

The USAID Contribution to the Economic Development of

# MAHARASHTRA



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

MAY 1970

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## CONTENTS

I. Introduction	...	1
II. Basic Data Relating to the State	...	5
III. Map of USAID Assisted Projects in the State	...	6
IV. Summary of USAID Assistance	...	7
V. USAID Projects and Activities Confined to the State		
A. Development Loans	...	10
B. Cooley Loans	...	12
C. Technical Assistance	...	16
VI. Countrywide Projects and Activities Benefiting the State :		
A. Current Activities	...	17
B. Completed Activities	...	25
C. PL 480 Rupee Assistance for Development Activities	...	33

# MAHARASHTRA

Maharashtra has many tourist attractions due to its scenic grandeur, hill resorts, vast forests rich in wild life and its rich heritage of art, architecture and sculpture (such as the Ajanta, Ellora and Elephanta caves).

The state was formed in 1960 following the bifurcation of the former state of Bombay along linguistic lines into Maharashtra and Gujarat states. The Marathi-speaking people predominate in the present state of Maharashtra. Maharashtra is bounded by the Arabian Sea on the west, Gujarat on the northwest, Madhya Pradesh on the north, Andhra Pradesh on the southeast and Mysore and Goa on the south.

With an area of 118,820 square miles and approximately 48 million people, the state ranks third in area as well as in population in India. Maharashtra's population density of 404 persons per square mile is somewhat lower than the all-India average of 439 persons per square mile. The state is predominantly rural in character; about 72 per cent of the population live in some 36,000 villages, while the remaining 28 per cent reside in cities and towns.

Bombay, the state capital with more than five million people, is the second most populous city in India. As the "Gateway of India", it is one of Asia's largest seaports. Bombay is second only to Calcutta as India's most important industrial and financial center; it is the chief center of the Indian film industry, which is third largest in the world.

Poona with a population of more than 750,000 is an important and industrialized city. Other cities with a population of 100,000 or more are: Thana, Nagpur, Nasik, Sholapur, Kolhapur, Amaravati, Ulhasnagar, Malegaon and Ahmednagar.

## GEOGRAPHY AND CLIMATE

Geographically, the state can be divided into the following natural regions :

*The Konkan Region*—A range of mountains called the Western Ghats runs quite close and almost parallel to the sea coast, leaving a very narrow strip of land between the sea and the lofty mountain barrier. This strip of land which at no place is more than 60 miles wide but extends from Daman in the north to Goa in the south—a distance of about 350 miles—is known as the Konkan Region. Interspersed with hills, the land is very undulating and the soil far from fertile. Only the flat patches which lie crouched in small valleys and perched on the hill slopes are suitable for paddy cultivation. The mountain sides are, however, covered by evergreen vegetation and horticultural wealth which make the Konkan very picturesque.

*The Deccan Plateau*—The ghats running north to south and the Satpura ranges running east to west, with their meeting point in the state's northwest district (Dhulia), hold between them the

vast plateau of the Deccan. Several transverse ranges emanating from the Western Ghats extend into the plateau which is intercepted by the Godavari and the Krishna rivers flowing eastward from the Ghats. The Godavari valley is the nerve center of Maharashtra. The Krishna valley is on the southern periphery of the Deccan Plateau, and some portions of it are infertile and barren.

*The Tapi Valley*—In between the Satpura ranges in the north and the Balaghat range (one of the transverse ranges emanating from the Western Ghats and running from west to east) lies the Tapi valley. The valley of the Tapi is a transition between Central India and the Deccan. The Tapi river, rising in the Satpuras, flows westward with the Purna river flowing into it in its upper course. The Tapi valley is a fertile belt of black soil which grows rich cotton.

*The Vainganga-Wardha Valley*—Further east of the Tapi valley and the Godavari valley is the Vainganga-Wardha Valley, which presents a very different topographical pattern. The Wardha river is in fact the eastern fringe of the Deccan plateau, the Vainganga river is further east. These two rivers flow southeast before they drain into the Godavari. The undulating land in this valley abounds in lakes and tanks, many of which are man-made, and which are used for irrigation.

## CLIMATE

Rainfall varies considerably throughout the state. The Ghats and the coastal districts have heavy rainfall with an annual average of 80 inches although in some places it is more than 120 inches. The major part of the state, however, lies in the rain shadow of the Ghats with the rainfall averaging 25 to 30 inches and in some areas less than 20 inches.

## AGRICULTURE

Agriculture is the bulwark of the economy of Maharashtra. Of the total area comprising approximately 76 million acres, 47 million acres (gross) are under cultivation annually. Approximately, 3.5 million acres currently have irrigation facilities. With the development of new irrigation projects, the acreage under irrigation is expected to increase substantially in the future.

Maharashtra has been promoting increased food production by encouraging the development and use of high yielding seed varieties and more intensive cultivation by means of multiple cropping in selected areas and by offering incentive and stable prices for the farmers' produce. To enable the cultivators to adopt improved methods of farming, financial assistance in the form of grants-in-aid and loans has been further liberalized.

The main food crops of Maharashtra are: rice, wheat, millets, pulses, cotton, sugarcane, and oilseeds. The state grows over 34 per cent of the cotton produced in the entire country and about 20 per cent of the oilseeds. The state is also known for its fruits such as bananas, mangoes and oranges (especially from the Nagpur area).

The acreage and production data for the state's major crops for 1968 are as follows :

	AREA (000 acres)	PRODUCTION (000 tons)
<b>FOODGRAINS</b>	<b>32,565</b>	<b>7,159</b>
Jowar (grain sorghum)	15,543	3,549
Rice	3,390	1,369
Bajra (spiked millet)	4,672	598
Wheat	2,157	428
Tur (red gram)	1,424	335
Gram	967	129
Ragi (finger millet)	551	193
Small millets	523	93
Other pulses	3,237	410
Maize, Barley	101	55
<b>CASH CROPS</b>	<b>12,160</b>	<b>3,558</b>
Cotton	7,182	1,408
Sugarcane (gur)	416	1,209
Oilseeds	3,407	815
Sunflower	964	64
Tobacco	45	32
Dry Chillies, turmeric	26	17
Mesta, Sann-hemp	120	13

## FORESTS

Forests extending over 24,500 square miles or roughly 18 per cent of the state's total area constitute an important natural resource. The most important timber species in the state is teak; shisham, babul, sandal wood, gums and resins are also found. The Rosha oil, which is extracted by distillation from rosha grass, is an important product which earns foreign exchange as it is used in the perfume and soap making industries. A number of other industries are based on the raw materials derived from forests, i.e. paper pulp and straw board manufacturing, match factories, saw milling industries, and charcoal manufacture.

In order to further develop its forest resources, the State Government has established a number of research stations in different parts of the state as well as sample plots. The State Government also has sanctioned a scheme for the establishment of a Forest Research Institute at Chandrapur.

## FISHERIES

Maharashtra, with a coastline of about 450 miles, is the second largest fish producing state in India. The rivers, lakes, and tanks in the state are also rich in fish resources. The annual fish production is estimated at about 254,000 tons (241,000 tons from the sea and 13,000 tons from fresh water), valued at about Rs 1,218 million. Of the total catch, approximately 40 per cent is consumed as fresh fish, about 50 per cent is cured and the rest is converted into fish manure and fish meal.

Shrimp, lobster and frogs' legs are being exported to foreign countries in substantial quantities, and this earns considerable foreign exchange for India.

There are 52,000 fishermen in Maharashtra. The State Government has provided loan and grant assistance to the fishermen to enable them to mechanize their boats, and Maharashtra now has 40 per cent of the mechanized boats in India. The Fisheries Department of the State Government operates eight fisheries' upper primary schools and one fisheries' high school in maritime fishing villages.

## INDUSTRY

Maharashtra is the most highly industrialized state in India. During the last sixteen years of planned development, industry in the state has achieved wide diversification and sophistication. The progress is predominantly in respect of non-traditional manufactured goods in the fields of engineering, electronics, petro-chemicals, dye-stuffs, pharmaceuticals, plastics, synthetic textiles, rubber and many other lines of manufacture.

