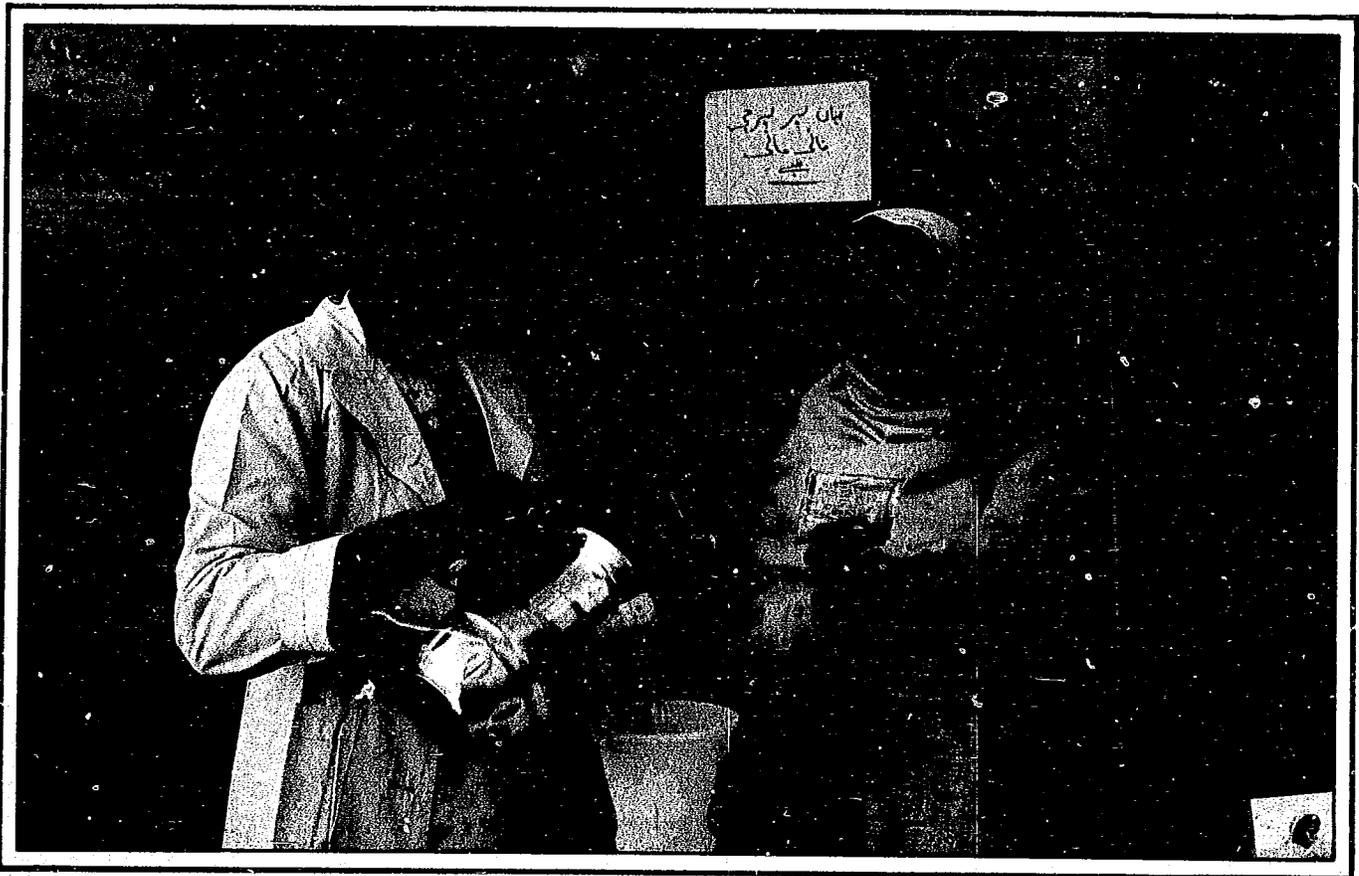


USAID IN PAKISTAN: PUNJAB



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PUNJAB

Cover Picture :

Demonstration of oral rehydration salts preparation at a health center near Lahore which received USAID funding.

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INTRODUCTION

This booklet is one of a four-part series highlighting United States Government support for economic development in Pakistan. Since 1951 the United States, through its Agency for International Development (USAID), has channelled nearly \$7 billion in support of Pakistan's development efforts. From 1982 to 1987, U.S. economic assistance totalled \$1.6 billion.

USAID is working with national and provincial governments to stimulate dynamic, self-sustaining growth throughout Pakistan. USAID funding of development programs reflects Pakistan's long-term development priorities and emphasizes activities in agriculture, energy, health, and training. Rural development is a top priority with nearly one-half of the program directed at increasing agricultural productivity.

The pages which follow mainly describe USAID-supported development activities in the Punjab during the 1982 -- 1988 period. These activities show how USAID projects, while national in scope, advance economic and social development at the provincial level.

AGRICULTURE



Lining of the water courses has improved the efficiency of on-farm water management resulting in higher yields and better incomes for the farmers. A local mason at work near Shahkot laying the bed of a watercourse.

Overall growth of the national economy depends on advancements in agriculture. Punjab, the agricultural heartland of the nation, produces 78 percent of Pakistan's wheat, the country's main food staple, and 75 percent of its cotton. Cotton or cotton products earn much of Pakistan's foreign exchange.

For an estimated 40 million villagers who live in rural Punjab, better incomes depend on improved agricultural yields. Yields have increased in recent years as a result of high-yielding seed varieties, more efficient fertilizer use, and rehabilitation of the irrigation system. However, much higher yields are possible with still better use of these inputs.

USAID is supporting efforts by the national and provincial governments to increase agricultural productivity in the Punjab through:

- Assistance to national and provincial agricultural research institutes; and

- Improvements in the efficiency of the irrigation system and the management of water resources.

