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FERTILISER STATISTICS

1982-83

X9(J:24)-2s, No
M3
208163

THE FERTILISER ASSOCIATION OF INDIA, NEW DELHI

Objects of F.A.I.

To bring together all concerned with the production, marketing and use of fertilisers with a view to promoting a solution of industry problems and the formulation of policies and practices beneficial to the national economy;

To promote consideration and discussion of all questions that contribute to sound agricultural practices and to the economic development of the fertiliser and agricultural industries;

To institute, prosecute, develop and carry on scientific and economic research regarding preparation of fertilisers, increasing crop production;

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New Delhi - 110 067

November 1983

[Price Rs. 50]

First published

August 1956

Twenty-eighth edition

November 1983

Prepared in The Fertiliser Association of India

by

C. Sahai, Chief Statistician

A. N. Kulkarni, Senior Statistician

T. K. Chanda, Statistical Officer

Editor: T. M. Alexander

P R E F A C E

Fertiliser Statistics has been published regularly every year since 1956. The current issue relating to the year 1982-83 is the 28th edition.

The object of the publication is to keep those engaged in fertiliser industry and others dealing with or interested in fertilisers informed of relevant data pertaining to India in particular and the world in general.

Present volume brings up-to-date the statistical information furnished in the previous edition and contains fresh data for the latest year, viz. 1982-83. It provides basic information on production, imports, despatches and consumption (seasonwise, statewise and districtwise) of fertilisers which, we hope, will be useful to planners, research institutes, existing and potential manufacturers and suppliers of agricultural inputs.

The data presented in this publication have been drawn from different sources and, therefore, do not necessarily conform to the same standard of accuracy. This aspect has to be borne in mind when using the data.

The publication of *Fertiliser Statistics* has been made possible by the cooperation of multifarious organisations, official and non-official, like Central Ministries of Agriculture, Petroleum, Chemicals & Fertilisers; The Directorate General of Technical Development; Planning Commission; Rural Electrification Corporation; National Cooperative Development Corporation; State Departments of Agriculture and Cooperation; Minerals and Metals Trading Corporation of India Ltd.; Rajasthan State Mines and Minerals Ltd.; M. P. State Mining Corporation Ltd.; Pyrites, Phosphates and Chemicals Ltd., fertiliser manufacturers, importers, marketers and many others. The assistance rendered by them is gratefully acknowledged.

Members of the Association and those interested in the future development of Indian agriculture will, I am sure, continue to find this publication useful.

Suggestions received from our readers have enabled us to make many improvements in the past to increase the utility of this publication. Further suggestions for making future editions more comprehensive and useful to the readers are most welcome.

New Delhi,
November 23, 1983

GOPAL SOHBTI,
Chief Executive,
The Fertiliser Association of India.

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INTRODUCTION

With the growth in fertiliser consciousness, it is inevitable that *Fertiliser Statistics* should be expected, in each successive issue, to provide more relevant data to cover different related aspects of the fertiliser industry. It is, therefore, becoming difficult for us in each successive year to reconcile the conflicting demands of additional information and yet retaining the compactness of this book. Updating of data has, therefore, had to be combined with modification of contents and layout.

The publication of data has been made possible by the cooperation of the Government and the Industry. Primary statistics of various types are to be found in the records of the Government, the Industry and the research institutions. Often, these are unpublished. Even the published information is scattered over a large number of publications and is not generally available in a form that it can be put to ready use. A lot of collection, tabulation and collation becomes necessary to meet each individual's need. Quite a frustrating task. And fertiliser and its related fields are no exception. This book is, therefore, brought out every year in order to bring together all suitable data regarding fertilisers, both published and unpublished, with a view to presenting a comprehensive picture of the fertiliser situation. We hope that it will continue to meet the needs of all those who are interested in economic development through intensive agriculture in which fertiliser plays a key role.

As usual, the book has been presented in four parts. First part deals with Indian fertiliser statistics; part two with Indian agricultural and allied statistics; and part three with world fertiliser and agricultural statistics. Part four contains a brief write-up about our Active Member firms and a list of other Members.

In part I, chapters have been updated to cover itemwise data in respect of production, capacity, raw materials used, actual quantum of production, despatches, imports and consumption and prices. Each aspect cover separately all the three primary nutrients, i.e. N, P_2O_6 and K_2O . Fertiliser projects under various stages of implementation have been incorporated to present all-India capacity of N and P_2O_5 .

Data on plant nutrients removed, available status of plant nutrients, soil-testing laboratories and railway freight rates for fertilisers have been included to facilitate a more comprehensive consideration of fertiliser use.

While making use of the distribution figures, following aspects should be kept in view:

- (i) Distribution data comprise despatches made to different states by the Central Fertiliser Pool, Indian Potash Ltd. and the domestic manufacturers.
- (ii) Pool distributes imported nitrogenous and complex fertilisers and manufacturers market the indigenous material. Movement of indigenous material is controlled under the Essential Commodities Act.

- (iii) The statewise consumption figures for the 3-year period 1980-81 to 1982-83 are derived from the deliberations of the Zonal Conferences held twice a year by the Ministry of Agriculture, Department of Agriculture, New Delhi. The districtwise/seasonwise consumption figures have been taken from the respective states' Departments of Agriculture.

Part II dealing with Indian agricultural and allied statistics complements Part I. Besides land utilisation statistics, it contains production of crops, areas covered under special agricultural programmes like High Yielding Varieties, Multiple Cropping, Small Farmers Development Agency, etc. Basic statistics on population and agricultural economy will, we hope, make the section comprehensive.

Part III contains fertiliser and agricultural statistics on production and consumption in other countries to enable a comparable study with our Indian situation, e.g. fertiliser consumption per hectare, consumption ratio, prices, etc.

Presentation

Data are presented for the latest available year and are mostly on April-March basis except in a few cases where statistics on July-June have also been provided. Consumption figures are on February-January basis as these are recorded from the Zonal Conferences. Owing to rounding off, the total of columns may not, in every case, tally with the sum of the constituent items.

For the purpose of *Fertiliser Statistics*, the country has been divided into the following five zones:

1. **CENTRAL** : Madhya Pradesh, Rajasthan, Uttar Pradesh and Delhi.
2. **EAST** : Assam, Bihar, Meghalaya, Mizoram, Nagaland, Orissa, West Bengal, Manipur, Tripura, Arunachal Pradesh and Andamans.
3. **NORTH** : Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab and Chandigarh.
4. **SOUTH** : Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Pondicherry and Laccadive Islands.
5. **WEST** : Gujarat, Maharashtra, Goa, Daman & Diu and Dadra & Nagar Haveli.

The sources from which the data have been derived are indicated at the bottom of each Table. Where no source is given for a particular Table, the data may be assumed to have been collected and tabulated by the FAI.

PART I

FERTILISER STATISTICS

1.00. CAPACITY FOR FERTILISER PRODUCTION

1

101. LICENSED CAPACITY AND PRODUCTION OF NITROGENOUS AND COMPLEX FERTILISERS FACTORYWISE AND PRODUCTWISE (As on October 1, 1983)

('000 tonnes)							
Name of factory/location	Sector	Date of commissioning	End product		Nutrient capacity (production)		
			Product	Capacity	Production 1982-83 (April-March)	N	P ₂ O ₅
1. CFL, Vizag (A.P.)	Pvt.	December 1967	Urea	—	—	84.0	104.0
		UAP/NPK, Feb. 1968	NP/NPKs			(62.1)	(70.0)
		Exp. UAP/NPK April 1976	28-28-0	251.0	203.0		
2. EID-Parry (India) Ennore (T.N.)	Pvt.	March 1963	APS				
		January 1968	16-20-0	51.5	46.0	16.0	10.3
		AS	38.8	—	(7.4)	(9.2)	
3. FACT, Alwaye (Kerala)	Pub.	June 1947	AS	198.0	69.7	78.0	29.7
		1st stage	APS			(32.5)	(18.2)
		December 1960					
		2nd stage	20-20-0		37.9		
		November 1962					
3rd stage			148.5				
November 1967							
4th stage	16-20-0			52.9			
September 1971							
4. FACT, Ambalamedu (Cochin-Phase I) (Kerala)	Pub.	July 1973	A/cI	24.8	8.2		
			Urea	330.0	208.3	152.0	—
						(95.8)	(—)

1-2

5. FACT, Ambalamedu (Cochin-Phase II) (Kerala)	Pub.	December 1976	NP/NPKs			40.0	114.0	
			17-17-17	}	18.8	(28.9)	(50.1)	
			28-28-0		485.0	23.5		
			18-46-0			49.3		
20-20-0		88.4						
6. FCI:	Pub.							
a) Gorakhpur (U.P.)		January 1969	Urea	284.9	161.5	131.0	—	
		Exp. December 1975				(74.3)	(—)	
b) Sindri (Bihar)		November 1951	AS	320.0	42.7	219.0	—	
		Modernisation	}	Urea	330.0	254.3	(125.8)	(—)
		October 1979		Urea				
c) Ramagundam (A.P.)		November 1980	Urea	495.0	162.7	228.0	—	
						(74.8)	(—)	
d) Talcher (Orissa)		November 1980	Urea	495.0	44.7	228.0	—	
						(20.6)	(—)	
7. GNFC, Bharuch (Gujarat)	Pvt.	July 1982	Urea	594.0	387.3	273.0	—	
						(178.2)	(—)	
8. GSFC, Baroda (Gujarat)	Pvt.	Phase I, May 1967	}	Urea	364.0	250.2	236.0	50.0
		Phase II, June 1969		AS	240.0	231.3	(182.7)	(51.1)
		Phase III, Aug. 1974		DAP 18-46-0	108.0	111.1		
9. Hari Fertilisers, Varanasi (U.P.)	Pvt.	November 1959	A/ci	41.0	4.7	10.0	—	
						(1.2)	(—)	
10. HFCL:	Pub.							
a) Barauni (Bihar)		November 1976	Urea	330.0	164.8	152.0	—	
						(75.8)	(—)	
b) Durgapur (W.B.)		October 1974	Urea	330.0	85.2	152.0	—	
						(38.2)	(—)	
c) Namrup (Assam)		January 1969	}	Urea	385.0	198.8	197.0	—
		Exp.-April 1976		AS	100.0	39.3	(89.5)	(—)
d) Haldia (W.B.)		July 1983	Urea	167.4	—	152.0	75.0	
		October 1983	Nitrophosphate	375.0	—	(—)	(—)	
		(trial production)						
11. IEL, Kanpur (U.P.)	Pvt.	December 1969	}	Urea	675.0	573.3	310.0	—
		Exp -Sept. 1981					(263.7)	(—)

(Continued)

**101. LICENSED CAPACITY AND PRODUCTION OF NITROGENOUS AND COMPLEX FERTILISERS
FACTORYWISE AND PRODUCTWISE
(As on October 1, 1983) (Continued)**

('000 tonnes)

Name of factory/location	Sector	Date of commissioning	End product			Nutrient capacity (production)	
			Product	Capacity	Production 1982-83 (April-March)	N	P ₂ O ₅
12. IFFCO:	Coop.						
a) Kandla/Kalol (Gujarat)		January 1975 November 1974 Exp.-Sept. 1981	Urea NP/NPKs 10-26-26 12-32-16 14-36-12 18-46-0	392.0 800.0	389.4 92.8 554.7 — 143.6	260.0 (280.8)	260.0 (267.7)
b) Phulpur (U.P.)		March 1981	Urea	495.0	362.1	228.0 (165.6)	— (—)
13. Kotheri (Madras), Manali (T.N.)	Pvt.	May 1979	A/cI	20.0	1.7	5.0 (0.4)	— (—)
14 MFL, Manali (T.N.)	Pub.	November 1971 3rd stream October 1976	Urea NP/NPKs 17-17-17 14-28-14 24-24-0 18-46-0	210.0 360.0	85.4 564.5 20.0 13.1 6.4	176.0 (139.2)	112.0 (107.5)
15. MCFL, Mangalore (Karnataka)	Pvt.	March 1976	Urea	340.0	211.0	156.0 (97.1)	— (—)
16. NFL:	Pub.						
a) Bhalinda (Punjab)		October 1979	Urea	511.5	333.0	235.0 (153.2)	— (—)
b) Nangal (Punjab)		April 1961 Exp.-November 1978	CAN (25% N) Urea	320.0 330.0	246.1 260.0	232.0 (181.1)	— (—)
c) Panipat (Haryana)		October 1979	Urea	511.5	353.4	235.0 (162.6)	— (—)

17.	NLC, Neyveli (T.N.)	Pub.	March 1966 Switch over to fuel oil August 1979	Urea	154.0	101.3	70.0 (46.6)	— (—)
18.	Polymers Corpn., Vadodara (Gujarat)	Pvt.	June 1981	AS	10.0	3.8	2.1 (0.8)	— (—)
19.	RCFL:	Pub.						
	a) Trombay (I to IV) (Maharashtra)		October 1965	Urea	99.0	84.7	165.0 (123.6)	120.0 (84.7)
			November 1965 Debottle-July 1976 4th stage Exp.-July 1978 Switch over to natural gas 1979	Nitrophosphate 15-15-15 Ammonium nitrophosphate 20.7-20.7-0	300.0	246.1		
	b) Trombay (V) (Maharashtra)		Expn.-July 1982	Urea	330.0	185.2	152.0 (85.2)	— (—)
20.	SAIL:	Pub.						
	a) Bhilai (M.P.)		January 1955 1st. expn.- Dec. 1959	AS	32.6	26.9	6.7 (5.5)	— (—)
	b) Bokaro (Bihar)		October 1972 1st expn.- Nov. 1973 2nd expn.- March 1977	AS	36.3	23.2	7.5 (4.8)	— (—)
	c) Durgapur (W.B.)		April 1960	AS	21.2	9.5	4.4 (2.0)	— (—)
	d) IISCO, Burnpur-Kulti (W.B.)		1947	AS	23.0	5.8	4.7 (1.2)	— (—)
	e) Rourkela (Orissa)		March 1967	AS	28.2	8.5	5.8 (1.8)	— (—)
	f) Rourkela (Orissa) (Fert. plant)		December 1962 Exp. August 1969 In naphtha reformer 1978-79	CAN (25% N)	480.0	43.9	120.0 (11.0)	— (—)
21.	SFC, Kota (Rajasthan)	Pvt.	February 1969 Exp.-Dec. 1974	Urea	330.0	308.6	152.0 (142.0)	— (—)

**1.01. LICENSED CAPACITY AND PRODUCTION OF NITROGENOUS AND COMPLEX FERTILISERS
FACTORYWISE AND PRODUCTWISE
(As on October 1, 1983) (Continued)**

('000 tonnes)

Name of factory/location	Sector	Date of commissioning	End product			Nutrient capacity (production)		
			Product	Capacity	Production 1982-83 (April-March)	N	P ₂ O ₅	
22. SPIC, Tuticorin (T.N.)	Pvt.	June 1975	Urea	512.0	546.6	258.0	73.0	
		November 1976	NP/NPKs			(278.5)	(69.3)	
			18-46-0	}	160.0	150.6		
			10-26-26			—		
			15-15-15			—		
	28-28-0		—					
23. TISCO, Jamshedpur (Bihar)	Pvt.	1933	AS	23.1	17.0	4.8 (3.5)	— (—)	
24. Tuticorin Alkali Chemicals & Fertilisers Tuticorin (T.N.)	Pvt.	July 1982	A/cI	66.0	22.6	16.5 (5.7)	— (—)	
25. ZACL, San-Cole (Goa)	Pvt.	May 1973	Urea	340.0	307.7	171.0 (174.0)	42.0 (33.8)	
		March 1975	NP/NPKs					
			28-28-0	}		17.7		
			19-19-19		150.0	140.0		
			14-35-14			6.5		
Straight phosphatic fertilisers (vide table 1.02)			SSP/TSP/Pelofos			—	637.7 (222.1)	
Sectorwise capacity:			Public			3,143.1	758.6*	
			Private			1,694.4	609.1*	
			Coop.			488.0	260.0	
I. Total capacity						5,325.5	1,627.7	
Production						3,429.7	983.7	
Capacity utilisation (per cent)						67	68	

II. UNDER IMPLEMENTATION

1. Bihar Caustic & Chemicals, Pvt. Rehla (Bihar)	December 1983	Amm. chloride	26.0	6.5	—
2. Deepak Fertiliser & Products, Talaja (Maha.)	December 1983	NH ₃	90.0	74.0	—
3. FACT, Ambalamedu, Cochin (II) (Kerala)	Expn. Dec. 1983	DAP	137.0	25.0	63.0
4. Godavari Fert. & Chem., Kakinada (A.P.)	1985-86	DAP	300.0	54.0	138.0
5. HFCL, Namrup III (Assam)	Expn.-Nov. 1984	Urea	330.0	152.0	—
6. Hindustan Lever, Haldia (W.B.)	1984-85	DAP	160.0	29.0	73.0
7. KRIBHCO, Hazira (Gujarat) (2 plants)	Plant I-March '85 Plant II-March '86	Urea	1452.0	668.0	—
8. MCFL, Mangalore (Karnataka)	Expn. Mid 1984	DAP	137.0	25.0	63.0
9. Punjab National Ferts. & Chemicals, Naya Nangal (Punjab)	December 1983	Amm. chloride	66.0	16.5	—
10. RCFL, Thal Vaishet (Maharashtra) (2 plants)	Plant I-Sept. '84 Plant II-Dec. '84	Urea	1485.0	683.0	—
11. SPIC, Tuticorin (T.N.)	Expn. Oct. '83	DAP	150.0	27.0	70.0
12. ZACL, Goa (Goa)	Expn. Sept. '84	DAP	91.0	16.4	42.0
13. NFL, Bijayapur (Dist. Guna) (M.P.): V Plant	1985-86	Urea	750.0	345.0	—
Straight phosphatic fertilisers (vide table 1.02)					188.8
Sectorwise capacity:			Public	1,275.5	201.0
			Private	177.9	436.8*
			Coop.	668.0	—
II. Total capacity				2,121.4	637.8

III. APPROVED IN PRINCIPLE

1. FACT, Alwaye (Kerala)	Pub.	Expn. stage V 1985-86	Amm. sulphate	200.0	41.2	—
2. FCI, Korba (M.P.)	Pub.	1986-87	Urea	495.0	228.0	—
3. GSFC, Porbandar (Gujarat)	Pvt.	1985-86	DAP	326.0	58.7	150.0
4. IFFCO, Phulpur (U.P.)	Coop.	Expn. I-1984-85	Amm. chloride	66.0	16.5	—

(Continued)

**1.01. LICENSED CAPACITY AND PRODUCTION OF NITROGENOUS AND COMPLEX FERTILISERS
FACTORYWISE AND PRODUCTWISE
(As on October 1, 1983) (Concluded)**

('000 tonnes)

Name of factory/location.	Sector	Date of commissioning	End product			Nutrient capacity (production)		
			Product	Capacity	Production 1982-83 (April-March)	N	P ₂ O ₅	
5. Nagarjuna Fertilisers, Kakinada (A.P.)	Pub.	1986-87	Urea	495.0		228.0	—	
6. Paradeep Fertilisers, Paradeep (Orissa)	Pub.	{ Phase I-July '85 Phase II-May '86	DAP	326.0		58.7	150.0	
			DAP	326.0		58.7	150.0	
Projects based on Bombay High								
7. VI Plant, ZACL, Swai Madhopur (Rajasthan)	Pvt.	1986-87	Urea	750.0		345.0	—	
8. VII Plant, Tata Babraia, Distt. Badaun (U.P.)	Pvt.	1987-88	Urea	750.0		345.0	—	
9. VIII Plant, IFFCO, Aonla, Bareilly (U.P.)	Coop.	1988-89	Urea	750.0		345.0	—	
10. IX Plant, SFC, Shahjahanpur Dist. Shahjahanpur (U.P.)	Pvt.	1988-89	Urea	750.0		345.0	—	
11. X Plant, PICUP, Jagdishpura, Dist. Sultanpur (U.P.)	Pub.	1989-90	Urea	750.0		345.0	—	
Straight phosphatic fertilisers (vide table 1.02)								36.2
			Sectorwise capacity:	Public		959.6	300.0	
				Private		1,093.7	186.2*	
				Coop.		361.5	—	
			III. Total capacity			2,414.8	486.2	
			Sectorwise capacity	Public		5,378.2	1,249.6*	
				Private		2,966.0	1,232.1*	
			(I+II+III)	Coop.		1,517.5	260.0	
			Grand Total (I+II+III)	Capacity		9,861.7	2,751.7	

IV. UNDER CONSIDERATION

1. SAIL, Rourkela (Orissa) (Fert. Plant)	Pub.	Expn. 1985-86	Urea	90 0	41.4	—
Straight phosphatic fertilisers (vide table 1.02)						225.3
			Sectorwise capacity	Public	41.4	225.3*
				Private	—	—
				Coop.	—	—
			IV. Total capacity		41.4	225.3
			Sectorwise capacity	Public	5,419.6	1,484.9
				Private	2,966.0	1,232.1
			(I+II+III+IV)	Coop.	1,517.5	260.0
			Grand Total			
			(I+II+III+IV)	Capacity	9,903.1	2,877.0

Abbreviations:

CFL — Coromandel Fertilisers Ltd.	MFL — Madras Fertilizers Ltd.
DMCC — Dharamsi Morarji Chemical Co. Ltd.	NFL — National Fertilizers Ltd.
FACT — Fertilisers and Chemicals Travancore Ltd.	NLC — Neyveli Lignite Corporation
FCI — Fertilizer Corpn. of India Ltd.	PFL — Paradeep Fertilizers Ltd.
GNFC — Gujarat Narmada Valley Fertilizers Co. Ltd.	PICUP — Pradeshiya Industrial & Investment Corporation of U.P.
HCL — Hindustan Copper Ltd.	RCFL — Rashtriya Chemicals & Fertilisers Ltd.
HFCL — Hindustan Fertilizer Corpn. Ltd.	SAIL — Steel Authority of India Ltd.
GSFC — Gujarat State Fertilizers Co. Ltd.	SFC — Shriram Fertilisers & Chemicals
HZL — Hindustan Zinc Ltd.	SPIC — Southern Petrochemical Industries Corpn. Ltd.
IEL — Indian Explosivos Ltd.	TISCO — Tata Iron & Steel Co. Ltd.
IFFCO — Indian Farmers Fertiliser Cooperative Ltd.	ZACL — Zuari Agro Chemicals Ltd.
ISCO — Indian Iron & Steel Co. Ltd.	Pub. — Public
KRIBHCO — Krishak Bharati Cooperative Ltd.	Pvt. — Private
MCFL — Mangalore Chemicals & Fertilizers Ltd.	Coop. — Cooperative

() = Production during 1982-83 (April-March)

* = Includes contribution from straight phosphatic fertilisers (details vide Table 1.02)

Note: Production of N excludes nitrogen meant for non-agricultural purposes.

**1.02. LICENSED CAPACITY AND PRODUCTION OF PHOSPHATIC FERTILISERS
FACTORYWISE AND PRODUCTWISE
(As on October 1, 1983)**

(*000 tonnes)

Name of factory/location	Sector	Date of commissioning	End-product		P ₂ O ₅	
			Capacity	Production 1982-83 (April-March)	Capacity	Production 1982-83 (April-March)

I. IN PRODUCTION

(A) Single Superphosphate (16% w.s. P₂O₅)

1. Adarsh Chemicals & Fertilisers, Udhna (Guj.)	Pvt.	Oct. 1962 Expn.-Jan. '83	136.0	42.3	21.8	6.8
2. Anand Chemical Works, Wadhwan City (Guj.)	Pvt.	November 1982	1.8	0.1	0.3	0.02
3. Andhra Fertilisers, Tadepalle (A.P.)	Pvt.	November 1960	50.0	43.2	8.0	6.9
4. Andhra Sugars, Tanuku (A.P.)	Pvt.	March 1961	33.5	31.4	5.4	5.0
5. Anil Starch Products, Bhavnagar (Guj.)	Pvt.	1947 shifted site April '64	33.5	14.8	5.4	2.4
6. Anish Chemicals, Ahmedabad (Guj.)	Pvt.	Nov. '72 shifted site Feb. '77	9.0	1.2	1.4	0.2
7. Bharat Alums & Chemicals, Alwar (Raj.)	Pvt.	March 1980	66.0	49.1	10.6	7.9
8. Bharat Fertiliser Industries Majiwada (Mah.)	Pvt.	April 1968	22.5	16.1	3.6	2.6
9. Bihar State Superphosphate Factory, Sindri Institute (Bihar)	Pub.	May 1958	23.5	4.0	3.8	0.6
10. Chamundi Chemicals, Munirabad (Karnataka)	Pvt.	November 1963	40.6	—	6.5	—
11. Chemical Unit of Associated Ind. (Assam) Chandrapur (Assam)	Pub.	August 1963 recommissioned March '75	33.5	11.1	5.4	1.8
12. Coimbatore Pioneer Fertilisers, Coimbatore (T.N.)	Pvt.	February 1966	40.6	20.9	6.5	3.3
13. Dharamsi Morarji Chemical Co., Ambarnath (Maharashtra)	Pvt.	Original 1924 Expn.-May 1973	146.3	209.1	23.4	33.5
14. Dharamsi Morarji Chemical Co., Kumhari (M.P.)	Pvt.	Oct. '61, Exn.-I May '73 Exp.-II May 1980	161.0	135.3	25.8	21.6

15.	EID-Perry (India), Ranipet (T.N.)	Pvt.	1906	50.0	36.5	8.0	5.8
16.	Fertilisers & Chemicals, Travancore Alwaye (Kerala)	Pub.	April 1948	44.7	14.4	7.2	2.3
17.	Gammon Fer-Chems., Belagula (Karnataka)	Pvt.	July 1976 Expn.-1982	55.0	42.9	8.8	6.9
18.	Girraj Fert. & Chems., Shikohabad (U.P.)	Pvt.	July 1979	9.0	2.0	1.4	0.3
19.	Hindustan Copper, Khetri (Raj.) (also see TSP)	Pub.	October 1976	—	7.5	—	1.2
20.	Hindustan Zinc, Debari (Raj.)	Pub.	October 1967	72.6	24.3	11.6	3.9
21.	Hyderabad Chems. & Ferts., Maula Ali (A.P.)	Pub.	1946, shifted site 1963	41.9	13.2	6.7	2.1
22.	Indag Products, Cuddalore (T.N.)	Pvt.	Original Feb. '63 renovated August '83	40.6	—	6.5	—
23.	Jayshree Chems. & Ferts., Khardah (W.B.)	Pvt.	Dec. '61 Expn.-March '73	57.4	70.4	9.2	11.3
24.	Kamal Chemicals, Nandesari (Guj)	Pvt.	November 1977	3.0	0.05	0.5	0.008
25.	Khicha Industries, Udaipur (Raj)	Pvt.	June 1980	3.6	2.0	0.6	0.3
26.	Kothari (Madras), Ennore (T.N.)	Pvt.	July 1962	44.7	35.6	7.2	5.7
27.	Krishna Industrial Corpn., Nidadavole (A.P.)	Pvt.	April 1964	50.8	17.2	8.1	2.8
28.	Liberty Pesticides & Fertilisers, Madri (Raj.)	Pvt.	February 1977 Expn. October 1978	12.5	3.2	2.0	0.5
29.	Madhuvan Agro Chemicals, Dabok (Raj.)	Pvt.	Original Jan. '77 Exp. Aug. '83	49.5	0.5	7.9	0.08
30.	Maharashtra Agro Industries Development Corporation, Panvel (Maharashtra)	Pub.	March 1974	45.0	28.4	7.2	4.5
31.	Mittal Fertilisers, Rae-Bareilly (U.P.)	Pvt.	June 1983	66.0	—	10.6	—
32.	Multitech International, Dharuhera (Haryana)	Pvt.	January 1982	66.0	44.7	10.6	7.2
33.	Noble Chemicals, Taloja (Maharashtra)	Pvt.	April 1980	3.0	0.3	0.5	0.05
34.	Paushak, Baroda (Gujarat)	Pvt.	1951	33.5	20.1	5.4	3.2
35.	Phosphate Co., Rishra (W.B.)	Pvt.	1950, Expn.-Dec. 1967	61.0	50.8	9.8	8.1
36.	Punjab Phosphate, Chheharta (Punjab)	Pvt.	June 1980	8.3	0.7	1.3	0.1
37.	Rallis India, Magarwara (U.P.)	Pvt.	September 1962	61.0	56.1	9.8	9.0
38.	Rama Krishi Rasayan, Loni-Kalbhor (Maharashtra)	Pvt.	1950, shifted site and recommissioned in June 1967	40.0	45.0	6.4	7.3
39.	Shaw Wallace & Co., Avadi (T.N.)	Pvt.	April 1967	76.2	59.4	12.2	9.5

