ontribution to the Economic Development of

RAJASTHAN

U.S.A.I.D. Mission to India • New Delhi
Office of Development Policy
Program Division

The USAID Contribution to the Economic Development of

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CONTENTS

RAJASTHAN

THE LAND AND THE PEOPLE

With its cultural heritage reaching back to the ancient past, Rajasthan ("Place of Kings") is a land of legend and romance. Although vast areas are covered by a dreary desert ranging from desolate rock plateaus and sand dunes to steeps and bare cliffs, the monotony of the desert is frequently broken by fertile tracts, in eastern and southeastern Rajasthan. In the center of these tracts stand massive forts and picturesque palaces.

Some of Rajasthan's cities are well known : *Jaipur*, known as the "pink city" because of its red sandstone buildings; *Udaipur*, sometimes called the "Venice of the East" or the "City of Sunrise", and *Bikaner*, one of the finest spots in the world for goose shooting.

Rajasthan is the second largest state in India (next to Madhya Pradesh), but one of the least densely populated. The state, which was formed in 1956 with the integration of 19 princely states, now has an area of 132,147 square miles. It is bounded on the west by Pakistan, on the north by Punjab, on the northeast by Haryana and Uttar Pradesh, on the southeast by Madhya Pradesh and on the southwest by Gujarat.

The population of the state in 1970 was estimated at about 26 million, giving it a population density of 197 persons per square mile compared to the all-India average of 439. However, in the Thar or the Great Indian Desert, the rate falls below 50 per square mile and in Jaisalmer, in the extreme west, to only seven per square mile. The eastern quarter of the state, comprising about 15,000 square miles, accommodates one-half of the state's population.

Rajasthan has only five cities which exceed 100,000 or more in population : Jaipur, the state capital, Jodhpur, Bikaner, Kotah, and Udaipur. Approximately 93 per cent of the state's population lives in some 145 small towns and 34,528 villages.

GEOGRAPHY AND CLIMATE

The most conspicuous geophysical feature of Rajasthan is the Aravalli range, one of the oldest mountain systems in the world. The highest peak of the range is Mount Abu (5,646 feet) in the extreme southwest. At Udaipur, the Aravallis culminate in a great node of spurs and ridges varying from 3,500 to 4,000 feet. The Aravalli range runs through the state like a spine dividing it into the following two main geographical parts :

Northwest Region—Comprising about three fifths of Rajasthan—consists of the Thar desert (the Great Indian Desert) and a semi-desert area. The desert is dotted with numerous hillocks, patchy and stunted vegetation. Rainfall is scanty and irregular, with an average rainfall as low as five inches in some areas. Sub-soil water is found at a depth of 150 to 300 feet on an average. Even for drinking purposes, people must depend principally on rain water stored in reservoirs and tanks, and in years of drought the cattle breeders and sheep farmers migrate with their flocks to distant places in search of water and pastures. The climate is

generally hot and dry with sudden changes of temperature between day and night. Hot westerly winds and sand storms occur frequently during the summer.

Southeast Region—Lying to the southeast of the Aravallis—covers the remaining two-fifths of the state and is a more damp and fertile region. There are large tracts of excellent soil watered by a number of rivers, wooded hills, wide vales, level plains and fertile table lands. The state's two largest and most important rivers, the Chambal and the Banas, flow in this area. This area benefits from the monsoons and average 40 inches of rainfall a year.

AGRICULTURE

About 70 per cent of the population derives its livelihood from agriculture. The bulk of Rajasthan's agricultural production comes from the southeast region. With the development of the Rajasthan Canal and of new irrigation projects, the acreage under irrigation is also expected to increase substantially.

The major crops produced during 1968-69 were as follows :

	AREA (000 acres)	*PRODUCTION (000 tons)*
FOODGRAINS	**27,472**	**4,000**
Bajra	11,277	500
Wheat	2,872	1,170
Gram	2,457	600
Jowar	2,337	199
Maize	1,964	623
Barley	1,237	579
Rice	320	57
Other pulses and small millets	5,008	272
CASH CROPS	**6,190**	**745.4**
Cluster Bean	2,794	347
Oilseeds	2,437	152
Cotton	732	190
Sugarcane	93	30
Dry Chillies, etc.	49	13
Sannhemp	36	4
Opium	28	.4
Tobacco, Potatoes	21	9

To the northwest of the Aravallis region, where the land is for the most part unproductive, animal husbandry rather than farming is the main occupation. Roughly speaking, Rajasthan livestock constitutes 11 per cent of all-India total. Some of the country's best cattle breeds are found in this area. Sheep and goats in this region account for more than one-sixth of India's total population ; the cattle and buffaloes population approximately 8 per cent, and camels about 56 per cent of India's total.

MINERALS

Next to Bihar, Rajasthan possesses the widest range of mineral deposits, and is sometimes called a "museum of minerals". The state produces or has reserves of asbestos, clay,

barytes, dolomite, emerald, falspar, gypsum, lignite, limestone, mica, graphite, red and yellow ochre and manganese ore. Fairly large deposits of apatite, rock phosphate and mangnesite have recently been discovered in the state. Rajasthan is the only state in the country which has wolfram deposits which cater to the needs of defense organizations.

Among the base metals, Rajasthan has deposits of copper, lead and zinc ores. A public sector undertaking has been established for the development and exploitation of the copper ore deposits, and its annual production will be over 31,000 tons of copper metal. Lead and zinc have been mined for the past two decades at the Zawar mines at Udaipur. The mine is at present producing 800 to 1,000 tons of the ore per day.

The Government of India has selected part of the state to be surveyed under the program "Operation Hardrock" looking particularly for more base metals such as copper, lead, zinc, and their associated minerals (see page 14).

The state is also noted for the quality of marble which it produces (especially from the Makrana marble mines). This marble has been used in the construction of such famous buildings as the Taj Mahal and the Victoria Memorial, Calcutta, as well as for ornamental stones and statuary.

INDUSTRY

While Rajasthan's full industrial potential has yet to be developed, several important undertakings have been established in recent years. There are at present 16 textile mills, two sugar mills, three cement factories and one fertilizer plant.

The state has four public sector undertakings operated by the Central Government : The Hindustan Zinc Ltd., at Debari (Udaipur) ; Hindustan Copper Ltd., at Khetri ; Instrumentation Ltd., at Kotah ; and the Machine Tool Factory at Ajmer.

