination of poppy production (8,000-10,000 acres) in Gadoon Amazai, as a result of GOP poppy reduction enforcement and project interventions;
- Road construction and maintenance improved access of residents to services, markets and employment;
- NWFP residents employed and trained through the project;
- Rural development schemes completed (village electrification, industrial estate infrastructure, irrigation and water systems, schools, clinics, and forestry plots).

BALUCHISTAN AREA DEVELOPMENT PROJECT (BALAD)

**(391-0479) FY 84 — FY 91
Total AID Cost \$33.5 Million**

GOAL	Contribute to the socioeconomic development of the lagging areas of Pakistan.
PURPOSE	Improve the quality of life for people who live in the Makran through improving roads, water infrastructure, agricultural development, access to social services; and strengthen Balochistan's planning, management and human resources in the process.
AGENCIES	Government of Balochistan (GOB): Planning & Development (P&D), Communication & Works (C&W), Irrigation & Power.

To maximize gains achieved in Balochistan Province, efforts are under way to complete initiated development activities and to sustain the flow of benefits to Makrani residents, as the project approaches its completion date. Key to this is the institutionalization of the Makran Project Planning and Monitoring Unit (PPMU).

A study addressing institutional approaches to planning in Makran is identifying strategies to accomplish this. Likewise, the provision of computers and training of government staff is improving information and management systems.

Project-funded Ketch River Bridge and approach roads are completed, providing improved access to an isolated area of one of the least developed provinces in the country. Other roads have been upgraded and maintained.

PROJECT ACCOMPLISHMENTS

- Ketch River Bridge and approach roads completed;
- Rural roads upgraded, shingled and maintained — heavy equipment provided to C&W Department for road maintenance;
- Infrastructure projects completed (schools, *karezes*, low-water crossings, watercourses and recharge dams); and
- Makrani students trained in the United States.