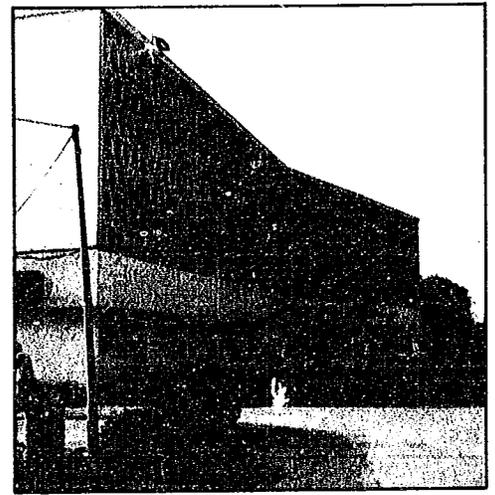
Research and Education

Sustained agricultural growth requires relevant research and training, appropriate technology, and effective extension services. USAID is supplying over \$2 million in field and laboratory equipment and vehicles to half a dozen agricultural institutes in the Punjab for research and outreach activities.

Ayub Agricultural Research Institute, located in Faisalabad, has received about \$650,000 in equipment and ongoing support for its research on constraints to wheat productivity. Since 1980, there has been very little increase in wheat yields. Studies indicate that with better technology, yields in the rice/wheat areas could be increased by 30 to 40 percent.

Through the nationally coordinated Wheat Research Program, Ayub Agricultural Research Institute is collaborating with the National Agricultural Research Center (NARC), the Pakistan Agriculture Research Council (PARC), and the International Wheat and Maize Improvement Center (CIMMYT). With USAID financing, PARC is helping to coordinate a multidisciplinary, farmer-based approach to research with Ayub and other institutions in the Punjab.

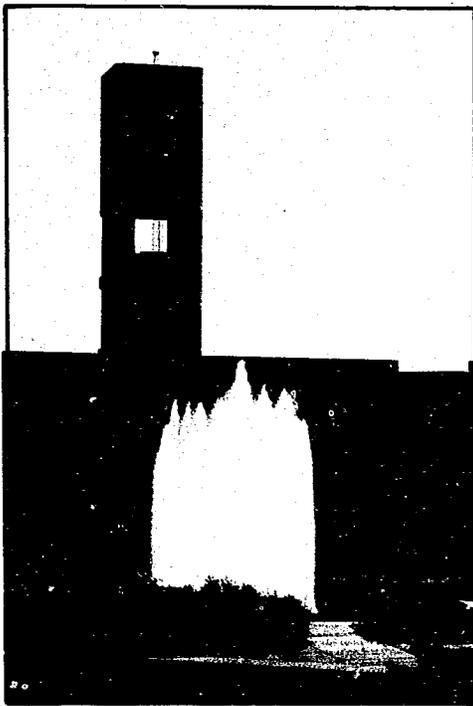
For example, a team of agronomists and social scientists interviewed farmers in Gujranwala and Sheikhpura Districts and observed their farming practices. The farmers mentioned the difficulty of preparing a suitable seed bed for wheat in the compacted soil of the harvested rice fields.



Ayub Agriculture Research Institute, Faisalabad, is one of the provincial institutions receiving USAID support.

Field trials in Punjab of a new method for direct sowing of wheat in the compacted soil of the harvested rice fields, called the "zero-tillage" have proved very successful in reducing turn-around time from one crop to another and eliminate land preparation costs. Picture shows wheat sown directly into the rice stubble already about six inches high (right) while the land preparation for traditional sowing in another part (left) of the same farm is still in progress.





National Agricultural Research Center (NARC), Islamabad, is one of the national institutions helping Punjab in a multidisciplinary, farmer based approach to agricultural research.

PID workshop in Multan is one of the three heavy agriculture machinery repair workshops being equipped and upgraded under the ISM project. Picture shows a technician working on one of the equipments supplied by USAID.



The research team identified a specially designed drill for direct sowing of wheat. Farmers are now testing this promising technology that could reduce turnaround time from one crop to another and eliminate land preparation costs.

Water management is another important research concern. Information on the performance of 500 tubewells and 81 watercourses in the Punjab has been collected. The watercourse data covers six years: three years prior to rehabilitation and the following three years. The data is now being analyzed and will help to determine policy directions for improved water management throughout Pakistan.

All provinces will benefit from USAID's assistance to national research institutes. For instance, USAID is working with the National Agricultural Research Center to establish a multimedia studio in Islamabad. Documentaries and training tapes will inform farmers of agricultural breakthroughs. USAID will also be financing the \$1 million expansion of NARC's training center.

Irrigation

Approximately 83 percent of the Punjab's farms are irrigated. An efficient irrigation system requires continual canal and watercourse rehabilitation, timely maintenance, detailed planning, and farmer support. For nearly 30 years USAID has been committed to the improvement and protection of this system.

In recent years USAID, under the Irrigation Systems Management project, has financed the rehabilitation of more than 900 kilometers of canals and surface drains in the Punjab at a cost of \$3 million. The 22 schemes completed thus far include work at Faqirian, Sillanwali, Ghazi Ghat, Hinjrai, and Lower Buddi Nullah. Additional rehabilitation valued at \$3.5 million is planned or in progress.

Institutional support and development is another important component of USAID-assisted irrigation activities. USAID is providing technical assistance, irrigation equipment, and earthmoving machinery to the Provincial Irrigation Department



Computerization of PID engineering design office in Lahore is helping design and monitor water resource delivery and maintenance systems.

(PID). PID's equipment maintenance workshops in Bhalwal, Lahore, and Multan have been renovated and re-equipped at a cost of approximately \$3 million.

The recent computerization of the PID engineering design office in Lahore is further demonstration of USAID's support. The computers will aid in the designing and monitoring of water resource delivery and maintenance systems.

Over the next few years some of USAID's irrigation activities will be in seven pilot command areas, regions served by one of the irrigation system's distributaries or canals. The four irrigation command areas in central and southern Punjab receiving USAID and World Bank assistance for Command Water Management activities are: Niazbeg, Shahkot, 6R Hakra, and Pakpattan. These activities aim at ensuring more reliable and equitable water distribution and use through community participation and improved water management.

USAID helped to establish a regional command water management office in Niazbeg near Lahore. In addition, USAID is providing scientific equipment and technical assistance to the Niazbeg office and to the smaller offices in the other pilot areas.