The State Government owns and operates plants in several industries—sugar, salt, woollen cloth and yarn, glass products, sodium sulphate and sulphide. There are also a number of industrial estates established by the State Government for the development of small-scale industries.

POWER

The installed capacity in the state before the beginning of the First Five Year Plan was 34,000 kw. and by the end of the Third Plan it was about 260,500 kw. With the commissioning of various units of the Satpura and Rana Pratap Sagar projects, the installed capacity has increased to about 530,000 kw.

While Rajasthan lacks hydroelectric potential, it does possess thorium and uranium resources, indicating that cheaper atomic power may be a solution for meeting the future power developments. An atomic power plant is now being developed at Kotah in collaboration with Canada. The first unit of this project consisting of 175,000 kw. is expected to be commissioned by the end of 1971.

Basic Data on Rajasthan

1969

Capital : Jaipur

Language : Hindi

LAND AREA	132,147 square miles
Districts	26
Towns and Villages	32,241
POPULATION	26 million
Density	197 per square mile

(Millions of acres)

GEOGRAPHICAL AREA	84
Area Cropped (gross)	37
Area Cultivated (net)	35
Forests	3
Not available for cultivation	15
Uncultivated Land	20
Fallow Land	11

POWER	
Installed Generating Capacity	530 MW
Villages and towns electrified	1,757
Pump sets energized	18,700
INDUSTRY	
Factories	1,511
Persons employed (daily)	75,330
COOPERATIVES	
Societies	22,580
Membership (million)	1.5
Working Capital (millions of Rs.)	570
LABOR	
Craftsmen Training Institutes	15
Enrollment	2,017

EDUCATION

Literacy 15.2 per cent

Type of Schools	*No. of Institutions*	*Enrollment*	*Teachers*
Universities	4	9,843	565
Colleges for General educ.	57	25,978	1,842
Colleges for professional education	142	22,582	2,110
Colleges for Special education	44	5,942	422
High/Higher Sec. Schools	721	278,985	13,191
Middle Schools*	1,762	434,766	17,894
Primary Schools	19,081	1,263,390	38,181
Special/ Professional Schools	583	172,553	594

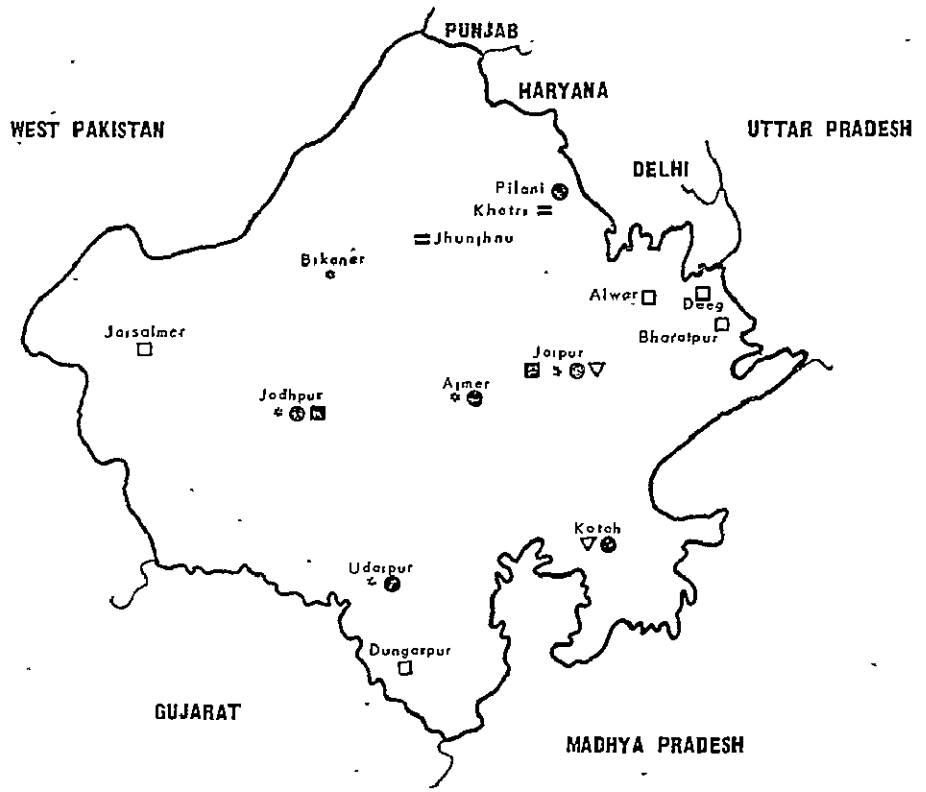
HEALTH

Hospitals	396
Dispensaries	299
Primary Health Centers	232
Beds	12,436
Doctors	1,699
Nurses (trained)	1,266
Nurses (untrained)	873

*Includes Senior Basic schools.

SOURCES : 1 Times of India Directory—1969
2 Statistical Abstract of India—1968
3 Statistical Abstract of Rajasthan—1966
4 Geography of Rajasthan—issued by National Book Trust of India.

USAID Assisted Projects in Rajasthan



DEVELOPMENT LOANS

DELHI CLOTH & GENERAL MILLS	Kotah
NATIONAL ENGINEERING & BALLBEARING PLANT	Jaipur

MAJOR TECHNICAL COOPERATION PROJECTS

AGRICULTURAL UNIVERSITIES DEVELOPMENT	Udaipur
SCIENCE EDUCATION IMPROVEMENT	Pilani, Udaipur, Jodhpur, Jaipur & Ajmer.
OPERATION HARDROCK	Jhunjhunu, Khetri
MULTIPURPOSE SECONDARY EDUCATION	Ajmer
CONSTRUCTION EQUIPMENT TRAINING & UTILIZATION	Kotah
FOREST RESEARCH & DESERT AFFORESTATION	Jodhpur
NURSING COLLEGES	Jaipur
ASSISTANCE TO MEDICAL COLLEGES & ALLIED INSTITUTES	Jaipur
AVIATION GROUND FACILITIES	Jodhpur, Jaipur
ASSISTANCE TO INDUSTRIAL RESEARCH & TECH. SERVICE ORGANIZATION	Pilani
IMPROVEMENT OF RAJASTHAN POWER FACILITIES	Alwar, Jaisalmer, Dungarpur, Deeg, Shahpur, Sagwara & Bharatpur