(Continued)

**1.02. LICENSED CAPACITY AND PRODUCTION OF PHOSPHATIC FERTILISERS
FACTORYWISE AND PRODUCTWISE
(As on October 1, 1983) (Continued)**

('000 tonnes)

Name of factory/location	Sector	Date of commissioning	End-product		P ₂ O ₅	
			Capacity	Production 1982-83 (April- March)	Capacity	Production 1982-83 (April- March)
40. Shivalik Fertilisers, Rai Majra (Punjab)	Pvt.	October 1980	66.0	52.2	10.6	8.4
41. Shriram Foods & Fertiliser Industries (Delhi)	Pvt.	1946 Expn.-April 1968	144.0	109.1	23.0	17.5
42. Udaipur Chemicals & Fertilisers	Pvt.					
a) Madri (Rajasthan)		October 1977	8.3	1.8	1.3	0.3
b) Bichadi (Rajasthan)		August 1983	44.0	—	7.0	—
43. Viraj Chemicals, Nandesari (Gujarat)	Pvt.	October 1974	2.2	0.8	0.4	0.1
44. Vijay Fertilisers, Ghaziabad (U.P.)	Pvt.	October 1982	13.5	1.9	2.2	0.3
45. Western Chemical Industries, Bombay (Mah.)	Pvt.	July 1948	3.4	0.09	0.5	0.01
		(A) Total SSP	2074.5	1320.6	332.4	211.3
(B) Triple Superphosphate						
1. Dharamsi Morarji Chemical Co. Ambernath (Maharashtra)	Pvt.	January 1968	27.0	Nil	12.2	Nil
2. Hindustan Copper, Khetri (Rajasthan) (also see SSP)	Pub.	October 1976	200.0	1.0	90.0	0.5
3. Fertilizer Corpn. of India, Sindri (Bihar) (Rationalisation)	Pub.	April 1979	340.0	22.4	150.0	10.3
		(B) Total TSP	567.0	23.4	252.2	10.8
(C) Pelofos						
1. Orissa Ferts. & Chemicals, Rourkela (Orissa)	Pvt.	June 1973	45.0	—	7.6	—
		(C) Total Pelofos	45.0	—	7.6	—
(D) Phosphoric Acid						
1. Hindustan Lever, Haldia (W.B.)	Pvt.	October 1979			19.5	
2. Hindustan Zinc, Debari (Rajasthan)	Pub.	February 1979			26.0	
		(D) Total Phosphoric Acid			45.5	
		Sectorwise capacity:				
		Public			307.9	
		Private			329.8	
		Coop.			—	
		Total I			637.7	

1-2

Name of factory/location	Sector	Date of commissioning	End-product capacity	P ₂ O ₅ capacity
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II. UNDER IMPLEMENTATION

(A) Single Superphosphate (16% w.s. P₂O₅)

1. Bhilai Engineering Corpn., Bilaspur (M.P.)	Pvt.	1984-85	66.0	10.6
2. Dharuhera Chemicals, Dharuhera (Haryana)	Pvt.	1983-84	66.0	10.6
3. Kothari (Madras) Ennore (T.N.)	Pvt.	1983-84	22.0	3.5
4. Madhuvan Agro Chemicals, Dabok (Rajasthan)	Pvt.	Dec. 83	16.5	2.7
5. Munak Chemicals, Bhatinda (Punjab)	Pvt.	1983-84	66.0	10.6
6. People's Chemicals & Fertilisers, Lucknow (U.P.)	Pvt.	1984-85	66.0	10.6
7. Pragati Fertilisers, Vizag (A.P.)	Pvt.	Dec. 1983	66.0	10.6
8. Rallis India, Magarwara (U.P.)	Pvt.	1984-85	66.0	10.6
9. Rama Krishi Rasayan, Loni Kalbhori (Maharashtra)	Pvt.	1984-85	66.0	10.6
10. Shree Acids & Chemicals, Gajraula (U.P.)	Pvt.	Feb. 1985	66.0	10.6
11. Udaipur Phosphate & Fertilisers, Khemli (Rajasthan)	Pvt.	Oct. 1983	66.0	10.6
12. Uttar Pradesh Rasaynik Khad, Sikanderabad (U.P.)	Pvt.	Feb. 1985	66.0	10.6
13. Varinder Agro Chemicals, Barnala (Punjab)	Pvt.	March 1985	66.0	10.6

(A) Total SSP 764.5 122.8

(B) Phosphoric Acid

1. M.P. Agro Morarji Fertilisers, Sagar (M.P.)	Pvt.	1985-86	—	66.0
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(B) Total Phosphoric acid 66.0

Sectorwise Capacity

Public	—
Private	188.8
Coop.	—

Total II 188.8

III APPROVED IN PRINCIPLE

(A) Single Superphosphate (16% w.s. P₂O₅)

1. Bharat Fertiliser Industries, Bombay (Maharashtra)	Pvt.	1983-84	44.0	7.0
2. DMCC, Amreli (Gujarat)	Pvt.	1984-85	66.0	10.6

(Continued)

**1.02. LICENSED CAPACITY AND PRODUCTION OF PHOSPHATIC FERTILISERS
FACTORYWISE AND PRODUCTWISE
(As on October 1, 1983) (Concluded)**

('000 tonnes)

Name of factory/location	Sector	Date of commissioning	End-product capacity	P ₂ O ₅ capacity
8. East Coast Ferts. & Chemicals, Kalme (Orissa)	Pvt.	1984-85	49.5	8.0
4. Jayshree Chemicals & Fertilisers, Khardah (W.B.)	Pvt.	1984-85	66.0	10.6
	(A) Total SSP		225.5	36.2
	Sectorwise capacity			
	Public			—
	Private			36.2
	Coop.			—
	Total III			36.2
	Sectorwise capacity (I + II + III)			
	Public			307.9
	Private			554.8
	Coop.			—
	Grand Total (I + II + III)			862.7
IV. UNDER CONSIDERATION				
(A) Triple Superphosphate				
1. HSI DC, Panipat (Haryana)	Pub.	1985-86	55.0	25.3
2. NFL, Rajasthan Project, Udaipur/Chittorgarh (Rajasthan)	Pub.	1986-87	435.0	200.0
	(A) Total TSP		490.0	225.3
	Sectorwise capacity			
	Public			225.3
	Private			—
	Coop.			—
	Total IV			225.3
	Sectorwise capacity (I + II + III)			
	Public			533.2
	Private			554.8
	Coop.			—
	Grand Total (I + II + III + IV)			1088.0

**1.03. SHARE OF FERTILISER CAPACITY UNDER VARIOUS STAGES OF IMPLEMENTATION
NUTRIENTWISE AND SECTORWISE**

(As on October 1, 1983)

('000 tonnes of nutrient per annum)

Category	N				P ₂ O ₅			
	Public sector	Private sector	Coop- sector	Total	Public sector	Private sector	Coop- sector	Total
1. Factories in production	3,143.1 (59.0)	1,694.4 (31.8)	488.0 (9.2)	5,325.5 (100.0)	758.6 (46.6)	609.1 (37.4)	260.0 (16.0)	1,627.7 (100.0)
2. Projects under implementation	1,275.5 (60.1)	177.9 (8.4)	668.0 (31.5)	2,121.4 (100.0)	201.0 (31.5)	436.8 (68.5)	— (—)	637.8 (100.0)
3. Projects approved in principle	959.6 (39.7)	1,093.7 (45.3)	361.5 (15.0)	2,414.8 (100.0)	300.0 (61.7)	186.2 (38.3)	— (—)	486.2 (100.0)
4. Projects under consideration	41.4 (100.0)	— (—)	— (—)	41.4 (100.0)	225.3 (100.0)	— (—)	— (—)	225.3 (100.0)
Total	5,419.6 (54.7)	2,966.0 (30.0)	1,517.5 (15.3)	9,903.1 (100.0)	1,484.9 (49.9)	1,232.1 (41.4)	260.0 (8.7)	2,977.0 (100.0)

Figures in brackets indicate the percentage contribution through the sector to the total (horizontal).

1.04. CAPACITY OF NITROGEN (N) ACCORDING TO SOURCES OF FEEDSTOCK
(As on 1-10-1983)

('000 tonnes of nutrient N per annum)

Stage of production/feedstock	Natural gas	Naptha	Fuel oil	Coal	Coke/ Coke oven gas	Electric power	Ammonia (external supply)	Total
1. Factories in production	741.1 (13.9)	2,469.0@ (46.4)	1,326.0@ (24.9)	456.0 (8.6)	64.8@ (1.2)	80.0* (1.5)	188.7@ (3.5)	5,325.5 (100.0)
2. Projects under implementation	1,922.0 (90.6)	84.8 (4.0)	— (—)	— (—)	— (—)	— (—)	114.6 (5.4)	2,121.4 (100.0)
3. Projects approved in principle	1,725.0 (71.5)	41.2 (1.7)	228.0 (9.4)	228.0 (9.4)	— (—)	— (—)	192.6 (8.0)	2,414.8 (100.0)
4. Projects under consideration	— (—)	41.4 (100.0)	— (—)	— (—)	— (—)	— (—)	— (—)	41.4 (100.0)
Total	4,388.0 (44.3)	2,636.4 (26.6)	1,554.0 (15.7)	684.0 (6.9)	64.8 (0.7)	80.0 (0.8)	495.9 (5.0)	9,903.1 (100.0)

Figures in brackets indicate the percentage contribution through a fertiliser feedstock to the total (horizontal).

@In the case of (i) FCI, Sindri (219,000 tpy N) it is assumed : 209,000 tpy capacity on fuel oil, 10,000 tpy capacity on naphtha.

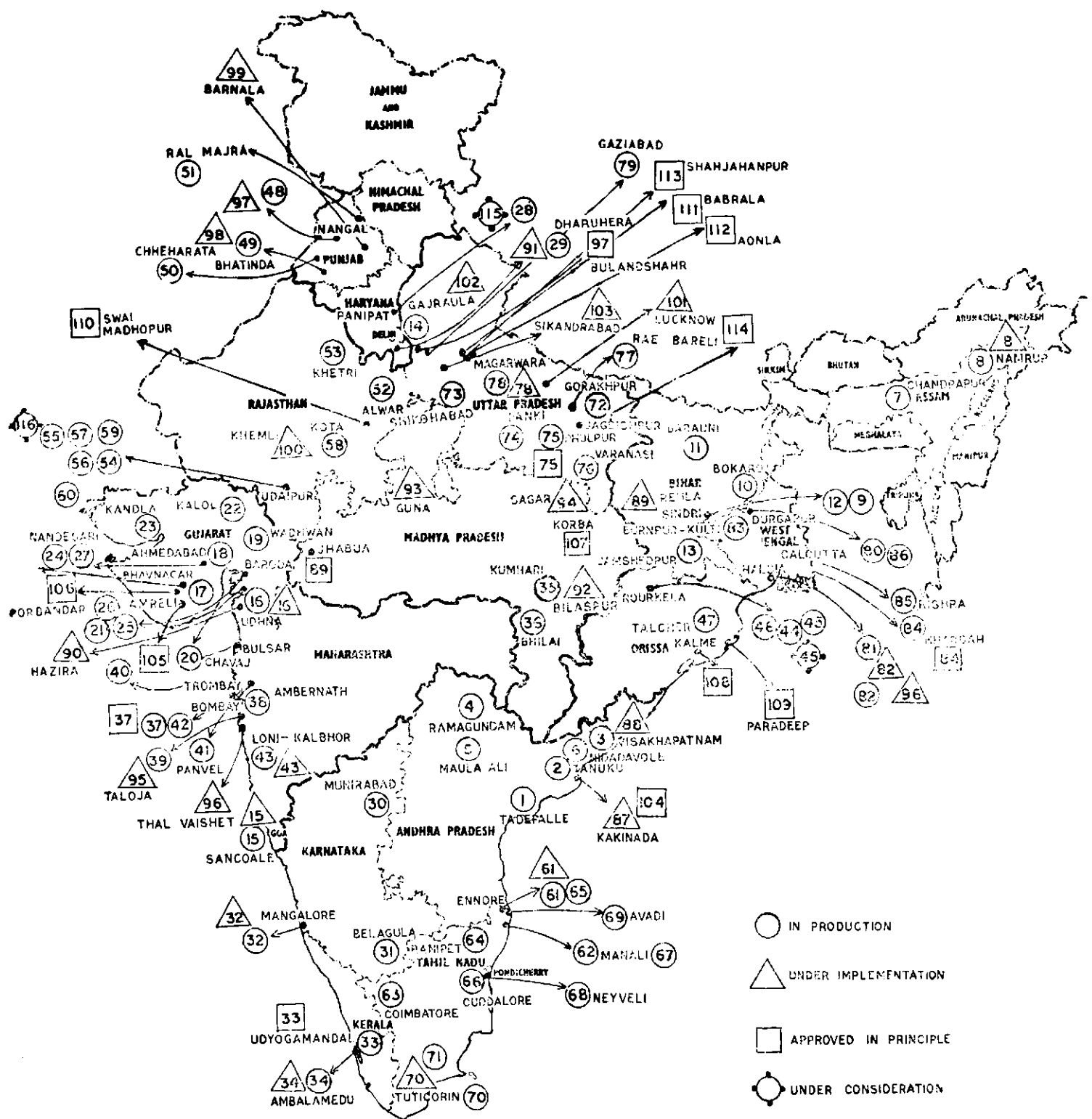
(ii) SAIL, Rourkela (120,000 tpy N) it is assumed : 99,000 tpy capacity on naphtha, 21,000 tpy capacity on COG.

(iii) RCFL, Trombay (165,000 tpy N) it is assumed : 81,000 tpy capacity on natural gas, 9,000 tpy capacity on refinery gas, 75,000 tpy capacity on external supply of ammonia.

(iv) GSFC, Baroda (236,000 tpy N) it is assumed : 144,000 tpy capacity on naphtha, 92,000 tpy capacity on natural gas.

*Only a part of the capacity is based on electrolysis.

LOCATION OF FERTILISER FACTORIES (As on 1-10-1983)



○ IN PRODUCTION
 △ UNDER IMPLEMENTATION
 □ APPROVED IN PRINCIPLE
 ◇ UNDER CONSIDERATION

Sl. No.	State/Name of the factory and location	End product
I. IN PRODUCTION		
Andhra Pradesh		
1.	Andhra Fertilisers, Tadepalle	*SSP
2.	Andhra Sugars, Tanuku	*SSP
3.	Coromandel Fertilisers, Visakhapatnam	*Urea, NP, NPK
4.	FCI, Ramagundam	*Urea
5.	Hyderabad Chemicals & Fertilisers, Maula Ali	*SSP
6.	Krishna Industrial Corpn., Nidadavole	*SSP
Assam		
7.	Chemical Unit of AIA, Chandrapur	*SSP
8.	HFCL, Namrup	*AS, Urea **Urea
Bihar		
9.	Bihar State Superphosphate Factory, Sindri Institute	*SSP
10.	SAIL, Bokaro	*AS
11.	HFCL, Barauni	*Urea
12.	FCI, Sindri	*AS, Urea, TSP
13.	TISCO, Jamshedpur	*AS
Delhi		
14.	Shriram Foods & Fertiliser Industries, Delhi	*SSP
Goa		
15.	Zuari Agro Chemicals, San Coale	*Urea, NPK **DAP
Gujarat		
16.	Adarsh Chemicals & Fertilisers, Udhna	*SSP
17.	Anil Starch Products, Bhavnagar	*SSP
18.	Anish Chemicals, Ahmedabad	*SSP
19.	Anand Chemical Works, Wadhwan city	*SSP
20.	Gujarat Narmada Valley Fertilisers, (Bharuch) Chavaj	*Urea
21.	GSFC, Baroda	*Urea, AS, DAP
22.	IFFCO, Kalol	*Urea
23.	IFFCO, Kandla	*NPK, DAP
24.	Kamal Chemicals Nandesari	*SSP
25.	Polymers Corporation, Vadodara	*AS
26.	Paushak, Baroda	*SSP
27.	Viraj Chemicals, Nandesari	*SSP
Haryana		
28.	National Fertilisers, Panipat	*Urea
29.	Multitech International, Dharuhera	*SSP
Karnataka		
30.	Chamundi Chemicals, Munirabad	*SSP
31.	Gammon Fer.-Chems, Belagula	*SSP
32.	Mangalore Chemicals & Fertilisers, Mangalore	*Urea **DAP
33.	FACT, Udyogamandal	*AS, ACI, APS, SSP **AS
34.	FACT, Ambalamedu	*Urea, NPK, DAP **DAP
Madhya Pradesh		
35.	Dharamsi Morarji Chemical Co., Kumhari	*SSP
36.	SAIL, Bilhal	*AS
Maharashtra		
37.	Bharat Fertiliser Industries, Majiwada, Bombay	*SSP, ***SSP
38.	Dharamsi Morarji Chemical Co., Ambernath	*SSP, TSP
39.	Noble Chemicals, Talaja	*SSP
40.	RCFL, Trombay	*Urea, Nitro-phosphate Ammonium Nitrophosphate
41.	Maharashtra Agro Industries Development Corpn., Panvel	*SSP
42.	Western Chemical Industries, Bombay	*SSP
43.	Rama Krishi Rasayan, Loni-Kalbhori	*SSP **SSP
Orissa		
44.	Orissa Fertilisers & Chemicals, Rourkela	*Pelofos
45.	SAIL (Fert. Plant), Rourkela	*CAN, Urea & AS
46.	SAIL, Rourkela	*AS
47.	FCI, Talcher	*Urea
Punjab		
48.	National Fertilisers, Nangal	*Urea, CAN
49.	National Fertilisers, Bhatinda	*Urea
50.	Punjab Phosphate, Chheharata	*SSP
51.	Shivalik Fertilisers, Rai-Majra	*SSP
Rajasthan		
52.	Bharat Alums & Chemicals, Alwar	*SSP
53.	Hindustan Copper, Khetri	*TSP
54.	Hindustan Zinc, Udaipur	*SSP, H ₃ PO ₄
55.	Khicha Industries, Udaipur	*SSP
56.	Liberty Pesticides & Fertilisers, Madri, Udaipur	*SSP
57.	Madhvan Agro Chemicals, Dabok, Udaipur	*SSP **SSP
58.	Shriram Fertilisers & Chemicals, Kota	*Urea
59.	Udaipur Chemicals & Fertilisers, Madri	*SSP
60.	Udaipur Chemicals & Fertilisers, Bichadi, Udaipur	*SSP

Sl. No.	State/Name of the factory and location	End product
Tamil Nadu		
61.	Kothari (Madras), Ennore	*SSP **SSP
62.	Kothari (Madras), Manali	*ACI
63.	Coimbatore Pioneer, Colmbatore	*SSP
64.	EID-Parry (India), Ranipet	*SSP
65.	EID-Parry (India), Ennore	*AS, APS
66.	Indag Products, Cuddalore	*SSP
67.	Madras Fertilisers, Manali	*Urea, DAP, NPK
68.	Neyveli Lignite Corpn., Neyveli	*Urea
69.	Shaw Wallace, Avadi	*SSP
70.	SPIC, Tuticorin	*Urea, DAP, NPK **DAP
71.	Tuticorin Alkali Chemicals & Fertilisers, Tuticorin	*ACI
Uttar Pradesh		
72.	FCI, Gorakhpur	*Urea
73.	Girraj Fertilisers & Chemicals, Shikohabad	*SSP
74.	Indian Explosives, Panki	*Urea
75.	IFFCO, Phulpur	*Urea ***ACI
76.	Hari Fertilisers, Varanasi	*ACI
77.	Mittal Fertilisers, Rai Bareilly	*SSP
78.	Rallis India, Magarwara	*SSP **SSP
79.	Vijay Fertilisers, Ghaziabad	*SSP
West Bengal		
80.	HFCL, Durgapur	*Urea
81.	HFCL, Haldia	*Urea, Nitrophosphate H ₃ PO ₄ , **DAP
82.	Hindustan Lever, Haldia	*AS
83.	IISCO, Burnpur-Kulti	*SSP
84.	Jayshree Chemicals & Fertilisers, Khardah	**SSP
85.	Phosphate Co. Ltd., Rishra	*SSP
86.	SAIL, Durgapur	*AS
II. UNDER IMPLEMENTATION		
Andhra Pradesh		
87.	Godavari Fertiliser & Chemicals, Kakinada	DAP
88.	Pragati Fertiliser, Vizag	SSP
Bihar		
89.	Bihar Caustic & Chemicals, Rahela	ACI
Gujarat		
90.	KRIBHCO, Hazira (2 plants)	Urea+
Haryana		
91.	Dharuhera Chemicals, Dharuhera	SSP
Madhya Pradesh		
92.	Bhilai Engineering Corpn., Bilaspur	SSP
93.	V. Plant-NFL, Vijayapur Dist. Guna	Urea+
94.	M.P. Agro Morarji Fertiliser, Sagar	H ₃ PO ₄
Maharashtra		
95.	Deepak Fertilisers & Products, Talaja	Ammonia
96.	RCFL, Thal Vaishet (2 plants)	Urea+
Punjab		
97.	Punjab National Fertilisers & Chemicals, Naya Nangal	ACI
98.	Munak Chemicals, Bhatinda	SSP
99.	Varinder Agro Chemicals, Barnala	SSP
Rajasthan		
100.	Udaipur Phosphate & Fertiliser, Khemli	SSP
Uttar Pradesh		
101.	Peoples Chemicals & Fertilisers, Lucknow	SSP
102.	Shree Acids & Fertilisers, Gajraula	SSP
103.	Uttar Pradesh Rasayan, Sikandrabad	SSP
III. APPROVED IN PRINCIPLE		
Andhra Pradesh		
104.	Nagarjuna Fertilisers, Kakinada	Urea
Gujarat		
105.	DMCC, Amrell	SSP
106.	GSFC, Porbunder	DAP
Madhya Pradesh		
107.	FCI, Korba	
Orissa		
108.	East-Coast Fertilisers & Chemicals, Kalme	SSP
109.	Paradeep Fertilisers, Paradeep	DAP
Rajasthan		
110.	VI Plant—ZACL, Sawai Madhopur	Urea+
Uttar Pradesh		
111.	VII Plant—TATA, Babrala (Dist. Badaun)	Urea+
112.	VIII Plant—IFFCO, Aonla (Dist. Bareilly)	Urea+
113.	IX Plant—SFC, Shahjahanpur (Dist. Shahjahanpur)	Urea+
114.	X Plant—PICUP, Jagdishpura (Dist. Sultanpur)	Urea+
VI UNDER CONSIDERATION		
Haryana		
115.	HSIDC, Panipat	TSP
Rajasthan		
116.	NFL—Rajasthan Udaipur/Chittorgarh	TSP

* In production
 ** Under implementation
 *** Approved in principle
 † Under consideration
 + Based on Bombay High

1.05(a). LICENSED CAPACITY OF FERTILISERS—STATEWISE AND PRODUCTWISE AND THEIR SHARE
(As on October 1, 1983)

('000 tonnes)

Stage of Implementation Material	Madhya Pradesh	Rajasthan	Uttar Pradesh	Delhi	Total Central Zone	Assam	Bihar	Orissa	West Bengal	Total East Zone	Haryana	Punjab	Total North Zone	Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	Total South Zone	Gujarat	Maha- rashtra	Goa	Total West Zone	Grand Total All India	Share to total capacity (%)		Sl. No.	
																								N	P ₂ O ₅		
MATERIAL																											
I. IN PRODUCTION																											
1. Ammonium sulphate	32.6	—	—	—	32.6	100.0	379.4	28.2	44.2	551.8	—	—	—	—	—	198.0	38.3	236.8	250.0	—	—	250.0	1071.2	4.1	—	1	
2. Calcium ammonium nitrate	—	—	—	—	—	—	—	480.0	—	480.0	—	320.0	320.0	—	—	—	—	—	—	—	—	—	800.0	3.8	—	2	
3. Urea	—	330.0	1454.9	—	1784.9	385.0	600.0	495.0	497.4	2037.4	511.5	841.5	1353.0	495.0	340.0	330.0	876.0	2041.0	1350.0	429.0	340.0	2119.0	9335.3	80.6	—	3	
4. Ammonium chloride	—	—	41.0	—	41.0	—	—	—	—	—	—	—	—	—	—	24.8	86.0	110.8	—	—	—	—	151.8	0.7	—	4	
5. Ammonium phosphate sulphate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	148.5	51.5	200.0	—	—	—	—	200.0	0.6	2.5	5	
6. Diammonium phosphate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	108.0	—	—	—	108.0	0.4	3.1	6	
7. Nitrophosphate	—	—	—	—	—	—	—	—	375.0	375.0	—	—	—	—	—	—	—	—	—	—	—	661.0	1036.0	4.0	13.2	7	
8. NP/NPKs	—	—	—	—	—	—	—	—	—	—	—	—	—	347.5	—	485.0	520.0	1352.5	800.0	—	150.0	950.0	2302.5	5.8	42.0	8	
9. Single superphosphate	161.0	256.5	149.5	144.0	711.0	33.5	23.5	—	118.4	175.4	66.0	74.3	140.3	176.2	95.6	44.7	252.1	568.6	219.0	260.2	—	479.2	2074.5	—	20.4	9	
10. Triple superphosphate	—	200.0	—	—	200.0	—	340.0	—	—	340.0	—	—	—	—	—	—	—	—	—	27.0	—	27.0	567.0	—	15.5	10	
11. Pelofos	—	—	—	—	—	—	—	45.0	—	45.0	—	—	—	—	—	—	—	—	—	—	—	—	45.0	—	0.5	11	
12. Phosphoric acid (as P ₂ O ₅)	—	26.0	—	—	26.0	—	—	—	19.5	19.5	—	—	—	—	—	—	—	—	—	—	—	—	45.5	—	2.8	12	
I. Total	N	6.7	152.0	679.1	—	837.8	197.0	383.2	353.8	313.0	1247.0	235.0	467.0	702.0	312.0	156.0	270.0	541.5	1279.5	771.1	317.0	171.0	1259.1	5325.5	100.0	100.0	
	P₂O₅	25.8	157.0	23.9	23.0	229.7	5.4	153.8	7.6	113.5	280.3	10.6	11.9	22.5	132.2	15.3	150.9	235.7	534.1	345.4	173.7	42.0	561.2	1627.7			
II. UNDER IMPLEMENTATION																											
1. Urea	750.0	—	—	—	750.0	330.0	—	—	—	330.0	—	—	—	—	—	—	—	—	1452.0	1485.0	—	2937.0	4017.0	87.2	—	1	
2. Ammonium chloride	—	—	—	—	—	—	26.0	—	—	26.0	—	66.0	66.0	—	—	—	—	—	—	—	—	—	92.0	1.1	—	2	
3. Diammonium phosphate	—	—	—	—	—	—	—	—	160.0	160.0	—	—	—	300.0	137.0	137.0	150.0	724.0	—	—	91.0	91.0	975.0	8.3	70.4	3	
4. Single superphosphate	66.0	82.5	264.0	—	412.5	—	—	—	—	—	66.0	132.0	198.0	66.0	—	—	22.0	88.0	—	66.0	—	66.0	754.5	—	19.3	4	
5. Ammonia	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	90.0	—	90.0	90.0	8.4	—	5	
6. Phosphoric acid (as P ₂ O ₅)	66.0	—	—	—	66.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	66.0	—	10.3	6	
II. Total	N	345.0	—	—	345.0	152.0	6.5	—	29.0	187.5	—	16.5	16.5	54.0	25.0	25.0	27.0	131.0	668.0	757.0	16.4	1441.4	2121.4	100.0	100.0		
	P₂O₅	76.6	13.2	42.3	132.1	—	—	—	73.0	73.0	10.6	21.2	31.8	148.6	63.0	63.0	73.5	348.1	—	10.6	42.0	52.6	637.8				
III. APPROVED IN PRINCIPLE																											
1. Ammonium sulphate	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	200.0	—	200.0	—	—	—	—	200.0	1.7	—	1	
2. Urea	495.0	750.0	3000.0	—	4245.0	—	—	—	—	—	—	—	—	495.0	—	—	—	495.0	—	—	—	—	4740.0	90.3	—	2	
3. Ammonium chloride	—	—	66.0	—	66.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	66.0	0.7	—	3	
4. Diammonium phosphate	—	—	—	—	—	—	—	652.0	—	652.0	—	—	—	—	—	—	—	—	326.0	—	—	326.0	978.0	7.3	92.5	4	
5. Single superphosphate	—	—	—	—	—	—	—	49.5	66.0	115.5	—	—	—	—	—	—	—	—	66.0	44.0	—	110.0	225.5	—	7.5	5	
III. Total	N	228.0	345.0	1380.0	—	1953.0	—	—	117.4	117.4	—	—	—	228.0	—	41.2	—	269.2	75.2	—	—	75.2	2414.8	100.0	100.0		
	P₂O₅	—	—	—	—	—	—	308.3	10.2	318.5	—	—	—	—	—	—	—	160.6	7.0	—	167.6	486.2	100.0	100.0			
IV. UNDER CONSIDERATION																											
1. Urea	—	—	—	—	—	—	—	90.0	—	90.0	—	—	—	—	—	—	—	—	—	—	—	—	90.9	100.0	—	1	
2. Triple superphosphate	—	435.0	—	—	435.0	—	—	—	—	—	55.0	—	55.0	—	—	—	—	—	—	—	—	—	490.0	—	100.0	2	
IV. Total	N	—	—	—	—	—	—	41.4	—	41.4	—	—	—	—	—	—	—	—	—	—	—	—	41.4	100.0	100.0		
	P₂O₅	—	200.0	—	200.0	—	—	—	—	—	25.3	—	25.3	—	—	—	—	—	—	—	—	—	225.3	—	—		
Grand Total	N	579.7	497.0	2059.1	—	3135.8	349.0	389.7	512.6	342.0	1593.3	235.0	483.5	718.5	594.0	181.0	336.2	568.5	1679.7	1514.3	1074.0	187.4	2775.7	9903.1	100.0	100.0	
	P₂O₅	102.4	370.2	66.2	23.0	561.8	5.4	153.8	315.9	196.7	671.8	46.5	33.1	79.6	280.8	78.3	213.9	309.2	882.2	506.0	191.4	84.0	781.4	2977.0			