Command Water Management builds in part on the OnFarm Water Management (OFWM) project which officially concluded in June 1987. OFWM is regarded by the Government of Pakistan and the donor community as an innovative and successful program with impact far beyond the \$18.4 million contributed by the United States in the 1970s and early 1980s.



Under the Forestry Planning and Development project tree planting on private farms in the province is an important activity supported by USAID.

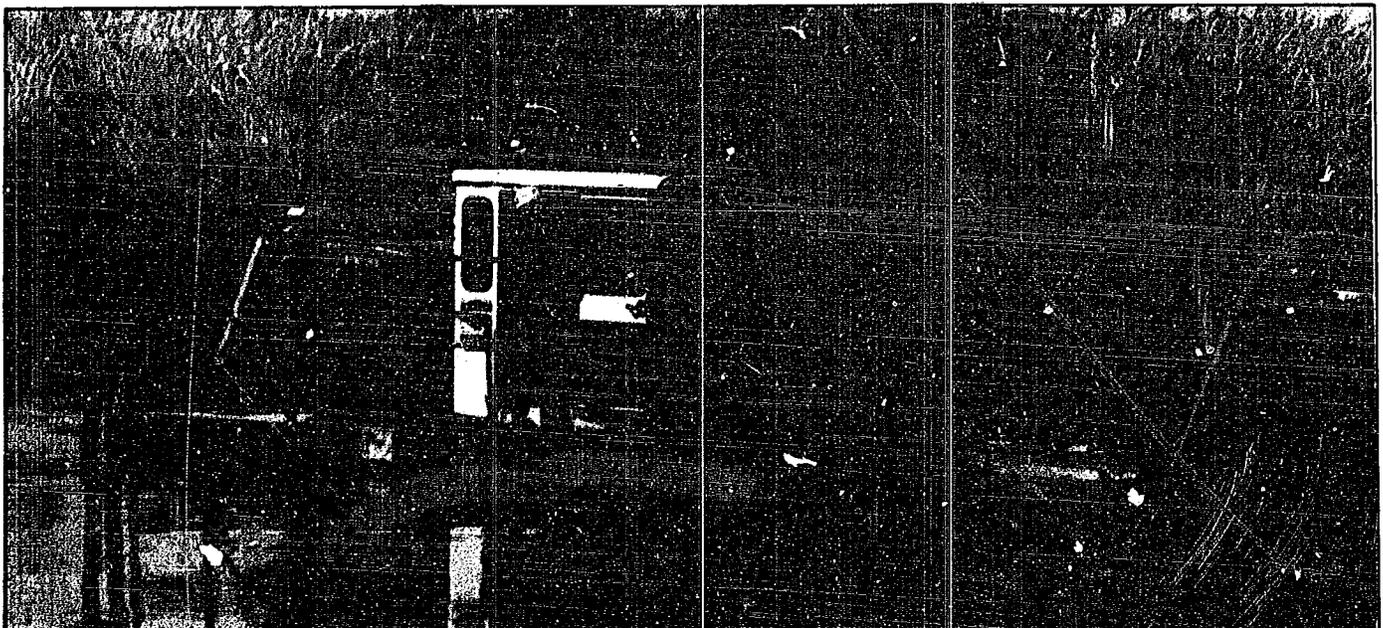
Main features of the program, which covered all four provinces of Pakistan, involved training, watercourse improvements, precision land levelling, and institutional development. The success of the On-Farm Water Management concept in providing for more efficient water delivery and use has been repeatedly demonstrated and is now widely adopted by other institutions both in Pakistan and abroad.

Forestry

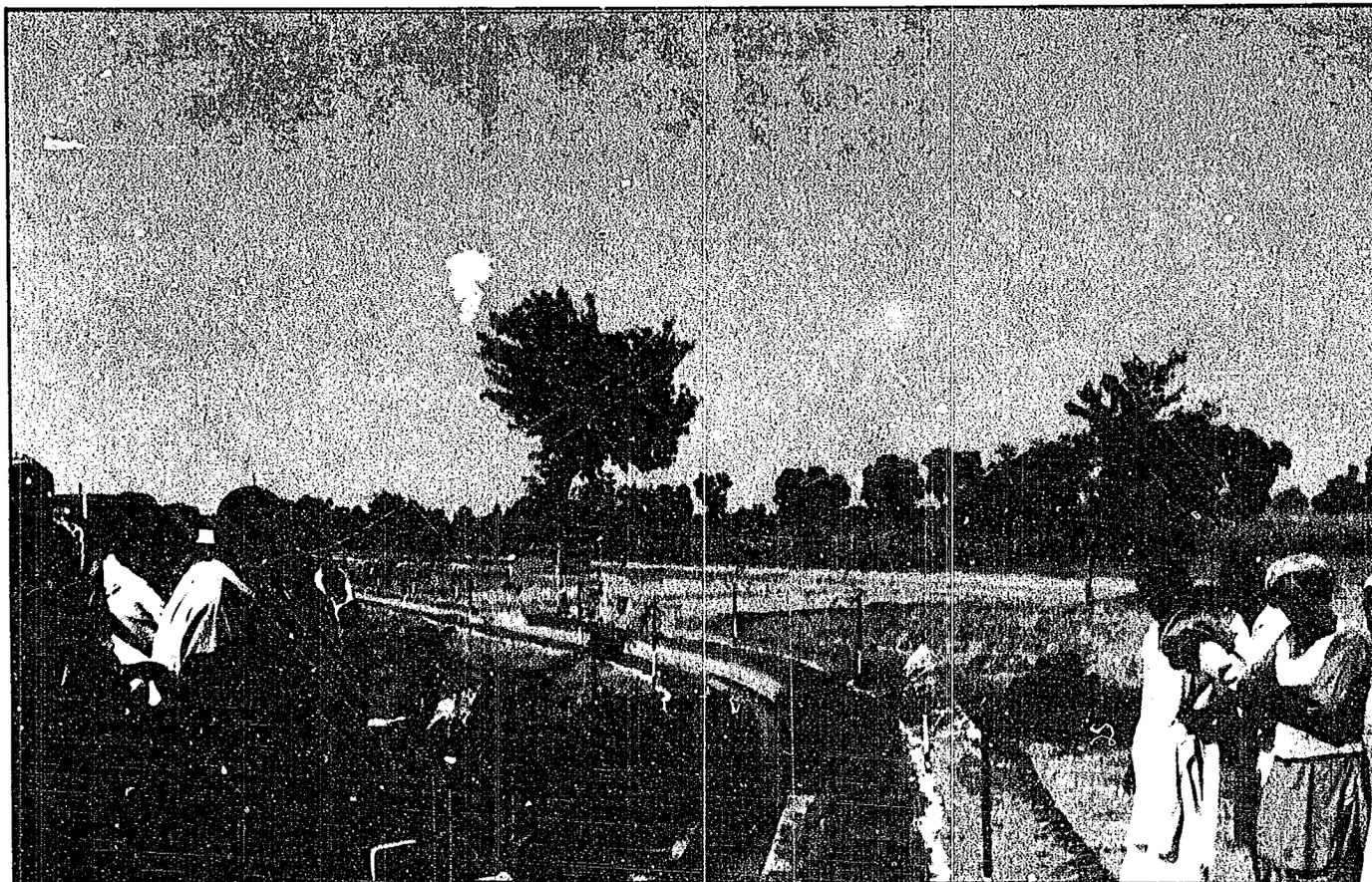
USAID is also supporting agricultural activities in rainfed areas. Under a USAID forestry project, seedlings are being provided to farm families for tree planting on private farmlands in Gujrat, Rawalpindi, Attock, Jhelum, and Sialkot Districts.