LEGEND

- ▽ INDUSTRIAL EXPANSION
- = MINING
- ^ FOODGRAIN STORAGE
- ● INSTITUTES AND UNIVERSITIES (Agricultural, education, technological & research)
- □ POWER
- ▣ AVIATION FACILITIES

Summary of USAID Assistance
1952–

(Figures in Thousands)

	LOANS		*GRANTS*	
US – GOI Projects and Activities	*Dollars*	*Rupees*	*Dollars*	*Rupees*
Confined to Rajasthan[1]	**12,280**		**1,046**	
Delhi Cloth & General Mills	8,007			
National Engineering & Ballbearing	4,273			
Improvement of Rajasthan Power Facilities			1,046	
Countrywide[2]	**2,500,278**	**3,628,600**	**298,093**	**3,013,512**
Agriculture	**28,845**		**64,635**	**64,123**
Agricultural Universities Development			14,992	52,562
Acquisition & Distribution of Fertilizers	8,854		20,118	
Soil Fertility & Fertilizer Use			1,029	194
Agricultural Extension			3,013	2,458
Community Development Program	1,991		11,518	
Forest Research & Desert Afforestation			545	10
Agricultural Education & Research			8,981	5,144
Foodgrain Storage			1,664	99
Crop Production			1,536	1,711
Farmers' Organization			275	396
Soil & Water Conservation			964	1,549
Beas Dam	18,000			
Education			**17,085**	**42,321**
Science Education Improvement			6,140	28,242
Technical Education Institutes			4,481	3,886
Teacher Training in Engg. Education			2,250	1,689
Multipurpose Secondary Education			3,992	8,250
Rural Institute			222	254
Health	**12,233**		**96,456**	**12,434**
Malaria Control & Eradication	9,533		80,773	1,733
Family Welfare Planning	2,700		5,203	7,501
Assistance to Medical Colleges & Allied Institutions			1,056	
Medical Educator Training			1,751	2,023
Nursing Colleges			1,223	1,023
Water Supply and Sanitation			6,450	154

1 See Annex I.

2 See Annex II.

Benefiting Rajasthan
1970

US—GOI Projects and Activities	*LOANS*		*GRANTS*	
	Dollars	*Rupees*	*Dollars*	*Rupees*
Labor			**1,130**	**1,597**
Trades Training			661	
Labor Ministry Training			469	1,597
Industry & Mining	**14,419**		**58,235**	**8,932**
Operation Hard Rock	3,500			
Consultancy Services (Operation Softrock)	520			
Acquisition & Distribution of Iron & Steel	10,399		50,394	
Construction Equipment Training & Utilization			1,494	1,035
Assistance to Industrial Research & Technical Service Organizations			3,010	
Notional Productivity Council			3,337	7,897
Transportation	**229,670**		**32,635**	**88**
Railway Modernization	229,670		29,756	
Aviation Ground Facilities			2,879	88
Commodity Imports	**2,202,831**		**20,000**	
Program Assistance—Loans	2,202,831			
Program Assistance—Grants			20,000	
PL 480 Rupee Assistance for Development Activities	—	**3,628,600**	**7,917**	**2,884,017**
River Valley Development		2,359,000	7,917	59,400
Higher Technical Education		265,700		165,600
Elementary Education		428,300		783,100
Technical Education Institutes				1,200
Primary Health Centers		60,000		105,500
Smallpox Eradication		27,300		102,900
Malaria Control & Eradication		194,600		851,500
Family Welfare Planning				84,690
Medical Educator Training				74,000
Foodgrain Storage		29,500		160,735
Soil & Water Conservation		29,000		100,829
Craftsmen Training		235,200		394,563

Annex I

USAID assisted projects and activities confined to the State of Rajasthan

Projects and Activities	*U.S. Inputs*
A. DEVELOPMENT LOANS	
Delhi Cloth & General Mills Company Ltd., Kotah: To finance the foreign exchange costs of establishing plants to produce filament yarn, tire cord fabric, and rayon grade pulp.	USAID made available in FY 1962 a Development Loan of $8,007,153 for the import of the plant equipment.
National Engineering and Ball-Bearing Plant, Jaipur: To enable this company to expand its production of ball and roller bearings.	USAID authorized in FY 1964 a Development Loan of $4,273,072 for the import of equipment.
B. TECHNICAL ASSISTANCE	
Improvement of Rajasthan Power Facilities (FY 1954-FY 1959): To increase the electric generating capacity of the State of Rajasthan by renovating and expanding nine Rajasthan thermal stations and extending transmission and distribution lines. This project increased the generating capacity of the state from 25,650 kw. to 33,000 kw.	USAID provided $1,046,000 on a grant basis to finance the foreign exchange costs for procuring the plant and equipment. The equipment included diesel generating sets, alternators, steam boilers and turbines, transmission lines and various accessories.

"FY" used in this booklet designates U.S. Fiscal Year, July 1 to following June 30.

Countrywide projects and activities benefiting the State of Rajasthan

A. CURRENT ACTIVITIES

PL 480 TITLE II PROGRAM

The Title II (formerly Title III) food donation program is a "people-to-people" program through which U. S. citizens express their humanitarian concern for and share their food abundance with needy people and school children. The program is carried out by distributing agencies, i.e., inter-governmental organizations and U.S. non-profit voluntary agencies.

During FY 1970, gift commodities such as non-fat dry milk, bulgur, corn soya milk (CSM), whole wheat, wheat flour and vegetable oil, totalling 497,500 metric tons have been approved for distribution to approximately 17.2 million beneficiaries in the country.

In Rajasthan during FY 1970, gift commodities were provided to 352,600 people through 3,000 distribution centers and American voluntary agencies. The breakdown of the number of people who benefited from this program by category and by voluntary agency is indicated below :

NUMBER OF BENEFICIARIES

Name of Agency	*Mat. and Pre-School*	*School Feeding*	*School Hostels*	*Other Children*	*Economic Development*	*Institutional Feeding*	*Health Cases*	*Educational Development*	*Total*
CARE		200,000							200,000
CRS	5,100	1,600		1,100	38,800	200	300		47,100
CWS/ LWR	700	2,900	900	300	100,100	300	100	200	105,500
TOTAL	5,800	204,500	900	1,400	138,900	500	400	200	352,600

CARE=Cooperative for American Relief Everywhere ; CRS=Catholic Relief Services ; CWS=Church World Service ; and LWR=Lutheran World Relief

Annex II

Countrywide projects and activities

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*

Agriculture

Agricultural Universities Development (FY 1964—): To assist the GOI in developing State Agricultural Universities capable of planning and administering fully integrated statewide program in agricultural teaching, research and extension. The seven universities which have been assisted under this project since 1963 are in the states of Orissa, Mysore, Punjab, Madhya Pradesh, Uttar Pradesh, Andhra Pradesh and Rajasthan. The eighth, Maharashtra University, was added to the project in 1968. U. S. assistance through June 30, 1970 totalled $14,992,000 and Rs 52,561,600.