The cotton textile industry is one of the oldest and largest industries in the state. Nearly 15 per cent of India's textile mills are located in or around Bombay. Maharashtra is also one of the major sugar-producing states, having 37 sugar factories with a crushing capacity of 49,400 tons per day. One of the important features of this industry is that 26 factories are in the cooperative sector.

The state has six public sector undertakings operated by the Central Government: Hindustan Aeronautics at Nasik, Hindustan Organic Chemicals at Kolaba, Ordnance Factories at Ambernath and Nagpur, Filling Factory at Chanda and the Fertilizer Corporation of India at Bombay. The State Government has established the Maharashtra Industrial Development Corporation to provide assistance to small industries, and has sanctioned 69 industrial estates to be set up throughout the state.

## MINERALS

Maharashtra state is richly endowed with industrial minerals such as coal, iron ore, manganese ore, bauxite, limestone and dolomite. In addition to these major minerals, there are deposits of various industrial clays, chromite, ilmenite, kyanite, silica sand, copper, lead and zinc. Maharashtra also has abundant supplies of various types of rock suitable for building construction and road building.

## POWER

At the beginning of 1955, the territories which now constitute the present state of Maharashtra had a total installed generating capacity of 467 megawatts. During the first three Five-Year Plans, the state made great progress; and by 1969 the generating capacity had increased to approximately 1,828 megawatts, with the per capita consumption of electricity about 180 kwh. Further increases will be registered with the commissioning of new power projects (Koyna Stage III, Nagpur, Nasik, Bhusaval).

Advances also have been made in rural electrification with 10,020 rural localities electrified and 123,000 pump sets energized by 1969. Thus more than 28 per cent of the villages in the state have been electrified.

# Basic data on Maharashtra

1969

Capital : Bombay

Language : Marathi

LAND AREA 118,280 square miles  
Districts 26

POPULATION 48 million  
Density 404 (per square mile)  
(Millions of acres)

GEOGRAPHICAL AREA 76  
Area sown 45  
Forests 13  
Not available for cultivation 4  
Permanent pastures, fallow land, culturable waste 9  
Barren & Uncultivable 5

POWER  
Installed Generating Capacity 1,828 MW  
Per Capita Consumption 180 kwh  
Villages & Towns Electrified 10,020  
Pump Sets Energized 123,000

INDUSTRY  
Factories 10,119  
Persons Employed 879,359

COOPERATIVES  
Societies 38,312  
Membership (million) 7.5  
Working Capital (millions of Rs) 8,268

EDUCATION  
Literacy 29.8 per cent  
Universities 6

Type of Schools	No. of Institutions	Enrollment	Teachers
Primary	41,781	5,534,000	153,000
High	432	192,000	N.A.
Higher Sec.*	4,032	1,500,000	58,000
Colleges for General Education	151	95,500	5,534
Colleges for Professional Education	274	100,236	4,416
Vocational Education	885	72,000	6,748

HEALTH  
Hospitals 393  
Dispensaries 1,002  
Beds 37,425  
Primary Health Centers 382  
Doctors 12,258  
Nurses (trained) 12,021  
Nurses (untrained) 11,806

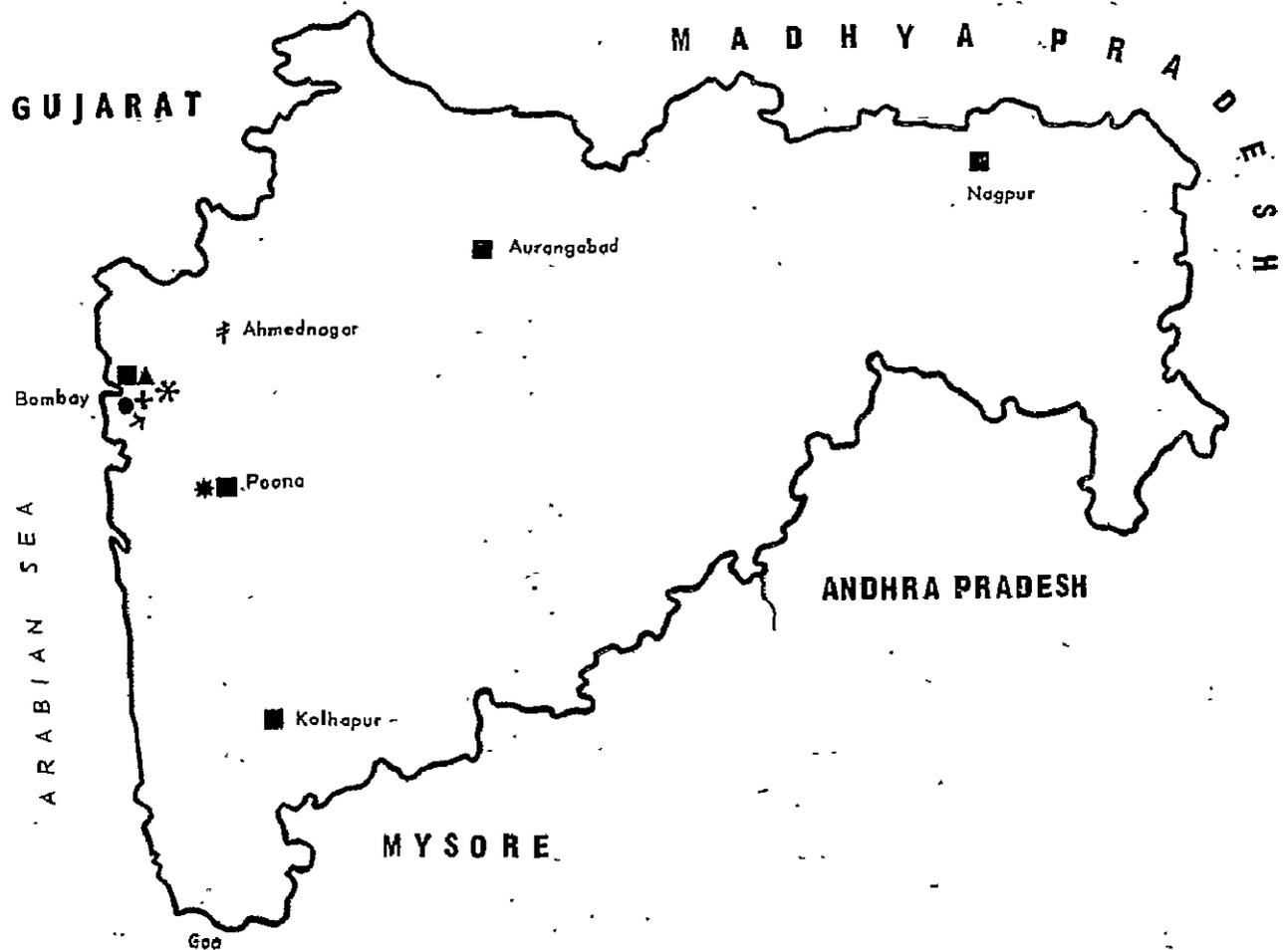
LABOR  
Craftsmen Training Institutes 33  
Enrollment 12,618

\*Includes Senior Basic Schools

## SOURCES :

- 1) Times of India Directory and Year Book 1969
- 2) Economic Review of Maharashtra—issued by the State Government 1967
- 3) Maharashtra 1969—issued by Directorate of Publicity, Government of Maharashtra.