1.05(b). CAPACITY OF PHOSPHATE (P₂O₅) ACCORDING TO RAW MATERIALS

(As on 1-10-1983)

 ('000 tonnes of nutrient P₂O₅ per annum)

Type of fertilisers	Raw materials						Total
	Sulphur	Pyrites	Smelter gases	Sulphuric acid (external supply)	Nutric acid	Phosphoric acid (external supply)	
I. Factories in production							
(i) SSP	283.2+26.0@	—	11.6	37.6	—	—	358.4
(ii) TSP	12.2	150.0**	90.0	—	—	—	252.2
(iii) Pelofos	7.6	—	—	—	—	—	7.6
(iv) NP/NPK fertilisers	381.0	—	—	—	195.0	414.0*	990.0
(v) Others	19.5@	—	—	—	—	—	19.5
I. Total	729.5 (44.8)	150.0 (9.2)	101.6 (6.2)	37.6 (2.3)	195.0 (12.1)	414.0 (25.4)	1627.7 (100.0)
II. Projects under implementation							
(i) SSP	122.8+66.0@	—	—	—	—	—	188.8
(ii) NP/NPK fertilisers	—	—	—	—	—	449.0	449.0
II. Total	188.8 (29.6)	(—)	(—)	(—)	(—)	449.0 (70.4)	637.8 (100.0)
III. Projects approved in principle							
(i) SSP	36.2	—	—	—	—	—	36.2
(ii) NP/NPK fertilisers	450.0	—	—	—	—	—	450.0
III. Total	486.2 (100.0)	(—)	(—)	(—)	(—)	(—)	486.2 (100.0)
IV. Projects under consideration							
(i) TSP	225.3	—	—	—	—	—	225.3
IV. Total	225.3 (100.0)	(—)	(—)	(—)	(—)	(—)	225.3 (100.0)
Total I+II+III+IV							
(i) SSP	534.2	—	11.6	37.6	—	—	583.4
(ii) TSP	237.5	150.0	90.0	—	—	—	477.5
(iii) Pelofos	7.6	—	—	—	—	—	7.6
(iv) NP/NPK fertilisers	831.0	—	—	—	195.0	863.0	1889.0
(v) Others	19.5	—	—	—	—	—	19.5
Grand Total (I+II+III+IV)	1629.8 (54.7)	150.0 (5.0)	101.6 (3.4)	37.6 (1.3)	195.0 (6.6)	863.0 (29.0)	2977.0 (100.0)

*One of the factories uses imported mono ammonium phosphate occasionally.

**It would use both pyrites and sulphur. @Phosphoric acid is planned to be marketed as such.

Note: 1. Rockphosphate is the basic raw material which is processed with H₂SO₄, HNO₃ and H₃PO₄ to release P₂O₅ in the desired concentration. Factories based on imported H₃PO₄ do not require either rock or sulphur as such to manufacture phosphatic fertilisers.

2. Figures in brackets indicate the percentage contribution through a fertiliser feedstock to the total (horizontal).

**1.06. LICENSED CAPACITY OF FERTILISERS—
1950 to**

Installed as on date	Nitrogen fertilisers					NP/NPK	
	AS 20.6% N	ASN 26% N	Urea 46% N	ACI 25% N	CAN 25% N 20.5% ¹	Nitro- phos- phate 20-20-0	18-46-0
	←----- MATE -----→						
1. December 31, 1950	81.0						
2. December 31, 1951	430.8						
3. December 31, 1952	430.8						
4. December 31, 1953	430.8						
5. December 31, 1954	430.8						
6. December 31, 1955	430.8						
7. December 31, 1956	430.8						
8. December 31, 1957	430.8						
9. December 31, 1958	430.8						
10. December 31, 1959	446.8	148.0	24.0	40.0	—	—	—
11. December 31, 1960	491.9	148.0	24.0	48.8	—	—	—
12. December 31, 1961	499.8	150.4	24.0	48.8	395.1 ¹	—	—
13. August 31, 1962	502.1	140.2	24.0	48.8	394.2 ¹	—	—
14. July 31, 1963	536.0	140.2	24.0	48.8	699.3 ¹	—	—
15. September 30, 1964	536.0	140.2	23.5	48.8	685.0 ¹	—	—
16. September 30, 1965	536.0	140.2	23.5	48.8	685.0 ¹	—	—
17. September 30, 1966	662.2	121.9	276.5	65.6	685.4 ¹	330.0	—
18. September 30, 1967	691.5	121.9	376.5	65.6	{ 320.0 290.0 ¹	330.0	108.0
19. September 30, 1968	978.1	121.9	627.3	65.6	{ 320.0 585.4 ¹	270.0	108.0
20. September 30, 1969	978.1	121.9	1,131.3	65.6	8.00	270.0	108.0
21. September 30, 1970	1,013.1	121.9	1,581.3	65.6	800.0	180.0	108.0
22. September 30, 1971	1,005.8	121.9	1,791.3	65.6	800.0	180.0	108.0

MATERIALWISE AND NUTRIENTWISE

1983

('000 tonnes)

fertilisers				Phosphatic fertilisers			Total	
16-20-0 & 20-20-0 ²	19-19-19 28-28-0 ¹ 14-35-14 ³	17-17-17 & 14-28-14	10-26-26 12-32-16 15-15-15 ⁴	Pelofos 18% P ₂ O ₅	SSP 16% P ₂ O ₅	TSP 46% P ₂ O ₅	N	P ₂ O ₅
RIAL					128.0		16.7	20.5
					173.0		88.7	27.7
					198.0		88.7	31.7
					216.0		88.7	31.7
					216.0		88.7	34.6
					270.0		88.7	43.2
					270.0		88.7	43.2
					310.0		88.7	49.6
					334.3		88.7	53.5
—	—	—	—	—	504.7	—	148.6	80.8
16.5	—	—	—	—	577.1	—	162.2	95.6
16.8	—	—	—	—	649.4	—	246.3	107.2
16.8	—	—	—	—	649.4	—	246.3	107.2
85.0	—	—	—	—	809.7	—	326.7	146.5
88.5	—	—	—	—	983.6	—	324.0	175.1
88.5	—	—	—	—	1,061.2	—	324.0	187.5
187.8	—	—	—	—	1,131.3	—	524.9	263.6
451.8	—	—	—	—	1,131.3	—	632.4	316.4
186.5	260.0	—	—	—	1,327.8	27.0	904.5	431.2
186.5	260.0	—	—	—	1,327.8	27.0	1,136.4	431.2
232.5	260.0	—	—	—	1,337.9	27.0	1,349.3	433.5
232.5	260.0	360.0	—	—	1,378.8	27.0	1,514.7	532.0

(Continued)

**1.06. LICENSED CAPACITY OF FERTILISERS—
1950 to**

Installed as on date	Nitrogen fertilisers					NP/NPK	
	AS 20.6% N	ASN 26% N	Urea 46% N	ACI 25% N	CAN 25% N 20.5% ¹	Nitro- phos- phate 20-20-0	18-46-0
	← MATE						
23. September 30, 1972	933.8	50.0	1,780.4	64.8	800.0	180.0	108.0
24. November 1, 1973	950.5	50.0	2,756.4	64.8	800.0	180.0	108.0
25. November 1, 1974	955.8	5.0	3,172.2	64.8	800.0	180.0	108.0
26. November 1, 1975	955.8	50.0	4,186.4	64.8	800.0	180.0	108.0
27. November 1, 1976	945.9	50.0	4,819.0	64.8	800.0	270.0	136.0
28. October 1, 1977	969.0	50.0	4,819.0	64.8	800.0	270.0	136.0
29. October 1, 1978	969.0	0.0	5,149.0	64.8	800.0	555.0	136.0
30. November 1, 1979	969.0	—	6,451.9	84.8	800.0	555.0	136.0
31. September 1, 1980	969.0	—	7,525.0	84.8	800.0	555.0	136.0
32. October 1, 1981	969.0	—	8,243.9	84.8	800.0	361.0*	136.0
33. October 1, 1982	1,071.2	—	9,329.9	151.8	800.0	361.0*	136.0
34. October 1, 1983*	1,071.2	—	9,497.3	151.8	800.0	736.0*	136.0

*For factorywise/projectwise details, see Tables 1.01 and 1.02.

*=of grade 20.7-20.7-0.

**MATERIALWISE AND NUTRIENTWISE
1983 (Concluded)**

('000 tonnes)

fertilisers				Phosphatic fertilisers			Total	
16-20-0 & 20-20-0 ³	19-19-19 28-28-0 14-35-14 ³	17-17-17 & 14-28-14	10-26-26 12-32-16 15-15-15 ⁴	Pelofos 18% P ₂ O ₅	SSP 16% P ₂ O ₅	TSP 46% P ₂ O ₅	N	P ₂ O ₅
∫ 51.5 ∪ 171.5 ²	260.0	360.0	—	—	1,249.8	27.0	1,471.2	502.6
∫ 51.6 ∪ 171.5 ²	260.0	360.0	—	45.0	1,399.8	27.0	1,933.5	534.2
∫ 51.5 ∪ 171.5 ²	260.0	360.0	375.5	45.0	1,431.2	27.0	2,162.1	666.2
∫ 51.5 ∪ 171.5 ²	410.0	360.0	375.5	45.0	1,420.6	27.0	2,625.1	737.6
∫ 51.5 ∪ 171.5 ²	∫ 401.0 ∪ 96.5 ³	445.0	∫ 503.5 ∪ 32.0	45.0	1,444.8	227.0	3,024.1	927.5
∫ 51.5 ∪ 181.0 ³	∫ 401.0 ∪ 96.5 ³	920.0	∫ 503.5 ∪ 32.0	45.0	1,451.4	567.0	3,068.8	1,192.6
∫ 51.5 ∪ 181.0 ³	∫ 401.0 ∪ 96.5 ³	920.0	∫ 503.5 ∪ 32.0	45.0	1,474.7	567.0	3,295.8	1,278.5
∫ 51.5 ∪ 181.2 ³	∫ 401.0 ∪ 96.5 ³	920.0	∫ 503.5 ∪ 32.0	45.0	1,539.4	567.0	3,901.8	1,309.5
∫ 51.5 ∪ 181.3 ³	∫ 401.6 ∪ 96.5 ³	920.0	∫ 503.5 ∪ 32.0	45.0	1,634.4	567.0	4,357.8	1,333.3
∫ 51.5 ∪ 148.5 ³	∫ 401.0 ∪ 96.5 ³	920.0	∫ 800.0 ∪ 300.0 ⁴	45.0	1,836.9	567.0	4,735.8	1,386.7
∫ 51.5 ∪ 148.5 ³	∫ 401.0 ∪ 96.5 ³	920.0	∫ 800.0 ∪ 300.0 ⁴	45.0	1,869.1	567.0	5,178.5	1,511.7
∫ 51.5 ∪ 148.5 ³	∫ 401.0 ∪ 96.5 ³	920.0	∫ 800.0 ∪ 300.0 ⁴	45.0	2,074.5	567.0	5,325.5	1,627.7

1.07. GAPACITY OF N & P₂O₅ ANTICIPATED DURING 1981-82 to 1989-90

('000 tonnes)

Year	Public		Private		Cooperative		Total	
	N	P ₂ O ₅	N	P ₂ O ₅	N	P ₂ O ₅	N	P ₂ O ₅
1981-82 ¹	-4.0 (2,838.8)	-6.5 (657.8)	105.1 (1,405.1)	— (551.4)	45.0 (488.0)	133.0 (260.0)	146.1 (4,731.9)	126.5 (1,469.2)
1982-83 ²	152.0 (2,990.8)	— (657.8)	289.5 (1,694.6)	16.5 (567.9)	— (488.0)	— (260.0)	441.5 (5,173.4)	16.5 (1,485.7)
1983-84	193.5 (3,184.3)	138.0 (795.8)	33.5 (1,728.1)	147.9 (715.8)	— (488.0)	— (260.0)	227.0 (5,400.4)	285.9 (1,771.6)
1984-85	835.0 (4,019.3)	— (795.8)	70.4 (1,798.5)	270.0 (985.8)	350.5 (838.5)	— (260.0)	1,255.9 (6,656.3)	270.0 (2,041.6)
1985-86	540.3 (4,559.6)	313.3 (1,109.1)	58.7 (1,857.2)	160.6 (1,146.4)	334.0 (1,172.5)	— (260.0)	933.0 (7,589.3)	473.9 (2,515.5)
1986-87	514.7 (5,074.3)	350.0 (1,459.1)	345.0 (2,202.2)	— (1,146.4)	— (1,172.5)	— (260.0)	859.7 (8,449.0)	350.0 (2,865.5)
1987-88	— (5,074.3)	— (1,459.1)	345.0 (2,547.2)	— (1,146.4)	— (1,172.5)	— (260.0)	345.0 (8,794.0)	— (2,865.5)
1988-89	— (5,074.3)	— (1,459.1)	345.0 (2,892.2)	— (1,146.4)	345.0 (1,517.5)	— (260.0)	690.0 (9,484.0)	— (2,865.5)
1989-90	345.0 (5,419.3)	— (1,459.1)	— (2,892.2)	— (1,146.4)	— (1,517.5)	— (260.0)	345.0 (9,829.0)	— (2,865.5)

¹ Capacity installed by 31-3-1982.² Capacity installed by 31-3-1983.

() Figures in brackets indicate the cumulative capacity at the end of each year viz., by 31st March.

Note: 1. For details, see Tables 1.01 and 1.02.

2. Projects for manufacturing ammonia and phosphoric acid, to be marketed as such, have not been accounted here.

1.08. MANUFACTURERS AND LICENSED CAPACITY OF SULPHURIC ACID
(As on September 1, 1983)

Name of factory	(tonnes) Capacity
1. IN PRODUCTION	
SOUTH	154,4490
Andhra Pradesh	446,250
*1. Andhra Fertilisers Pvt. Ltd. Tadepalle	16,500
*2. Andhra Sugars Ltd. Tanuku	24,750
*3. Coromandel Fertilisers Ltd. Visakhapatnam	306,000
*4. Hyderabad Chemicals & Fertilisers, Maula Ali	16,500
*5. Hindustan Zinc Ltd. Visakhapatnam	66,000
*6. Krishna Industrial Corpn. Nidadavole	16,500
Karnataka	24,750
*7. Gammon Fer-Chems, Belagula	24,750
Kerala	738,490
*8. Comminco Binani Zinc Ltd. Binanipuram, Ernakulam	36,000
*9. Fertilisers & Chemicals Travancore Ltd. Udyogmandal	246,200
*10. Fertilisers & Chemicals Travancore Ltd. Ambalamedu	330,000
11. Travancore Rayon Ltd. Rayonpuram	18,290
12. Travancore Titanium Products Ltd. Trivandrum	108,000
Tamil Nadu	335,000
*13. Coimbatore Pioneer Fertilisers Ltd. Coimbatore	18,000
*14. EID-Parry (India) Ltd. Ennore	49,500
*15. EID-Parry (India) Ltd. Ranipet	20,400
*16. Kothari (Madras) Ltd. Madras	15,000
17. Madras Petro Chemicals, Manali	16,500
18. Shaw Wallace & Co. Ltd. Avadi	32,000
19. South India Viscose Ltd. Coimbatore	53,
20. Southern Petro Chemicals Industries Ltd. Tuticorin	1,0, 00
WEST	888,015
Gujarat	336,935
*21. Adarsh Chemicals & Fertilisers Ltd. Udhana	23,100
*22. Anil Starch Products Ltd. Ahmedabad	12,600
*23. Anil Strach Products Ltd. Bhavnagar	18,000
24. Atul Products Ltd. Atul Bulsar	33,000

(Continued)

1.08. MANUFACTURERS AND LICENSED CAPACITY OF SULPHURIC ACID
(As on September 1, 1983) (Continued)

Name of factory	Capacity (tonnes)
I. IN PRODUCTION (Continued)	
WEST (Concluded)	
Gujarat (Concluded)	
25. Atic Industries, Post Atul	16,500
26. Baroda Rayon Corpn. Baroda	13,200
*27. Gujarat State Fertilisers Co. Ltd. Baroda	155,100
*28. Indian Rayon Corpn. Ltd. Veraval	10,310
29. Navin Fluorine Industries, Udhana	20,625
*30. Paushak Ltd. Baroda	18,000
31. Rama Industrial Chemicals, Vapi	16,500
Maharashtra	
	551,080
32. Albright Morarji & Pandit, Ambernath	45,000
33. Century Spining & Weaving Mills, Bombay	23,100
*34. Dharamsi Morarji Chemicals Co. Ltd. Ambernath	161,700
35. Hindustan Organic Chemicals Ltd. Rasayani	25,080
36. Indian Dyestuff Industries Ltd. Bombay	16,500
37. Indian Link Chain Mfg. Co. Thane	16,500
38. National Rayon Corpn. Ltd. Thane, Bombay	58,000
*39. Rashtriya Chemicals & Fertilisers, Trombay	99,000
40. Solar Chemicals, Chandrapur	16,500
41. Sonawala Industries Pvt. Ltd. Kalyan, Maharashtra	3,300
42. Tarapur Acids---Alkali, Thane	16,500
*43. Western Chemicals Industries Ltd. Goregaon, Bombay	3,900
*44. Rama Krishi Rasayan Ltd. Lonikalbhor	16,500
45. Shri Siddeshwar Sulphur Products	33,000
46. Divya Chemicals Ltd.	16,500
CENTRAL	
	615,730
Madhya Pradesh	
	129,000
*47. Dharamsi Morarji Chemical Co. Ltd. Kumhari	46,200
48. Gwalior Rayon Silk Manufacturing Co. Ltd. (Wvg.) Nagda	37,800
49. Steel Authority of India Ltd. Bhilai	45,000
Rajasthan	
	325,100
*50. Bharat Alums & Chemicals Ltd. Alwar	39,000
†† *51. Hindustan Copper Ltd. Khetri	182,000

(Continued)

1.08. MANUFACTURERS AND LICENSED CAPACITY OF SULPHURIC ACID
(As on September 1, 1983) (Continued)

Name of factory	(tonnes)
	Capacity
I. IN PRODUCTION (Continued)	
CENTRAL (Concluded)	
Rajasthan (Concluded)	
† *52. Hindustan Zinc Ltd. Debari Udaipur	87,000
53. Shriram Rayons, Kota	16,500
Uttar Pradesh	61,630
54. Cawnpore Chemical Work (P) Ltd. Anwarganj	9,000
55. J. K. Cotton Spg. & Wvg Mills Co. Ltd. Kanpur	8,250
*56. Rallis India Ltd. Magarwara	24,380
57. Salfuri India Ltd. Akrapur, Unnao	20,000
Delhi	100,000
*58. DCM Chemical Works, Delhi	100,000
NORTH	85,000
Haryana	68,500
59. Dharuhera Chemicals Co. Ltd. Dharuhera	30,000
60. Indian Sulph Acids Industries Ltd. Shahbad Dist. Kurukshetra	5,500
*61. Multitech International, Dharuhera	33,000
Punjab	16,500
62. Punjab Sulphur Products, Rail Majra Dist. Hoshiarpur	16,500
EAST	736,090
Assam	107,100
*63. Chemical Unit of Associated Industries (Assam) Ltd. Chandrapur	18,000
64. Assam Oil Co. Digboi	6,600
*65. Hindusthan Fertiliser Corpn. Ltd. Namrup	82,500
Bihar	344,400
66. Steel Authority of India Ltd. Bokaro. Distt. Dhanbad	84,000
††67. Hindustan Copper Ltd. Ghatshila	54,000
68. Uranium Corpn. of India Ltd. Jaduguda. Dist. Singhbhum	16,500
69. Ranjan Chemicals Ltd. Barauni	16,500
70. Indian Steel & Wire Products Ltd. Jamshedour	3,600
* 71. Fertiliser Corpn. of India Ltd. Sindri	132,000

(Continued)

108. MANUFACTURERS AND LICENSED CAPACITY OF SULPHURIC ACID
(As on September 1, 1983) (Concluded)

Name of factory	Capacity (tonnes)
I. IN PRODUCTION (Concluded)	
EAST (Concluded)	
Bihar (Concluded)	
72. Rohtas Industries Ltd. Dalminagar Rohtas	3,000
73. Tata Iron & Steel Co. Ltd. Jamshedpur	31,500
74. Tinplate Co. of India (P). Golmuri, Dist. Singhbhum	3,300
Orissa	42,900
75. East Coast Fertilisers & Chemicals, Kalme, Mayurbhanj	16,500
76. Jayshree Chemicals, Ganjam	8,400
*77. Steel Authority of India Ltd., Rourkela	18,000
West Bengal	241,690
78. Bengal Chemicals & Pharmaceutical Works Ltd. Panihati	28,050
79. Hindustan Heavy chemicals Ltd. Khardah	8,250
80. Hindustan Lever Ltd. Haldia	54,000
81. Steel Authority of India Ltd. Durgapur	20,120
82. Indian Iron & Steel Co. Ltd. Burnpur	31,020
*83. Jayshree Chemicals & Fertilisers, Khardah	19,250
84. Kesoram Industries & Cotton Mills Ltd. Tribeni, Hoogly	16,500
*85. Phosphate Co. Ltd. Rishra	33,000
86. C.D. Thakkar & Co. Rupnarayanpur	15,000
87. East West Coast Fertilisers & Chemicals Ltd.	16,500
I. Total	38,69,325

SUMMARY

<i>Based on</i>	<i>No. of units</i>	<i>Capacity (tonnes)</i>
1. Elemental sulphur	81	3312,325
2. By-product from copper smelter	2	236,000
3. By-product from zinc smelter	3	189,000
4. Iron pyrites	1	132,000
Total	87	3869,325

* Fertiliser manufacturer.

† By-product from zinc smelter.

†† By-product from copper smelter.

‡ Iron pyrites based.