The Agricultural University for the state of Rajasthan was established in 1962 with its headquarters at Udaipur. Initially, it consisted of the colleges of Agriculture at Udaipur and Jobner and a Veterinary College at Bikaner. In 1963, the name of the University was changed to the "University of Udaipur" in order to add all other arts and science colleges within the municipal limits of Udaipur.

Currently, a major effort is being made at the University of Udaipur to integrate the teaching program of the college of Basic Sciences and Humanities with the academic work of the Agricultural College by changing the entire examination system into the internal examination and trimesters.

USAID is assisting the University of Udaipur through a contract with the Ohio State University. The U.S. team at Udaipur includes advisors in agricultural extension, veterinary science, home science, and university administration. USAID is also providing participant training for the staff members of the University. Prior to 1964, the Agricultural College at Udaipur and the Veterinary College at Bikaner received books and laboratory equipment worth $195,000 and $44,000 respectively. Subsequently,

benefiting the State of Rajasthan (continued)

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
Agricultural Universities Development :	with the establishment of the Agricultural University, the USAID has invested $177,800 and Rs 6,110,400 through June 30, 1970 in the University of Udaipur.
Beas Dam Project—Rajasthan Canal : USAID made available a Development Loan of $18,000,000 in FY 1966 for the import of equipment required for the construction of a dam on the Beas River at Pong in the state of Punjab. The project will provide irrigation and power facilities for the states of Punjab, Haryana and Rajasthan. The dam is expected to be completed by 1973.	The primary purpose of the Beas Dam is to provide a perennial water supply for the Rajasthan Canal. The canal, financed by the Government of India, is intended to irrigate three million acres of land annually in the Great Indian Desert in northwestern Rajasthan. The canal when completed in 1978 will be 425 miles long with a head capacity of 18,500 cubic feet per second (this is larger than any irrigation canal in the United States).
Education	
Science Education Improvement (FY 1963—): To improve the teaching of science, mathematics and technology by training Indian teachers and professors at the higher secondary and college levels in modern teaching methods. From 1963 through FY 1970, 891 summer science institutes were conducted in biology, physics, chemistry, mathematics, engineering and polytechnics for approximately 30,000 teachers and professors of these subjects. A total of 1,078 U.S. consultants participated in these summer sessions. U.S. technical assistance is being provided through the National Science Foundation (NSF), and has totalled $6,140,000 and Rs 28,241,600 through June 30, 1970.	Through FY 1970, 51 summer institutes were held in Rajasthan and approximately 2,200 teachers and professors received training. Sixtyone professors from American universities participated in these institutes. In addition, USAID has provided books and scieuce education equipment to some of the Indian teachers and professors. National Science Foundation is also helping the Rajasthan State Government with its program of curriculum reform and workshops for secondary school science teachers.

Annex II

Countrywide projects and activities

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
Health	
Malaria Control and Eradication (FY 1953—) : To assist the GOI in its National Malaria Control and Eradication Program. Prior to 1953, malaria was considered to be India's greatest health scourge. Every year there were about 75 million cases resulting in 750,000 deaths, with substantial increases during epidemic years. After five years of concentrated effort in the Control Program, there were two million cases and approximately 200,000 deaths annually. In 1958, the program was converted to "eradication". By 1969, 69 units with population of 91 million had passed to the consolidation phase, and 217 units with 287 million people had been approved for maintenance phase. Thus there were 107 units with 136 million people in the attack phase of the program. The annual number of reported cases had been reduced to less than 300,000. Since 1953, the United States has financed the procurement of several thousand tons of DDT, malaria drugs, spray equipment, vehicles and has provided the services of U.S. technicians. The project has also provided training to 32 key National Malaria Control and Eradication program personnel. Total assistance through June 30, 1970 was $90,306,000 (grant $80,773,000 and loan $9,533,000) and Rs 1,733,000. In addition, the GOI has allocated from PL 480 funds Rs 1,046,100,000 (USAID grant to GOI of Rs 851,500,000 and loan Rs 194,600,000) to meet the local costs of the project. The above figures do not include the imports made under the USAID Non-Project Loans estimated at $13,000,000 for DDT and anti-malaria drugs.	The State of Rajasthan participates in the national program of malaria control and eradication. As of June 30, 1969, 1 unit with a population of two million had passed into the consolidation phase and 3 units with four million people had been approved for the maintenance phase. The remaining 13 units with 19 million people still were in the attack phase of the program.
Family Welfare Planning (FY 1966—) : To assist the GOI to achieve its declared goal of reducing India's annual rate of population increase from an estimated 2.5 per cent to 1.5 per cent by 1975. Although the	Rajasthan is one of the states which is participating in this country-wide program of family planning.

benefiting the State of Rajasthan (continued)

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*

Government of India was the first in the world to adopt a comprehensive national family planning policy as a part of its developmental plans in 1952, the program has gathered real momentum only since 1966.

Since 1966, USAID has financed the procurement of one million cycles of oral contraceptives, 170 million condoms, and a large quantity of audio-visual equipment and training aids. In addition, USAID has supplied technical advisory services and participant training in the United States and other countries. Total grant assistance through June 30, 1970 was $5,203,000 and Rs 7,501,200.

A loan of $2,700,000 in foreign exchange has also been made to the GOI to meet the cost of imported components for vehicles required for the project. The USAID has further agreed to provide a grant of Rs 60,000,000 out of PL 480 funds for the procurement initially of 1,540 vehicles during the first year of the Fourth Five-Year Plan period, for capital expanditure for the Central and State Health Transport Organizations, and for operation and routine maintenance of the vehicles.

A grant of Rs 84,700,000 from PL 480 funds has already been made available to the GOI for increasing the effectiveness of the program including experimental and innovative activities in research, training, motivation, and mass communication.