# USAID Assisted Projects in Maharashtra



## DEVELOPMENT LOANS

- \* TARAPUR NUCLEAR POWER PLANT
- + TROMBAY THERMAL POWER PLANT
- TROMBAY FERTILIZER PLANT
- ⊙ PREMIER AUTOMOBILES
- INDUSTRIAL CREDIT & INVESTMENT CORP.
- \* KOYNA HYDRO ELECTRIC PROJECT

● In addition, 30 Cooley loans have been made to companies located in Bombay and Poona (see Annex I)

Bombay (Tarapur)  
Bombay  
Bombay  
Bombay  
Bombay  
Poona

## MAJOR TECHNICAL COOPERATION PROJECTS

- AGRICULTURAL UNIVERSITY DEVELOPMENT
- AGRICULTURAL PRODUCTION
- AGRICULTURAL INPUTS DEVELOPMENT
- † RURAL ELECTRIC COOPERATIVE DEVELOPMENT
- ▲ FAMILY WELFARE PLANNING
- SCIENCE EDUCATION IMPROVEMENT
- MULTIPURPOSE SECONDARY EDUC.
- BOMBAY CENTRAL TRAINING INSTITUTE
- NUCLEAR ENGINEERING
- ✧ AVIATION GROUND FACILITIES

Poona  
Poona  
Poona  
Ahmednagar  
Chembur-Bombay  
Bombay, Poona, Nagpur, Aurangabad, Kolhapur  
Poona, Nagpur, Kolhapur  
Bombay  
Bombay  
Bombay

SINCE 1952, the United States through the Agency for International Development (USAID) has been assisting India in many fields including agriculture, education, health industry, power and transportation. Many of

these USAID activities have benefited the State of Maharashtra. For example, 670 Indian technicians and professionals from Maharashtra have received training in the United States through December 31, 1969 (see page 35).

## Summary of USAID assistance benefiting Maharashtra (1952-1969)

(Figures in thousands)

<i>US-GOI Projects and Activities</i>	<i>LOANS</i>		<i>GRANTS</i>	
	<i>Dollars</i>	<i>Rupees</i>	<i>Dollars</i>	<i>Rupees</i>
<b>Confined to Maharashtra*</b>	<b>139,180</b>	<b>532,539</b>	<b>1,289</b>	<b>2,262</b>
Tarapur Nuclear Power Plant	75,000			
Trombay Fertilizer & Methanol	36,532	134,300		
Trombay Thermal Power Plant	17,716			
Premier Automobiles Ltd.	9,932			
American Express		60,000		
Arbor Acres Farm India		1,250		
Bank of America		60,000		
Borosil Glass Works		7,618		
Corn Products India (P) Ltd.		2,388		
Elpro International Ltd.		4,000		
Everest Refrigerants Ltd.		6,000		
Ex-Cell-O India Ltd.		2,000		
First National City Bank		60,000		
Gabriel India Ltd.		1,900		
Herdillia Chemicals Ltd.		26,484		
I.A. & I.C. (P) Ltd.		500		
Indabrator Ltd.		1,428		
Indofil Chemicals Ltd.		2,975		
Kirloskar Cummins Ltd.		12,500		
Lal-Roe Measuring Tools (P) Ltd.		1,300		
Lube-India Ltd.		64,345		
Otis Elevators Co. (India) Ltd.		7,000		
Richardson Hindustan Ltd.		6,250		
Searle (India) Ltd.		8,000		
Semi-Conductors Ltd.		1,350		
Shavo-Norgen (India) Pvt. Ltd.		800		
Tractor Engineers Ltd.		6,000		
Union Carbide India Ltd.		21,600		
United Carbon India Ltd.		20,101		
Vazir Glass Works Ltd.		2,500		
Vickers Sperry of India Ltd.		2,000		
Vicktor Gasket India (P) Ltd.		750		
Wyeth Laboratories Ltd.		1,700		
Wyman-Gordon India Ltd.		5,500		
Bombay Central Training Institute			1,189	2,262
Central Labor Institute			83	
Citrus Production & Marketing			17	

\* For details see Annex I.

# Summary of USAID assistance

(Figures in thousands)

<i>US-GOI Projects and Activities</i>	<i>LOANS</i>		<i>GRANTS</i>	
	<i>Dollars</i>	<i>Rupees</i>	<i>Dollars</i>	<i>Rupees</i>
<b>Countrywide*</b>	<b>2,310,600</b>	<b>3,843,600</b>	<b>277,377</b>	<b>3,266,433</b>
<b>Agriculture</b>	<b>10,845</b>		<b>72,089</b>	<b>83,324</b>
Agricultural Universities Development			13,384	47,103
Agricultural Production			3,212	14,775
Agricultural Inputs Development			1,919	7,322
Rural Electric Cooperatives			356	1,400
Acquisition & Distribution of Fertilizers	8,854		20,118	
Expansion & Modernization of Marine Inland Fisheries			2,902	63
Agricultural Extension			3,013	2,458
Community Development	1,991		11,518	
Foodgrain Storage			1,664	99
Agricultural Education & Research			8,981	5,144
Animal Husbandry			964	1,304
Agricultural Economic Research			289	
Crop Production			1,536	1,711
Dairy Development			994	
Farmers' Organization			275	396
Soil & Water Conservation			964	1,549
<b>Education</b>			<b>17,733</b>	<b>39,512</b>
Science Education Improvement			5,965	25,463
Technical Education Institutes			4,481	3,886
Multipurpose Secondary Education			3,992	8,250
Teacher Training in Engineering Education			2,250	1,689
Home Science Education & Research			1,045	224
<b>Health</b>	<b>12,233</b>		<b>89,374</b>	<b>11,746</b>
Malaria Control & Eradication	9,533		80,751	1,632
Family Welfare Planning	2,700		5,649	7,068
Medical Educator Training			1,751	2,023
Nursing Colleges			1,223	1,023
<b>Labor</b>			<b>1,130</b>	<b>1,597</b>
Trades Training			661	
Labor Ministry Training			469	1,597

\*For details see Annex II.

# benefiting Maharashtra (continued)

(Figures in thousands)

	<i>LOANS</i>		<i>GRANTS</i>	
	<i>Dollars</i>	<i>Rupees</i>	<i>Dollars</i>	<i>Rupees</i>
<b>Transportation</b>	<b>229,670</b>		<b>32,635</b>	<b>88</b>
Railway Modernization	229,670		29,756	
Aviation Ground Facilities			2,879	88
<b>Industry</b>	<b>14,874</b>		<b>53,805</b>	<b>8,038</b>
Acquisition & Distribution of Iron and Steel	10,399		50,394	
National Productivity Council			3,337	7,897
Banking & Investment			74	141
Industrial Credit & Investment Corporation of India	4,475			
<b>Power</b>			<b>2,694</b>	<b>1,438</b>
Nuclear Engineering			1,618	948
Technical Services in Water & Power Development			1,076	490
<b>Commodity Imports Under Non- Project Loans</b>	<b>2,042,978</b>			
<b>PL 480 Rupee Assistance for Development Activities</b>		<b>3,843,600</b>	<b>7,917</b>	<b>3,120,690</b>
River Valley Development		2,359,000	7,917	59,400
Higher Technical Education		265,700		165,600
Elementary Education		428,300		783,073
Primary Health Centres		20,000		105,500
Smallpox Eradication		27,300		102,900
Craftsman Training		235,200		394,563
National Highways				196,000
Agricultural Production		255,000		
Foodgrain Storage		29,500		160,735
Dairy Development				40,700
Soil & Water Conservation		29,000		100,829
Malaria Control & Eradication		194,600		851,500
Family Welfare Planning				84,690
Medical Educator Training				74,000
Technical Education Institutes				1,200

## USAID assisted projects and activities

### *Projects and Activities*

### *U.S. Inputs*

#### A. DEVELOPMENT LOANS

**Tarapur Nuclear Power Plant :** To increase the electric generating capacity of the states of Maharashtra and Gujarat by providing the foreign exchange costs for the 400,000 kw. Tarapur project.

Located on the Arabian Sea about 65 miles north of Bombay, the Tarapur Nuclear Power Plant is the single largest atomic power station in Asia. The plant began commercial operation in October 1969, and power will be shared equally by Gujarat and Maharashtra.

The station consists of two identical generating units, each with a boiling water reactor fueled with enriched uranium and a 200,000 kw. steam turbine generator. Sea water is used for condenser cooling.

The immediate impact of the Tarapur power station has been the withdrawal of power cuts, which had been imposed in the region. Following this will be its widespread benefits to the farmers. Already there are plans to extend rural electrification which will make possible the greater utilization of pumps for irrigation and a resultant increase in agricultural production.