1.09. MANUFACTURERS AND LICENSED CAPACITY OF PHOSPHORIC ACID
(As on October 1, 1983)

Name of factory	Sector	Date of commissioning	Capacity of acid as P ₂ O ₅ ('000 tonnes)		
			Per ann.	Per day	
I. IN PRODUCTION					
1. Albright, Morarji & Pandit Ambernath (Mah.)	Private	January 1968	14.5	—	
2. Coromandel Fertilisers Vizag. (A.P.)	Private	February 1968 Expn. April 1976	104.0	350	
3. EID-Parry (India) Ennore (T.N.)	Private	March 1963	10.3	32	
4. Fertilisers & Chemical Travancore, Always (Kerala)	Public	Dec. 1960 Expn. March 1972	29.7	100	
5. Fertilisers & Chemical, Travancore Ambalamedu (Cochin Phase II) (Kerala)	Public	Dec. 1976	114.0	360	
6. Fertiliser Corpn. of India Sindri (Bihar)	Public	April 1979	150.0	360	
7. Gujarat State Fertilisers Co., Ltd. Baroda (Gujarat)	Private	May 1967	50.0	165	
8. Hindustan Copper Khetri (Rajasthan)	Public	Oct. 1976	90.0	210	
9. Hindustan Fertilizer Corporation Haldia (West Bengal)	Public	Oct. 1983	75.0	100	
10. Hindustan Lever Haldia (West Bengal)	Private	Oct. 1979	19.5	—	
11. Hindustan Zinc Debari (Rajasthan)	Public	Feb. 1979	26.0	87	
12. Rashtriya Chemicals & Fertilisers Trombay (Maharashtra)	Public	Nov. 1965 Acid Plant- June 1975	120.0	200	
13. Southern Petrochemical Industries Corpn. Tuticorin	Private	Nov. 1975	73.0	165	
	Sectorwise Total		Public Private Cooperative	604.7 271.3 —	1,417 712 —
I. Total Capacity			876.0	2,129	

1.10. MANUFACTURERS & INSTALLED CAPACITY OF GRANULATED FERTILISER MIXTURES
(As on April 1, 1983)

(tonnes/annum)

Name of factory	Installed capacity
I. IN PRODUCTION	
South	179,000
*1. Raichur Agricultural Produce Coop. Marketing Society Raichur (Karnataka)	45,000
*2. Chikodi Taluka Agricultural Produce Coop. Marketing Society Ltd. Nipani (Karnataka)	54,000
*3. Pamani Fertiliser Ltd., Pamani, Thanjavur (T.N.) (Unit of TNCMF)	35,000
*4. Tamil Nadu Cooperative Marketing Federation Ltd., Madras (T.N.)	45,000
West	744,000
1. Asha Fertilisers Pvt. Ltd., Nasik (Maharashtra)	40,000
2. Granulated Fertiliser & Feds Pvt. Ltd., Bhavnagar (Gujarat)	30,000
3. Deccan Sales Corpn. Ltd., Bombay (Maharashtra)	44,000
4. Godavari Pravara Canal Coop. Purchase & Sales Union, Kopergaon (Maharashtra)	30,000
*5. Karad Cooperative Purchase & Sales Society, Karad (Maharashtra)	30,000
*6. Vidharbha Coop. Marketing Society Ltd., Amravati & Butibori (Maharashtra)	80,000
*7. Kolhapur Dist. Granulated Fertiliser Coop. Ltd., Laxmipuri (Maharashtra)	50,000
*8. Maharashtra State Coop. Marketing Federation Ltd., Chikalthana (Maharashtra)	45,000
9. Maharashtra Agro Industries Development Corpn. Ltd. Rasayani, Nanded and Pachora (Maharashtra)	165,000
10. Krishi Organic Chemical Industries Pvt. Ltd., Miraj (Maharashtra)	50,000
*11. Shetkari Sahakari Sangh Ltd., Rukadi (Maharashtra) Unit No. I	30,000
Unit No. II	45,000
*12. Kissan Coop. Granulated Fertilisers & Chems. Ltd., Ghansoli (Maharashtra)	30,000
*13. Sahyadri Coop. Fertilisers & Chemicals Ltd., Majiwada Thana (Maharashtra)	30,000
14. Goa Agro Chemicals Ltd., Margao (Goa)	45,000
Central	469,000
1. Dewas Chemicals & Fertiliser Manufacturing Co., Dewas (M.P.)	45,000
2. M.P. Agro Morarji Fertiliser Ltd., Raisalpur (M.P.)	60,000
3. Madhuvan Chemicals & Fertilisers Pvt. Ltd., Udaipur (Rajasthan)	50,000
4. Jaevan Fertiliser & Chemicals Co. Pvt. Ltd., Kota (Rajasthan)	40,000
5. Sriganganagar Fertiliser Corpn., Sriganganagar (Rajasthan)	50,000
6. Shriram Foods & Fertiliser Industries (Delhi)	48,000
7. Chemicals & Fertilisers India, Rampur (U.P.)	6,000
8. Aqarwal Pesticides & Chemical Industries, Muzaffarnagar (U.P.)	12,000
9. D.R. Chemicals & Fertilisers, Gorakhpur (U.P.)	36,000
10. Fertilizer Corpn. of India, Gorakhpur (U.P.)	36,000
11. Shri Madan Fertilizer Co., Fatehgarh (U.P.)	12,000
12. Ravi Fertilisers, Ballia (U.P.)	22,000
13. Rallis India Ltd., Magarwara (U.P.)	N.A.
14. U.P. Pesticides & Fertiliser, Muzaffarnagar (U.P.)	10,000
15. U.P. Pesticides Products, Azamgarh (U.P.)	6,000
*16. U.P. Cooperative Federation, Barabanki (U.P.)	36,000

(Continued)

1.10. MANUFACTURERS & INSTALLED CAPACITY OF GRANULATED FERTILISER MIXTURES
(As on April 1, 1983) (Concluded)

(tonnes/annum)

Name of factory	Installed capacity
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I. IN PRODUCTION (Concluded)

North		320,000
1. Haryana Agro Fertiliser & Chemicals, Shahabad Markanda (Haryana)		30,000
*2. Haryana State Coop. & Supply Marketing Federation, Taraori (Haryana)		30,000
*3. Haryana State Coop. & Supply Marketing Federation, Shahabad (Haryana)		30,000
4. Hind Fertilizer & Chemicals Industries Pvt. Ltd., Rukri		40,000
5. Himalaya Fertiliser Ltd., Nalagarh (H.P.)		50,000
6. Punjab Fertilizers, Ludhiana (Punjab)		12,000
*7. Punjab State Coop. Supply & Marketing Federation, Dhanderikalan (Punjab)		45,000
*8. Punjab State Coop. Supply & Marketing Federation, Dhuri (Punjab)		38,000
*9. Punjab State Coop. Supply & Marketing Federation, Anandpur Saher (Punjab)		45,000
10. India Agro Chemical Industries, Chabal, Amritsar (Punjab)		N.A.
11. Varinder Agro Chemicals, Ludhiana (Punjab)		N.A.
East		316,000
*1. Bihar State Coop. Marketing Union Ltd., Tilrath, Begusarai (Bihar)		45,000
2. Bihar State Superphosphate Factory (NPK Granulation Plant) Sindri Institute, Distt. Dhanbad (Bihar)		36,000
3. Shakti Chemical & Fertiliser (Pvt) Ltd. P.O. Lokai, Kodarma (Bihar)		30,000
4. Bihar Agro Industries, Forbesganj (Bihar)		6,000
5. Chem. Fert. (India) Pvt. L d., Cola Road Samastipur (Bihar)		18,000
6. Kosi Chemicals, College Road, Katihar, (Bihar)		18,000
7. Himalaya Agro Chemicals, Purnea (Bihar)		12,000
*8. Orissa State Coop. Marketing Federation Ltd., Bargarh (Orissa)		19,000
9. Phosphate Co. Ltd., Rishara (West Bengal)		48,000
10. Ferti-chem Ltd., Narangi, Gauhati (Assam)		60,000
11. Jayshree Chemicals & Fertilisers, Khardah (West Bengal)		24,000
Total I		2,028,000

II. PLANNED AND YET TO GO INTO PRODUCTION

South		
1. Fertilisers and Chemicals Travancore Ltd., Alwaye (Kerala)		N.A.
West		50,000
1. Trimurti Agro Chemicals Ltd, Nangrol (Gujarat)		50,000
Central		45,000
*1. M.P. State Cooperative Marketing Federation Ltd., Bhopal (M.P.)		45,000
*2. Kraya Vikrarya & Prakriyatmak Sahakari Samiti, Varanasi (U.P.)		N.A.
North		
1. Hind Fertilizer & Chemicals Ltd., Barara		N.A.
Total II		95,000
Grand Total (I+II)		2,123,000

N.A. = Not available.

*In Cooperative Sector.

Source: State Departments of Agriculture.

2.00. RAW MATERIALS

2.01(a). PRODUCTION OF ROCKPHOSPHATE
1969-70 to 1982-83 (April-March)

(000 tonnes)

Year	Rockphosphate		MPSMC ³		Total
	Mussoorie phos PPCL ¹	Jhamarkotra RSMM ²	Jhabua	Hirapur/ Sagar	
1969-70	—	96.9	—	—	96.9
1970-71	—	195.1	—	—	195.1
1971-72	0.7	232.2	—	—	232.9
1972-73	7.3	191.6	—	—	198.9
1973-74	9.9	123.4	—	—	133.3
1974-75	16.9	402.3	9.7	—	428.9
1975-76	7.9	350.7	28.0	—	386.6
1976-77	21.4	500.2	41.0	—	562.6
1977-78	29.0	506.3	47.6	—	582.9
1978-79	43.2	535.8	67.6	6.9	653.5
1979-80	59.0	404.0	82.2	11.1	556.3
1980-81	59.1	273.8	79.8	21.8	434.5
1981-82	62.9	282.9	72.3	17.4	435.5
1982-83	70.0	288.0	75.0	17.7	450.7

Source: ¹ Pyrites, Phosphates and Chemicals Ltd., Dehra Dun (U.P.).

² Rajasthan State Mines and Minerals Ltd., Rajasthan Government, Jaipur (Rajasthan).

³ Madhya Pradesh State Mining Corporation Ltd., Bhopal (M.P.).



Sources of Raw Materials

2.01(b). DISTRIBUTION OF INDIGENOUS ROCKPHOSPHATE
(1969-70 1982-83 April-March)

('000 tonnes)

Year	Mussoorie Phos (PPCL) ¹	Jhamarkotra (RSMM ²)			MPSMC ³				Total			
		Total ¹	Fertilisers	Others*	Total	Jhabua		Hirapur saar rock	Total*	Fertilisers	Others	Total
						Fertilisers	Others*					
1969-70	—	—	—	7.0	—	—	—	—	—	—	7.0	
1970-71	—	121.4	69.9	191.3	—	—	—	—	121.4	69.9	191.3	
1971-72	0.7	213.8	9.2	222.3	—	—	—	—	213.1	9.2	222.3	
1972-73	4.7	181.4	14.5	195.9	—	—	—	—	181.4	14.5	195.9	
1973-74	10.1	97.5	25.2	122.7	—	—	—	—	97.5	25.2	122.7	
1974-75	9.9	126.9	34.0	160.9	—	2.9	2.9	—	126.9	35.9	163.8	
1975-76	8.2	233.6	54.2	287.8	9.0	16.3	25.3	—	242.6	70.5	313.0	
1976-77	20.1	497.4	91.6	589.0	5.7	27.1	32.8	—	503.1	138.3	641.9	
1977-78	33.0	489.8	60.6	550.4	21.8	37.6	59.4	—	511.6	131.2	642.8	
1978-79	45.3	458.6	42.1	500.7	14.9	56.6	71.5	4.4	473.5	144.0	621.9	
1979-80	58.2	355.9	61.3	417.2	25.6	43.8	69.4	14.4	381.5	163.3	559.2	
1980-81	56.6	326.5	18.0	344.5	26.1	69.0	85.1	22.9	352.6	133.6	509.1	
1981-82	58.1	338.6	9.5	348.1	8.2	57.7	65.9	15.8	346.8	125.3	487.9	
1982-83	61.3	379.4	20.9	400.3	0.8	42.4	43.2	17.4	380.2	142.0	522.2	

*Constitutes supplies to mixtures and non-fertilisers.

¹For direct application.

Source: ¹ Pyrites, Phosphates & Chemicals Ltd., Dehra Dun (U.P.)

² Rajasthan State Mines & Minerals Ltd., Udaipur (Rajasthan).

³ M.P. State Mining Corporation Ltd., Bhopal (M.P.).

2.02. IMPORT OF ROCKPHOSPHATE AND SULPHUR
(1969-70—1982-83)

('000 tonnes)

Country	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
ROCKPHOSPHATE														
1. Jordan	297	47	349	391	358	496	113	152	393	463	603	617	674	708
2. Morocco	14	183	87	79	199	234	127	168	331	387	441	367	310	278
3. Senegal	—	27	—	25	12	—	47	53	105	104	157	126	150	176
4. Tunisia	—	18	46	—	—	—	—	—	—	—	—	—	—	—
5. Florida	288	451	320	380	310	228	226	212	248	229	279	235	271	254
6. Japan	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7. Spanish (Sahara)	—	—	—	—	—	11	—	—	—	—	—	—	—	—
8. Egypt	47	30	—	—	—	—	—	—	—	—	—	—	13	—
9. Kenya	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10. Australia	—	—	—	—	—	—	—	—	7	—	—	—	—	—
11. Syria	—	—	—	—	—	—	—	—	—	11	—	—	—	—
12. Other	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	646	756	842	875	879	942	513	585	1,084	1,194	1,480	1,345	1,418	1,416
	(87.2)	(123.2)	(112.0)	(137.0)	(300.0)	(330.4)	(247.5)	(221.17)	(312.1)	(497.2)	(764.6)	(862.9)	(941.2)	(785.4)
SULPHUR														
1. Canada	208	292	193	131	149	83	79	225	163	123	170	140	672	220
2. Iran	25	84	220	146	247	288	157	147	255	151	32	103	29	—
3. Poland	—	153	205	299	41	107	79	78	109	88	51	48	44	—
4. Iraq	—	—	—	3	115	124	178	143	205	306	381	128	—	—
5. Saudi Arabic	—	—	—	—	—	—	—	—	—	—	—	—	—	404

(Continued)

2.02. IMPORT OF ROCKPHOSPHATE AND SULPHUR
(1969-70-1982-83) (Concluded)

Country	('000 tonnes)													
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
5. Kuwait	—	—	3	10	15	13	17	66	51	96	33	67	83	132
7. U.S.S.R.	—	10	—	—	21	33	26	43	34	21	31	—	12	—
8. France	21	7	—	—	—	—	—	—	—	—	—	—	—	—
9. U.S.A.	6	—	—	—	—	11	—	—	—	—	—	291†	39	71
10. Poland (Iraq)	58	—	—	—	—	29	—	47	75	—	—	—	—	—
11. Germany, Fed. Rep. of	0.2	—	—	—	—	—	—	—	—	—	—	—	—	—
12. Mexico	—	—	—	—	—	—	—	40	—	17	—	—	—	—
13. U.K.	0.1	—	—	—	—	—	—	—	—	—	—	—	—	—
14. Bolivia	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15. Bahrain	—	—	—	—	—	—	26	—	—	—	66	39	5	25
16. D.P.R. Korea	—	—	—	—	—	—	—	9	10	—	11	—	—	—
17. Netherlands	Neg.	—	—	—	—	—	—	—	—	—	—	—	—	—
18. Qatar	5	—	—	—	—	—	—	—	—	—	—	—	—	6
19. West Indies	—	—	—	—	—	—	—	—	—	—	—	—	16	—
20. Singapore	—	—	—	—	—	—	—	—	—	—	—	—	6	—
21. Others *	—	—	—	—	—	—	—	—	—	—	317	—	—	—
Total	324	547	621	589	589	688	562	795	873	802	1,092	816	904	858
	(107.0)	(94.4)	(106.0)	(97.0)	(176.6)	(351.0)	(277.4)	(311.3)	(343.6)	(473.0)	(1109.9)	(1071.7)	()	()

*Spot purchase.

† USA and Mexico.

Figures in brackets indicate the value in Rs. million.

Source: 1. Monthly Statistics of the Foreign Trade of India.
2. Minerals & Metals Trading Corporation of India Ltd., New Delhi.

2.03. ALL INDIA PRODUCTION OF SULPHURIC ACID
1969-70 to 1982-83 (April—March)

('000 tonnes)

Year	Production
1969-70	1213.7
1970-71	1200.1
1971-72	1264.1
1972-73	1339.4
1973-74	1412.3
1974-75	1457.7
1975-76	1445.2
1976-77	1778.1
1977-78	2045.5
1978-79	2107.4
1979-80	2196.0
1980-81	2163.0
1981-82	2200.0 (Provisional)
1982-83	2,778.4 (Provisional)

Source: Directorate General of Technical Development, Government of India, New Delhi.

2.04. PRODUCTION OF PHOSPHORIC ACID AND ITS CONSUMPTION
IN THE FERTILISER INDUSTRY
(1977-78 to 1982-83)

(tonnes of P₂O₅)

Year	Production	Consumption
1977-78	217,869	221,525
1978-79	262,514	260,140
1979-80	280,578	281,080
1980-81	275,226	278,998
1981-82	270,973	268,792
1982-83	256,683	267,139

Note: 1. Phosphoric acid is expressed as 100 per cent P₂O₅.
 2. Data in respect of one factory is not available.

**2.05. IMPORT OF PHOSPHORIC ACID AND ITS CONSUMPTION IN THE
FERTILISER INDUSTRY**
(1977-78 to 1981-82)

(tonnes of P_2O_5)

Year	Import	Consumption
1977-78	232,045	246,064
1978-79	239,730	252,746
1979-80	271,857	270,249
1980-81	365,320	309,139
1981-82	441,126	441,218

Note: Phosphoric acid is expressed as 100 per cent P_2O_5 .

2.06. IMPORT OF AMMONIA FOR FERTILISER INDUSTRY
(1973-74 to 1982-83)

Year	Quantity imported (tonnes)
1973-74	5,190
1974-75	Nil
1975-76	27,110
1976-77	16,555
1977-78	43,470
1978-79	95,443
1979-80	117,054
1980-81	159,258
1981-82	240,838
1982-83	151,116

2.07. TYPICAL ANALYSIS OF ROCKPHOSPHATE (INDIGENOUS)

Component	Jhamarkotra (RSMM, Udaipur)	Maton (HZL, Udaipur)	Mussoorie (PPCL)	Jhabua (MPSMC)	Purulia (WBMDTC)
BPL Grade	73/77	69/76	44/52	68/82	77
Moisture	3.0	0.30-1.00	—	—	—
Analysis of material on moisture-free basis					
1. P ₂ O ₅	35.47-35.52	31.70-35.50	23.32-24.57	31.55-37.61	35.30
2. CO ₂	0.71-2.30	0.50-0.90	10.35-16.22	0.39-0.91	—
3. SiO ₂	8.02-10.05	7.50-16.50	9.62	8.88-17.71	0.91
4. CaO	47.83-48.84	43.00-49.00	41.00-41.23	40.68-48.54	42.33
5. SO ₃	Traces 0.06	0.20-0.45	0.42-1.22	0.08-0.20	—
6. Fe ₂ O ₃	0.80-1.30	1.70-2.50	4.0-6.14	0.57-1.42	17.34
7. Al ₂ O ₃	0.48-0.64	0.80-1.50	0.35-0.65	0.47-2.13	2.24
8. MgO	0.50-0.76	0.16-0.40	4.30-4.59	Nil	0.90
9. Na ₂ O	0.80	—	0.09-0.22	0.12-0.26	—
10. K ₂ O	Nil	—	0.10-0.36	0.11-0.19	—
11. F	3.29-4.06	1.60-3.80	1.20-1.38	1.93-3.28	3.04
12. Cl	Nil-0.0015	Traces-0.008	0.10	0.005-0.01	—
13. Org. matter & combined water	Nil-0.27	0.60-1.30	—	0.40-2.54	—
14. LOI	0.87	1.50-1.80	—	—	3.58

2.08. TYPICAL ANALYSIS OF ROCKPHOSPHATE (IMPORTED)

Component	Florida	Jordan	Jordan	Morocco	Morocco	Senegal
BPL grade	72/75	70/72	73/75	72/73	75/77	79/81
Moisture	0.67-1.51	1.00-2.60	0.80-2.50	0.64-1.03	0.77-1.17	3.00-11.90
Analysis of material on moisture-free basis						
1. P ₂ O ₅	33.13-34.70	31.94-33.00	33.90-35.70	32.00-34.00	33.70-34.76	36.11-36.72
2. CO ₂	2.93-6.05	3.80-4.58	2.18-4.53	2.00-4.81	3.60-4.40	1.63-2.66
3. SiO ₂	2.38-4.46	3.40-5.50	1.22-3.00	2.00-4.00	1.27-2.15	2.81-3.59
4. CaO	47.26-48.76	47.20-51.00	15.15-53.33	50.00-52.00	50.88-53.10	50.68-51.79
5. SO ₃	0.77-0.94	1.00-1.50	0.75-1.40	1.00-2.00	1.68-1.95	0.34
6. Fe ₂ O ₃	1.15-1.86	0.10-0.50	0.10-0.20	0.10-0.60	0.18-0.39	0.77-1.10
7. Al ₂ O ₃	0.81-1.41	0.20-0.87	0.20-0.51	0.20-0.51	0.32-1.25	0.85-1.18
8. MgO	0.67-1.30	0.30-0.60	0.22-0.70	0.12-0.80	0.15-1.26	0.10
9. Na ₂ O	0.05	0.19-1.30	0.25-0.70	0.50-1.00	0.17-0.75	0.08-0.20
10. K ₂ O	—	0.02-0.20	0.05-0.10	<0.10	0.06	—
11. F	2.79-4.08	1.13-4.00	2.16-4.30	3.00-5.00	3.01-4.31	2.77-3.70
12. Cl	0.0012-0.0057	0.02-0.20	0.007-0.07	<0.02	0.001-0.03	0.004
13. Org. matter & combined water	—	0.34-1.50	0.27-2.37	1.00-2.05	0.20-2.05	—
14. LOI	—	4.90-5.70	4.50-6.40	~8.09	5.00	2.54

**2.09(a). RAW MATERIALS AND INTERMEDIATES REQUIREMENTS IN THE
MANUFACTURE OF FERTILISER INTERMEDIATES**

(tonne per tonne)

Intermediate	Raw materials/intermediate	
1. Ammonia (NH ₃)	Natural gas	860 Nm ³ /te or
	Naphtha	0.9-1.02 or
	*Fuel oil	0.91 or
	*Coal	3.62
2. Sulphuric acid (H ₂ SO ₄)	Sulphur	0.345 or
	Pyrites	0.90
3. Phosphoric acid (H ₃ PO ₄) as P ₂ O ₅	Rock (73-75% BPL)	3.3 and
	H ₂ SO ₄	2.85
4. Nitric acid (HNO ₃)	NH ₃	0.292

*For feedstock only.

2.09(b). RAW MATERIALS AND INTERMEDIATE REQUIREMENTS IN THE MANUFACTURE OF FERTILISER MATERIALS

(tonne per tonne)

Raw material/intermediate fertiliser product	NH ₃	CO ₂	Phos- phate rock	H ₂ SO ₄	H ₃ PO ₄ (as P ₂ O ₅)	HNO ₃	KCl (as 60% K ₂ O)	Gypsum	Remarks
1. a) Ammonium sulphate	0.27	—	—	0.78	—	—	—	—	
b) AS from gypsum route	0.27	0.38	—	—	—	—	—	—	
2. CAN (25% N)	0.16	—	—	—	—	0.59	—	—	
3. Urea	0.60	0.77	—	—	—	—	—	—	
4. SSP	—	—	0.60	0.36	—	—	—	—	
5. TSP	—	—	0.46	—	0.36	—	—	—	
6. UAP (28-28-0)*	0.37	—	—	—	0.29	—	—	—	*Total ammonia including the quantity required for producing urea which is incorporated in the end-product.
7. DAP (18-46-0)	0.24	—	—	—	0.48	—	—	—	} †Small quantities of urea are also added to make these formulations.
8. NPK (14-35-14)†	0.18	—	—	—	0.38	—	0.25	—	
9. NPK (17-17-17)†	0.22	—	—	—	0.18	—	0.30	—	
10. NPK (19-19-19)	0.24	—	—	—	0.20	—	0.33	—	
11. NPK (12-32-16)	0.15	—	—	—	0.34	—	0.28	—	
12. Nitro phosphate (15-15-15)	0.10	—	—	—	0.16	0.36	0.26	—	

Conversion factors:

1 te N	=	1.215 te NH ₃
1 te NH ₃	=	0.823 te N
600 tpd NH ₃	=	152,000 tpa N
900 tpd NH ₃	=	228,000 tpa N
1350 tpd NH ₃	=	3,45,000 tpa N
% BPL	=	2.18 × % P ₂ O ₅
% P ₂ O ₅	=	0.46 × % BPL

3.00. PRODUCTION OF FERTILISERS

3.01. CHRONOLOGY OF MANUFACTURE OF FERTILISER MATERIALS

Year of first manufacture	Fertiliser material manufactured	Factory which first manufactured	Total No. of units licensed manufacture (as on 1-10-83)
(i) 1906	Single superphosphate	E.I.D. Parry (India) Ltd., Ranipet	46
(ii) 1906	Fertiliser mixtures		594
(iii)	Ammonium sulphate		12
1933	(a) As a by-product of steel industry	(a) Tata Iron & Steel Co. Ltd., Jamshedpur	6
1941	(b) Using sulphuric acid	(b) Mysore Chemicals & Fertilisers Ltd. Belagulia*	2
1947	(c) Using gypsum as a raw material	(c) FACT, Alwaye	5
(iv) 1959	Ammonium sulphate nitrate	FCI Ltd., Sindri	1**
	Urea	FCI Ltd., Sindri	25
	Ammonium chloride (Agriculture)	New Central Jute Mills Co. Ltd., Varanasi (Now Hari Fertilizers)	4
(v) 1960	Ammonium phosphate	FACT, Alwaye	2
(vi) 1961	Calcium ammonium nitrate	NFL, Nangal	2
(vii) 1965	Nitrophosphate	RCFL, Trombay	2
(viii) 1967	Diammonium phosphate	Gujarat State Fertilizers Co. Ltd., Baroda	5
(ix) 1968	Triple superphosphate	Dharamsi Morarji Chemical Co. Ltd., Ambernath	3
	Urea ammonium phosphate	Coromandel Fertilisers Ltd., Vizag	4
	NPK complex fertilisers	RCFL, Trombay	4
(x) 1973	Pelofos	Orissa Fertilisers and Chemicals, Rourkela	1**

*Closed in 1955.

**Now not manufactured.

3.02. ALL-INDIA PRODUCTION OF N AND P₂O₅
(1951-52 to 1982-83)

('000 tonnes)

Year		N			P ₂ O ₅			Total material (all fertilisers)
		Through straight N	Through NP/NPKs	Total*	Through straight P ₂ O ₅	Through NP/NPKs	Total	
1951-52	I Plan	28.9	—	28.9	9.8	—	9.8	201.6
1952-53		53.1	—	53.1	7.4	—	7.4	304.4
1953-54		52.9	—	52.9	13.8	—	13.8	343.2
1954-55		68.5	—	68.5	14.3	—	14.3	422.1
1955-56		76.9	—	76.9	12.4	—	12.4	450.4
1956-57	II Plan	78.8	—	78.8	17.6	—	17.6	492.4
1957-58		81.1	—	81.1	25.8	—	25.8	555.1
1958-59		80.8	—	80.8	31.0	—	31.0	585.8
1959-60		83.7	—	83.7	51.4	—	51.4	718.8
1960-61		110.9	1.1	112.0	52.4	1.3	53.7	846.5
1961-62	III Plan	152.2	2.1	154.3	62.8	2.6	65.4	1,113.5
1962-63		192.7	1.5	194.2	86.5	1.8	88.3	1,637.8
1963-64		214.6	4.5	219.1	103.1	4.7	107.8	1,676.6
1964-65		235.3	7.9	243.2	121.2	9.8	131.0	1,912.7
1965-66		226.9	11.0	237.9	106.2	12.6	118.8	1,781.3
1966-67		265.3	23.7	309.0	121.0	24.7	145.7	2,114.4
1967-68		374.0	28.6	402.6	157.7	49.4	207.1	2,595.6
1968-69		479.9	83.1	563.0	110.7	102.2	213.2	3,200.2
1969-70	IV Plan	625.3	105.3	730.6	103.2	120.5	223.7	3,063.5
1970-71		725.6	106.9	832.5	102.2	125.9	228.1	3,226.2
1971-72		807.4	141.8	949.2	127.6	162.7	290.3	3,741.2
1972-73		886.7	167.8	1,054.5	127.3	203.0	330.3	4,108.4
1973-74		889.4	160.5	1,049.9	126.9	197.6	324.5	4,077.4
1974-75	V Plan	1,030.1	156.5	1,186.6	134.9	196.3	331.2	4,451.1
1975-76		1,300.0	208.0	1,508.0	75.0	244.7	319.7	5,046.6
1976-77		1,608.8	253.6	1,862.4	127.0	351.3	478.3	6,328.9
1977-78		1,659.3	340.5	1,999.8	161.3	508.6	669.9	7,644.5
1978-79		1,769.8	403.2	2,173.0	186.8	591.2	778.0	7,840.3
1979-80		1,834.5	389.8	2,224.3	178.0	585.1	763.1	7,798.2
1980-81		1,758.7	405.2	2,163.9	196.7	644.8	841.5	7,854.5
1981-82		2,773.8	469.5	3,143.3	215.4	734.6	950.0	10,374.7
1982-83		2,938.8	490.9	3,429.7	222.1	761.6	983.7	11,024.3

* Excludes N meant for non-agricultural purposes.

Note: Entire requirement of K₂O is met through imports.