In addition to the above grants and loans, the U.S. has made another Program Assistance grant of $20,000,000 in June 1970 to the Government of India for procurement of commodities; this grant will enable the GOI to increase its budgetary allocation for family planning activities in India.

Annex II

Countrywide projects and activities

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*

INDUSTRY AND MINING

Operation Hardrock (FY 1965—): To conduct airborne geophysical surveys over 90,000 linear miles in the states of Bihar, Andhra Pradesh and Rajasthan, and to drill at selected points in order to find exploitable deposits of base metals, such as copper, lead, zinc, tin and nickel.

In order to discover the base metals in these states, the United States authorized a Development Loan of $3,500,000 to finance: 1) the services of a U.S. contractor to conduct airborne geophysical surveys, ground follow-up with diamond drilling and 2) the purchase of necessary equipment. Training of Indian scientists is an integral part of the project. The project is scheduled to terminate in 1970.

In the state of Rajasthan, the airborne geophysical flights were completed in FY 1968. Using the data developed, geological reconnaissance and field inspection were then carried out in the zones between Khetri and Jaipur. Diamond drilling to test potential mineral deposits is now underway and substantial footages of ore-grade, lead and zinc have been intersected in Rajasthan.

Operation Soft Rock - Phosphate Assessment: Following earlier exploratory work by the USAID which led to the discovery of phosphate beds in Rajasthan, the GOI chose to use a portion of the Consultancy Services Loan to finance the foreign exchange costs to assess the extent and commercial worth of the phosphate deposits in the Mussoorie ranges in Uttar Pradesh and Rajasthan. Under a contract with the U.S. Geological Survey and the U.S. Bureau of Mines, the Geological Survey of India and the State of Rajasthan are conducting pilot plant tests on medium grade phosphate rocks.

USAID has authorized in FY 1964 a Development Loan of $520,000 for the foreign exchange costs of hiring consulting firms and individual experts to provide assistance to the Government of India, state governments, and private firms for consultancy services in a wide range of fields. Of the total amount, $243,000 has been allotted for Soft Rock operation.

The state of Rajasthan has located over a 100 million tons of phosphate rock near Udaipur. Mining there is now proceeding at the rate of 500 tons a day, saving India about $10,000 per day in foreign exchange. It is hoped that with the completion of this work, most of India's phosphate requirements in the 1970's will be met from the Udaipur rocks. This will save India from $50 million to $60 million per year in foreign exchange by 1972.

benefiting the State of Rajasthan (continued)

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
Non-Project Loans	
Commodity Imports Under AID Non-Project Loans : To assist the Government of India to procure from the United States essential raw materials, machinery and spare parts required for the growth of India's agriculture and industry. Since 1958, the USAID has made available to India $2,202,831,382 as Non-Project Loans through the Government of India. Industrial commodities imported under the various loans included chemicals, non-ferrous metals, specialized components such as roller bearings, and spares for industrial and construction equipment. Some portion of these loans was used for the import of DDT and anti-malaria drugs. Prior to 1963, these Non-Project Loans were used mainly for industry and transport. Since that time, however, these loans have been used increasingly for agricultural inputs, primarily fertilizers. Almost 50 per cent of the recently authorized loans have been earmarked for the agricultural sectors. None of these loans have been used for the import of consumer goods or luxury.	The agricultural and industrial sectors in Rajasthan benefit from these general commodity import loans.
B. COMPLETED ACTIVITIES	
Agriculture	
Acquisition and Distribution of Fertilizers (FY 1952-FY 1958) : To provide fertilizer to promote an increase in agricultural production. At the start of this project, the production of chemical fertilizers was completely inadequate and India was almost entirely dependent on imports. It was considered important to test new types of fertilizers on Indian soils and to popularize them, if found suitable. Under the project, approximately 262,350 tons of fertilizer were made available to the GOI to be sold to the Indian farmers through the State Governments.	Rajasthan was one of the states which participated in this country-wide program for increasing agricultural production.

Annex II

Countrywide projects and activities

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
A portion of the supply was made available to the states for demonstration purposes. Total USAID assistance through FY 1958 : Grant $20,118,000 and loan $8,854,000. These figures do not include the allocations made for the import of fertilizer under USAID Non-Project Loans.	
Soil Fertility and Fertilizer Use (FY 1952 - FY 1961) : To increase agricultural production through the distribution and sale of fertilizers ; to establish soil testing laboratories throughout the country ; to assist the Central and State Governments in training Indian personnel. Total assistance : $1,029,000 and Rs 194,000.	Equipment worth $9,000 was provided for the establishment of a soil testing laboratory at Jodhpur and one participant was sent to the United States for six months training.
Agricultural Extension (FY 1951 - FY 1967) : To assist the Central and State Governments in training an efficient corps of extension workers, planning and developing an effective extension program, and implementing the program in these fields. With USAID assistance, the GOI has established 100 extension and 44 home science training centers to train Village Level Workers. Total assistance : $3,013,000 and Rs 2,458,000.	USAID financed the training of 10 participants for a total of 61 man-months in the United States, and provided the services of one technician for one year in the IDAP Program in Pali district.
Community Development Program (FY 1952-FY 1959) : To develop the material and human resources prerequisite for greater agricultural production through rural community development blocks. Agricultural extension centers, panchayats and cooperatives, village schools, community centers and social education programs were initiated in many rural areas. Advisory services were provided as well as substantial commodity aid including jeeps, audio-visual materials, and agricultural implements. Total assistance: $13,509,000 (grant $11,518,000 and loan $ 1,991,000).	Assistance was provided to the State Government for the development of rural community development blocks, extension centers and village schools.
Forest Research and Desert Afforestation (FY 1957-FY 1962) : To provide equipment and technical assis-	The Desert Afforestation Research Station at Jodhpur was equipped

benefiting the State of Rajasthan (continued)