**Trombay Fertilizer and Methanol Plants, Bombay :** To assist in the establishment of a fertilizer and methanol plant at Trombay, about 15 miles north of Bombay. Both plants have been in operation since 1965. The annual production capacity of the fertilizer plant is presently 99,000 tons of urea, and 180,000 tons of nitro-phosphate (20:20:0) fertilizer. The methyl alcohol plant has an annual production capacity of 20,000 tons of refined methanol.

USAID in FY 1963 made available \$75,000,000 in foreign exchange for the procurement of equipment. In addition, the United States Atomic Energy Commission (USAEC) provided enriched uranium oxide fuel worth \$14,500,000 on a long term credit basis. USAEC will continue to supply fuel throughout the life of the station. All of the rupee construction costs were financed by the Government of India.

USAID authorized two dollar loans totalling \$36,532,000 to defray the foreign exchange costs of the plant and the related equipment. The first loan of \$29,636,000 made in FY 1961 financed the fertilizer plant and the second loan of \$6,896,000 made in FY 1964 was used for both the methanol plant and the fertilizer plant. In addition, the GOI authorized a loan of Rs 134,300,000 from PL 480 funds to meet the local costs of the project.

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

## confined to the State of Maharashtra

### *Projects and Activities*

### *U.S. Inputs*

**Trombay Thermal Power Station, Bombay :** To increase the electric -generating capacity of the State of Maharashtra by providing the foreign exchange costs for the fourth unit of the Trombay Thermal Power Station. This fourth unit is an addition to the three existing 62.5 megawatt units in the power station owned by the Tata electric system. This system serves the Bombay-Poona area of the state of Maharashtra, one of India's most populous and heavily industrialized regions. The Trombay Thermal Power Station is now in operation and has significantly increased the electrical power in the area.

**Premier Automobiles Ltd., Bombay:** To finance the foreign exchange costs of importing machinery and equipment required to establish a press shop for the production of sheet metal components for trucks and automobiles; and to modernize and expand the capacity of related portions of the plant facilities.

Premier Automobiles was organized in 1944 as the first automobile and truck manufacturing company in India, and at present its annual production capacity is over 12,000 trucks and 9,000 automobiles.

USAID in FY 1962 made available \$17,715,502 in foreign exchange for the procurement of the plant and equipment required for the commissioning of the fourth unit of the thermal power station at Trombay.

USAID authorized two development loans totalling \$9,932,182. The first loan of \$7,059,182 made in FY 1961 was for the procurement of equipment required to manufacture sheet metal, and the second loan of \$2,873,000 made in FY 1962 was to expand production capacity.

## USAID assisted projects and activities

<i>Projects and Activities</i>	<i>U.S. Inputs (Amount and Year Authorized)</i>
<b>B. COOLEY LOANS*</b>	
<p><b>American Express, Bombay :</b> To encourage the company to increase its medium and long term lending to local enterprises.</p>	Rs 60,000,000 (FY 1969)
<p><b>Arbor Acres Farm India (P) Ltd., Poona :</b> To establish poultry breeding farms at Telegaon (Poona). The company is collaborating with Arbor Acres Farm Inc., Glastonbury, Connecticut.</p>	Rs 1,250,000 (FY 1964)
<p><b>Bank of America, Bombay :</b> To encourage the Bank to increase its medium and long term lending facilities to local enterprises.</p>	Rs 60,000,000 (FY 1969)
<p><b>Borosil Glass Works Ltd., Bombay :</b> To expand facilities to manufacture scientific apparatus and laboratory and industrial glassware. The company is collaborating with Corning Glass Works, New York.</p>	Rs 7,618,000 (FY 1964)
<p><b>Corn Products India (P) Ltd., Bombay :</b> To expand production of starch glucose and dehydrated food. The company is affiliated with Corn Products Co., New York.</p>	Rs 2,388,000 (FY 1967)
<p><b>Elpro International Ltd., Bombay :</b> To manufacture lightening arrestors and X-ray equipment. The company is affiliated with the General Electric Company, New York.</p>	Rs 4,000,000 (FY 1964)
<p><b>Everest Refrigerants Ltd., Bombay :</b> To manufacture refrigerant gases. The company is collaborating with Technical Enterprises Inc., New York.</p>	Rs 6,000,000 (FY 1965)
<p><b>Ex-Cell-O India Ltd., Bombay :</b> To manufacture tools and parts for automobiles, tractors and other industries. The company is affiliated with Ex-Cell-O Corporation, Detroit.</p>	Rs 2,000,000 (FY 1961)

\* "Cooley Loans" are local currency loans of U.S. owned rupees (generated from PL 480 sales agreements) made to American firms or their subsidiaries operating in India. The loans may also be made to Indian firms in which there is an American equity interest or which have operations which expand the market for/or increase the consumption of U.S. agricultural products.

## confined to the State of Maharashtra

### *Projects and Activities*

### *U.S. Inputs (Amount and Year Authorized)*

<b>First National City Bank, Bombay :</b> To encourage the Bank to increase its medium and long term lending facilities to local enterprises.	Rs 60,000,000 (FY 1969)
<b>Gabriel India Ltd., Bombay :</b> To manufacture shock absorbers. The company is collaborating with Gabriel Co., Cleveland, Ohio.	Rs 1,900,000 (FY 1961 and FY 1963)
<b>Herdillia Chemicals Ltd., Thana :</b> To assist in the manufacture of phenol, cumene, acetone, alcohol, diacetone, ethyl alcohol, phthaloc anhydride, phthalates, titanium dioxide, etc. The company is affiliated with Hercules Power Company Inc., Washington, Delaware. In addition to the Cooley Loans, the company has received an Export-Import Bank loan of \$3,340,000.	Rs 26,484,000 (FY 1966)
<b>I.A. &amp; I.C. (P) Ltd., Bombay :</b> To build a sulphur grinding plant. The company is affiliated with Lápíc Inc., Philadelphia, Pennsylvania.	Rs 500,000 (FY 1964)
<b>Indabrator Ltd., Bombay :</b> To manufacture airblast and shot blast equipment and dust collectors. The company is affiliated with Wheelabrator Corporation, Mishwaka, Indiana.	Rs 1,428,000 (FY 1965)
<b>Indofil Chemicals Ltd., Bombay :</b> To produce fungicides and plasticizers. The company is collaborating with Rohm & Hass Co., Philadelphia, Pennsylvania.	Rs 2,975,000 (FY 1965)
<b>Kirloskar-Cummins Ltd., Poona :</b> To manufacture diesel engines. The company is affiliated with Cummins Engine Co., Inc., Columbus, Indiana.	Rs 12,500,000 (FY 1964)
<b>Lal-Roe Measuring Tools (P) Ltd., Bombay :</b> To manufacture steel measuring tapes. The company is affiliated with Jutus Roe and Sons Inc., New York.	Rs 1,300,000 (FY 1967)
<b>Lube India Ltd., Bombay :</b> To assist in the construction of a refinery for the manufacture of medium and high viscosity index lubricating oil base stocks.	Rs 64,345,000 (FY 1968)

## USAID assisted projects and activities

*Projects and Activities*

*U.S. Inputs  
(Amount and Year Authorized)*

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The company is collaborating with Standard Oil Company (ESSO) of New Jersey and the Government of India.

**Otis Elevators Co. (India) Ltd., Bombay :** To expand the company's elevator manufacturing facilities and also to provide working capital for the manufacture and repair of elevators and escalators. The company is affiliated with Otis Elevator Co., New Jersey.

Rs 7,000,000 (FY 1959,  
FY 1964 and FY 1969)

**Richardson Hindustan Ltd., Bombay :** To manufacture methol and pharmaceutical products. The company is affiliated with Richardson Merrel Inc., New York.

Rs 6,250,000 (FY 1966)

**Searle India Ltd., Bombay :** To finance part of the local costs of establishing a factory to produce finished pharmaceutical chemicals (including all the ingredients for an oral contraceptive). The company is affiliated with G. D. Searle & Company, Chicago.

Rs 8,000,000 (FY 1969)

**Semi-Conductors Ltd., Poona :** To expand the production of transistors and diods. The company is collaborating with Raytheon Company, Lexington, Massachusetts.