During the first year of the project, about 20 private seedling nurseries were established. Approximately 250 families planted trees on marginal, unproductive land. These trees will provide fodder, fuel, and perhaps income if planted as a cash crop. Moreover, readily available firewood will allow animal waste to be used as fertilizer rather than fuel.

Canal dredger supplied by USAID.



COMMAND WATER MANAGEMENT IN THE PUNJAB



A newly completed water course near Haroonabad branches off from 6R Hakra minor which is part of the canal rehabilitation work under the Command Water Management component of the ISM project.

Under the Command Water Management project, USAID is rehabilitating watercourses and supporting the formation of Water Users Associations (WUAs). WUAs are farmer organizations responsible for maintaining watercourses, the channels which bring irrigated water to farmers' fields. During the past couple of years, over 450 WUAs have been formed in the Punjab's four pilot command areas.

Evaluation studies by WAPDA and the Punjab Economic Research Institute report the following benefits from watercourse improvements:

- more efficient water delivery,
- reduction in water losses, and
- increases in cropped areas, cropping intensities and crop yield.

USAID SUPPORTED AGRICULTURAL ACTIVITIES IN THE PUNJAB

Institutional Development (includes training, technical assistance, commodities, equipment)

Agricultural Machinery Research Institute, Multan
Agricultural University, Faisalabad
Ayub Agricultural Research Institute, Faisalabad
Barani Agricultural Research Institute, Chakwal
Barani Agricultural Research Institute, Bahawalpur
Fodder Research Institute, Sargodha
Forest Department, Rawalpindi, Lahore, Multan
On Farm Water Management Directorate and Training Institute, Lahore
Punjab Economic Research Institute, Lahore
Punjab Forest Department Research Center, Gatwal
Punjab Irrigation Department
Punjab Irrigation Research Institute, Lahore

Research, Education, and Training

Crop, livestock, and tree species studies
Water management research
Farm trials, irrigation demonstration farms
Long and short-term training at overseas institutions
In-country training in statistics, computers, management, planning, and technical fields

Equipment and Commodities

Workshop, earthmoving, construction, and irrigation equipment
Computer hardware and software
Research and hydraulic measurement equipment
Vehicles
Fertilizer

Water Resources

Rehabilitation of more than 900 kilometers of canals and drains
Tools and machinery for Provincial Irrigation Department's maintenance workshops
Approval of civil works for 374 watercourses, establishment of Command Water Management office at Niazbeg, and formation of 468 Water Users Associations

Forestry

Establishment of private seedling nurseries in 5 districts
Tree planting on 250 family farms

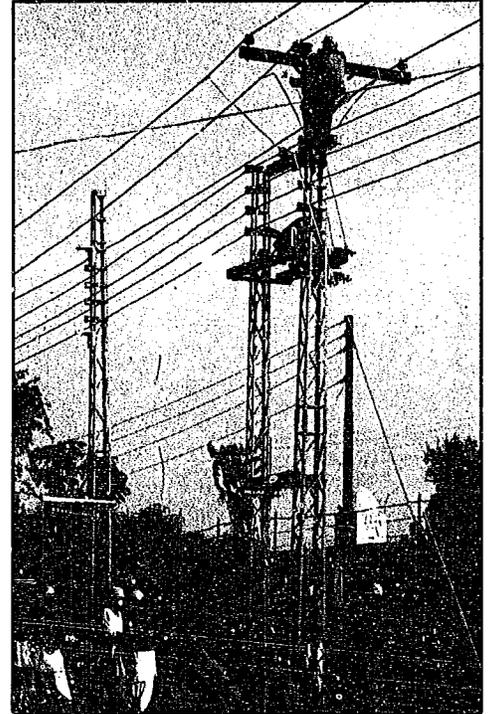
ENERGY

Future agricultural and industrial growth in the Punjab depends on increased availability of water and energy resources. Major objectives of USAID's energy program are to help Pakistan expand energy production and distribution, develop indigenous energy resources, modernize energy equipment, promote conservation activities, and strengthen energy institutions.

Electricity

At present less than one-half of the Punjab's villages are electrified. In support of the Government's rural electrification program, USAID is providing \$72 million in training, equipment, and technical assistance to help the Lahore-based Water and Power Development Authority (WAPDA):

- undertake its first major reorganization since its inception in 1958;
- develop a master plan for rural electrification;



Distribution Training Institute, Lahore is training 1500 individuals from lineman (above) to mid-level management employees (left) of WAPDA under the USAID financed Rural Electrification Project.