3.03. ALL-INDIA PRODUCTION OF NITROGENOUS FERTILISERS 1951-52 to 1982-83 (April-March)

('000 tonnes)

Year	Ammonium sulphate (20.6% N)	Ammonium sulphate nitrate (26% N)	Urea (46% N)	Calcium ammonium nitrate (25% N)	Ammonium chloride ^a (25% N)	Total	
						Nutrient N (straight)	Material
1951-52	140.3	—	—	—	—	28.9	140.3
1952-53	257.9	—	—	—	—	53.1	257.9
1953-54	256.8	—	—	—	—	52.9	256.8
1954-55	332.4	—	—	—	—	68.5	332.4
1955-56	373.1	—	—	—	—	76.9	373.1
1956-57	382.5	—	—	—	—	78.8	382.5
1957-58	393.9	—	—	—	—	81.1	393.9
1958-59	392.1	—	—	—	—	80.8	392.1
1959-60	367.0	21.3	3.8	—	3.4	83.7	395.5
1960-61	399.0	40.0	11.8	51.3 ^b	10.3	110.9	512.4
1961-62	402.3	53.2	13.5	228.1 ^b	11.2	152.2	708.3
1962-63	422.2	62.2	18.7	381.7 ^b	10.6	192.7	1,088.1
1963-64	426.0	47.2	19.1	498.1 ^b	14.3	214.6	1,004.7
1964-65	474.4	47.8	17.9	555.6 ^b	11.9	235.3	1,107.6
1965-66	449.4	52.3	27.5	503.1 ^b	16.4	226.9	1,048.7
1966-67	438.4	50.0	141.0	540.9 ^b	14.5	285.3	1,194.8
1967-68	498.6	60.9	290.9	337.8 ^b , 194.3	25.4	374.0	1,397.9
1968-69	575.3	49.2	473.2	180.0 ^b , 358.9	17.2	479.9	2,133.7
1969-70	581.8	42.8	828.6	3 0 ^b , 437.3	12.9	625.3	1,906.4
1970-71	612.3	41.8	1,096.2	317.2	22.1	725.6	2,089.6
1971-72	599.1	30.4	1,236.1	411.5	18.4	807.4	2,295.5
1972-73	554.5	57.5	1,417.7	419.8	13.9	886.7	2,462.9
1973-74	574.6	48.7	1,406.8	431.3	13.7	889.4	2,475.1
1974-75	589.4	26.7	1,734.3	406.5	10.2	1,030.1	2,767.1
1975-76	611.1	21.3	2,196.7	617.5	15.5	1,300.0	3,462.1
1976-77	586.5	2.0	2,875.3	638.2	17.6	1,608.8	4,119.6
1977-78	557.3	—	3,071.8	509.3	16.7	1,659.3	4,155.1
1978-79	508.6	—	3,306.0	558.8	17.9	1,769.8	4,391.3
1979-80	479.3	—	3,513.5	465.3	12.7	1,834.5	4,470.8
1980-81	436.2	—	3,384.2	347.4	18.9	1,758.7	4,186.7
1981-82	443.2	—	5,384.4	403.8	18.9	2,673.8	6,250.3
1982-83	477.7	—	6,019.9	290.0	37.2	2,938.8	6,824.8

^a For agricultural purposes only.^b This figure is for 20.5% N grade.

3.04. ALL-INDIA PRODUCTION OF PHOSPHATE
1951-52 to 1982-83 (April-March)

Year	('000 tonnes)						
	Single superphosphate and pelofos material of grade			Triple superphosphate material of grade		Total	
	16% W.S. P ₂ O ₅	Super- phosphate other grades	Nutrient W.S. P ₂ O ₅	46% W.S. P ₂ O ₅	Nutrient W.S. P ₂ O ₅	Nutrient P ₂ O ₅ (straight)	Material
1951-52*	61.3	—	9.8	—	—	9.8	61.3
1952-53*	46.5	—	7.4	—	—	7.4	48.5
1953-54*	86.4	—	13.8	—	—	13.8	86.4
1954-55*	89.7	—	14.3	—	—	14.3	89.7
1955-56*	77.3	—	12.4	—	—	12.4	77.3
1956-57*	109.9	—	17.6	—	—	17.6	109.9
1957-58*	161.2	—	25.8	—	—	25.8	161.2
1958-59*	193.7	—	31.0	—	—	31.0	193.7
1959-60*	323.3	—	51.4	—	—	51.4	323.3
1960-61*	327.4	—	52.4	—	—	52.4	327.4
1961-62*	392.0	—	62.7	—	—	62.7	392.0
1962-63	540.5	—	86.5	—	—	86.5	540.5
1963-64	637.4	6.1	103.1	—	—	103.1	643.5
1964-65	745.3	10.6	121.2	—	—	121.2	755.9
1965-66	664.1	—	106.2	—	—	106.2	664.1
1966-67	747.3	24.2	121.0	—	—	121.0	771.5
1967-68	949.1	31.3	157.5	0.6	0.2	157.7	981.0

(Continued)

**3.04. ALL-INDIA PRODUCTION OF PHOSPHATE
1951-52 to 1982-83 (April-March) (Concluded)**

('000 tonnes)

Year	Single superphosphate and pelofos material of grade			Triple superphosphate material of grade		Total	
	16% W.S. P ₂ O ₅	Super-phosphate other grades	Nutrient W.S. P ₂ O ₅	46% W.S. P ₂ O ₅	Nutrient W.S. P ₂ O ₅	Nutrient P ₂ O ₅ (straight)	Material
1968-69	664.5	14.7	108.9	4.1	1.8	110.7	683.3
1969-70	609.4	12.4	99.8	7.5	3.4	103.2	629.3
1970-71	613.0	7.9	99.5	5.8	2.6	102.1	626.7
1971-72	773.0	2.6	124.2	7.7	3.5	127.6	763.3
1972-73	781.9	—	125.1	4.9	2.2	127.3	786.8
1973-74	773.3 (10.0)	0.4	125.5	3.0	1.4	126.9	786.7
1974-75	822.8 (12.3)	—	133.8	2.5	1.2	135.0	837.6
1975-76	461.3 (1.6)	1.6	74.0	2.1	1.0	75.0	466.6
1976-77	779.3 (1.8)	7.0	126.2	1.8	0.8	127.0	789.9
1977-78	987.6	—	158.0	7.2	3.3	161.3	994.8
1978-79	1,081.3	34.5 ⁺	177.8	19.6	9.0	186.8	1,135.4
1979-80	1,033.1	16.8 ⁺	167.7	22.4	10.3	178.0	1,072.3
1980-81	1,085.0	22.1 ⁺	176.7	44.5	20.0	196.7	1,150.6
1981-82	1,202.6	6.6 ⁺	193.3	48.0	22.1	215.4	1,257.2
1982-83	1,320.6	—	211.3	23.4	10.8	222.1	1,344.0

*July-June basis.

()=Pelofos.

+ = 14% W.S. P₂O₅.

3.05. ALL-INDIA PRODUCTION OF NP/NPK FERTILISER
1960-61 to 1982-83 (April-March)

('000 tonnes)

Year	N						NPK _B							Total		Material
	26-28-0	24-24-0	20-20-0	20-20-0**	18-46-0	16-20-0	19-19-19	17-17-17	15-15-15**	14-35-14	14-28-14	12-32-16	10-26-26	Nutrients from NPs & NPKs		
														N	P ₂ O ₅	
1960-61*	—	—	—	—	—	6.7	—	—	—	—	—	—	—	1.1	1.3	6.7
1961-62*	—	—	—	—	—	13.2	—	—	—	—	—	—	—	2.1	2.6	13.2
1962-63	—	—	—	—	—	9.2	—	—	—	—	—	—	—	1.5	1.8	9.2
1963-64	—	—	—	—	—	28.4	—	—	—	—	—	—	—	4.5	4.7	28.4
1964-65	—	—	—	—	—	49.2	—	—	—	—	—	—	—	7.9	9.8	49.2
1965-66	—	—	—	16.4 ^a	—	52.1	—	—	—	—	—	—	—	11.0	12.6	68.5
1966-67	—	—	—	70.6 ^a	—	77.5	—	—	—	—	—	—	—	23.7	24.7	148.1
1967-68	—	—	—	70.5	27.7 ^a	92.4	—	—	—	—	—	—	—	28.6	49.4	216.7
				22.4 ^a												
				3.7 ^b												
1968-69	132.2	—	3.4	94.1	55.2 ^a	98.3	—	—	—	—	—	—	—	83.1	102.5	383.2
1969-70	207.4	—	27.2	22.2	44.7	87.1	—	—	—	—	—	50.9	—	105.3	120.5	527.2
				87.7 ^b												
1970-71	159.7	—	60.2	4.1	55.5	88.1	—	—	59.4	—	—	—	6.6	106.9	125.9	509.9
				22.2 ^c					56.1 ^b							

1971-72	195.1	—	35.8	25.0 ^a	49.7	102.8	—	54.9	139.7	3.1	12.7	—	—	141.8	162.7	662.4
									44.9 ^d		4.7 ^d					
1972-73	174.6	—	20.1	—	69.1	94.4	—	242.1	240.1	18.1	—	—	—	167.8	203.0	658.7
1973-74	171.8	—	19.6	—	60.2	104.8	—	208.9	213.4	36.9	—	—	—	180.5	197.6	815.5
1974-75	136.9	—	23.8	—	67.5	119.7	—	226.4	219.5	28.2	—	16.0	14.4	156.5	196.3	846.4
1975-76	181.1	95.4	30.2	12.7	52.9	113.1	15.3	282.1	180.1	12.2	—	72.3	3.1	208.0	244.7	1,117.9
			16.3 ^d	22.3 ^d	20.1 ^f								8.7 ⁱ			
1976-77	244.1	5.0	33.0	50.9	87.0	101.7	61.4	261.9	182.4	44.9	5.0	247.5	54.9	253.6	351.3	1,419.4
			9.7 ^d	29.9 ^d	0.1 ^f											
1977-78	807.6	38.3	40.1 ^h	15.8	195.1	124.9	87.7	414.8	213.6	19.8	20.0	392.2	108.9	340.5	308.6	2,494.6
				15.8												
1978-79	338.2	28.0	42.7 ^b	128.4 [†]	229.0	119.9	66.5	472.2	265.6	18.0	42.1	464.4	78.6	403.2	591.2	2,313.6
1979-80	261.5	25.7	40.6	199.8	263.4	125.2	68.8	412.5	255.5	55.2	36.8	453.3	56.8	389.8	585.1	2,255.1
1980-81	222.3	35.1	35.8	247.7 ⁺	256.2	109.8	25.2	577.1	263.1	61.9	60.8	498.8	129.4	405.2	644.8	2,517.2
1981-82	297.3	35.4	43.8	255.2 ⁺	277.9	105.0	115.7	602.8	283.1	33.7	44.7	661.5	111.1	469.5	734.6	2,867.2
1982-83	244.2	13.1	126.3	230.7 ⁺	461.0	98.9	140.0	583.3	246.1	44.1	20.3	554.7	92.8	490.9	761.6	2,855.5

*July-June basis

d Grade 18-9-0

i Grade 22-22-11

**Nitrophosphate

e Grade 20-48-0

† Ammonium nitrophosphate

a Grade 19-13-0

f Grade 19.5-19.5-0

+ 20.7-20.7-0 (nitro phos)

b Other grades

g APSN 20-20-0

c Grade 18-18-9

h Grade 20-20-0

20.6. STATEWISE PRODUCTION OF FERTILISERS—

Zone/State	Ammonium sulphate (20.6% N)	Urea 46% N	Calcium ammonium nitrate (25% N)	Ammonium chloride (25% N)	16-20-0 ¹	24-24-0 ¹	28-28-0 ¹
					20-20-0 ²	14-28-14 ²	14-35-14 ²
Central	26.9	1405.5	—	4.7	—	—	—
Madhya Pradesh	26.9	—	—	—	—	—	—
Rajasthan	—	308.6	—	—	—	—	—
Uttar Pradesh	—	1096.9	—	4.7	—	—	—
Delhi	—	—	—	—	—	—	—
East	146.0	747.8	43.9	—	—	—	—
Assam	39.3	198.8	—	—	—	—	—
Bihar	82.9	419.1	—	—	—	—	—
Orissa	8.5	44.7	43.9	—	—	—	—
West Bengal	15.3	85.2	—	—	—	—	—
North	—	946.4	246.1	—	—	—	—
Haryana	—	353.4	—	—	—	—	—
Punjab	—	593.0	246.1	—	—	—	—
South	69.7	1315.3	—	32.5	98.9¹ 126.3²	13.1¹ 20.3²	226.5¹ 37.6²
Andhra Pradesh	—	162.7	—	—	—	—	203.0¹ 37.6²
Karnataka	—	211.1	—	—	—	—	—
Kerala	69.7	208.3	—	8.2	52.9¹ 126.3²	—	23.5¹
Tamil Nadu	—	733.3	—	24.3	46.0¹	13.1¹ 20.3²	—
West	235.1	1604.5	—	—	—	—	17.7¹ 6.5²
Gujarat	235.1	1025.9	—	—	—	—	—
Maharashtra	—	269.9	—	—	—	—	—
Goa	—	307.7	—	—	—	—	17.7¹ -6.5²
All India	477.7	6019.9	290.0	37.2	98.9¹ 126.3²	13.1¹ 20.3²	244.2¹ 44.1²

* Excludes N used for non-agricultural purposes.

MATERIALWISE AND NUTRIENTWISE 1982-83

('000 tonnes)

19-19-19	20.7- 20.7-0 ¹ 15-15-15 ²	10-26-26	12-32-16 ¹ 17-17-17 ²	18-46-0	Single super- phosphate (16% P ₂ O ₅)	TSP 46% P ₂ O ₅	N	P ₂ O ₅
—	—	—	—	—	392.8	1.0	653.3	63.3
—	—	—	—	—	135.3	—	5.5	21.6
—	—	—	—	—	88.4	1.0	142.0	14.6
—	—	—	—	—	60.0	—	505.8	9.6
—	—	—	—	—	109.1	—	—	17.5
—	—	—	—	—	136.4	22.4	385.2	32.2
—	—	—	—	—	11.1	—	99.5	1.8
—	—	—	—	—	4.1	22.4	209.9	10.9
—	—	—	—	—	—	—	33.4	—
—	—	—	—	—	121.2	—	42.4	19.4
—	—	—	—	—	97.6	—	496.9	15.7
—	—	—	—	—	44.7	—	162.6	7.2
—	—	—	—	—	52.9	—	334.3	8.5
—	—	—	583.3 ²	206.3	314.7	—	868.9	374.6
—	—	—	—	—	105.0	—	136.9	86.8
—	—	—	—	—	42.9	—	97.1	6.9
—	—	—	18.8 ²	49.3	14.4	—	157.2	70.5
—	—	—	564.5 ²	157.0	152.4	—	477.7	210.4
140.0	230.7 ¹ 246.1 ²	92.8	554.7 ¹	254.7	379.1	—	1025.4	497.9
—	—	92.8	554.7 ¹	254.7	79.3	—	642.5	331.4
—	230.7 ¹	—	—	—	299.8	—	208.9	132.7
—	246.1 ¹	—	—	—	—	—	—	—
140.0	—	—	—	—	—	—	174.0	33.8
140.0	230.7 ¹ 246.1 ²	92.8	554.7 ¹ 583.3 ²	461.0	1326.6	23.4	3429.7*	983.7

**3.07. STATEWISE FERTILISER MIXING UNITS
GRANULATED AND PHYSICAL MIXTURES**

Zone/State	No. of mixing units						Grand Total
	Granulated@			Physical			
	Coop.*	Others	Total	Coop.*	Others	Total	
Central	1	15	16	—	8	8	24
Madhya Pradesh	—	2	2	—	6	6	8
Rajasthan	—	3	3	—	—	—	3
Uttar Pradesh	1	9	10	—	2	2	12
Delhi	—	1	1	—	—	—	1
East	2	9	11	2	57	59	70
Assam	—	1	1	1	19	20	21
Bihar	1	6	7	—	5	5	12
Orissa	1	—	1	—	—	—	1
West Bengal	—	2	9	1	33	34	36
North	5	6	11	—	—	—	11
Haryana	2	2	4	—	—	—	4
Himachal Pradesh	—	1	1	—	—	—	1
Punjab	3	3	6	—	—	—	6
South	4	—	4	27	180	207	211
Andhra Pradesh	—	—	—	—	18	18	18
Karnataka	2	—	2	8	27	35	37
Kerala	—	—	—	4	30	34	34
Tamil Nadu	2	—	2	14	93	107	109
Pondicherry	—	—	—	1	12	13	13
West	10	4	14	109	155	264	278
Gujarat	—	1	1	25	70	95	96
Maharashtra	10	2	12	82	71	153	165
Goa	—	1	1	2	14	16	17
Total	22	34	56	138	400	538	594

* Constitutes fertiliser mixing units with public and private sectors.

@For capacity see Table 1.10.

3 08 PRODUCTION AND DISTRIBUTION OF GRANULATED FERTILISER MIXTURES
1980-81 to 1982-83

(tonnes)

Grade	Production			Despatches		
	1980-81	1981-82	1982-83	1980-81	1981-82	1982-83
20-20-10	1,651	3,765	1,045	1,730	3,910	630
20-20-0	5,774	3,760	12,645	5,798	3,270	14,211
20-0-20	—	—	40	—	—	40
20-0-10	10	171	15	10	170	8
20-0-8	902	553	—	796	695	—
18-18-18	—	45	127	—	24	103
18-18-10	—	—	95,436	—	—	89,575
18-18-9	1,500	346	—	1,508	445	—
18-18-6	—	—	14,418	—	—	14,454
18-9-0	—	—	866	—	—	561
16-12-12	—	—	4	—	—	4
17-17-17	9,939	17,485	7,700	7,655	17,945	8,980
15-15-5	21	1,186	—	—	1,086	—
15-15-15	21,736	25,467	40,577	21,793	23,912	46,240
15-7.5-15	—	—	—	—	—	94
15-10-5	9	—	—	9	—	—
15-15-7.5	—	—	10,358	—	—	6,160
15-6-21	920	995	—	1,000	864	—
15-5-5	112,963	99,616	42,101	115,167	58,756	73,434
15-0-5	—	18	—	—	113	—
14-14-7	—	—	37	—	—	24
12-32-16	11,943	14,447	12,856	12,562	12,866	11,855
12-32-6	11,628	9,806	4,975	12,217	8,738	5,493
12-25-6	—	—	1,164	—	—	528
12-6-6	3,727	—	—	3,061	599	—
10-30-10	13,845	3,022	697	11,257	6,838	249
10-26-26	—	140	—	—	—	1,401
10-10-4.5	—	139	—	—	—	—
10-5-15	130	519	—	117	439	—
10-5-10	2,896	801	—	2,582	1,106	—
10-5-5	—	164	118	13	164	118
9-20-20	—	663	447	—	643	467
9-9-9	—	—	24	—	—	—
8-32-8	4,320	4,735	2,742	6,511	3,341	9,349
8-8-8	16,157	12,700	8,859	15,430	12,264	364
Total	220,071	200,543	247,251	219,216	198,108	284,343

Note: Data for 1980-81, 1981-82 and 1982-83 are based on returns received for 30, 30 and 25 granulated mixture manufacturers respectively out of a total of 56.

4.00. IMPORT OF FERTILISERS

4.01. IMPORT OF NITROGENOUS FERTILISERS
1980-81, 1981-82 and 1982-83

Material and origin of import	('000 tonnes)		
	April-March		
	1980-81	1981-82	1982-83
Ammonium sulphate (21% N)			
USSR	—	6.0	—
West Germany	20.0	—	—
Total	20.0	6.0	—
	(15.2)	(4.6)	(—)
Urea (46% N)			
Austria	0.9	—	—
Belgium	44.2	30.0	—
Bulgaria	45.6	88.0	—
Finland	14.2	19.0	—
France	56.3	49.0	—
Ger. Dem. Rep.	66.0	56.0	50.0
Ger. Fed. Rep.	138.5	99.0	30.0
Holland	494.5	390.0	174.0
Hong Kong	—	41.0	—
Hungary	—	10.0	—
Indonesia	12.5	—	—
Iraq	5.5	—	—
Italy	341.8	258.0	61.0
Ireland	13.2	48.0	—
Japan	—	—	—
Kuwait	78.8	76.0	17.0
Norway	89.1	72.0	20.0
Poland	59.2	—	48.0
Qatar	382.5	295.0	—
Romania	310.4	95.0	98.0
Saudi Arabia	38.5	40.0	33.0
USA	450.9	196.0	—
USSR	204.7	116.0	300.0
Yugoslavia	—	21.4	37.0
Total	2,848.1	1,999.0	868.0
	(5,399.8)	(4,167.5)	(N.A.)
Calcium Ammonium Nitrate (26% N)			
Romania	73.5	—	—
Total	73.5	—	—
	(91.6)	(—)	(—)

4.02. IMPORT OF COMPLEX FERTILISERS
1980-81, 1981-82 and 1982-83

('000 tonnes)

Material and origin of import	April-March		
	1980-81	1981-82	1982-83
DAP (18-46-0)			
Jordan	—	—	62.0
USA	982.8	746.0	74.0
Total	982.8 (2,147.0)	746.0 (1,845.7)	136.0 (N.A.)
NPK (17-17-17)*			
Denmark	— (—)	— (—)	5.0 (N.A.)

*Low chloride.

4.03. IMPORT OF POTASSIC FERTILISERS
1980-81, 1981-82 and 1982-83

('000 tonnes)

Material and origin of import	April-March		
	1980-81	1981-82	1982-83
Muriate of potash (60% K₂O)			
Canada	589.3	396.0	352.0
Ger. Dem. Rep.	388.7	342.0	333.0
Ger. Fed. Rep.	261.0	246.0	196.0
USA	—	45.0	182.0
USSR	70.8	34.0	—
Total	1,309.8 (1,580.7)	1,063.0 (1,325.0)	1,063.0 (N.A.)
Sulphate of Potash (50 K₂O)			
Ger. Fed. Rep.	21.3 (37.8)	12.0 (23.5)	10.0 (N.A.)

Figures in brackets indicate value in Rs. million.

Source: Ministry of Agriculture, New Delhi.

4.04. IMPORT OF FERTILISER MATERIALS - 1967-68 to 1982-83
(April-March)

Q = Quantity in '000 tonnes
V = Value in Rs. million

Year	Nitrogenous					NP/NPKs					Potassic		Total			Value	
	Ammonium sulphate	Ammonium sulphate nitrate	Urea	Calcium ammonium nitrate	Ammonium chloride	Ammonium nitro-phosphate 20-20-0 24-24-0 23-23-0	Ammonium phosphate 20-20-0	Diammonium phosphate 18-46-0	NPKs (various grades)	Mono-ammonium phosphate 11-55-0	Phosphatic triple super phosphate	Muriate of potash	Sulphate of potash	N	P ₂ O ₅		K ₂ O
1967-68 Q	1,053.2	16.1	918.4	125.0	50.7	—	256.4	614.7	90.0	—	—	439.0	5.0	866.7	348.7	270.2	1,933.1
V	468.9	7.0	598.8	49.7	16.9	—	174.5	382.4	58.0	—	—	171.6	2.5	—	—	—	1,167.7
1968-69 Q	1,255.8	10.5	1,028.6	90.0	46.4	27.0	50.8	216.2	113.0	—	—	326.0	4.0	844.1	137.6	213.2	1,629.8
V	440.2	4.5	703.1	37.9	16.0	17.0	33.4	168.3	78.1	—	—	126.2	1.8	—	—	—	1,167.7
1969-70 Q	790.1	—	838.1	82.9	—	6.9	—	125.1	184.0	—	—	152.0	4.0	667.2	94.1	120.4	1,167.7
V	282.1	—	620.7	35.5	—	3.3	—	65.2	124.7	—	—	52.4	2.1	—	—	—	1,167.7
1970-71 Q	83.3	24.6	779.8	279.8	—	17.4	—	12.0	121.0	—	—	157.0	24.0	477.3	32.4	119.8	767.9
V	27.5	10.3	458.9	108.8	—	9.7	—	7.1	65.9	—	—	60.7	18.9	—	—	—	767.9
1971-72 Q	186.6	32.0	549.6	317.2	—	—	—	352.8	288.0	—	—	382.0	—	481.3	247.8	268.2	899.7
V	31.2	11.4	249.4	113.7	—	—	—	200.0	183.6	—	—	110.4	—	—	—	—	899.7
1972-73 Q	128.2	—	1,008.4	317.7	—	56.4	—	347.8	119.0	12.0	—	504.0	6.1	665.4	204.7	326.3	1,212.6
V	27.5	—	507.9	121.9	—	31.8	—	273.8	76.6	9.6	—	160.2	3.2	—	—	—	1,212.6
1973-74 Q	75.9	2.0	1,033.9	133.4	—	239.8	—	340.2	55.0	—	—	607.0	5.0	656.8	212.7	370.4	1,767.5
V	39.0	1.8	737.1	105.6	—	202.0	—	359.8	44.2	—	—	275.0	3.0	—	—	—	1,767.5

1974-75	Q	285.1	15.6	1,244.1	359.6	30.0	182.7	—	435.9	285.0	—	5.0	639.9	10.0	883.8	285.9	437.3
	V	261.5	17.2	2,711.7	559.6	48.8	323.9	—	982.1	593.4	—	14.8	467.4	11.6			5,991.3
1975-76	Q	96.0	10.0	1,545.0	176.0	30.0	—	—	536.0	618.0	—	—	390.0	—	996.0	361.0	278.0
	V	143.7	17.6	3,668.8	274.0	47.6	—	—	1,477.6	1,271.5	—	—	327.4	—			7,227.7
1976-77	Q	—	—	1,596.9	4.5	—	34.6	—	30.1	13.4	—	—	441.0	10.5	750.1	22.8	277.8
	V	—	—	1,772.7	4.9	—	40.2	—	43.4	22.8	—	—	305.8	12.3			2,202.2
1977-78	Q	3.8	—	1,498.9	14.3	—	—	—	356.3	—	—	—	926.3	14.6	758.1	163.9	598.9
	V	2.8	—	1,845.0	12.4	—	—	—	532.7	—	—	—	654.8	16.7			3,064.4
1978-79	Q	342.8	—	2,218.3	175.6	—	—	—	529.3	—	—	—	853.4	10.7	1,233.1	243.5	517.4
	V	261.4	—	2,849.3	155.7	—	—	—	717.0	—	—	—	603.4	13.4			4,600.2
1979-80	Q	202.7	—	2,399.7	216.0	—	—	—	515.4	—	—	—	781.6	8.4	1,295.3	237.1	473.2
	V	148.5	—	3,592.0	228.9	—	—	—	891.1	—	—	—	672.4	12.1			5,545.0
1980-81	Q	20.0	—	2,848.0	73.5	—	—	—	982.8	—	—	—	1,309.8	21.8	1,510.4	452.1	796.5
	V	15.2	—	5,399.8	91.6	—	—	—	2,147.3	—	—	—	1,560.7	37.8			9,252.2
1981-82	Q	6.0	—	1,999.0	—	—	—	—	746.0	—	—	—	1,063.0	12.0	1,055.0	343.0	644.0
	V	4.6	—	4,167.5	—	—	—	—	1,845.7	—	—	—	1,325.0	23.5			7,166.3
1982-83	Q	—	—	868.0	—	—	—	—	136.0	5.0 ⁺	—	—	1,063.0	10.0	425.0	63.0	644.0
	V	—	—	—	—	—	—	—	—	—	—	—	—	—			2,735.3

⁺Grade 17-17-17

source: Ministry of Agriculture, New Delhi.

**4.05. IMPORT OF FERTILISERS IN BULK AND BAGGED FORM IN INDIA
1970-71 to 1980-81**

Year	Bulk (in million metric tons)	Bagged (in million metric tons)	Total (in million metric tons)	Percentage of bulk to total imports
1970-71	0.152	1.360	1.512	10.05
1971-72	1.030	0.993	2.023	50.91
1972-73	0.976	1.587	2.563	38.08
1973-74	1.059	1.503	2.562	41.33
1974-75	1.596	1.873	3.469	46.00
1975-76	1.759	1.498	3.257	54.01
1976-77	1.350	0.690	2.040	66.18
1977-78	1.785	1.089	2.874	62.11
1978-79	3.261	0.858	4.119	79.17
1979-80	3.242	0.882	4.124	78.61
1980-81	4.746	0.548	5.294	89.65

Source: November 1982, Agro Chemicals, ESCAP.