Rs 1,350,000 (FY 1966)

**Shavo Norgen (India) Pvt. Ltd., Bombay :** To manufacture pressure regulators, air filters and air lubricators. The company is affiliated with C.A. Norgen Company, Colorado.

Rs 800,000 (FY 1967)

**Tractor Engineers, Ltd., Bombay :** To expand production of caterpillar equipment. The company is affiliated with Caterpillar Overseas, Peoria, Illinois.

Rs 6,000,000 (FY 1966)

## confined to the State of Maharashtra

<i>Projects and Activities</i>	<i>U.S. Inputs (Amount and Year Authorized)</i>
<b>Union Carbide India Ltd., Bombay :</b> To increase the production of polyethylene and chemical facilities at Trombay. The company is affiliated with Union Carbide Corp., New York.	Rs 21,600,000 (FY 1964)
<b>United Carbon India Ltd., Bombay :</b> To set up a plant to manufacture carbon black. The company is affiliated with Ashland Oil & Refining Co., California.	Rs 20,101,000 (FY 1965 and FY 1967)
<b>Vazir Glass Works Ltd., Bombay :</b> To assist in expanding the company's facilities for manufacturing vials and bottles. The company is collaborating with Wheaton Glass Co., Millville, New Jersey.	Rs 2,500,000 (FY 1968)
<b>Vickers Sperry of India Ltd., Bombay :</b> To manufacture hydraulic equipment and accessories. The company is affiliated with Sperry Rand Corporation, New York.	Rs 2,000,000 (FY 1967)
<b>Victor Gaskets India (P) Ltd., Bombay :</b> To manufacture gaskets and oil seals. The company is affiliated with Victor Manufacturing and Gasket Co., Chicago.	Rs 750,000 (FY 1963)
<b>Wyeth Laboratories Ltd., Bombay :</b> To manufacture corticosteroids, hormones and intermediate compounds. The company is collaborating with the American Home Products Corporation, New York.	Rs 1,700,000 (FY 1967)
<b>Wyman Gordon India Ltd., Bombay :</b> To manufacture forgings and castings. The company is collaborating with Wyman Gordon Company, Worcester, Massachusetts.	Rs 5,500,000 (FY 1964 and FY 1969)

## USAID assisted projects and activities, confined to the State of Maharashtra

*Projects and Activities*

*U.S.  
Inputs*

### C. TECHNICAL ASSISTANCE

**Bombay Central Training Institute (FY 1960-FY 1969) :**  
To assist the GOI in establishing a central training institute at Bombay to : (i) provide specialized courses of 12 months duration for 400 instructor-trainees who would then be assigned to teach in one of the 357 industrial training institutes; (ii) provide vocational training courses in seven important trades (motor mechanics, instrument mechanics, welding, machine teaching, electronics, and tool and die making); and (iii) impart refresher courses enabling previously trained instructors to keep informed about the newest industrial techniques and the latest advances in teaching in their respective trades.

**Central Labor Institute, Bombay (FY 1953-FY 1959) :**  
To assist the GOI in establishing a Central Labor Institute at Bombay. The purpose of the Institute is to promote industrial efficiency and to increase productivity by encouraging improvement in the safety, health and welfare of industrial workers. The Institute provides facilities for training, and has a center of visual demonstration, an industrial hygiene laboratory, a library and an information bureau. It serves as a meeting place for government, management and labor groups.

**Citrus Production and Marketing (FY 1956-FY 1957):**  
To assist in the development of a cooperative to produce, process and market citrus products in India by enlarging the marketing area and prolonging the marketing period.

USAID provided assistance through a contract with the Dunwoody Institute of Minneapolis. The contractor provided the services of 15 technicians and consultants for a total of 45 man-years. In addition, participant training was provided at the Dunwoody Institute for 23 senior teaching masters and administrators. Total assistance through December 31, 1969 was \$1,189,000 and Rs 2,262,000 including the cost of workshop, teaching and demonstration equipment and technical books worth \$404,000.

USAID provided a total of \$83,000 for the procurement of exhibits, equipment and apparatus for the laboratory, technical books and other hygienic equipment.

USAID provided the services of two short-term consultants to survey the citrus and orange production and marketing situation in the Nagpur area and suggest ways and means to improve production and marketing facilities. These consultants worked with the Nagpur Orange Association, a cooperative organization. One participant was trained. Total assistance : \$17,000.

## Countrywide projects and activities benefiting the State of Maharashtra

### 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 1969 gift commodities such as non-fat dry milk, bulgur, corn soya milk (CSM), whole wheat, wheat flour and vegetable oil, totalling 480,017 metric tons were allocated for distribution to approximately 17.1 million beneficiaries in the country.

In FY 1970, 497,500 metric tons of gift commodities have been approved for distribution to approximately 17.2 million beneficiaries throughout the country under the program.

In Maharashtra during FY 1970, gift commodities will be provided to 914,400 people through 1,716 distribution centers and American voluntary agencies. The breakdown of the number of people who will benefit from the program by category and voluntary agency is indicated below :

#### NUMBER OF BENEFICIARIES

<i>Name of Agency</i>	<i>Mat. and Pre-School</i>	<i>School Feeding</i>	<i>School Hostels</i>	<i>Other Children</i>	<i>Economic Development</i>	<i>Institutional Feeding</i>	<i>Health Cases</i>	<i>Educational Development</i>	<i>Total</i>
CARE	21,000	569,000							590,000
CRS	26,900	61,700		12,200	79,700	4,600	5,700		190,800
CWS/ LWR	8,000	3,900	8,000	6,900	100,000	4,500	1,000	1,300	133,600
<b>TOTAL :</b>	<b>55,900</b>	<b>634,600</b>	<b>8,000</b>	<b>19,100</b>	<b>179,700</b>	<b>9,100</b>	<b>6,700</b>	<b>1,300</b>	<b>914,400</b>

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

## Countrywide projects and activities

*Projects and Activities with  
Countrywide Objectives*

*State Participation  
and Benefits*

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### Agriculture

**Agricultural Universities Development (FY 1964—) :** To assist the GOI in developing state agricultural universities capable of planning and administering fully integrated statewide programs in agricultural teaching, research and extension. The seven universities which have been assisted under this project since 1964 are : Andhra Pradesh, Madhya Pradesh, Punjab, Mysore, Uttar Pradesh, Rajasthan and Orissa. The eighth, Maharashtra University, was added to the project in 1968. U.S. assistance through December 31, 1969 totalled \$13,384,000 and Rs 47,103,000.

The Maharashtra Agricultural University founded in the year 1968 was split into two regional state universities in late 1969, namely, Mahatma Phule Krishi Vidyapeeth (MPKV) with its main campus at Poona, and Punjabrao Krishi Vidyapeeth with its headquarters in Akola.

One of these universities, the Mahatma Phule Krishi Vidyapeeth is currently receiving USAID technical assistance under this project. The MPKV university is presently situated in Poona, but a new campus is being developed on an 8,000-acre track of land at Rahuri, (90 miles northeast of Poona). This will provide centralized facilities for teaching, research and extension activities. There are also five outlying campuses which are under the jurisdiction of MPKV university.

USAID assistance to MPKV is being provided through a contract with the Pennsylvania State University. Since the inception of the project in 1968, the services of four technicians and eight short-term consultants have been provided in the fields of agricultural education, research, veterinary science, agricultural economics, home science, and campus development. In addition, USAID has provided U.S. training for 13 members of the University staff. Total assistance

# benefiting the State of Maharashtra

## *Projects and Activities with Countrywide Objectives*

## *State Participation and Benefits*

### **Agricultural Universities Development**

**Agricultural Production (FY 1967—)** : To strengthen the link between the field, research facilities, and the State Department of Agriculture, to facilitate solution of problems as they arise, and to insure the rapid communication of research results back to the cultivators. The program is focused particularly on areas where high yielding variety programs are being undertaken.

In each state where this project is being implemented, a team consisting of four to six U.S. technicians is provided in fields such as seed production, plant protection, soil fertility, water use management and drainage, agricultural implements, extension training, and agricultural information. This project also includes non-degree training in the United States for up to five participants from each state. Total assistance under this project through December 31, 1969 was \$3,212,000 and Rs 14,775,000. In addition, the GOI has allocated Rs 255,000,000 from PL 480 funds to meet the local costs of the project.

through December 31, 1969 was \$377,000 and Rs 1,368,000.