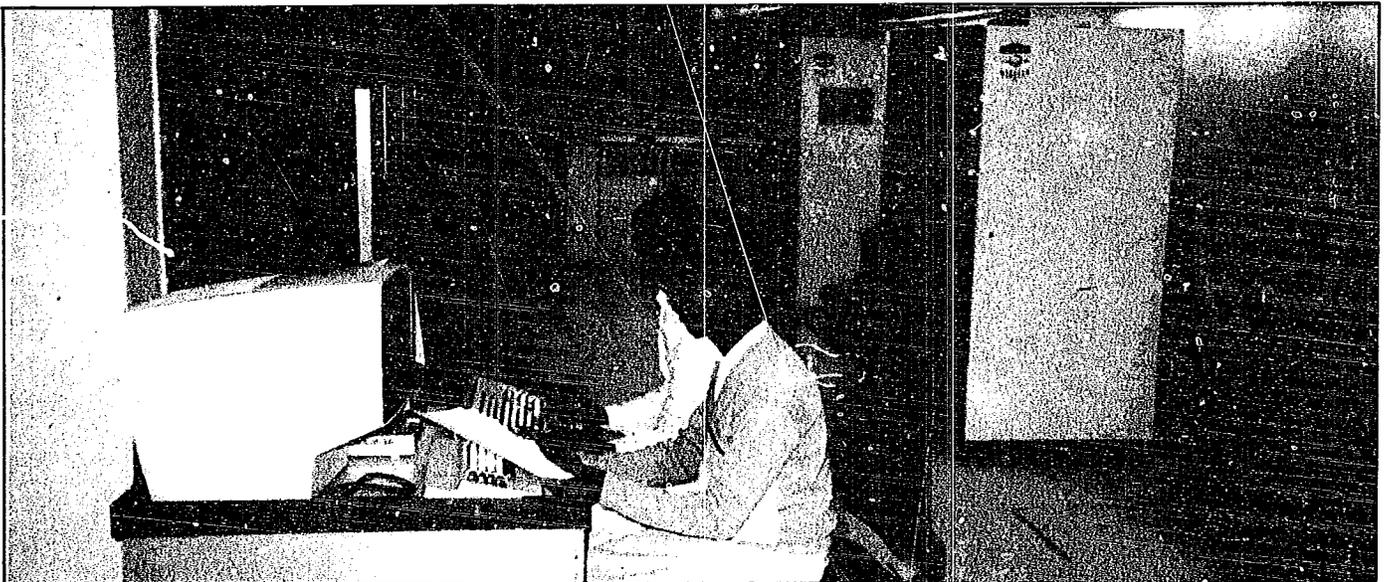
- improve customer services;
- prepare engineering plans for new facilities;
- design a comprehensive training program;
- reduce power distribution losses;
- computerize accounts and billing; and
- improve office methods and procedures.

The safety procedures curriculum, designed and implemented with USAID technical assistance, has been used in training programs for over 18,000 WAPDA employees, over one-half from the Punjab. Several thousand professionals have participated in technical and management training. USAID has also financed overseas training in electrification and management for about 150 WAPDA professionals based in the Punjab.

Another curriculum developed by the technical assistance team is being used in the Distribution Training Institute. USAID renovated a facility in Lahore for temporary use during the USAID-financed construction of a new training institute. Each year the Institute trains 1,500 individuals, from linemen to midlevel management employees.

Besides technical assistance, USAID is providing nearly \$6 million worth of equipment to WAPDA's Power Distribution Wing to computerize billing, inventory control, and management information systems. USAID has supplied other equipment to improve efficiency and reduce energy loss, such as measuring and testing devices and spare parts for Faisalabad's thermal power station.

USAID is providing nearly \$6 million worth of equipment to WAPDA to computerize billing, inventory control and management information systems. This master computer at WAPDA headquarters in Lahore was supplied by USAID.

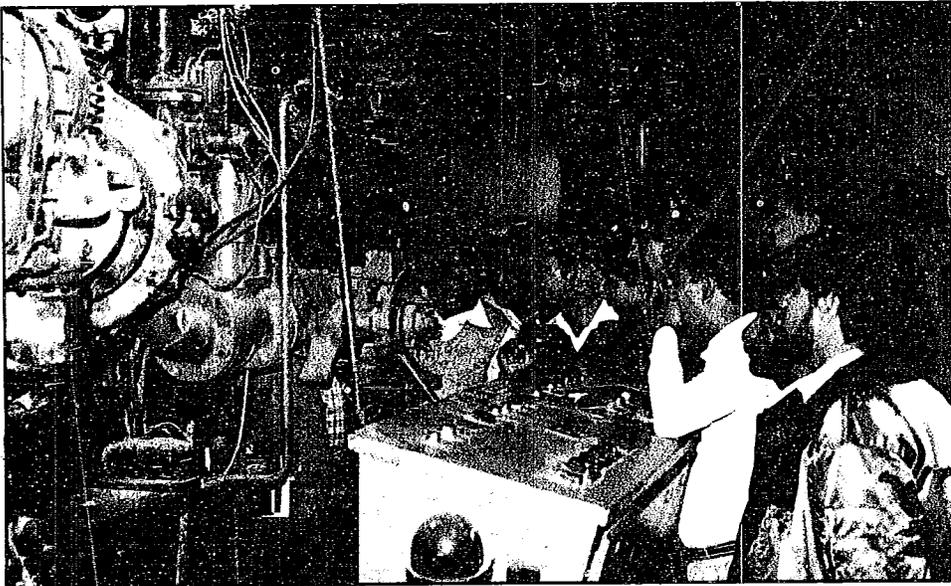


Future activities include procurement of equipment to rehabilitate other power stations and construction of a \$7 million Distribution Training Institute in Islamabad.

USAID will be contributing technical assistance, office equipment, and computers for three model warehouses and two customer service centers, to be constructed by WAPDA in the Punjab.