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
tance to support research and training in various aspects of forestry, including preservation of forest products industries and desert control and afforestation. Total assistance: $545,000 and Rs 10,000.	with $28,000 worth of research equipment.
Agricultural Education and Research (FY 1955-FY 1963) : To strengthen and expand agricultural education and research in about 80 colleges and institutions throughout India by providing commodity support, technical advisory services, and participant training. Total assistance: $8,981,000 and Rs 5,144,000. Assistance for the development of eight selected agricultural universities has been provided since 1963 under the Agricultural Universities Development project (see page 10).	Under this project, USAID financed the training of 35 participants for a total of 530 man-months in the United States. USAID assistance to the University of Udaipur, Rajasthan, is continuing under the Agricultural Universities Development project.
Foodgrain Storage (FY 1955-FY 1966): To demonstrate efficient grain storage through construction of modern grain elevators and determine the most economical type of grain handling facilities for Indian conditions. Total assistance: $1,664,000 and Rs 99,000. In addition, the GOI provided from PL 480 funds Rs 190,235,000 (grant Rs 160,735,000 and loan Rs 29,500,000) for the construction of over 100 godowns.	Five godowns were constructed in Rajasthan with a total capacity of 36,500 tons (Jodhpur 3,000 tons; Udaipur 1,500 tons; Bikaner 10,000 tons; Jaipur 17,000 tons and Ajmer 5;000 tons).
Crop Production (FY 1955-FY 1967): To assist the GOI to increase foodgrain production by promoting and demonstrating the use of high yielding hybrid seeds of adapted varieties, establishing seed production control and certification standards, controlling fertilizer quality and expanding the use of fertilizers. Assistance included providing technician services, participant training and commodities, primarily for seed production and seed testing laboratories. Total assistance: $1,536,000 and Rs 1,711,000.	One seed testing laboratory costing $3,800 was established at Jaipur, and training for three participants was provided in the United States.
Farmers' Organization (FY 1956-FY 1961) : To increase agricultural production through the establishment of national, state and local farmers' organizations capable of providing agricultural information to far-	A four-month tour of the United States and Japan was provided for four Rajasthan farm leaders, and a limited quantity of training

Annex II

Countrywide projects and activities

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
mers. A Farmers' Forum was established. United States assistance was directed towards strengthening and expanding the Forum's leadership. Total assistance $275,000 and Rs 396,000.	equipment was supplied to the State Government.
Soil and Water Conservation (FY 1959-FY 1967): To assist the GOI to increase agricultural production through effective soil and water management practices, to train Indian soil and water conservation technicians from Union and State Governments and to conduct pilot projects. Total assistance : $964,000 and Rs 1,549,000. In addition the GOI allocated Rs 145,829,000 (grant Rs 100,829,000, and loan Rs 45,000,000) from PL 480 funds for this project.	USAID provided the services of one technician for two years to the State Government and a small amount of commodities for the Soil Conservation Research Demonstration and Training Center at Kotah. In addition, USAID financed the training of seven participants from the state for a total of 42 man-months.
Education	
Technical Education Institutes (FY 1953 - FY 1967): To assist in improving teaching methods in technical education. Through contracts with the Universities of Illinois, Wisconsin, and Michigan State, USAID provided U.S. professors, participant training and commodities. Total assistance : $4,481,000 and Rs 3,886,000. The GOI allocated a grant of Rs 1,200,000 from PL 480 funds to purchase computer equipment under the project.	USAID financed U.S. training for nine participants from the state of Rajasthan for a total of 178 man-months.
Teacher Training in Engineering Education (FY 1958-FY 1961): To assist the GOI to improve the facilities and quality of engineering education in India. Under a four-year program, USAID provided an average of 18 months training to each of 299 Indian engineers. Total assistance : $2,250,000 and Rs 1,689,000.	USAID financed U.S. training for five Rajasthan engineers for a total of 72 man-months.
Multipurpose Secondary Education (FY 1956 - FY1969) : To help reorganize and improve secondary education in India. The first phase established 54 extension training centers for secondary school teachers. The second phase emphasized vocational education in the multipurpose secondary schools. The third phase	USAID under the first phase provided equipment worth $9,700 to the Vidya Gobindram Saksaria Teachers College at Bikaner. In the second phase, the Maharaja Multipurpose High School at Jaipur

benefiting the State of Rajasthan (continued)

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
emphasized the development of four regional teacher training colleges with attached demonstration schools. Total assistance : $3,922,000 and Rs 8,250,000.	received $4,409 worth of epuipment. In the third phase, the Regional College of Education at Ajmer was set up under the National Council of Education, Research and Training of the Ministry of Education. The USAID through a contract with Ohio State University provided advisors in the fields of agriculture, commerce, technology and science. In additlon, 11 participants from the college were trained in the United States for a total of 55 man-months, and equipment valued at $36,200 was supplied.
Rural Institutes (FY 1957 - FY 1961) : To support the GOI's rural education program, the USAID provided technical services, participant training in the United States and instructional materials and equipment to 11 rural institutes in India. Specialization was offered in rural social services, rural extension services, applied agricultural training, and rural engineering education. Total assistance : $222,000 and Rs 254,000.	USAID financed the training of four participants from Rajasthan for a total of 34 man-months.
Health	
Assistance to Medical Colleges and Allied Institutions (FY 1954 - FY 1957) : To assist in upgrading and expanding medical education institutions in India. Scientific, laboratory and professional equipment was provided to 16 medical research institutions, 41 medical colleges and various allied institutions. Total assistance : $1,056,000, consisting mainly of commodities.	The Sawai Man Singh Medical College at Jaipur received scientific equipment worth $84,000.
Medical Educator Training (FY 1958 - FY 1967) : To improve the quality of medical education by providing	USAID financed the training of 27 participants from the state for a

Annex II

Countrywide projects and activities

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
technicians, participant training and commodity support. Total assistance : $1,751,000 and Rs 2,023,000. In addition, the GOI allocated Rs 74,000,000 from PL 480 funds to improve medical education in India.	total of 287 man-months in the United States.
Nursing Colleges (FY 1958—FY 1967) : To improve the quality of nursing administration, nurse education, and in-service training in hospitals and nursing colleges by providing technicians, participant training and commodity support. Total assistance : $1,223,000 and Rs 1,023,000.	USAID provided the services of four U.S. technicians for a total of nine man-years to College of Nursing, Jaipur and financed the training of four staff members of the college for a total of 48 man-months in the United States. In addition, equipment, publications, professional and scientific instruments worth $ 4,500 were supplied to the College of Nursing, Jaipur.
Water Supply and Sanitation (FY. 1953—FY 1961) : To assist the All India Water Supply and Sanitation Program to develop, organize and implement water supply and human waste disposal improvements in urban and rural areas. Nine American technicians spent a total of 24 man-years in India ; 22 key GOI and state officials received U.S. training and commodities valued at $6,000,000 were provided. Total assistance : $6,450,000 and Rs 154,000.	USAID provided pipes, drilling rigs, and laboratory equipment worth $705,000 to the State Government to improve the water supply and sanitation conditions in the state.
Labor	
Trade Training (FY 1955—FY 1959) : To assist the Ministry of Labor to expand and upgrade facilities in basic trades and crafts for pre-employed youths. Total assistance : $661,000.	USAID provided equipment to the State's 15 industrial training institutes including Ajmer, Alwar, Bikaner, Jodhpur, Jaipur and Udaipur.
Labor Ministry Training (FY 1960—FY 1969) : To improve the services provided by the Indian Central and and State Ministries of Labor in the fields of manpower research and analysis, labor statistics, employment services, industrial skill improvement, concilia-	USAID financed the training of three participants in the United States for a total of 18 man-months. In addition, under a related project titled Trade Union Development,

benefiting the State of Rajasthan (continued)