5.00. DISTRIBUTION OF FERTILISERS

5.01. DISTRIBUTION OF INDIGENOUS NITROGENOUS FERTILISERS—
1982-83—QUARTERWISE

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	April/ June/ 1983
					April '82- March '83	
(A) Urea (46% N)						
Central	337.2	452.6	578.4	377.4	1745.6	365.7
Madhya Pradesh	58.0	45.8	68.9	36.8	209.5	66.9
Rajasthan	41.7	49.0	78.7	51.8	221.2	40.9
Uttar Pradesh	236.7	355.7	428.7	286.7	1307.8	255.8
Delhi	0.8	2.1	2.1	2.1	7.1	2.1
East	122.7	171.1	179.6	222.3	695.7	120.3
Arunachal Pradesh	Neg.	Neg.	Neg.	—	0.02	—
Assam	3.1	3.2	4.2	3.5	14.0	10.0
Bihar	76.4	101.1	85.9	77.6	341.1	50.5
Manipur	4.5	—	—	1.8	6.3	—
Meghalaya	—	—	0.3	—	0.3	—
Mizoram	0.03	—	—	—	00.3	0.1
Nagaland	0.19	0.01	—	—	0.2	—
Orissa	5.5	8.1	11.2	17.2	42.0	4.6
Sikkim	—	—	—	—	—	—
Tripura	0.9	—	1.2	1.4	3.5	1.2
West Bengal	26.6	56.1	74.1	108.3	265.1	36.6
Tea (N.E.)	5.5	2.6	2.7	12.4	23.2	17.3
North	283.2	315.3	325.8	402.3	1326.6	266.3
Haryana	88.6	89.3	99.7	145.5	423.1	74.1
Himachal Pradesh	1.5	1.2	0.8	1.4	4.9	0.8
Jammu & Kashmir	7.0	2.4	7.8	3.6	20.8	3.5
Punjab	186.0	222.4	217.5	251.7	877.6	186.3
Chandigarh	0.02	0.03	0.06	0.09	0.14	1.6
South	313.9	417.3	451.4	317.4	1500.0	115.4
Andhra Pradesh	92.3	125.9	165.2	136.4	519.8	47.5
Karnataka	55.6	111.7	47.7	42.8	257.8	37.0
Kerala	12.7	14.5	16.9	9.6	53.7	4.1
Tamil Nadu	150.4	163.7	219.2	126.8	660.1	26.5
Pondicherry	1.6	1.0	1.0	0.6	4.2	0.3
Coffee Board	1.3	0.5	1.4	1.2	4.4	—
West	203.1	220.1	197.5	121.2	741.9	241.1
Gujarat	81.2	98.5	123.7	49.9	353.3	82.7
Maharashtra	121.1	120.8	73.4	70.7	386.0	157.9
Goa	0.8	0.8	0.4	0.6	2.6	0.5
Industrial users	8.6	7.8	2.8	1.1	20.3	3.8
MFL ⁺	1.3	1.3	1.0	—	3.6	—
IFFCO ⁺	1.4	0.5	0.6	—	2.5	—
Total	1271.5	1586.0	1737.2	1441.7	6036.4	1112.9

* Under product exchange scheme

(Continued)

**5.01. DISTRIBUTION OF INDIGENOUS NITROGENOUS FERTILISERS
1982-83—QUARTERWISE (Continued)**

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	April/ June 1983
					April '82- March '83	
(B) Ammonium Sulphate (20.6% N)						
Central	7.2	11.5	1.0	3.5	23.2	4.2
Madhya Pradesh	0.2	8.4	—	—	5.0	1.3
Rajasthan	0.04	—	0.04	—	0.08	0.3
Uttar Pradesh	7.0	6.7	0.9	3.5	18.1	2.6
East	24.8	25.5	20.4	30.0	100.7	13.1
Assam	0.5	0.6	0.5	2.4	4.0	2.1
Bihar	12.5	7.6	11.0	5.6	36.7	4.4
Meghalaya	1.6	0.6	1.8	0.5	4.5	1.0
Orissa	3.3	3.1	1.8	6.0	14.2	2.1
West Bengal	4.6	11.9	4.4	13.7	34.6	1.7
Tea (NE)	2.3	1.7	0.9	1.8	6.7	1.8
North	3.6	1.8	0.2	0.4	6.0	0.3
Haryana	1.9	—	—	—	1.9	0.3
Punjab	1.6	1.8	0.2	0.4	4.0	—
South	44.5	38.9	31.3	34.6	199.3	18.8
Andhra Pradesh	23.1	15.4	63.0	17.0	118.5	7.3
Karnataka	7.4	7.0	3.2	2.5	20.1	1.8
Kerala	4.8	6.0	7.5	6.6	24.9	4.8
Tamil Nadu	9.1	10.4	7.6	8.6	35.7	4.9
West	38.4	48.5	31.9	21.6	140.4	42.8
Gujarat	21.9	37.6	22.9	15.7	98.1	21.9
Maharashtra	16.5	10.9	9.0	5.9	42.3	20.9
Used in Industry	0.6	0.6	0.7	0.6	2.5	0.5
All India	119.1	126.8	135.5	90.7	472.1	79.7

(Continued)

5.01. DISTRIBUTION OF INDIGENOUS NITROGENOUS FERTILISERS
1982-83—QUARTERWISE (Concluded)

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec 1-82	Jan./ March 1983	Total	April/ June 1983
					April '82 March '83	
(C) Calcium Ammonium Nitrate (25% N)						
Central	10.45	9.03	13.75	14.7	47.9	13.8
Madhya Pradesh	0.02	—	0.05	0.03	0.1	—
Rajasthan	3.2	2.9	6.3	3.5	15.9	4.7
Uttar Pradesh	7.2	6.1	7.3	11.1	31.7	9.1
Delhi	0.03	0.03	0.1	0.07	0.2	Neg.
East	6.5	6.1	18.3	4.3	35.2	0.8
Bihar	1.8	0.2	5.4	0.4	7.8	—
Orissa	3.9	3.4	8.6	3.1	19.0	0.8
West Bengal	0.8	2.5	4.3	0.8	8.4	—
North	43.8	29.5	48.7	23.1	145.1	25.2
Haryana	5.6	2.8	15.5	4.3	28.2	4.8
Himachal Pradesh	11.0	5.1	4.1	14.0	34.2	3.3
Punjab	27.2	21.6	28.9	4.8	82.5	17.1
Chandigarh	0.03	0.01	0.13	—	0.2	Neg.
J & K	—	—	—	—	—	Neg.
South	4.65	31.5	29.1	23.1	88.3	14.0
Andhra Pradesh	2.7	22.6	22.4	7.6	55.3	8.2
Karnataka	1.9	8.9	5.5	15.3	31.6	5.8
Kerala	0.05	—	0.1	—	0.1	—
Tamil Nadu	—	—	1.1	0.2	1.3	—
West	1.9	—	0.1	—	2.0	1.7
Gujarat	1.9	—	—	—	1.9	1.7
Maharashtra	—	—	0.12	—	0.1	—
Others	—	0.1	0.4	0.3	0.7	0.08
Bhutan	0.05	—	0.1	—	0.1	—
All India	67.35	76.1	110.0	65.6	318.9	55.6
(D) Ammonium Chloride (25% N)						
Central	1410	1434	2117	1437	6398	743
Madhya Pradesh	90	304	22	10	426	—
Rajasthan	—	—	7	—	7	9
Uttar Pradesh	1315	1120	2078	1427	5940	734
Delhi	5	10	10	—	25	—
East	1183	673	548	475	2879	85
Bihar	—	—	21	84	105	42
Orissa	22	4	—	—	26	—
West Bengal	1161	669	527	391	2748	43
North	129	123	54	66	372	—
Punjab	129	123	54	66	372	—
South	1374	3308	2253	3535	10470	2319
Andhra Pradesh	558	577	745	762	2642	423
Karnataka	5	16	34	15	70	160
Kerala	108	79	82	101	370	20
Tamil Nadu	703	2616	1392	2641	7352	1673
Pondicherry	—	20	—	16	36	43
West	1707	708	512	240	3167	39
Gujarat	235	157	213	171	776	29
Maharashtra	1472	551	299	69	2391	10
All India	5803	6246	5484	5743	23286	3186

**5.02. DISTRIBUTION OF POOL NITROGENOUS FERTILISERS
1982-83—QUARTERWISE**

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	
					April '82 March '83	April/ June 1983
(A) Urea (46% N)						
Central	19.0	71.0	51.8	108.4	250.2	7.6
Madhya Pradesh	6.7	18.2	11.8	8.4	45.1	4.5
Rajasthan	0.2	4.3	4.4	3.6	12.5	0.3
Uttar Pradesh	12.1	48.5	35.6	96.4	192.5	2.8
Delhi	—	—	—	0.03	0.03	—
East	13.2	32.4	24.9	48.3	118.8	3.3
Arunachal Pradesh	0.03	—	—	—	0.03	—
Assam	1.0	0.6	0.8	0.6	3.0	0.8
Bihar	4.0	5.2	11.4	31.6	52.2	1.2
Meghalaya	—	0.1	—	—	0.1	—
Orissa	1.7	13.6	1.7	5.5	22.5	0.2
Sikkim	—	0.4	—	—	0.4	0.3
West Bengal	6.5	12.5	11.0	10.6	40.6	0.6
Andaman & Nicobar	—	—	—	—	—	0.2
North	24.2	76.7	24.8	92.7	218.4	19.0
Haryana	1.8	6.3	0.7	17.4	26.2	0.2
Himachal Pradesh	—	0.2	—	—	0.2	—
Jammu & Kashmir	14.0	10.2	1.8	5.8	31.8	14.7
Punjab	8.4	60.0	22.3	69.5	160.2	4.1
South	38.5	155.0	96.4	84.6	364.5	48.4
Andhra Pradesh	33.4	134.3	62.8	62.1	292.6	14.9
Karnataka	0.4	7.8	3.5	6.5	18.2	9.0
Kerala	0.5	0.1	1.9	0.3	2.8	0.2
Tamil Nadu	3.6	7.4	17.5	13.3	41.8	17.9
Pondicherry	0.4	0.1	0.04	0.9	1.4	0.3
Tea (South)	0.2	5.3	0.7	1.5	7.7	6.1
West	53.5	52.9	24.6	10.3	141.3	20.2
Gujarat	2.7	4.9	8.2	4.3	20.1	5.4
CSFC	0.6	0.4	Neg.	—	1.0	0.1
All India	149.0	388.4	212.5	344.3	1094.2	98.6

(Continued)

**5.02. DISTRIBUTION OF POOL NITROGENOUS FERTILISERS
1982-83—QUARTERWISE (Continued)**

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	April/ June 1983
					April '82 March '83	
(B) Ammonium Sulphate (20.6% N)						
Central	0.04	2.3	7.6	1.5	11.4	0.2
Madhya Pradesh	0.04	0.3	0.1	—	0.4	—
Uttar Pradesh	—	2.0	7.5	1.5	11.0	0.2
East	—	2.5	0.23	0.4	3.1	0.1
Bihar	—	—	0.03	0.4	0.4	0.1
West Bengal	Neg.	2.5	0.2	—	2.7	—
North	0.4	0.1	0.5	0.2	1.2	0.1
Haryana	—	—	0.5	—	0.5	—
Punjab	0.4	0.1	—	0.2	0.7	0.1
South	0.5	0.6	7.8	3.9	12.8	3.4
Andhra Pradesh	—	0.1	3.7	3.3	7.1	3.1
Karnataka	—	0.2	3.6	0.6	4.4	0.3
Kerala	—	—	0.05	—	0.05	—
Tamil Nadu	—	—	0.4	—	0.4	—
Tea South	0.5	0.3	Neg.	—	0.8	—
Rubber Board	—	—	0.05	—	0.05	—
West	4.3	2.2	0.8	1.1	8.4	2.0
Gujarat	—	0.6	0.5	0.1	1.2	—
Maharashtra	4.3	1.6	0.3	1.0	7.2	2.0
All India	5.2	7.7	16.9	7.0	36.8	5.8

(Continued)

**5.02. DISTRIBUTION OF POOL NITROGENOUS FERTILISERS
1982-83—QUARTERWISE (Concluded)**

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	April/ June 1983
						April '82 March '83
(C) Calcium Ammonium Nitrate (26% N)						
Central	—	0.8	5.9	3.21	9.91	0.3
Rajasthan	—	—	—	0.01	0.01	—
Uttar Pradesh	—	0.8	5.9	3.2	9.9	0.3
East	0.2	—	3.2	1.0	4.4	1.1
Bihar	0.2	—	3.1	0.4	3.7	0.9
Orissa	—	—	—	0.1	0.1	0.2
West Bengal	—	—	0.1	0.5	0.6	0.05
North	—	—	0.52	3.8	4.32	0.1
Haryana	—	—	0.02	—	0.02	—
Himachal Pradesh	—	—	—	0.9	0.9	—
Punjab	—	—	0.5	2.9	3.4	0.1
South	1.8	3.1	6.23	4.7	15.83	2.5
Andhra Pradesh	0.2	2.0	2.2	1.9	6.3	1.1
Karnataka	0.8	0.7	0.03	0.4	1.93	Neg.
Kerala	—	—	Nil	—	Nil	—
Tamil Nadu	0.8	0.4	4.0	2.4	7.6	1.4
Tea Board (S)	Neg.	—	—	—	Neg.	—
West	—	0.03	—	0.04	0.07	0.3
Gujarat	—	0.03	—	—	0.03	—
Maharashtra	—	Nil	—	0.04	0.04	0.3
All India	2.0	3.93	15.85	12.75	34.53	4.3

**5.03. DISTRIBUTION OF INDIGENOUS PHOSPHATIC FERTILISERS
1982-83—QUARTERWISE**

('000 tonnes)

Zone/State	April/ June 1982	July/ September 1982	October/ December 1982	January/ March 1983	Total	April/ June 1983
					April '82- March '83	
(A) Single Superphosphate (16% w.s. P₂O₅)						
Central	95.2	82.2	102.6	48.9	328.9	98.4
Madhya Pradesh	68.7	41.2	41.1	26.6	177.6	66.4
Rajasthan	10.2	6.0	12.2	10.1	38.5	11.3
Uttar Pradesh	16.3	34.9	49.3	12.2	112.7	20.7
Delhi	—	0.05	0.07	0.02	0.1	0.03
East	32.7	27.6	45.1	28.1	133.5	26.5
Assam	0.7	0.6	3.4	0.4	5.1	1.9
Bihar	4.8	7.0	4.9	2.8	19.5	4.0
Orissa	5.8	0.05	3.8	2.1	11.8	3.5
West Bengal	18.7	18.5	29.6	20.7	87.5	15.7
Meghalaya	1.0	1.0	2.4	1.3	5.7	0.4
Mizoram	0.05	0.1	0.2	—	0.3	—
Tripura	0.03	—	0.6	—	0.6	—
Andaman & Nicobar Islands	—	0.08	—	—	0.08	—
Tea (NE India)	1.6	0.3	0.2	0.8	2.9	1.0
North	54.7	42.9	48.8	31.4	177.8	72.5
Haryana	11.0	10.9	17.1	8.1	47.1	17.9
Himachal Pradesh	0.4	0.5	2.1	0.9	3.9	0.08
Punjab	43.3	31.5	29.6	22.4	126.8	54.5
South	88.8	92.0	75.3	44.2	300.3	64.9
Andhra Pradesh	43.1	44.9	35.9	26.3	150.2	33.3
Karnataka	19.7	18.9	11.6	7.7	57.9	17.1
Kerala	3.8	3.1	1.8	1.2	9.9	1.1
Tamil Nadu	22.0	24.9	25.8	8.7	81.4	12.8
Pondicherry	0.2	0.2	0.2	0.3	0.9	0.09
West	94.3	53.7	70.2	52.2	270.4	97.8
Gujarat	45.8	16.9	42.4	23.3	128.4	38.7
Maharashtra	48.5	36.8	27.8	28.9	142.0	59.1
Used in Mixtures	8.7	8.8	8.3	6.0	31.8	10.2
Bhutan	—	0.2	—	—	0.2	—
All India	374.4	307.4	350.3	210.8	1242.9	370.3

(Continued)

**5.03. DISTRIBUTION OF INDIGENOUS PHOSPHATIC FERTILISERS
1982-83—QUARTERWISE (Concluded)**

('000 tonnes)

Zone/State	April/ June 1982	July/ September 1982	October/ December 1982	January/ March 1983	Total	April/ June 1983
					April '82- March '83	
(B) Triple Superphosphate (46% P₂O₅)						
Central	2.25	1.25	5.85	0.11	9.47	0.33
Madhya Pradesh	0.84	0.02	—	—	0.86	—
Rajasthan	0.01	0.01	0.02	0.01	0.05	0.01
Uttar Pradesh	1.41	1.22	5.83	0.10	8.56	0.32
Delhi	—	—	—	0.002	0.002	—
East	6.23	6.13	5.47	2.63	20.46	3.88
Bihar	5.62	1.98	1.87	1.56	11.03	3.88
Orissa	0.49	—	—	—	0.49	—
West Bengal	0.12	4.15	3.60	1.07	8.94	—
North	0.27	—	0.58	0.08	0.93	0.13
Haryana	0.15	—	0.38	0.06	0.59	0.05
Punjab	0.12	—	0.20	0.02	0.34	0.08
South	—	—	—	—	—	0.29
Andhra Pradesh	—	—	—	—	—	0.29
West	—	—	1.93	—	1.93	—
Maharashtra	—	—	1.93	—	1.93	—
All India	8.76	7.38	13.83	2.82	32.79	4.63

**5.04. DISTRIBUTION OF INDIGENOUS COMPLEX FERTILISERS
1982-83—QUARTERWISE**

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	
					April '82 June '83	April/ June 1983
(A) Ammonium Phosphate Sulphate (16-20-0)						
South	22.6	28.2	32.7	11.6	95.1	21.2
Andhra Pradesh	—	0.3	1.3	0.6	2.2	Neg.
Karnataka	11.2	11.0	13.0	7.5	42.7	16.2
Kerala	7.9	11.6	11.7	2.6	33.8	3.1
Tamil Nadu	3.4	5.2	6.7	0.8	16.1	1.9
Pondicherry	0.07	0.05	0.03	0.05	0.2	Neg.
All India	22.6	28.2	32.7	11.6	95.1	21.2
(B) Ammonium Phosphate Sulphate (20-20-0)						
South	8.7	31.4	45.5	33.6	119.2	24.8
Andhra Pradesh	4.7	18.2	22.7	20.7	66.3	9.7
Karnataka	2.5	5.5	9.1	6.2	23.3	8.9
Kerala	—	—	3.9	2.4	6.3	2.2
Tamil Nadu	1.5	7.7	9.8	4.3	23.3	4.0
West	3.2	1.9	0.3	0.6	6.0	—
Maharashtra	3.2	1.9	0.3	0.6	6.0	—
All India	11.9	33.3	45.8	34.2	131.2	24.8
(C) Diammonium Phosphate (18-46-0)						
Central	7.0	10.1	21.2	14.9	53.2	15.6
Madhya Pradesh	2.8	5.0	0.3	0.05	8.2	6.4
Rajasthan	4.2	3.9	11.8	8.3	28.3	8.0
Uttar Pradesh	—	1.1	9.1	6.6	16.8	1.2
East	—	3.4	2.2	1.6	7.2	4.4
Bihar	—	3.4	2.2	1.6	7.2	4.4
North	4.1	20.7	10.7	45.8	81.2	11.0
Haryana	0.9	20.0	4.8	4.9	30.6	5.7
Jammu & Kashmir	2.2	—	—	—	2.2	—
Punjab	0.9	0.6	5.9	41.0	48.4	5.3
South	51.8	49.4	49.2	40.1	190.5	49.5
Andhra Pradesh	3.0	4.0	2.3	5.4	14.7	4.1
Karnataka	11.3	6.9	2.8	9.9	30.9	8.5
Kerala	—	—	—	0.1	0.1	0.2
Tamil Nadu	37.5	38.7	44.1	24.6	144.9	36.7
West	33.9	41.4	27.0	32.8	135.1	37.1
Gujarat	29.3	28.4	22.6	20.7	101.0	55.3
Maharashtra	4.6	13.0	4.3	12.2	31.1	31.8
Others	—	8.4	4.4	2.0	15.0	—
Industrial use	Nil	Nil	Nil	0.02	0.03	0.5
Total	96.8	133.4	115.0	137.3	482.4	168.1

(Continued)

**5.04. DISTRIBUTION OF INDIGENOUS COMPLEX FERTILISERS
1982-83—QUARTERWISE (Continued)**

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	
					April '82 March '83	April/ June 1983
(D) Nitrophosphate (20.7-20.7-0)						
Central	8.0	4.6	6.1	13.7	32.4	5.2
Madhya Pradesh	2.1	2.2	0.7	0.7	5.7	1.3
Uttar Pradesh	5.9	2.4	5.4	13.0	26.7	3.9
East	7.0	5.4	9.2	17.4	39.0	14.1
Bihar	4.7	2.2	3.4	4.7	15.0	11.9
West Bengal	2.3	3.2	5.8	12.7	24.0	2.2
North	—	—	—	—	—	—
South	5.2	10.4	5.5	10.6	31.7	6.1
Andhra Pradesh	4.7	10.0	4.5	8.5	27.7	5.1
Karnataka	0.5	0.4	1.0	2.1	4.0	0.8
Tamil Nadu	—	—	—	—	—	—
Coffee Board	Neg.	—	—	—	Neg.	—
West	32.5	29.2	25.7	35.9	123.3	36.6
Gujarat	7.2	3.4	7.2	7.9	25.7	7.8
Maharashtra	25.3	25.8	18.5	28.0	7.6	28.8
All India	52.7	49.6	46.5	77.6	226.4	62.3
(E) NPK (14-28-14)						
South	6.0	9.9	6.1	0.3	22.34	—
Andhra Pradesh	2.0	5.3	2.9	0.05	10.3	—
Karnataka	3.8	4.1	2.2	0.2	10.3	—
Kerala	—	0.3	—	—	0.3	—
Tamil Nadu	0.2	0.2	1.0	0.05	1.5	—
Pondicherry	—	0.01	0.02	0.01	0.04	—
All India	6.0	9.9	6.1	0.3	22.34	—
(F) NP (24-24-0)						
South	1.2	8.8	3.5	0.5	14.0	0.03
Andhra Pradesh	1.2	8.8	3.5	0.5	14.0	0.03
All India	1.2	8.8	3.5	0.5	14.0	0.03

(Continued)

**5.04. DISTRIBUTION OF INDIGENOUS COMPLEX FERTILISERS
1982-83—QUARTERWISE (Continued)**

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	
					April '82 March '83	April/ June 1983
(G) NP (28-28-0)						
Central	4.9	10.5	5.6	2.5	23.5	8.3
Madhya Pradesh	4.9	10.1	5.1	2.5	22.6	8.3
Uttar Pradesh	—	0.4	0.5	—	0.9	—
East	8.1	10.9	11.4	15.4	45.8	13.3
Bihar	—	—	1.6	—	1.6	—
Orissa	6.7	5.2	6.3	8.5	26.7	9.4
West Bengal	1.4	5.7	3.5	6.9	17.5	3.9
North	—	—	—	—	—	—
South	43.9	65.76	43.20	9.9	162.74	43.9
Andhra Pradesh	43.5	65.2	43.1	9.9	161.7	43.9
Karnataka	0.4	0.56	0.06	—	1.0	0.05
Kerala	—	—	0.04	—	0.04	—
West	1.2	0.1	0.6	—	1.9	1.3
Gujarat	0.2	0.1	0.1	—	0.4	—
Maharashtra	1.0	—	0.5	—	1.5	0.1
Goa	—	—	—	—	—	1.2
All India	58.1	87.2	60.8	27.8	233.9	66.8
(H) NPK (12 32-16)						
Central	35.7	62.1	117.4	28.9	244.1	26.8
Madhya Pradesh	9.2	14.9	3.3	13.1	40.5	17.8
Rajasthan	2.7	8.1	1.3	1.7	13.8	4.1
Uttar Pradesh	23.8	39.1	112.8	14.1	189.8	4.1
East	8.7	5.1	14.5	5.4	33.8	6.9
Bihar	8.7	5.1	14.5	5.4	33.7	6.9
West Bengal	—	0.1	—	—	0.1	—
North	49.7	97.0	4.3	23.7	174.7	22.6
Haryana	18.2	22.8	—	11.8	52.8	2.3
Punjab	31.5	74.2	4.3	11.9	121.9	20.3
South	1.5	1.6	3.4	—	6.5	1.6
Andhra Pradesh	1.5	1.6	3.4	—	6.5	—
Karnataka	—	—	—	—	—	1.6
West	36.6	10.6	29.5	23.2	99.9	35.5
Gujarat	36.1	10.6	29.5	23.2	99.4	35.5
Maharashtra	0.5	—	—	—	0.5	—
Others	—	53.4	61.3	11.6	126.3	—
All India	132.2	229.8	230.4	92.8	685.2	92.6

(Continued)

**5 04. DISTRIBUTION OF INDIGENOUS COMPLEX FERTILISERS
1982-83—QUARTERWISE (Continued)**

('000 tonnes)

Zone/State	April/ June 1982	July/ September 1982	October/ December 1982	January/ March 1983	Total	April/ June 1983
					April '82- March '83	
(I) NPK (10-26-26)						
East	7.7	11.0	11.2	8.3	38.2	8.3
Orissa	1.7	—	1.4	3.3	6.4	1.7
West Bengal	6.0	11.0	9.8	5.0	31.8	6.6
South	6.7	6.7	—	1.7	15.1	12.7
Karnataka	5.0	1.7	—	—	6.7	9.4
Tamil Nadu	1.7	5.0	—	1.7	8.4	3.3
West	16.8	7.7	4.8	6.0	35.3	10.4
Gujarat	0.6	0.1	0.4	0.3	1.4	0.1
Maharashtra	16.2	7.6	4.4	5.7	33.9	10.3
All India	31.2	25.4	1.0	16.0	88.6	31.4
(J) Nitrophosphate (15-15-15)						
Central	1.2	1.5	5.3	5.3	13.3	1.5
Madhya Pradesh	0.5	0.6	0.2	0.5	1.8	0.7
Uttar Pradesh	0.7	0.9	5.1	4.8	11.5	0.8
East	13.8	4.1	18.1	18.1	54.1	8.0
Bihar	4.9	0.9	4.5	3.0	13.3	4.9
West Bengal	8.9	3.2	13.6	15.1	40.8	3.1
Tripura	—	—	—	—	—	Neg.
South	7.5	14.2	13.7	25.3	60.7	8.7
Andhra Pradesh	1.2	2.0	0.2	2.5	5.9	0.7
Karnataka	5.4	9.3	8.2	7.6	30.5	5.3
Kerala	—	—	—	4.2	4.2	—
Tamil Nadu	—	—	—	1.4	1.4	0.6
Coffee Board	0.9	2.9	5.3	9.6	18.7	2.1
West	38.4	33.8	24.7	23.3	120.2	43.3
Gujarat	3.5	1.9	2.5	1.8	9.7	3.4
Maharashtra	34.9	31.9	22.2	21.5	110.5	39.9
All India	60.0	50.7	56.5	56.8	248.3	61.5

(Continued)

**5.04. DISTRIBUTION OF INDIGENOUS COMPLEX FERTILISERS
1982-83—QUARTERWISE (Concluded)**

('000 tonnes)