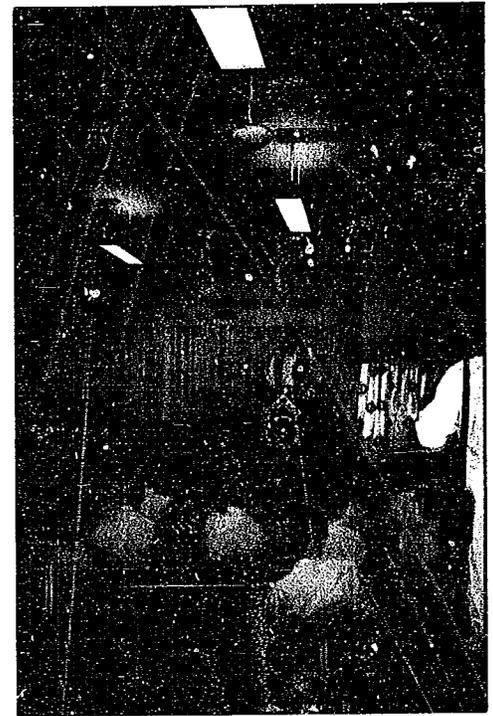
Other Activities

USAID is supporting coal exploration, energy conservation, and renewable energy programs covering the Punjab. USAID is providing technical assistance to the Geological Survey of Pakistan for its work in the Salt Range coal fields. As a way of encouraging the private sector to take a more active role in energy resource development, USAID will be arranging for the first scientific analysis of coal samples from private mines in the Punjab.



The private sector is involved in the USAID-supported National Energy Conservation Program. A number of textile, paper, steel, and other enterprises in the Punjab participated in detailed energy surveys to determine ways of conserving energy and reducing energy costs.

USAID is committed to both the efficient utilization of nonrenewable resources and the proper exploitation of renewable resources. For instance, USAID will be exploring ways of generating power for villages in the Punjab with small hydropower units on canals.



A view of the Energy Conference

Energy Surveys are part of a USAID financed energy conservation program. A number of private enterprises in Punjab are benefitting from this activity.



SOCIAL SECTORS

Expanded program of Immunization has dramatically increased immunization coverage in Punjab. USAID supports the program by providing to the provincial health department syringes, needles and jeeps for mobile and outreach teams.

Social sectors form an integral part of overall planning for economic development. Improving the quality of health services as well as expanding health coverage to all sections of population both rural and urban, keeping population increase within manageable limits and strengthening the human resource base through training are vital for achieving and sustaining growth rates necessary for the economic development of the community. USAID provides assistance in support of major initiatives of the Government of Pakistan for the development of these important sectors.

Health

USAID is supporting health activities aimed at reducing infant and child mortality, combatting preventable diseases, and improving basic health services, particularly in rural areas. In Pakistan more than 170,000 children under the age of two die each year from diseases that could be prevented simply by immunization.

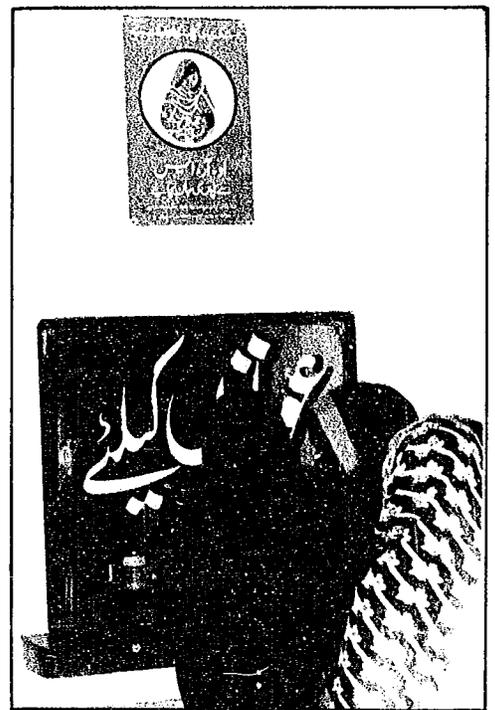
The Government of Pakistan's Expanded Program of Immunization has dramatically increased immunization coverage in the Punjab against six preventable diseases, from under 5 per cent in 1982 to 83 percent in 1987. USAID has supported the program by providing the Punjab Health Department with syringes, needles, and 63 jeeps for mobile and outreach teams.

The majority of childhood deaths in Pakistan are a result of diarrhea. An estimated 200,000 Pakistani children die each year from dehydration and diarrhea-related diseases. USAID is assisting in developing a communications and educational campaign to increase public awareness of oral rehydration therapy (ORT) as a simple and effective treatment for dehydration from diarrhea.

The extension of health services requires motivated, trained health workers. In the Punjab 277 men and women are presently enrolled in the 18-month health technician training program. USAID provided technical assistance to revise the curriculum used in training health technicians, placing greater emphasis on community health and preventive care.

In Punjab, health technician students are now moving from small, crowded facilities--sometimes no more than a couple of rooms in a hospital--to their own training schools. USAID provided funds for the construction and furnishing of health technician school complexes in Sialkot, Dera Ghazi Khan, Jhang, Attock, and Bahawalnagar. These complexes consist of classrooms, libraries, laboratories, auditoriums, tutor residences, and separate hostels for male and female students. Female hostels should make it more attractive for women to seek training.

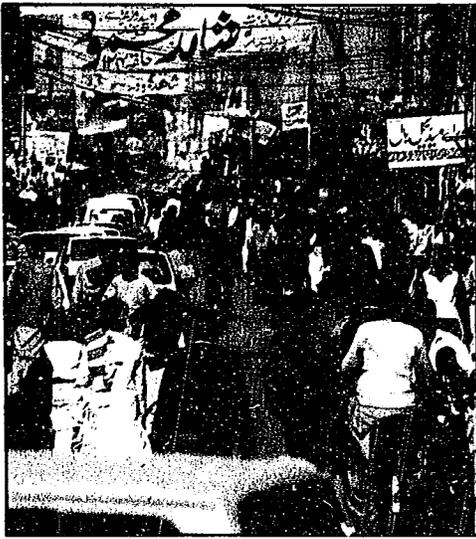
USAID is also assisting the Punjab Government develop comprehensive primary health care training for medical officers assigned to rural health facilities. In the Punjab a new health monitoring system has been introduced in seven rural health



ORT pamphlet on display at a rural health centre near Lahore.



Just completed HT School Complex buildings in Sialkot. These complexes include class rooms, laboratories, teacher residences and separate hostels for male and female students.