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
tion and mediation and labor law administration. Total assistance under this project was $469,000 and Rs 1,597,000, including $352,000 for participant training.	two additional participants for Rajasthan were sent for training in the U.S. for a total of 12 man-months.
Transportation	
Railway Modernization (FY 1953—FY 1965): To assist the GOI to carry out a program of Railway modernization and expansion in order to increase the efficiency and volume of passenger and commodity transport operations.	Rajasthan is one of the states which participated in this countrywide program of railway expansion and modernization.
Since 1953, USAID has given massive assistance to the Indian railways by providing foreign exchange for the procurement of structural steel, locomotives, rolling stock components, centralized traffic control, electric singalling equipment, machinery and tools. Advanced training was provided in the United States for approximately 100 Indian Railway officials from the high and middle level of management.	
Total assistance: $259,426,000 (loan $229,670,000 and grant $ 29,756,000). In addition, the U.S. Export-Import Bank made a loan of $48.8 million to the Indian railways.	
Aviation Ground Facilities (FY 1955—FY 1962): To assist in expanding and modernizing aviation ground facilities and aeronautical communications services in order to provide all-weather aid to high altitude aircraft. Total assistance: $2,879,000 and Rs 88,000.	Very high Frequency Omni-Directional Radio Ranges (VOR) were installed at the Jodhpur and Jaipur airports.
Industry	
Acquisition and Distribution of Iron and Steel (FY 1952—FY 1958): The objectives of the project were: 1) to help increase food and agricultural production by making available to farmers improved agricultural implements such as steel-point ploughs, spike tooth harrows, steel-tires, irrigation devices, etc.; 2) to make steel available for the replacement	Rajasthan was one of the states which benefited from this country-wide program for increasing agricultural and industrial production.

Countrywide projects and activities

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
and rehabilitation of railways; and 3) to stimulate general industrial activity in the country. Approximately 459,300 tons of steel and steel products were procured and distributed to several Indian manufacturers and state governments. Total USAID assistance through FY 1958: grant $50,394,000 and loan $10,399,000. These figures do not include the allocation of over $85 million for the import of iron and steel under AID Non-Project loans.	
National Productivity Council (FY 1959-FY 1966): To assist the GOI, through the National Productivity Council, to establish and operate a national program for increasing industrial efficiency. USAID provided U.S. training for 300 Indians and seven-week observation tours in the United States and elsewhere for 43 productivity teams with six to seven members each. Operating through the National Productivity Councils, U.S. technicians organized and conducted training courses, seminars and demonstration workshops within India. Total assistance: $3,337,000 and Rs 7,897,000.	At Jaipur, U.S. technicians conducted training courses in Tooling and Machine Utilization for 16 participants and a 12-week course in Work Study for 12 participants. In addition, the project financed six months U.S. training for one participant and seven-week observation tours for 10 members of Productivity Teams from Rajasthan.
Construction Equipment Training and Utilization (FY 1963-FY 1967): To assist the GOI to obtain the maximum use of its considerable investment in heavy earth moving and construction equipment. Under this and a FY 1954 project, "Construction Equipment Operators", two centers were set up under the auspices of the Central Water and Power Commission to train Indian personnel in heavy equipment operation and maintenance, one in Nagarjunasagar, Andhra Pradesh, and the other at Kotah, Rajasthan. Total assistance: $1,494,000 and Rs 1,035,000.	Two U.S. technicians were assigned to the center at Kotah for a total of 127 man-months to conduct courses in the use of heavy earth moving and construction equipment. In addition, training and demonstration equipment worth $215,000 was provided to the center and one participant was trained in the United States.
Assistance to Industrial Research and Technical Service Organizations (FY 1954-FY 1957): To provide technical assistance in strengthening research organizations and technical services departments concerned with in-	USAID supplied the Central Electronic Engineering Research Station at Pilani with scientific and laboratory equipment worth $ 282,062 and

benefiting the State of Rajasthan (continued)

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*

creasing industrial production. Thirty-seven Indian participants received training in the United States, and commodities worth $2,945,000 were supplied. Total assistance : $3,010,000.

also provided participant training in in the United States.

C. PL 480 RUPEE ASSISTANCE FOR DEVELOPMENT ACTIVITIES

River Valley Development (FY 1955-FY 1966) : To construct 12 multipurpose river valley projects in various states which will provide facilities for hydroelectric power generation, irrigation and flood control. The combined electric generating capacity of these projects, when completed, will be about 2,000 megawatts and will irrigate about 12 million acres of land. USAID financed heavy earth moving equipment valued at $7,917,000. The GOI allocated from PL 480 funds Rs 2,418,400,000 (loan Rs 2,359,000,000 and grant Rs 59,400,000) for the execution of these projects.

Rs 341,000,000 were allocated for the Chambal River Valley project which involves the construction of four dams, three hydroelectric power plants and an extensive irrigation canal system. It is a cooperative project of the states of Rajasthan and Madhya Pradesh and is designed to ensure adequate irrigation water for the arid part of Rajasthan.

USAID has provided technical assistance for the project. An advisor worked for two years in the Madhya Pradesh section of the project and another advisor assigned to the Technical Training Centre in Kotah (Rajasthan) gave considerable assistance in solving problems of earth moving equipment operation and maintenance.

The project which is expected to be completed by 1972, will irrigate about 700,000 acres of land in Rajasthan and total generating capacity will be 375 megawatts.