The GOI has recently requested that USAID assistance be extended to include the Punjabrao Krishi Vidyapeeth. This proposal is now being considered by USAID.

Through a contract with the Pennsylvania State University, USAID is providing a team of four subject matter specialists. Each of these advisors is working with two counterparts, one from the State Department of Agriculture and one from the Agricultural University. These advisors and their counterparts form four field problem units. Short-term consultants have been provided on problems of saline soils, seed processing and pesticide quality control.

During the short period of operation of this project, the team has been particularly successful in developing a field insect surveillance system to properly plan the insect control work; establishing an alkalinity and soil salinity improvement system which includes laboratory diagnosis as a guide for field operations; a successful approach to community rat control; improved production practices and processing of improved varieties of crop seeds and adaptation of farm machinery to serve the farmers of Maharashtra.

Since the project began in FY 1967 a

## Countrywide projects and activities

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

#### **Agricultural Production**

**Agricultural Inputs Development (FY 1967—):** To assist the GOI to increase the availability and encourage the efficient use of essential agricultural production inputs, reduce foodgrain losses, and improve the processing of agricultural products. This project is divided into five sub-projects: fertilizer, seeds, plant protection and rodent control, farm implements, and oilseeds processing. Through FY 1969, USAID has provided the services of twelve technicians and sixteen short-term consultants to work with the GOI and the state governments. Total assistance through December 31, 1969 was \$1,919,000 and Rs 7,322,000.

**Rural Electric Cooperatives Development (FY 1967—):** The USAID is providing assistance to the GOI to start a rural electric cooperative project on a pilot basis in the states of Gujarat, Mysore, Maharashtra, Uttar Pradesh and Andhra Pradesh. The objectives of the project are to: (i) furnish electricity to the rural people at the lowest possible cost in order to increase agricultural production, stimulate small agro-industry, and improve the standard of living of the rural population; (ii) increase the responsibility of the people by giving them some degree of control over their electricity supply; (iii) establish local organizations for the financing, procurement, installation, repair, and proper use of electrical appliances and equipment such as pump sets; (iv) provide the basis for a rapid and standardized pattern of construction and operation of rural electric systems in all states of the Union; and (v) provide a meaningful training experience for Indian personnel involved in rural electric cooperative activities so that they can help other such cooperatives.

USAID is providing technical services through a contract with the National Rural Electric Cooperative

total of \$509,000 and Rs 1,772,000 has been obligated for this activity.

The seeds sub-activity is aimed at working with the National Seeds Corporation in order to increase the use of quality seeds of improved crop varieties/hybrids. USAID, through a contract with the Mississippi State University, is providing the services of four specialists, one of whom is stationed at Poona. This technician is working on quality control and grower problems in the certified seed production program.

The Maharashtra Pilot Rural Electric Cooperative project is located in Ahmednagar district (north of Poona). There the Mula-Pravara Electric Cooperative Society Ltd., has been organized with a membership of 1,740 members. It will begin distribution of power by April 1970 through lines transferred from the Maharashtra Electricity Board. With the development of electricity, the economy of the area is expected to improve and the living standards of the people to be raised considerably.

To assist this cooperative society and the Maharashtra State Electricity Board, the USAID is providing the services of one technician who is stationed at Poona.

# benefiting the State of Maharashtra

## *Projects and Activities with Countrywide Objectives*

## *State Participation and Benefits*

Association (NRECA). Total assistance through December 31, 1969 was \$356,000 and Rs 1,400,000.

### **Education**

**Science Education Improvement (FY 1963—):** To improve the teaching of science, mathematics and technology by training Indian teachers at the higher secondary and college levels in the most recent developments in their specialties and in modern teaching methods. From 1963 through 1969, a total of 607 summer institutes were conducted in biology, physics, chemistry, mathematics, and engineering for approximately 24,300 teachers and professors of these subjects. A total of 1,000 U.S. consultants have participated in these summer sessions. U.S. technical assistance is being provided through the National Science Foundation, and has totalled \$5,965,000 and Rs 25,463,000 through December 31, 1969.

Through FY 1969, 71 summer institutes have been held in the State of Maharashtra, and approximately 2,800 teachers and professors have received training. One participant also received training in the United States for a total of 12 weeks.

In addition to the above, the Bombay Municipal Corporation, with the approval of the Maharashtra State Education Department and the concurrence of the GOI, has requested USAID assistance to prepare a science syllabus, teachers' handbooks, text and reference materials and other teaching aids for the elementary school system of Bombay City. These materials will be developed, tested and revised; they will then be used in teacher training courses which will be given prior to full scale adoption of the curriculum in the city schools. As the Bombay Municipal School System is a manageable size with some 510,000 students and it provides education in ten languages, including English, it is believed that this will provide a valid pilot study.

USAID during FY 1970 will provide four consultants with specialties in biology, chemistry,

## Countrywide projects and activities

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

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#### Science Education Improvement

mathematics and physics; these consultants will also have special competence in areas such as equipment, visual aids, and evaluation, as applied to the elementary and middle school levels.

#### 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 an estimated twenty million cases and approximately 200,000 deaths annually. In 1958, the program was converted to "eradication". By June 30, 1969, 68 units with a population of 112 million had passed to the consolidation phase; and 217 units with 287 million people had been approved for the 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.

The State of Maharashtra participates in the national program of malaria control and eradication. As of June 30, 1969, 12 units with a population of 17 million had passed into the consolidation phase and 13 units with 18 million people had been approved for the maintenance phase. The remaining 8 units with 13 million people still were in the attack phase of the program.

Three National Malaria Control and Eradication Program personnel from the state went abroad for USAID-sponsored training.

Since 1953, the United States Agency for International Development has financed the procurement of several thousand tons of DDT, malaria drugs, spray equipment, vehicles, and has provided the services of technicians. The project has also provided training to 32 key National Malaria Eradication and Control program personnel. Total assistance through December 31, 1969 was \$90,284,000 (grant \$80,751,000 and loan \$9,533,000) and Rs 1,632,000. In addition, the GOI has allocated from PL 480 funds Rs 1,046,100,000 (grant 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

## benefiting the State of Maharashtra

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

Non-Project Loans estimated at \$13.8 million for DDT and anti-malaria drugs.

**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 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 December 31, 1969 was \$5,649,000 and Rs 7,068,000.

A loan of \$2.7 million in foreign exchange has also been made to the Government of India 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 million 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 expenditures for the Central and State Health Transport Organizations, and for operation and routine maintenance of the vehicles.

A grant of Rs 84.7 million from PL 480 funds has already been made available to the GOI for family planning activities. This grant is now being used for increasing the effectiveness of the program including experimental and innovative activities in research, training, motivation, and mass communication.

Maharashtra is one of the states which is participating in this countrywide program of family planning. More than 3,600 family welfare planning centers have been established in urban and rural areas by the state government, local bodies and voluntary organizations. During 1968-69, 316,871 IUCD insertions and 999,993 sterilizations were carried out. The State has also won the National award for family planning three times.

One of the activities of the GOI Family Planning project, namely the Demographic Training and Research Center, is located in Maharashtra at Chembur, Bombay. This center was established in July 1966 as a regional center for demographic training for the countries of the ECAFE (Economic Commission for Asia and the Far East) region. The center is jointly sponsored by the Government of India, the United Nations and the Sir Dorabji Tata Trust.

The aim of the training program of the Center is "to help to build up over a period of years a nucleus of persons in each country of the region who have sufficient knowledge of demography to plan and carry out such population studies as the governments

## Countrywide projects and activities

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

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#### **Family Welfare Planning**

and universities may wish to sponsor, and in turn to train other persons in the field".

The research focus at the Center is directed toward five broad areas: family planning, fertility, mortality, migration and urbanization, and simulation models. The Center has initiated research concerning family planning evaluation, target setting, cost-benefit analysis and births averted by the family planning work in India.