A higher rate of population growth results in constantly increasing pressures on cities.

centers and later will be computerized and introduced at other sites.

Population

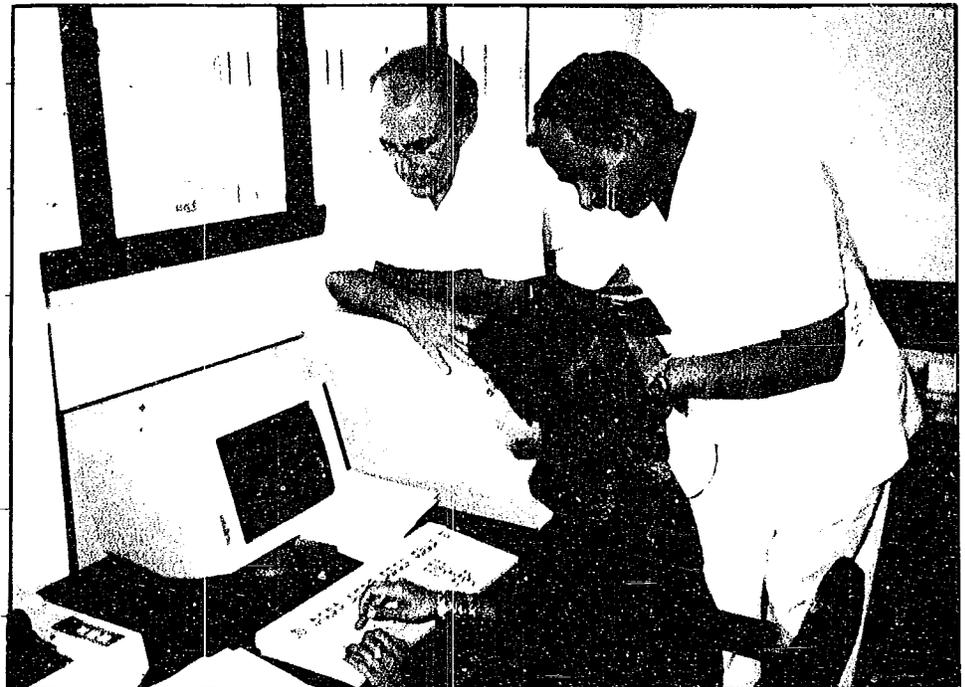
Family planning affects the health of a woman and the welfare of her family and community. Pakistan's high population growth rate taxes the country's ability to provide needed jobs and social services.

At the Government's request, USAID is working with the Population Welfare Division to strengthen family planning services in all four provinces. USAID is procuring contraceptives and equipment for the public and private sectors and providing technical assistance in social marketing and the distribution of contraceptives.

USAID, through its assistance to the NGO Coordinating Council, is supporting voluntary associations involved in family planning activities. For example, family planning services are provided in 8 centers of the Family Welfare Cooperative Society in Lahore, 18 Behbud Association Centers in Rawalpindi, 5 centers of the Maternity and Child Welfare Society in Lahore, and 6 centers of the TB Association in Faisalabad.

Training

The primary objective of USAID training programs is to upgrade the management and technical expertise of those involved in



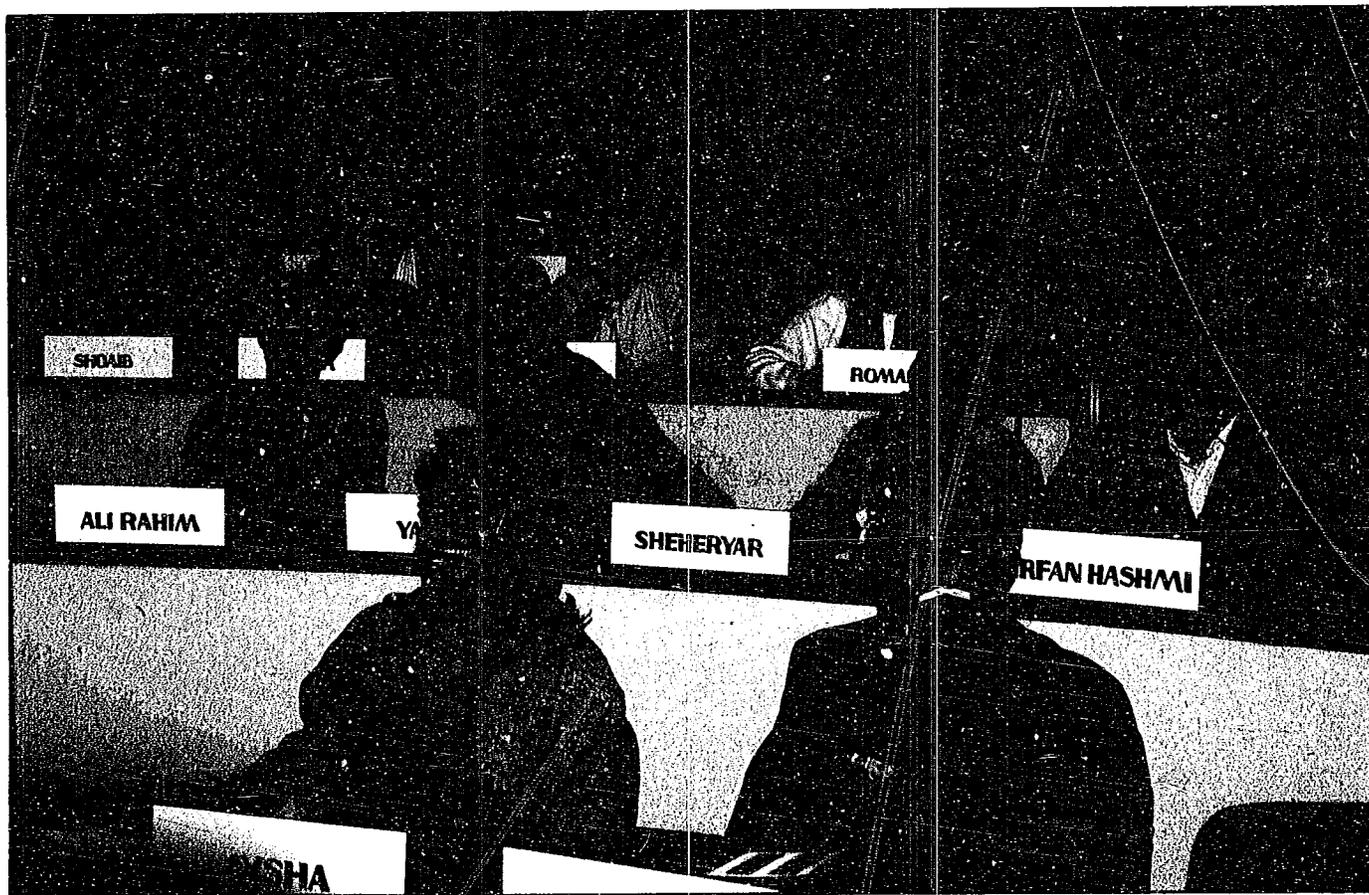
Computer technology and training will make Pakistan's management and research systems more efficient and responsive. Most USAID projects include funds for computers.