Higher Technical Education : To develop regional engineering colleges and other facilities for higher technical education. As of June 30, 1970, the GOI had allocated Rs 431,300,000 from PL 480 funds

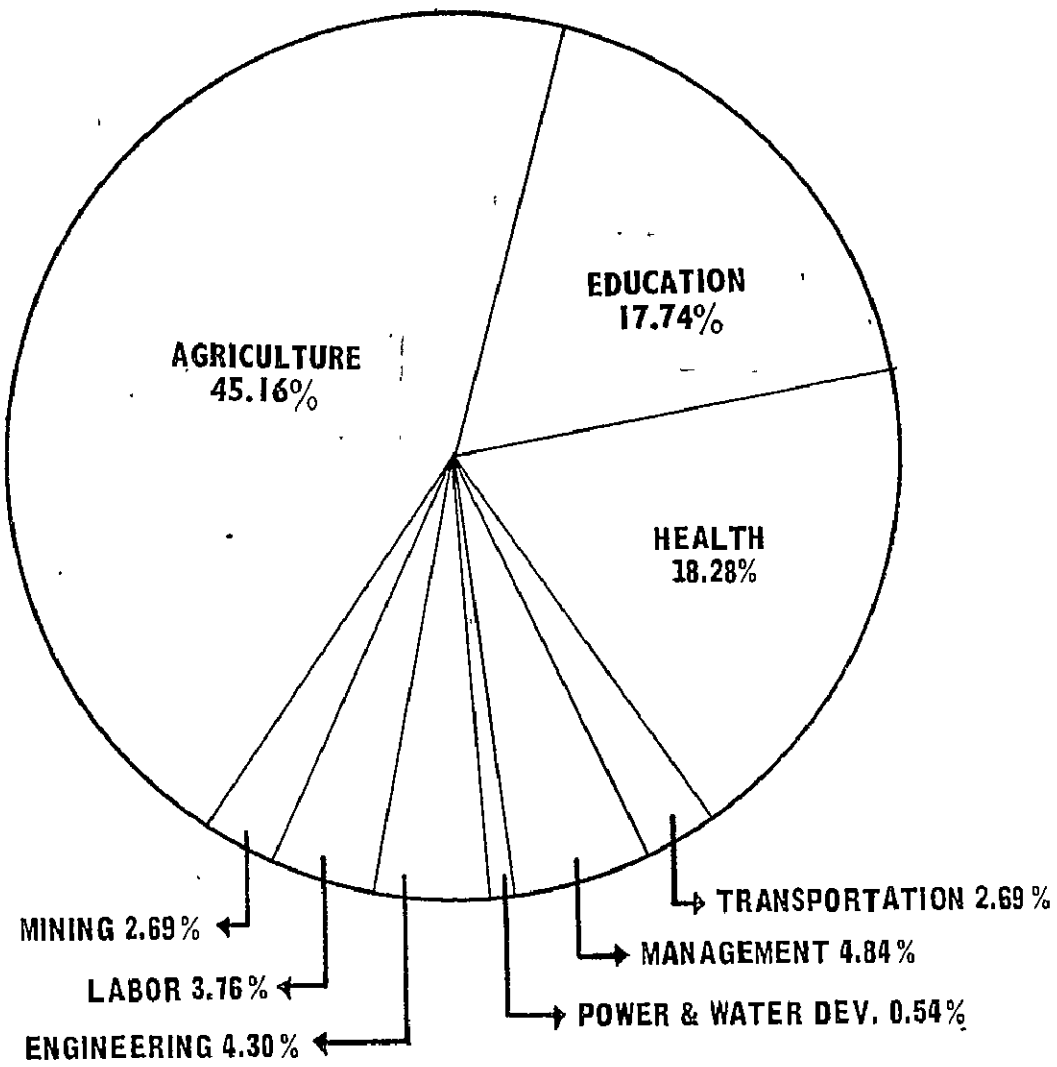
The Malaviya Engineering College at Jaipur received assistance.

Annex II

Countrywide projects and activities benefiting the State of Rajasthan

Projects and Activities with Countrywide Objectives	*State Participation and Benefits*
(grant Rs 165,600,000 and loan Rs 265,700,000) for their support.	
Elementary Education : In support of its elementary education program throughout the country, the GOI has allocated from PL 480 funds a total of Rs 1,211,400,000 (grant Rs 783,100,000 and loan Rs 428,300,000).	Assistance has been provided for development of elementary education in Rajasthan.
Primary Health Centers : The GOI is establishing primary health centers throughout the country, each to serve about 60,000 persons. Rs 165,500,000 had been allocated from PL 480 funds (grant Rs 105,500,000 and loan Rs 60,000,000) for their establishment through June 30, 1970.	232 primary health centers are functioning in the state of Rajasthan.
Smallpox Eradication : Rs 130,200,000 from PL 480 funds (grant Rs 102,900,000 and loan Rs 27,300,000) were allocated to the countrywide smallpox eradication program.	The program began to operate in Rajasthan in 1963, and since that time steady progress has been made. As of June 1969, 20,383,320 revaccinations and 6,214,120 primary vaccinations had been performed.
Craftsmen Training : To expand facilities for the training of craftsmen through seven Central and 357 Industrial Training Institutes. As of June 30, 1970, the GOI had allocated from PL 480 funds Rs 629,800,000 (grant Rs 394,600,000 and loan Rs 235,200,000).	Fifteen Industrial Training Institutes including those at Ajmer, Jaipur, Udaipur, and Bikaner, have benefited under the project.

RETURNED PARTICIPANTS
1951 – 1969



RAJASTHAN
186 PARTICIPANTS

AGRICULTURE		**84**
EXTENSION	13	
LAND AND WATER	9	
CROP PRODUCTION	2	
LIVESTOCK	1	
FERTILIZER	3	
AGRICULTURAL PRODUCTION INCENTIVE	1	
AGRICULTURAL UNIVERSITY DEV.	55	
EDUCATION		**33**
EDUCATION	32	
SCIENCE EDUCATION IMPROVEMENT	1	
HEALTH		**34**
HEALTH	28	
NURSING	4	
FAMILY PLANNING	2	
MANAGEMENT		**9**
PERSONNEL	1	
INDUSTRIAL	4	
GENERAL	4	
ENGINEERING		**8**
INDUSTRIAL	5	
NUCLEAR	3	
LABOR		**7**
TRANSPORTATION		**5**
POWER & WATER DEV.		**1**
MINING		**5**
		186

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