USAID has been assisting the Center since 1968. Two U.S. demographers are working with the Center and commodities worth \$56,000 have been provided. In addition, two participants from the center are receiving training in the United States for one year each. Total assistance under this activity, through December 31, 1969 was \$220,000 and Rs 575,000.

#### **Non-Project Loans**

**Commodity Imports Under AID Non-Project Loans:** To assist the GOI 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 \$2,042,978,000 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.

The agricultural and industrial sectors in Maharashtra benefit from these general commodity import loans.

# benefiting the State of Maharashtra

*Projects and Activities with  
Countrywide Objectives*

*State Participation  
and Benefits*

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 fertilizer. Almost 50 per cent of the recently authorized loans have been earmarked for the agricultural sector.

None of these loans has been used for the import of consumer goods or luxury items.

## 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. 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.

**Expansion and Modernization of Marine and Inland Fisheries (FY 1952—FY 1961)**: To provide supplies and equipment for the modernization of Marine and Inland Fisheries on the western and eastern coasts of India. Assistance was provided to eight training centres, four off-shore fishing stations and fishermen's cooperatives. Six U.S. technicians and three short-term consultants were provided. Participants were

Maharashtra was one of the states which participated in this country-wide program for increasing agricultural production.

Equipment (purse seine, diesel engines, insulated roadvans, gears, etc.) was supplied to the State Government to increase production of both marine and fresh water fish. In addition, USAID assisted the GOI to establish a Deep Sea Fishing Station at Bombay by providing

## Countrywide projects and activities

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

trained in the United States and commodities worth \$2.5 million were supplied. Total assistance: \$2,902,000 and Rs 63,000.

**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. The GOI has with USAID assistance established 100 extension and 44 home science training centres to train Village Level Workers. Total assistance: \$3,013,000 and Rs 2,458,000.

**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: grant \$11,518,000 and loan \$1,991,000.

**Foodgrain Storage (FY 1955—FY 1966):** To demonstrate efficient grain storage through construction of modern grain elevators and to 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.

**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,

the services of technicians and consultants. USAID also financed five months of U.S. training for two participants from the State.

USAID financed the training of 22 participants for a total of 170 man-months in the United States.

Assistance was provided to the State Government for the development of rural community development blocks, extension centers, and village schools.

Seven godowns were constructed in Maharashtra with a total capacity of 522,100 tons (Poona, 22,700 tons; Manmad, 196,000 tons; Borivilli, 245,300 tons; Wadala, 2,200 tons; Bombay, 4,000 tons; Sewri, 21,700 tons and Nagpur 30,000 tons).

Under this project, USAID financed the training of 40 participants in the United States. USAID assistance to the Mahatma Phule Agricultural University is being provided under

## benefiting the State of Maharashtra

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

at a total cost of \$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.

**Animal Husbandry (FY 1955—FY 1967):** To assist the Central and state governments in poultry and livestock development and marketing by training Indian participants and providing demonstration and training equipment. Total assistance: \$964,000 and Rs 1,304,000.

**Agricultural Economic Research (FY 1955—FY 1963):** To promote research and development in agricultural economics and farm management. Six Agro-Economic Research Centers were established. USAID provided training facilities for 12 participants for 12 months each and the services of two technicians for two years each and commodities worth about \$51,000. Total assistance: \$289,000.

**Crop Production (FY 1955—FY 1967):** To assist the GOI to increase foodgrain production by promoting and demonstrating the use of high yield 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 1,7110,00.

**Dairy Development (FY 1955—FY 1962):** To assist the GOI in its dairy development program by providing technical services and essential equipment. Total assistance: \$994,000. In addition, the GOI made available Rs 40.7 million as a grant from PL 480 funds for the construction and development of 15 milk and milk product schemes.

**Farmers' Organization (FY 1956—FY 1961):** To increase agricultural production through the establishment of national, state and local farmers' organizations

the Agricultural Universities Development project.

USAID financed the training of seven participants for a total of 50 man-months in the United States.

USAID provided training to two participants from the State of Maharashtra for a total period of 25 man-months.

USAID financed the training of nine participants in the United States for a total of 43 man-months.

Worli and Nagpur milk schemes were assisted under the project.

A four-month tour of the United States and Japan was provided for 11 Maharashtra farm leaders, and a

## Countrywide projects and activities

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

capable of providing agricultural information to farmers. The 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.

**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 the Union and state governments, and to conduct pilot projects. Total assistance: \$964,000 and Rs 1,549,000. In addition, the GOI allocated Rs 129,829,000 (grant Rs 100,829,000 and loan Rs 29,000,000) from PL 480 funds for this project.

#### **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.

**Multipurpose Secondary Education (FY 1956—FY 1969) :** To help reorganize and improve secondary education in India. The first phase established 54 extension training centres for secondary school teachers. The second phase emphasized vocational education in the multipurpose secondary schools. The third phase from FY 1964 emphasized the development of four regional teacher training colleges with attached demonstration schools. Total assistance: \$3,992,000 and Rs 8,250,000.

**Teacher Training in Engineering (FY 1958—FY 1961) :** To assist the GOI to improve the facilities and quality

limited quantity of training equipment was supplied to the State Government.

USAID financed the training of 12 participants from Maharashtra for a total of 90 man-months in the United States.

USAID provided the services of four technicians for a total of 82 man-months to the Colleges of Engineering at Poona and Nagpur and also financed the training of 13 participants for a total of 169 man-months in the United States.

USAID under the first phase assisted three extension training centers, at Poona, Nagpur and Kolhapur. In the second phase, five multipurpose schools (Bombay, Gorgati, Narayangaon, Nagpur and Nanded) were assisted. There was no activity in this state under the third phase of the project.

Twenty-one engineers from the State of Maharashtra received train-

# benefiting the State of Maharashtra

## *Projects and Activities with Countrywide Objectives*

## *State Participation and Benefits*

of engineering education. 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.

**Home Science Education and Research (FY 1955—FY 1961):** To strengthen home science education and research at the college and university level. Eighteen U.S. technicians were assigned to various states and 28 Indian participants received training in the United States. Total assistance: \$1,045,000 and Rs 224,000.

### **Health**

**Medical Educator Training (FY 1958—FY 1967):** To improve the quality of medical education by providing 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.

**Nursing Colleges (FY 1958—FY 1967):** To improve the quality of nursing administration, nurse education, and in-service training to hospitals and nursing colleges by providing technicians, participant training and commodity support. Total assistance: \$1,223,000 and Rs 1,023,000.

### **Labor**

**Trades Training (FY 1955—FY 1959):** To assist the Ministry of Labor to expand and upgrade facilities in basic trades and crafts for pre-employed youth. Total assistance: \$661,000.

**Labor Ministry Training (FY 1960—FY 1969):** To improve the services provided by the Indian Central and State Ministries of Labor in the fields of manpower research and analysis, labor statistics, employment services, industrial skill improvement, conciliation and mediation and labor law administration. Total

ing in the United States for a total of 340 man-months.

U.S. technicians were assigned to Shreemati Nathibai Damodar Thackersey Women's University, Bombay. Four participants received training in the United States under the project.

USAID financed the training of 30 participants from the state for a total of 285 man-months in the United States.

USAID financed the training of three participants for a total of 43 man-months in the United States.

USAID provided equipment to the State's 32 industrial training institutes including Akola, Bombay, Poona, Sholapur, Sangli and Kolhapur.

USAID financed the training of twelve participants in the United States for a total of 63 man-months.

## Countrywide projects and activities

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

assistance under this project was \$469,000 and Rs 1,597,000 including \$327,000 for participant training.

#### **Transportation**

**Railway Modernization (FY 1953—FY 1965) :** To provide foreign exchange for the procurement of structural steel, locomotives, rolling stock components, centralized traffic control, electric and signalling equipment, machinery and tools required to manufacture and to carry out a programme of modernization and expansion in order to increase the efficiency and volume of passenger and commodity transport operations.

As railways provide more than 90 per cent of the surface transport for industries, agriculture, and other domestic requirements, they are the main arteries of transport. Railway expansion and modernization has had a high priority in India's economic development program. India has taken effective measures to increase the production of railroad stock, and has made rapid strides to improve and expand transport.