the implementation of priority development programs. From 1983 to 1987 over 900 individuals from the Punjab received short or long-term training in the United States or third countries.

Over one-half of the training programs were initiated in 1987 in such fields as water management, engineering, forestry, computer science, electrification systems, public administration, and business management. USAID also supported numerous in-country seminars and workshops on public and private sector management and development-related topics.

Other aspects of the human resources development program are assistance to training institutions and scholarships for their faculty. Institutions in Lahore which received USAID support were the National Institute of Public Administration, Pakistan Institute of Management, and Lahore University of Management Sciences. This support included staff training, computers, instructional materials and equipment, and technical assistance in course design, planning, and evaluation. Other organizations receiving assistance were the Pakistan Audit Department, Punjab Small Industries Corporation, and Punjab Ministry of Social Welfare.

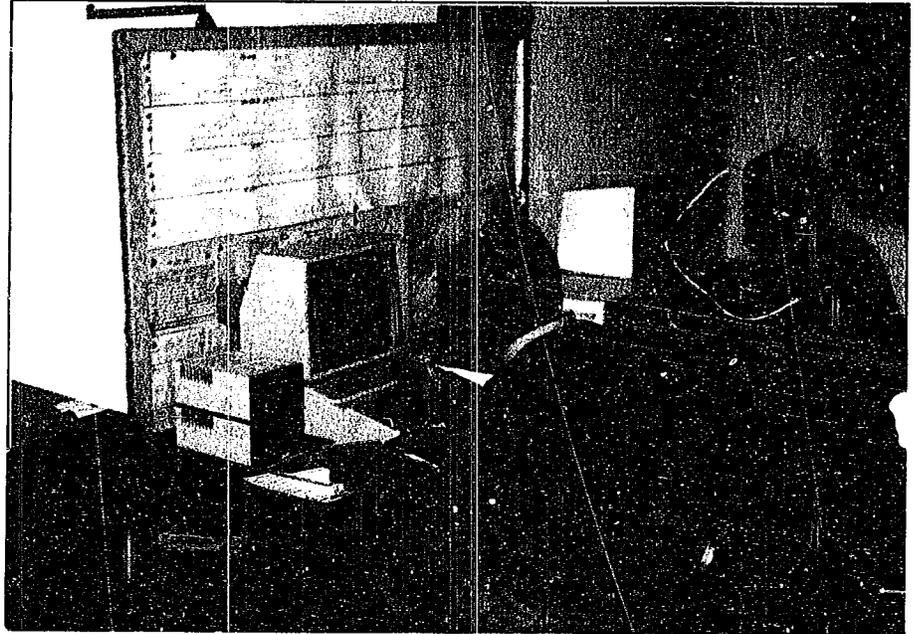
Institution building is an important part of USAID assistance for human resource development. Picture shows a class room in the Lahore University of Management Sciences, one of the institutions receiving USAID funding.



NATIONAL INSTITUTE OF MALARIA RESEARCH AND TRAINING



NIMRT follow-up malaria field work.



A section of the NIMRT laboratories, Lahore established with USAID funding.

USAID has been involved in malaria control since the 1960s. The potential for a malaria outbreak in the Punjab is high due to the province's low, flat terrain and the large number of rice fields and irrigation canals that can serve as breeding grounds for mosquitoes.

During a major malaria outbreak in the Punjab in 1972, there were an estimated 6,000,000 malaria cases of which 643,000 were laboratory confirmed. In 1986 the number of laboratory confirmed cases was around 45,000 or 7 percent of the 1972 figure. USAID has helped to achieve this level of control by supplying the Punjab Health Department with \$21 million of insecticides and spraying equipment over the past 6 years.

USAID has also provided funds for malaria training, health education, and research. Over 200 individuals from the Punjab were trained in such topics as malaria detection, the use of special fogging equipment for spraying in urban areas, and insecticide safety.

During the past several years, the National Institute for Malaria Research and Training (NIMRT) in Lahore has received USAID support for operational expenses and research. The Institute is comparing the effects of different insecticides and determining which species of mosquitoes carry malaria. Under a new malaria project, USAID will continue to provide the Institute with technical assistance and research funds. In addition, USAID anticipates financing the construction of a new building for NIMRT.

FUTURE DIRECTIONS

The United States remains committed to economic and human resources development at all levels, national as well as regional. The Government of Pakistan's efforts to ensure that the benefits of national development be distributed to all citizens and all regions will continue to receive USAID support.

Under a new aid package, the United States anticipates providing \$1.8 billion in economic grant assistance to Pakistan over the next six years (1988-1993). An additional \$480 million in economic assistance is expected to help finance the import of essential food commodities such as edible oils under the PL-480 program.

Most of the USAID-funded development activities described in this booklet will continue under the new program. Greater access to water, agricultural inputs; energy supplies, social services, and training opportunities will be provided, along with possible new initiatives in important areas such as primary education.



A modern Punjab farmer from Bahawalpur. He reclaims land, plants hybrid seeds and uses modern techniques and locally made equipment. He makes money. But more importantly, contributes in national development as a front line worker.