Zone/State	April/ June 1982	July/ September 1982	October/ December 1982	January/ March 1983	Total	April/ June 1983
					April '82- March '83	
(K) NPK (19-19-19)						
South	9.8	28.4	27.9	11.2	77.3	17.6
Andhra Pradesh	2.4	12.4	17.0	3.1	34.9	3.5
Karnataka	6.3	14.0	10.2	7.4	37.9	14.1
West	17.5	14.1	19.6	3.3	54.5	11.7
Maharashtra	15.8	13.6	18.4	3.1	50.9	10.4
Goa	1.7	0.5	1.2	0.3	3.6	1.3
All India	27.3	42.5	47.5	14.5	131.8	29.3
(L) NPK (17-17-17)						
South	110.9	171.5	163.9	81.0	527.3	81.0
Andhra Pradesh	24.3	81.7	67.4	30.7	204.1	22.0
Karnataka	39.1	45.8	20.0	26.9	131.8	25.3
Kerala	13.3	12.0	14.4	10.6	50.3	13.6
Tamil Nadu	32.9	30.5	60.2	12.7	136.3	18.7
Pondicherry	1.3	1.5	1.9	0.1	4.8	1.4
West	7.1	2.2	2.0	2.5	13.8	—
Maharashtra	7.1	2.2	2.0	2.5	13.8	—
All India	117.7	173.7	165.9	83.5	541.1	81.0
(M) NPK (14-35-14)						
Central	2.3	4.3	9.9	1.2	17.7	5.0
Madhya Pradesh	2.3	—	—	1.2	3.5	1.8
Uttar Pradesh	—	4.3	9.9	—	14.2	3.2
East	0.23	0.4	0.2	0.2	1.0	1.4
Orissa	0.02	0.2	—	0.2	0.4	0.3
West Bengal	0.2	0.2	0.2	—	0.6	1.1
South	4.3	5.8	4.5	2.0	16.6	3.3
Andhra Pradesh	3.0	4.9	4.4	2.0	14.3	3.0
Karnataka	1.3	0.9	0.1	—	2.3	0.3
West	1.5	0.2	0.2	—	1.9	—
Maharashtra	1.3	0.2	0.2	—	1.7	—
Goa	0.2	Neg.	—	—	0.2	—
All India	8.3	10.7	14.8	3.4	37.2	9.7

**5.05. DISTRIBUTION OF POOL COMPLEX FERTILISERS
1982-83—QUARTERWISE**

('000 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	April/ June 1983
					April '82 March '83	
(A) Diammonium phosphate (18-46-0)						
Central	8.5	8.9	122.7	8.4	148.5	4.2
Madhya Pradesh	1.3	3.3	11.4	0.2	16.2	1.2
Rajasthan	1.2	0.8	13.7	0.3	16.0	0.6
Uttar Pradesh	6.0	4.8	97.6	6.7	115.1	2.4
Delhi	—	0.01	—	1.2	1.2	0.02
East	2.9	9.0	15.8	11.2	38.9	5.9
Assam	0.1	0.2	0.2	0.1	0.6	0.5
Bihar	0.7	5.0	10.4	0.2	16.3	0.6
Manipur	—	1.0	—	—	1.0	0.4
Meghalaya	0.02	—	0.1	—	0.12	0.1
Mizoram	—	—	—	0.05	0.05	—
Orissa	0.5	—	0.3	0.3	1.1	0.4
Sikkim	—	—	Neg.	0.1	0.1	—
Tripura	—	—	—	0.05	0.05	—
West Bengal	1.6	2.8	4.8	10.4	19.6	0.3
Andaman & Nicobar	—	—	—	—	—	0.02
North	3.1	2.5	110.3	4.8	120.7	3.6
Haryana	0.2	0.2	11.8	1.3	13.5	0.1
Himachal Pradesh	—	0.4	0.3	—	0.7	—
Jammu & Kashmir	2.1	0.6	2.1	1.1	5.9	2.6
Punjab	0.8	1.3	96.1	2.4	100.6	0.9
South	6.0	10.2	17.4	6.2	39.8	7.4
Andhra Pradesh	0.6	5.3	7.2	1.6	14.7	3.8
Karnataka	2.1	4.2	2.7	0.4	9.4	0.3
Kerala	—	0.01	0.04	Neg.	0.05	0.03
Tamil Nadu	0.2	0.7	7.4	4.0	12.3	0.2
Pondicherry	—	0.01	0.04	—	0.05	0.03
Tea (South)	3.1	—	—	0.2	3.3	3.1
West	14.2	6.7	2.6	4.0	27.5	14.8
Gujarat	0.3	0.3	0.6	0.4	1.6	0.7
Maharashtra	13.9	6.4	2.0	3.6	25.9	14.1
CSFC	0.3	0.03	0.1	—	0.4	0.05
All India	34.7	37.3	268.8	34.6	375.8	32.

**5.06. DISTRIBUTION OF POTASSIC FERTILISERS
1982-83—QUARTERWISE**

('600 tonnes)

Zone/State	April/ June 1982	July/ Sept. 1982	Oct./ Dec. 1982	Jan./ March 1983	Total	
					April '82 March '83	April/ June 1983
(A) Muriate of Potash (60% K₂O)						
Central	10.1	14.1	41.9	3.5	69.6	7.0
Madhya Pradesh	3.1	2.7	3.4	0.6	9.8	3.1
Rajasthan	0.7	0.7	0.9	0.4	2.7	0.8
Uttar Pradesh	6.3	10.6	37.6	2.4	56.9	3.0
Delhi	—	0.1	0.02	0.09	0.2	0.1
East	12.1	13.6	39.7	25.9	91.2	20.6
Assam	3.6	2.1	3.7	10.7	20.1	8.8
Bihar	3.7	4.7	8.3	1.1	17.8	3.6
Orissa	1.0	1.3	3.1	4.1	9.5	0.9
West Bengal	3.7	5.3	24.1	9.8	42.9	7.0
Manipur & Tripura	—	0.2	0.3	0.1	0.6	0.08
Meghalaya	0.1	0.03	0.1	—	0.2	0.03
Sikkim	—	—	0.05	0.07	0.12	—
Mizoram	0.02	—	—	0.07	0.09	—
Andaman & Nicobar Islands	0.01	—	—	—	0.01	0.2
Nagaland	—	—	—	—	—	0.02
North	4.7	5.7	3.9	0.5	14.8	2.7
Haryana	1.2	0.9	2.3	0.2	4.6	0.6
Himachal Pradesh	0.3	0.3	0.5	0.2	1.3	—
Jammu & Kashmir	0.5	1.0	0.07	0.005	1.6	—
Punjab	2.7	3.5	1.0	0.08	7.3	2.1
South	61.3	79.4	75.9	41.4	258.0	52.5
Andhra Pradesh	5.9	10.0	10.6	6.1	32.6	4.8
Karnataka	11.1	20.6	7.8	11.4	50.9	10.6
Kerala	17.1	18.6	18.1	7.8	61.6	13.5
Tamil Nadu	26.1	29.6	38.5	15.2	109.4	22.8
Pondicherry	1.1	0.6	0.9	0.9	3.5	0.8
West	31.7	28.1	24.2	26.8	110.8	28.9
Gujarat	8.1	5.1	5.9	4.1	23.2	7.4
Maharashtra	23.6	22.9	18.3	22.6	87.4	21.5
Goa	0.05	0.1	—	0.05	0.2	—
Others*	99.8	156.3	127.1	98.4	481.6	74.5
All India	219.7	297.2	312.7	196.5	1026.0	186.2
(B) Sulphate of Potash (50% K₂O)						
Central	0.004	—	—	—	0.004	0.01
Uttar Pradesh	0.004	—	—	—	0.004	0.01
South	1.82	4.84	4.55	0.30	11.52	3.25
Andhra Pradesh	0.04	4.84	4.55	0.30	9.73	0.03
Karnataka	1.79	—	—	—	1.79	3.22
West	0.56	0.03	—	0.08	0.67	0.08
Maharashtra	0.56	0.03	—	0.08	0.67	0.08
All India	2.38	4.87	4.55	0.38	12.19	3.34

*Distribution to complex fertiliser manufacturers.

5.07. DISTRIBUTION OF TOTAL FERTILISER MATERIALS
(1969-70 to 1982-83)

	('000 tonnes)													
Fertiliser/Materials	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
A. Nitrogenous														
Ammonium sulphate (20.6% N)	969.1	1044.6	860.8	774.5	628.8	750.8	691.9	611.9	553.0	581.4	710.2	503.6	501.5	508.6
Urea (46% N)	1308.3	1701.1	2225.9	2430.4	2279.9	2684.1	2917.1	3739.2	4729.8	835.8	5786.4	6044.8	6701.4	7130.7
Ammonium sulphate nitrate (26% N)	41.1	69.7	44.0	56.6	49.7	41.4	27.6	1.9	0.6	0.7	—	—	—	—
Calcium ammonium nitrate (25% N)	448.0 ⁶	318.9	411.8	419.1	419.3	413.1	598.5	664.4	496.6	554.1	484.0	307.3	412.6	319.3
Calcium ammonium nitrate (26% N)	64.9	241.4	241.4	298.1	177.9	290.0	125.5	47.0	8.2	84.7	101.0	162.9	61.6	34.5
Ammonium chloride (25% N)	10.3	27.1	20.2	14.1	13.5	30.2	12.3	20.3	18.7	23.2	17.0	17.7	18.5	23.3
B. NPs and NPKs														
16-20-0	96.9	87.2	101.3	98.9	102.8	116.8	104.6	95.8	132.6	121.6	129.8	106.7	105.7	95.1
20-20-0+	4.2	0.6	36.0	2.1	21.4	23.8	26.2	36.1	40.6	42.4	40.9	36.3	43.7	125.2
18-9-0	—	—	—	—	—	—	2.4	20.0	—	—	—	—	—	—
19.5-19.5-0	—	—	—	—	—	—	19.9	12.6	—	—	—	—	—	—
28-28-0	149.5 ⁸	18.51 ⁷	267.8 ⁸	194.7 ⁹	173.7	133.7	158.8	248.0	314.0	325.1	281.4	226.0	299.5	233.8

24-24-0	—	—	—	—	—	—	92.2	16.2	27.3	30.0	20.0	37.1	24.3	14.0
22-22-11	4.8	5.0	6.2	—	—	—	2.1	—	—	—	—	—	—	—
14-35-14	—	—	—	25.7	39.4	30.1	12.8	39.5	24.6	16.8	53.5	63.2	35.1	37.4
20-20-0/20-7-20 7-0	21.4	74.4	72.6	—	—	—	7.4*	99.2*	41.9*	126.7*	183.8	240.8	252.8	226.3
20-10-0 (20-10-10)	—	0.2	—	—	—	—	—	—	—	(0.1)	—	—	—	—
19-19-9	—	—	—	—	—	—	2.1	45.1	102.0	78.1	59.1	26.3	110.7	131.8
18-18-19	11.2	24.5	25.0	—	—	—	—	—	—	—	—	—	—	—
15-15-15	30.9	65.4	108.6	211.0	213.4	183.8	191.6	191.5	207.8	247.7	270.4	240.8	305.0	248.4
15-15-15 (Imported)	6.3	162.1	296.1	179.4	21.6	196.1	94.6	44.9	20.8	8.5	—	—	—	—
17-17-17	—	—	44.6	238.3	221.5	211.0	281.7	276.6	40.3	491.3	442.1	542.3	609.4	541.3
10-26-26	—	—	—	—	—	4.7	11.7	54.8	104.3	77.6	57.9	111.1	122.9	96.8
12-32-16	—	—	—	—	—	13.4	40.1	281.8	373.6	482.2	458.6	515.7	672.2	685.4
18-46-0	88.5 ¹²	156.4	343.9	428.9	411.8	363.0	174.7	365.8	407.8	620.2	751.3	808.1	722.9	856.1
11-55-0	—	—	—	12.3	8.7	—	—	—	—	—	—	—	—	—
14-28-14	—	—	12.1	44.3	58.9	33.6	Neg	2.6	26.3	42.4	36.0	62.1	43.8	22.4
20-20-0**	—	—	—	36.1	190.6	122.3	26.3	6.1	12.7	5.8	—	—	—	—
Other grades of NP/NPKs (Now not imported)	19.8	3.0	3.1	1.7	—	—	8.7	—	2.6	4.4	—	—	—	—

C. Phosphate

Single Superphosphate (16% P ₂ O ₅)	677.9 (—)	683.5 (0.4)	750.3 (0.3)	794.4 (0.4)	836.3	733.5	467.7	867.6	985.6	1025.0 [32.8]	1040.5 [24.0]	1051.3 [19.5]	1163.8 [5.6]	1249.2 —
P ₂ tophos (18% P ₂ O ₅)	—	—	—	—	8.6	9.8	2.8	2.3	—	—	—	—	—	
Triple superphosphate (46% P ₂ O ₅)	4.8	8.0	7.2	4.3	4.6	7.0	1.0	2.0	7.4	15.7	21.6	33.3	46.5	32.8

(Continued)

5.07. DISTRIBUTION OF TOTAL FERTILISER MATERIALS (Concluded)
(1969-70 to 1982-83)

('000 tonnes)

Fertiliser/Materials	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83
D. Potassic														
Muriate of Potash (60% K ₂ O)	205.4	277.8	350.5	472.2	672.9	474.8	348.1	608.9	793.0	918.3	901.5	1017.0	1108.3	1026.0
Sulphate of Potash (48-50 K ₂ O)		13.4	3.4	3.8	7.9	6.3	3.5	10.4	9.9	14.3	9.2	14.8	10.9	12.2
Total														
N	1040.2	1310.0	1652.7	1742.1	1615.1	1845.2	1908.7	2351.8	2813.3	2986.2	3444.2	3522.0	3881.7	4043.0
P ₂ O ₅	334.9	805.1	473.5	534.3	546.4	497.4	373.6	643.5	773.1	950.6	997.9	1074.1	1154.7	1182.5
K ₂ O	131.9	199.0	256.3	312.1	380.9	317.5	227.0	377.8	482.7	560.1	545.1	617.6	670.4	621.7
Total Material	4157.0	5146.2	6246.3	6740.9	6513.2	6879.2	6454.6	8412.6	9838.4	10816.2	11979.8	12188.8	13377.8	13646.4

⁴ Includes 164.8 thousand tonnes of grade 20.5% N

⁵ Includes 16.7 thousand tonnes of grade 20-20-0.

⁶ Includes 42.1 thousand tonnes of grade 20-20-0.

[14% P₂O₅]

*This consists of APSN as well ammonium nitro phosphate.

**Imported Nitrophosphate.

⁷ Includes 1.1 thousand tonnes of grade 20.5% N.

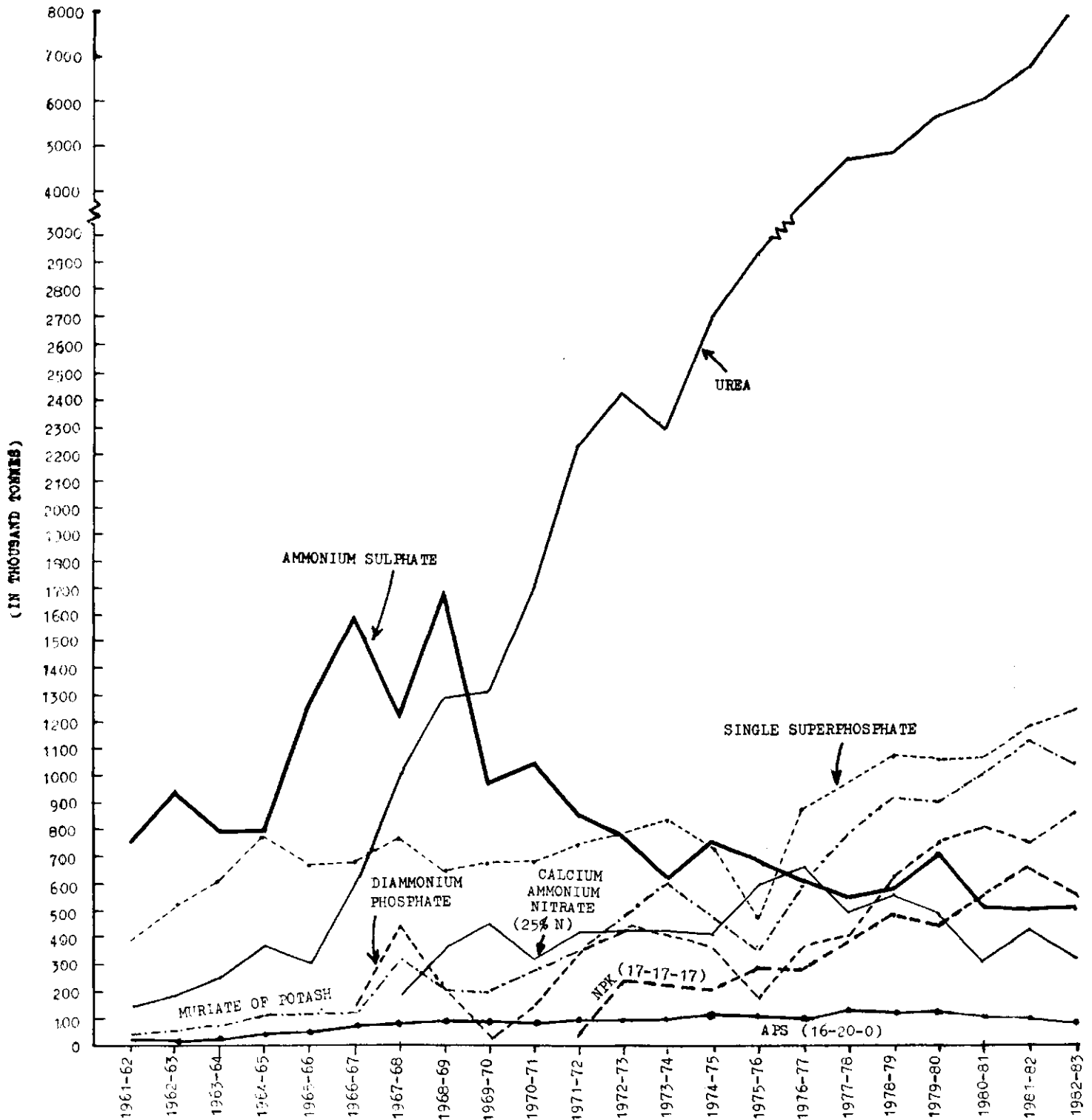
⁸ Includes 39.5 thousand tonnes of grade 20-20-0.

⁹ Includes 19.8 thousand tonnes of grade 20-20-0.

() Other grades

DISTRIBUTION OF SOME IMPORTANT FERTILISER MATERIALS

1961-62 to 1982-83



**5.08. STATEWISE DESPATCHES OF FERTILISERS—MATERIALWISE AND NUTRIENTWISE
1982-83 (April-March)**

(tonnes)

Zone/State	Ammonium sulphate (20.6% N)	Urea (46% N)	CAN (25% N)	CAN (26% N)	Ammonium chloride (25% N)	DAP 18-46-0	19-19-19	20.7-20.7-0	15-15-15	12-32-16	10-26-26	24-24-0	14-28-14	20-20-0	28-28-0	16-20-0	17-17-17	14-35-14	Single super phosphate (16% P ₂ O ₅)	Triple super phosphate (48% P ₂ O ₅)	Muriate of potash (60% K ₂ O)	Sulphate of potash (50% K ₂ O)	Total				
																							Material	N	P ₂ O ₅	K ₂ O	
Central	48810	1995866	47929	9922	8398	201661	—	32318	13325	244137	—	—	—	—	23461	—	—	17724	328952	9473	89731	4	3049511	1027608	249339	85380	
Madhya Pradesh	19370	254677	96	—	426	24394	—	5649	1800	40523	—	—	—	—	22612	—	—	3519	177649	866	9835	—	561416	138789	62013	13147	
Rajasthan	76	233713	15947	10	7	44240	—	—	—	13806	—	—	—	—	—	—	—	—	38479	52	2729	—	349059	121135	30949	3846	
Uttar Pradesh	29164	1500316	31655	9912	5940	131839	—	26669	11525	189808	—	—	—	—	849	—	—	—	—	—	—	4	2130066	764113	155807	68253	
Delhi	—	7160	231	—	25	1188	—	—	—	—	—	—	—	—	—	—	—	—	141	2	223	—	8970	3571	570	134	
East	103705	814504	35201	4397	2879	46078	—	30049	54179	33822	38177	—	—	—	45756	—	—	1097	133659	20466	91184	—	1464153	452044	102150	78329	
Arunachal Pradesh	—	20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	20	9	—	—	
Assam	4116	16957	—	—	—	590	—	—	—	—	—	—	—	—	—	—	—	—	5276	—	20086	—	47025	8754	1116	12052	
Bihar	37032	393348	7769	3660	105	23463	—	15035	13343	33739	—	—	—	—	—	—	—	—	19572	11038	17804	—	577530	205329	35366	18082	
Manipur	—	6270	—	—	—	1000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7900	3064	460	378	
Meghalaya	4509	380	—	—	—	123	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	630+	7900	3064	460	
Mizoram	—	32	—	—	—	50	—	—	—	—	—	—	—	—	—	—	—	—	5622	—	228	—	10862	1126	956	137	
Nagaland	—	200	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	364	—	86	—	532	24	81	52	
Orissa	14136	64512	18991	94	26	1090	—	—	—	—	6436	—	—	—	26622	—	—	—	—	—	—	—	200	154018	45719	11877	7413
Sikkim	—	445	—	—	—	105	—	—	—	—	—	—	—	—	—	—	—	—	421	11737	485	9468	—	550	224	48	
Tripura	—	3458	—	—	—	53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4180	1600	131	—	
West Bengal	37265	305649	8441	643	2748	19604	—	24014	40836	83	31741	—	—	—	17512	—	—	—	676	87461	8943	42872	—	628488	174047	51642	40209
Andaman	—	25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	110	11	12	6	
N. E., (Tea)	6647	23208	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2883	32738	12045	461	—
North	7125	1545031	145069	4321	372	281942	—	—	—	174826	—	—	—	—	—	—	—	—	177706	921	14703	—	2272016	886996	177694	36794	
Haryana	2386	449354	28169	23	—	44162	—	—	—	52828	—	—	—	—	—	—	—	—	—	—	—	—	629163	228-31	45022	11193	
Himachal Pradesh	—	5087	34236	939	—	660	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	46061	11262	921	769	
Jammu & Kashmir	—	52640	—	—	—	8130	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	62320	25678	3740	930	
Punjab	4739	1037747	82491	3359	372	148990	—	—	—	—	121998	—	—	—	—	—	—	—	—	—	—	—	126751	342	7304	23902	
Chandigarh	—	203	176	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	379	137	—	—	
South	197973	1864688	88259	15832	10470	230338	77326	31670	60668	6478	15049	13976	22385	119317	162696	95074	527459	16630	300211	—	257903	11518	4125918	1184543	383866	280479	
Andhra Pradesh	125598	812488	55227	6264	2642	29420	34942	27667	5830	6476	—	13976	10251	66314	161676	2262	204118	14419	150170	—	32617	9727	1772084	535429	157829	71137	
Karnataka	24388	276120	31612	1936	70	40319	37896	3979	30490	—	6667	—	10295	23411	982	42835	131828	2211	57900	—	50836	1791	775566	196957	81733	67332	
Kerala	10925	56527	144	48	370	149	—	—	4165	—	—	—	339	6337	38	33780	50383	—	9916	—	61654	—	234775	44341	18974	46230	
Tamil Nadu	36242	701938	1276	7579	7352	157214	—	—	1434	—	8382	—	1460	23255	15997	136285	—	81341	—	109186	—	1288941	394420	119155	89100		
Pondicherry	—	5588	—	—	36	5	—	—	—	—	—	—	40	—	—	200	4845	—	884	—	3610	—	15208	3442	1019	2995	
Coffee Board	—	4380	—	—	—	—	4488	24	18749	—	—	—	—	—	—	—	—	—	—	—	—	—	27641	5685	3670	3815	
Tea Board	772	7647	—	5	—	3231	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11655	4259	1486	—	
Rubber Board	48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	48	10	—	—	
West	148699	883236	2044	71	3167	162650	54504	123267	120257	99800	35397	—	—	5916	1839	—	13812	1959	270383	1931	110934	663	2040529	541266	218750	123080	
Gujarat	99216	373386	1924	35	776	102591	—	25672	9781	99341	1480	—	—	—	—	—	—	—	—	—	—	—	865954	965954	106689	31764	
Maharashtra	49483	507293	120	36	2391	60059	50960	97595	110476	459	33917	—	—	5916	407	—	13812	1780	141993	1931	87342	663	1166833	308799	110924	90480	
Goa	—	2557	—	—	—	—	3544	—	—	—	—	—	—	—	1432	—	—	179	—	—	—	—	7942	2276	1137	836	
Dadra & Nagar Haveli	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
CSFC	—	965	—	—	—	392	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1357	514	180	—	
Others	—	6146	661	—	—	14957	—	—	—	126370	8217	—	—	—	—	—	—	—	31813	—	481566	—	669730	20124	50489	17673	
Bhutan	—	—	145	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	344	36	32	—	
Industrial Use	2788	20282	—	—	—	32	—	—	—	—	—	—	—	—	—	—	—	—	199	—	—	—	22812	9853	15	—	
All India	588900	7130728	318308	34543	23286	858850	131830	226304	248429	685431	96840	13976	22385	125233	233752	95074	541271	37410	1242923	32791	1026021	12185	13646370	4042984	1182515	621705	

+This includes despatches made to Sikkim also.

5.09. NUMBER OF SALE POINTS
(As on 31-5-1981 & 31-5-1982)

Zone/State	As on 31-5-1981			As on 31-5-1982		
	Co-operative & Other Instt. agencies	Private	Total	Co-operative & Other Instt. agencies	Private	Total
Central	13,462	11,013	24,475	14,959	11,318	26,277
Madhya Pradesh	3,120	2,784	2,361	3,570	3,131	6,701
Rajasthan	1,169	1,192	5,904	1,064	1,187	2,251
Uttar Pradesh	9,152	7,000	16,152	10,282	7,000	17,282
Delhi	21	37	58	43	72	115
East	5,661	22,842	28,503	5,402	24,960	30,362
Assam	270	1,168	1,438	270	1,255	1,525
Bihar	553	3,999	4,552	563	5,525	6,088
Manipur	350	—	350	91	592	683
Meghalaya	24	502	526	14	445	459
Nagaland	14	—	14	16	—	16
Orissa	2,838	2,147	4,985	2,853	2,147	5,000
Sikkim	78	—	78	96	—	96
Tripura	253	30	283	253	—	253
West Bengal	1,246	14,996	16,242	1,246	14,996	16,242
Andaman & Nicobar Islands	35	—	35	—	—	—
North	4,519	3,641	8,159	5,256	4,143	9,399
Haryana	1,003	1,121	2,124	949	1,459	2,408
Himachal Pradesh	1,575	199	1,774	1,575	199	1,774
Jammu & Kashmir	1,472	—	1,472	1,444	—	1,444
Punjab	459	2,315	2,774	1,287	2,481	8,768
Chandigarh	10	5	15	1	4	5
South	10,510	23,748	34,258	9,804	24,717	34,521
Andhra Pradesh	1,168	7,071	8,239	1,392	7,175	8,567
Karnataka	3,266	3,909	7,175	2,725	3,902	6,627
Kerala	1,906	3,099	5,005	1,906	3,330	5,236
Tamil Nadu	4,105	9,559	13,664	3,737	10,178	13,915
Pondicherry	65	110	175	44	132	176
West	7,682	6,884	14,566	7,706	6,733	14,439
Gujarat	5,344	1,448	6,792	5,071	1,208	6,279
Maharashtra	2,280	5,291	7,571	2,567	5,380	7,947
Goa	58	145	203	68	145	213
All India	41,837	68,127	109,964	43,127	71,943	115,070

Source: Ministry of Agriculture, New Delhi.