Since 1953, USAID has provided massive assistance to Indian railways totalling \$259,426,000 (loan \$229,670,000 and grant \$29,756,000) to enable it to carry out its planned program of modernization and expansion. In addition, the U.S. Export-Import Bank has advanced to the Indian Railways a loan of \$48.8 million for the same purpose. The USAID assistance included advanced training facilities in the 'United States for approximately 100 Indian railway officials from the high and middle levels of management.

**Aviation Ground Facilities (FY 1955—1962) :** To assist in expanding and modernizing aviation ground facilities and aeronautical communication services in order to provide all-weather aid to high altitude aircraft. Total assistance: \$2,879,000 and Rs 88,000.

Maharashtra was one of the states which participated in this countrywide program of railway expansion and modernization. Fourteen participants from the state went abroad for USAID sponsored training for a total of 62 man-months.

Under the project Airport Surveillance Radar was installed at the Bombay airport for safe aircraft movement in all-weather conditions. Eight participants from the state

# benefiting the State of Maharashtra

## *Projects and Activities with Countrywide Objectives*

## *State Participation and Benefits*

### Aviation Ground Facilities

received advanced training in the United States concerning the operation of the equipment.

### 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 cart-tires, irrigation devices, etc., (2) to make steel available for the replacement, and rehabilitation of railways, and (3) to stimulate general industrial activity in the country.

Maharashtra was one of the states which benefited from this country-wide program for increasing agricultural and industrial production.

Approximately 459,280 tons of steel products were procured and distributed to several Indian manufacturers and state governments. Total USAID assistance through FY 1958 was: grant \$50,394,000 and loan \$10,339,000. 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 training facilities within India for 740 industrial technicians and managers 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.

In Maharashtra, at Bombay, Poona and Kolhapur, the U.S. advisors conducted two series of training courses for 47 man-months in which a number of Indian industrial technicians and managers participated. In addition, USAID financed the training of 52 participants from the state for a total of 335 man-months in the United States and also a seven-week observation tour of the United States and other countries for 80 participants.

**Banking and Investment (FY 1958—FY 1959):** To help streamline the operations of the various finance corporations which provide medium term financing for medium sized industries in the private sector. USAID

Fifteen participants from the State of Maharashtra received training in the United States for a total of 45 man-months.

## Countrywide projects and activities

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

provided training facilities to 32 banking executives in the United States in advanced banking techniques. Total assistance: \$74,000 and Rs 141,000.

**Industrial Credit & Investment Corporation of India (FY 1961):** To provide foreign exchange required for medium and long term sub-loans to private industrial borrowers for financing capital equipment and services for the establishment of new industrial concerns and expansion of existing ones.

USAID made available a loan of \$4,475,000 to the Industrial Credit & Investment Corporation of India for sub-lending to private industries. In addition to dollar assistance, the GOI made available to the ICICI from PL 480 funds a loan of Rs 250 million.

### **Power**

**Nuclear Engineering (FY 1955—FY 1969):** To assist the GOI in developing India's atomic energy resources and in implementing a program of research and utilization of atomic energy for peaceful purposes, including power development; and to provide U.S. training for Indian scientists of the Atomic Energy Establishment, Trombay, in advanced techniques and practices in various fields of nuclear engineering. Total assistance: \$956,000 and Rs 948,000.

USAID under another project (Nuclear Research), provided equipment and supplies worth \$662,000 to the Atomic Energy Establishment, Trombay.

**Technical Services in Water and Power Development (FY 1952—FY 1962):** To assist the GOI in the development of its multipurpose river basin program, irrigation, flood control, inland waterway navigation, and electric and power generating and transmission. Thirty-six U.S. technicians and consultants provided 41 man-years of services, 108 Indian engineers received

Six sub-loans have been made to industries in Maharashtra.

USAID provided training facilities for a total of 1,086 man-months to 130 participants who are stationed now at the Atomic Energy Establishment at Trombay.

USAID financed the training of six participants from Maharashtra for a total of 44 man-months.

# benefiting the State of Maharashtra

*Projects and Activities with  
Countrywide Objectives*

*State Participation  
and Benefits*

training in the United States, and technical books and radio gauge equipment were provided under the project. Total assistance: \$1,076,000 and Rs 490,000.

## C. PL 480 RUPEE ASSISTANCE FOR DEVELOPMENT ACTIVITIES.

**River Valley Development (FY 1955—FY 1966):** To construct 12 multi-purpose 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 \$7.9 million. The GOI allocated from PL 480 funds Rs 2,418.4 million (loan Rs 2,359 million and grant Rs 59.4 million) for the execution of these projects.

Under this project, the Koyna Hydroelectric Power Project is being constructed. The dam, located across the river Koyna at Hidakal, 150 miles south of Bombay, will provide a total of 760 megawatts of installed generating capacity of electricity. The first stage consisting of four units of 60 megawatts each was completed in 1963. The second stage of four units of 75 megawatts each was commissioned in 1968. The third stage which consists of four units of 80 megawatts each is expected to be commissioned by 1973. To finance this project, Rs 205 million were allocated from PL 480 funds.

**Higher Technical Education:** To develop regional engineering colleges and other facilities for higher technical education. As of June 30, 1969, the GOI had allocated Rs 431.3 million from PL 480 funds (grant Rs 165.6 million and loan Rs 265.7 million) for their support.

The Engineering College at Nagpur received assistance.

**Elementary Education:** In support of its elementary education program throughout the country, the GOI has allocated from PL 480 funds a total of Rs 1,211.4 million (grant Rs 783.1 million and loan Rs 428.3 million).

Assistance has been provided for development of elementary education in Maharashtra.

## Countrywide projects and activities benefiting the State of Maharashtra

### *Projects and Activities with Countrywide Objectives*

### *State Participation and Benefits*

**Primary Health Centers:** The GOI is establishing primary health centers throughout the country, each to serve about 60,000 persons. Rs 125.5 million has been allocated from PL 480 funds (grant Rs 105.5 million and loan Rs 20.0 million) for their establishment through June 30, 1969.

**Smallpox Eradication:** Rs 130.2 million from PL 480 funds (grant Rs 102.9 million and loan Rs 27.3 million) were allocated to the countrywide smallpox eradication program.

**Craftsmen Training:** To expand facilities for the training of craftsmen through seven central and 357 Industrial Training Institutes. As of June 30, 1969, the GOI had allocated from PL 480 funds Rs 629.9 million (grant Rs 394.6 million and loan Rs 235.2 million).

**National Highways:** For its countrywide program of expanding and strengthening roads and bridges, the GOI allocated Rs 196 million from PL 480 grant funds.

As of December 31, 1968, 382 primary health centers were functioning in Maharashtra.

The program began to operate in Maharashtra in 1962, and since that time, steady progress has been made. As of June 1969, 58,625,378 revaccinations and 10,645,254 primary vaccinations had been performed.

Thirty-two Industrial Training Institutes including those at Bombay, Poona, Nagpur, Kolhapur and Ahmednagar have received assistance.

Rs 19.8 million was made available for the state's 114 schemes, including construction of new bridges and strengthening of existing roads.

# MAHARASHTRA 670 PARTICIPANTS

# RETURNED PARTICIPANTS 1951—1969

## AGRICULTURE

EXTENSION	38
LAND/WATER	17
CROP PRODUCTION	12
LIVESTOCK	9
FERTILIZER	38
AGRICULTURAL PRODUCTION & INCENT.	4
AGR. UNIV. DEVELOPMENT	42

## EDUCATION

EDUCATION	54
SC. EDU. IMP.	2

## HEALTH

HEALTH	35
NURSING	3
FAMILY PLANNING	7

## MANAGEMENT

PERSONNEL	21
INDUSTRIAL	64
GENERAL	16

## ENGINEERING

INDUSTRIAL	54
NUCLEAR	126

## LABOR

## TRANSPORTATION

## POWER & WATER DEV.

## EXPORT PROMOTION

## MINING

## BANKING INVESTMENT

## COMM. MEDIA

160

56

45

101

180

41

40

11

8

5

17

6

670