6.00. CONSUMPTION OF FERTILISERS

6.01. ALL INDIA CONSUMPTION OF N, P₂O₅ & K₂O
(1951-52 to 1982-83)

('000 tonnes)

Year		N	P ₂ O ₅	K ₂ O	Total (N+P ₂ O ₅ + K ₂ O)
1951-52	I Plan	58.7	6.9	—	65.6
1952-53		57.8	4.6	3.3	65.7
1953-54		89.3	8.3	7.5	105.0
1954-55		94.8	15.0	11.1	120.9
1955-56		107.5	13.0	10.3	130.8
1956-57	II Plan	123.1	15.9	14.8	153.7
1957-58		149.0	21.9	12.8	183.7
1958-59		172.0	29.5	22.4	223.8
1959-60		229.3	53.9	21.3	304.6
1960-61		211.7	53.1	29.0	289.9
1961-62	III Plan	249.8	60.5	28.0	338.3
1962-63		333.0	82.8	36.4	452.2
1963-64		376.8	116.5	50.6	543.9
1964-65		555.2	148.7	69.3	773.2
1965-66		574.8	132.5	77.3	784.6
1966-67		737.8	248.6	114.2	1,100.6
1967-68		1,034.6	334.8	169.6	1,539.0
1968-69		1,208.6	382.1	170.0	1,760.7
1969-70	IV Plan	1,356.0	416.0	210.0	1,982.4
1970-71		1,479.0	541.0	236.3	2,256.0
1971-72		1,798.0	558.2	300.6	2,656.9
1972-73		1,839.0	581.3	347.6	2,767.9
1973-74		1,829.0	649.7	359.8	2,838.6
1974-75	V Plan	1,705.7	471.5	336.1	2,513.3
1975-76		2,148.6	466.8	278.3	2,893.7
1976-77		2,456.9	634.9	319.2	3,411.0
1977-78		2,913.0	866.6	506.2	4,285.8
1978-79		3,419.5	1,106.0	591.5	5,116.9
1979-80		3,498.1	1,150.9	606.4	5,255.4
1980-81		3,672.1	1,213.6	623.9	5,515.6
1981-82		4,068.7	1,322.3	676.2	6,067.2
1982-83@		4,262.7	1,420.2	735.0	6,417.9

Source: Ministry of Agriculture, New Delhi.

@ = Provisional.

**6.02. ALL INDIA CONSUMPTION OF N, P₂O₅ AND K₂O—SEASONWISE AND KHARIF : RABI SHARE
(1971-72 to 1982-83)**

('000 tonnes)

Year	Kharif				Rabi				Total consumption				Kh:Rabi ratio
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total (N+P ₂ O ₅ +K ₂ O)	
1971-72	736.01	235.24	119.02	1,090.27	1,062.00	323.00	181.00	1,566.00	1,798.01	558.24	300.62	2,656.87	41:59
1972-73	705.02	233.72	147.64	1,086.38	1,133.99	347.59	199.91	1,681.49	1,839.01	581.31	347.55	2,767.87	39:61
1973-74	797.13	276.22	141.29	1,214.64	1,031.89	373.49	218.53	1,623.91	1,829.02	649.71	359.82	2,838.55	43:57
1974-75	739.49	228.51	170.23	1,138.23	1,026.20	243.02	165.85	1,435.07	1,765.69	471.53	336.08	2,573.30	44:56
1975-76	742.97	162.25	101.41	1,006.63	1,405.64	304.52	176.94	1,887.10	2,148.61	466.77	278.35	2,893.73	35:65
1976-77	862.18	213.31	100.55	1,186.04	1,594.75	421.40	208.69	2,224.84	2,456.93	634.71	319.24	3,410.88	35:55
1977-78	1,051.35	315.73	185.05	1,552.13	1,861.66	550.85	321.18	2,733.69	2,913.01	866.58	506.23	4,285.82	3:64
1978-79	1,284.66	390.56	256.03	1,931.25	2,134.84	715.39	335.46	3,185.69	3,419.50	1,105.95	591.49	5,116.94	38:62
1979-80	1,359.34	423.80	275.58	2,058.72	2,138.80	727.05	330.86	3,196.71	3,498.14	1,150.85	606.44	5,255.43	39:61
1980-81	1,443.94	422.10	271.81	2,137.85	2,234.14	791.45	352.13	3,377.72	3,678.09	1,213.55	623.93	5,515.57	39:61
1981-82	1,561.06	470.78	278.33	2,310.17	2,507.59	851.54	397.85	3,756.98	4,068.65	1,322.32	676.18	6,067.15	38:62
1982-83@	1,484.50	489.70	292.70	2,266.90	2,778.20	930.80	442.20	4,151.00	4,262.70	1,420.20	735.00	6,417.90	35:65

@ = Provisional

Source: Ministry of Agriculture, New Delhi.

**6.03(a). SEASONWISE CONSUMPTION OF NITROGEN (N)
1980-81 to 1982-83**

Zone/State	Consumption of					
	1980-81			1981-82		
	Kharif	Rabi	Total	Kharif	Rabi	Total
Central	359.2	733.6	1092.7	412.1	797.0	1209.1
Madhya Pradesh	40.6	81.2	121.7	57.3	87.4	144.7
Rajasthan	37.3	69.3	106.6	37.9	68.8	106.7
Uttar Pradesh	280.0	580.6	860.6	314.7	635.9	950.6
Delhi	1.3	2.6	3.9	2.2	4.9	7.1
East	135.8	256.6	391.9	144.5	240.4	385.0
Arunachal Pradesh	0.009	0.03	0.04	0.026	0.02	0.05
Assam	3.8	3.2	7.0	4.4	3.6	8.0
Bihar	37.3	123.1	160.4	39.4	120.1	159.5
Manipur	1.7	0.7	2.4	2.0	0.8	2.8
Meghalaya	0.6	0.7	1.3	0.5	0.7	1.2
Nagaland	0.05	0.01	0.06	0.12	0.05	0.17
Orissa	22.6	29.1	51.7	24.2	29.9	54.1
Sikkim	0.118	0.08	0.20	0.14	0.22	0.36
Tripura	0.65	0.71	1.36	1.17	0.59	1.76
West Bengal	68.4	98.9	167.3	72.6	84.4	157.0
Mizoram	0.015	0.02	0.04	0.007	0.012	0.019
Andaman, Nicobar Islands	0.035	0.02	0.057	0.008	0.001	0.009
North	271.7	464.2	735.9	286.0	523.8	809.8
Haryana	66.9	120.5	187.4	69.1	139.6	208.7
Himachal Pradesh	8.0	4.4	12.3	8.1	5.2	13.3
Jammu & Kashmir	11.5	4.3	15.7	13.8	2.7	16.5
Punjab	184.6	333.6	518.3	194.8	375.8	570.6
Chandigarh	0.7	1.4	2.2	0.2	0.5	0.7
South	407.5	526.2	933.8	389.1	640.4	1029.5
Andhra Pradesh	161.9	237.5	399.4	167.9	288.3	456.2
Karnataka	98.0	95.1	193.1	104.0	107.8	211.8
Kerala	21.5	20.2	41.7	20.1	20.5	40.6
Tamil Nadu	122.2	170.2	292.4	93.3	220.1	313.4
Pondicherry	3.9	3.2	7.2	3.8	3.7	7.5
West	233.9	232.0	470.8	293.2	278.4	571.5
Gujarat	96.0	108.2	204.2	109.2	136.2	245.4
Maharashtra	141.6	123.0	264.6	182.5	141.3	323.8
Goa, Daman & Diu	1.2	0.8	2.0	1.4	0.8	2.2
Dadra & Nagar Haveli	0.098	0.04	0.14	0.08	0.05	0.13
Others	31.4	21.5	53.0	36.9	27.6	63.8
All India	1443.9	2234.1	3678.1	1561.1	2507.6	4068.7

@Provisional

Includes plantations

Source: Ministry of Agriculture, New Delhi.

BY STATES AND THEIR PERCENTAGE INCREASE
(Feb.—Jan.)

N ('000 tonnes)			± % increase over the previous year								
1982-83@			1980-81			1981-82			1982-83@		
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
362.9	983.8	1346.7	5.2	16.2	12.3	14.7	8.6	10.7	-11.9	23.4	11.4
53.0	93.1	146.1	3.8	40.5	25.6	41.1	7.6	18.9	-7.5	6.5	1.0
34.8	86.8	121.6	6.0	-13.6	-7.6	1.6	0.7	0.1	-8.2	26.2	14.0
274.2	800.0	1074.2	5.1	18.5	13.8	12.4	9.5	10.5	-12.9	25.8	13.0
0.9	3.9	4.8	44.4	-25.7	-13.6	69.2	88.5	82.1	-59.1	-20.4	-32.4
145.9	253.3	399.1	15.8	11.0	12.6	6.4	-6.3	-1.2	1.0	5.4	3.7
0.034	0.03	0.06	-77.5	50.0	-33.3	188.8	-33.3	25.0	30.8	50.0	20.0
4.7	4.5	9.1	52.0	3.2	25.0	15.8	12.5	14.3	6.8	25.0	13.8
34.0	125.7	159.7	5.4	12.3	10.6	5.6	-2.4	-0.6	-13.7	4.7	0.1
2.0	1.5	3.5	95.4	-50.0	5.3	17.6	14.3	16.7	—	87.5	25.0
0.5	0.8	1.3	33.3	-12.5	8.3	-16.7	—	7.7	—	14.3	8.3
0.05	0.10	0.15	—	—	—	100.0	400.0	183.3	-58.3	100.0	-11.8
24.6	34.3	58.9	16.5	5.8	10.2	7.1	2.7	4.6	1.7	14.7	8.9
0.22	0.22	0.44	-37.9	-42.9	-39.4	18.6	175.0	80.0	57.1	—	22.2
0.87	0.81	1.68	8.3	-10.1	-2.2	80.0	16.9	29.4	-25.6	37.3	4.5
78.7	85.4	164.1	19.4	12.9	15.5	6.1	-14.7	-6.2	8.4	1.2	4.5
0.023	0.023	0.046	-25.0	400.0	100.0	-53.3	-40.0	-52.5	228.6	91.7	142.1
0.040	0.011	0.051	1066.7	233.3	533.3	-77.1	-95.0	-84.2	400.0	1000.0	466.7
264.1	566.7	850.9	4.8	11.3	8.8	5.3	12.8	10.0	-0.7	8.2	5.1
71.5	147.8	219.2	8.6	6.7	7.4	3.3	15.9	11.4	3.5	5.9	5.0
8.3	5.9	14.2	29.0	22.2	25.5	1.3	18.2	8.1	2.5	13.5	6.8
11.5	12.6	24.2	2.7	-2.3	0.6	20.0	37.2	5.1	-16.7	366.7	46.7
192.6	400.0	592.6	2.9	13.2	9.3	5.5	12.6	10.1	-1.1	6.4	3.9
0.2	0.4	0.6	-13.6	-6.7	-4.3	-71.4	-64.3	-68.2	—	-20.0	-14.3
402.2	624.2	1026.4	7.4	-7.9	1.8	-4.5	21.7	18.1	3.4	-2.5	-0.3
169.5	303.4	472.9	23.5	-0.5	8.0	3.7	21.4	14.2	1.0	5.2	3.7
108.3	128.7	237.0	-7.8	-2.7	-5.3	6.1	13.4	9.7	4.1	19.4	11.9
19.1	24.9	44.0	-5.3	-14.8	-10.1	-6.5	1.5	-2.6	-5.0	21.5	8.4
101.0	103.3	264.3	4.9	-18.2	-9.9	-23.6	29.3	7.2	8.3	-25.8	-15.7
4.3	3.9	8.2	39.3	3.2	22.0	-2.6	15.6	4.2	13.2	5.4	9.3
250.3	311.0	561.3	4.6	9.2	-2.7	22.7	20.0	21.4	-14.6	11.7	-1.8
110.5	138.0	248.5	4.5	-18.2	-8.9	13.8	25.9	20.2	1.2	1.3	1.3
138.5	172.0	310.5	4.9	0.6	2.8	28.9	14.4	22.4	-24.1	21.7	-4.1
1.2	0.9	2.1	-14.3	-11.1	-13.0	16.7	—	10.0	-14.3	12.5	-4.5
0.10	0.06	0.2	8.9	33.3	-16.7	-16.4	25.0	-7.1	25.0	20.0	53.8
39.1	39.2	78.3	-7.6	-33.8	-20.3	15.3	28.4	26.4	6.0	42.0	22.7
1484.5	2778.2	4262.7	6.2	4.5	5.1	8.1	12.2	10.6	-4.9	10.8	4.8

**6.03(b). SEASONWISE CONSUMPTION OF PHOSPHATE (P₂O₅)
(1980-81 to 1982-83)**

Zone/State	Consumption of					
	1980-81			1981-82		
	Kharif	Rabi	Total	Kharif	Rabi	Total
Central	68.7	223.4	292.1	79.5	249.4	328.9
Madhya Pradesh	22.6	36.6	59.2	31.8	41.0	72.8
Rajasthan	7.5	15.5	23.0	8.0	17.7	25.7
Uttar Pradesh	38.5	170.8	209.3	39.6	189.8	229.4
Delhi	0.076	0.52	0.60	0.08	0.9	0.98
East	30.4	89.0	119.4	37.4	78.0	113.4
Arunachal Pradesh	0.006	0.003	0.009	0.016	0.009	0.025
Assam	0.6	0.5	1.0	0.6	0.6	1.2
Bihar	6.1	23.5	29.6	6.6	23.0	29.6
Manipur	0.4	0.1	0.5	0.2	0.2	0.4
Meghalaya	0.65	0.38	1.03	0.3	0.5	0.8
Nagaland	0.01	—	0.01	0.1	0.04	0.14
Orissa	7.6	8.3	15.9	9.2	8.7	17.9
Sikkim	0.055	0.08	0.14	0.052	0.161	0.23
Tripura	0.13	0.18	0.31	0.29	0.21	0.50
West Bengal	14.9	55.9	70.8	20.0	42.5	62.5
Mizoram	0.003	0.10	0.013	0.003	0.026	0.029
Andaman & Nicobar	0.025	0.16	0.014	0.023	0.001	0.024
North	43.1	201.2	244.3	50.3	206.2	256.5
Haryana	36.2	25.1	31.3	4.9	27.2	32.1
Himachal Pradesh	0.9	1.4	2.3	1.5	1.4	2.9
Jammu & Kashmir	2.0	2.0	4.0	2.6	1.6	4.2
Punjab	34.0	172.7	206.7	41.3	175.8	217.1
Chandigarh	0.03	0.02	0.05	0.01	0.15	0.16
South	143.9	177.5	321.4	153.4	206.3	359.7
Andhra Pradesh	47.9	83.0	130.9	56.5	93.8	150.3
Karnataka	45.8	35.1	80.9	53.9	38.4	92.3
Kerala	13.0	10.4	23.4	12.7	10.6	23.3
Tamil Nadu	36.2	48.2	84.4	29.3	62.4	91.7
Pondicherry	1.0	0.8	1.8	1.0	1.1	2.1
West	123.2	86.8	210.0	135.3	99.0	234.4
Gujarat	70.1	47.2	117.1	65.3	49.4	114.7
Maharashtra	52.3	39.0	91.3	69.2	49.1	118.3
Goa, Daman & Diu	0.7	0.6	1.3	0.8	0.5	1.3
Dadra & Nagar Haveli	0.072	0.016	0.008	0.07	0.02	0.09
Others[†]	12.8	13.5	26.3	14.9	14.6	29.4
All India	422.1	791.4	1213.5	470.8	851.5	1322.3

[†] Provisional

[‡] Includes plantations

Source: Ministry of Agriculture, New Delhi.

BY STATES AND THEIR PERCENTAGE INCREASE
(Feb.-Jan.)
P₂O₅ ('000 tonnes)

* % increase over the previous year

1982-83@			1980-81			1981-82			1982-83@		
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
76.5	318.8	395.3	2.2	16.9	13.1	15.7	11.6	12.6	-3.8	27.8	20.2
32.2	42.8	75.0	-5.4	40.2	18.4	40.7	12.0	23.0	1.3	4.4	3.0
9.3	24.8	34.1	2.7	-17.6	-11.9	6.7	14.2	11.7	16.3	40.1	32.7
35.0	250.0	285.0	7.2	17.5	15.4	2.9	11.1	9.6	-11.6	31.7	24.2
0.03	1.15	1.18	-30.9	-38.1	-36.8	5.3	73.1	63.3	-62.5	27.8	20.4
42.4	71.8	114.2	10.1	15.3	13.9	23.0	-14.6	-5.0	13.4	-5.5	0.7
0.020	0.007	0.027	—	-62.5	-35.7	166.7	200.0	177.7	25.0	-22.2	8.0
0.8	1.1	1.9	200.0	—	42.9	—	20.0	20.0	33.3	83.3	58.3
6.1	27.5	33.6	1.7	16.9	13.4	8.2	-2.1	—	-7.6	19.6	13.5
0.3	0.3	0.6	14.3	-52.4	-10.7	-50.2	100.0	-20.0	50.0	50.0	50.0
0.5	0.6	1.1	306.3	-2.6	87.3	-53.8	31.6	-22.3	66.7	20.0	37.5
0.03	0.12	0.15	—	—	-9.1	900.0	—	1300.0	-70.0	200.0	7.1
8.8	10.6	19.4	22.6	16.9	19.5	21.1	4.8	12.6	-4.3	21.8	8.4
0.21	0.17	0.38	-60.7	-11.1	-39.2	-5.5	125.0	-64.3	303.8	-6.1	65.2
1.32	0.37	0.69	—	-18.2	-11.4	122.2	16.7	61.3	10.8	76.2	38.0
25.3	30.9	56.2	3.5	15.3	12.6	34.2	-24.0	-11.7	26.5	-27.3	-10.1
0.012	0.007	0.019	66.7	-54.5	-55.6	—	-74.0	123.1	300.0	-73.1	-34.5
0.018	0.016	0.029	2400.0	2900.0	2750.0	-8.0	-99.4	-41.5	-43.5	1500.0	20.8
51.2	209.2	260.4	-2.5	17.8	13.6	16.7	2.5	5.0	1.8	1.5	1.5
4.7	28.4	33.1	-1.6	4.6	3.0	-21.0	8.4	2.6	-4.1	4.4	3.1
0.9	1.4	2.3	-18.2	-13.0	-9.1	66.7	—	26.1	-40.0	—	-20.7
1.8	4.3	6.1	-9.5	56.5	25.0	30.0	-20.0	5.0	-30.8	168.8	45.2
43.8	175.0	218.8	-2.0	20.5	16.1	21.5	1.8	5.0	6.1	-0.5	0.8
0.02	0.005	0.007	-25.0	-33.3	28.6	-66.7	650.0	220.0	100.0	-66.7	-56.2
171.4	201.8	373.2	-6.7	-3.8	-5.1	6.6	16.2	11.9	11.7	-2.2	3.8
68.7	86.0	154.7	8.9	1.1	3.8	18.0	13.0	14.8	21.6	-8.3	2.9
57.8	43.9	101.7	-17.3	12.9	-6.5	17.7	9.4	14.1	7.2	14.3	10.2
11.8	13.6	25.4	-4.4	-11.9	-7.9	-2.3	1.9	-0.4	-7.1	28.3	9.0
32.1	56.9	89.0	-11.0	-18.0	-15.2	-19.1	29.5	8.5	9.6	-8.8	-2.9
1.0	1.4	2.4	66.7	33.3	38.5	—	37.5	16.7	—	27.3	14.3
132.0	112.5	244.5	6.7	-4.5	1.7	9.8	14.1	11.6	-2.4	13.6	4.3
67.5	52.0	119.5	5.3	-1.3	2.4	-6.8	4.7	-2.1	3.4	5.3	4.2
63.8	60.0	123.8	9.0	-8.5	0.8	32.3	25.9	29.6	-7.8	22.2	4.6
0.6	0.5	1.1	-12.5	20.0	—	14.3	-16.7	—	-25.0	—	-15.4
0.69	0.03	0.12	20.0	-20.0	—	2.8	25.0	2.3	28.6	50.0	33.3
16.2	16.3	32.5	-14.7	7.1	-4.7	16.4	8.1	11.8	8.7	11.6	10.5
489.7	930.8	1420.2	-0.4	8.8	5.4	11.5	7.6	9.0	4.0	9.3	7.4

**6.03(c). SEASONWISE CONSUMPTION OF POTASH (K₂O)
(1980-81 to 1982-83)**

Zone/State	Consumption of					
	1980-81			1981-82		
	Kharif	Rabi	Total	Kharif	Rabi	Total
Central	26.0	76.3	102.3	30.6	84.0	114.6
Madhya Pradesh	6.0	9.9	15.9	9.2	9.5	18.7
Rajasthan	1.7	3.7	5.5	1.6	4.0	5.6
Uttar Pradesh	18.1	62.5	80.6	19.7	69.9	89.6
Delhi	0.1	0.2	0.4	0.09	0.59	0.68
East	25.7	44.4	70.0	25.0	42.0	67.4
Arunachal Pradesh	0.008	0.004	0.012	0.019	0.009	0.028
Assam	0.7	0.5	1.2	0.9	0.6	1.5
Bihar	3.0	11.6	14.6	3.9	12.2	16.1
Manipur	0.07	0.06	0.13	0.045	0.03	0.075
Meghalaya	0.20	0.03	0.22	0.043	0.074	0.117
Nagaland	0.001	—	0.001	—	—	—
Orissa	4.4	4.4	8.8	5.0	4.9	9.9
Sikkim	0.032	0.054	0.086	0.026	0.166	0.192
Tripura	0.14	0.17	0.31	0.28	0.13	0.41
West Bengal	17.1	27.6	44.7	14.8	24.3	39.1
Mizoram	0.004	0.013	0.017	0.003	0.002	0.005
Andaman & Nicobar Islands	0.035	0.004	0.039	0.016	—	0.016
North	12.6	31.7	43.3	12.1	34.4	46.5
Haryana	2.7	9.4	12.1	1.5	9.3	10.8
Himachal Pradesh	0.6	1.0	1.6	1.1	1.0	2.1
Jammu & Kashmir	0.4	0.6	1.0	0.7	0.2	0.9
Punjab	8.9	19.7	28.6	8.8	23.9	32.7
Chandigarh	0.003	0.002	0.005	0.013	0.005	0.018
South	123.2	141.9	265.2	114.1	157.7	270.8
Andhra Pradesh	16.4	28.9	45.3	14.6	34.4	49.0
Karnataka	37.0	32.8	69.8	44.1	35.5	79.6
Kerala	16.4	16.1	32.4	15.7	15.2	30.9
Tamil Nadu	51.7	62.8	114.5	36.7	70.9	107.6
Pondicherry	1.8	1.3	3.1	2.0	1.7	3.7
West	61.2	40.0	101.2	74.2	55.1	129.3
Gujarat	24.7	10.8	35.5	22.8	18.6	41.4
Maharashtra	36.0	29.0	65.5	50.8	36.2	87.0
Goa, Daman & Diu	0.5	0.2	0.7	0.6	0.3	0.9
Dadra & Nagar Haveli	0.008	0.004	0.012	0.008	0.003	0.011
Otherst	23.1	18.6	41.7	23.3	24.3	47.6
All India	271.8	352.1	623.9	278.3	397.9	676.2

¹ Provisional

² Includes plantations

Source: Ministry of Agriculture, New Delhi.

BY STATES AND THEIR PERCENTAGE INCREASE
(Feb.-Jan.)

K ₂ O ('000 tonnes)			± % increase over the previous year								
1982-83@			1980-81			1981-82			1982-83@		
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
25.7	113.4	139.1	9.7	14.9	13.5	17.7	10.1	12.0	-16.0	35.0	21.4
8.8	9.6	18.4	5.3	39.4	24.2	53.3	-4.0	17.6	-4.3	1.1	-1.6
1.7	3.6	5.3	12.5	-7.5	-1.8	-5.9	8.1	1.8	6.3	-10.0	-5.4
15.2	100.0	115.2	10.4	13.6	12.9	8.8	11.8	11.2	-22.8	43.1	28.6
0.05	0.23	0.28	150.0	-33.3	17.6	-10.0	195.0	70.0	-44.4	-61.0	-58.8
25.8	46.2	72.0	16.8	35.8	28.3	-2.7	-4.5	-4.0	3.2	9.0	6.8
0.020	0.007	0.027	-38.5	-20.0	-33.3	137.5	125.0	133.3	5.3	-22.2	3.6
1.4	1.1	2.5	250.0	66.7	160.0	28.6	20.0	25.0	55.6	83.3	66.7
3.1	14.2	17.3	11.1	10.5	10.6	30.0	5.2	10.3	-20.5	16.4	7.5
0.033	0.074	0.107	27.1	-25.0	-26.1	-35.7	-50.0	-42.3	-26.7	146.7	42.7
0.074	0.116	0.190	227.6	15.4	161.9	-78.5	146.7	-46.8	72.1	56.8	62.4
—	—	—	-93.3	—	-93.3	—	—	—	—	—	—
5.0	5.8	10.9	25.7	18.9	22.2	13.6	11.4	12.5	—	18.4	10.1
0.119	0.088	0.207	-70.9	-10.0	-49.4	-18.7	207.4	123.3	357.7	-47.0	7.8
0.21	0.35	0.56	—	-32.0	-20.6	100.0	-23.5	32.3	-25.0	169.2	36.6
15.8	24.4	40.2	12.5	15.6	35.9	-13.5	-12.0	-12.5	6.8	0.4	2.8
0.005	0.004	0.009	-42.8	30.0	—	-25.0	-84.6	-70.6	66.7	100.0	80.0
—	—	—	2500.0	33.3	875.0	-54.3	—	-59.0	—	—	—
13.4	35.3	48.7	-3.8	3.6	-0.9	-4.0	8.5	7.4	10.7	2.6	4.7
1.7	7.8	9.5	3.8	16.1	13.1	-44.4	-1.1	-10.7	13.3	16.1	-12.0
0.6	1.1	1.7	-25.0	-9.1	-15.8	83.3	—	31.3	-45.5	10.0	-19.0
0.3	1.4	1.7	-33.3	20.0	-9.1	75.0	-66.7	-10.0	-57.1	600.0	88.9
10.8	25.0	35.8	-2.2	-5.7	-4.7	-1.1	21.3	14.3	22.7	4.6	9.5
0.006	0.014	0.020	-40.0	-60.0	-50.0	333.3	150.0	260.0	-53.8	180.0	11.1
133.2	159.8	293.0	-4.6	4.5	9.1	-8.2	11.1	2.1	17.8	1.3	8.2
26.1	41.6	67.7	33.3	8.2	16.2	-11.0	19.0	8.2	78.7	20.9	38.2
45.8	42.1	87.9	-19.9	10.8	-7.9	19.2	8.2	14.0	3.9	18.6	10.4
18.1	18.8	36.9	0.6	-8.5	-4.4	-4.3	-5.6	-4.6	15.9	23.7	19.4
41.5	55.4	97.0	-2.6	3.5	0.7	-29.0	12.9	-6.0	13.1	21.9	-9.9
1.7	1.9	3.6	38.5	8.4	24.0	11.1	30.8	19.4	-15.0	11.8	-2.7
66.0	58.6	124.6	10.3	-11.1	-10.6	21.2	37.8	27.8	-11.1	6.4	-3.6
19.6	15.0	34.6	0.8	-26.0	-9.2	-7.7	72.2	16.6	-14.0	-19.4	-16.4
45.9	48.0	88.9	-16.3	-3.7	-11.0	-41.1	24.8	33.8	-9.6	18.8	2.2
0.5	0.6	1.1	-28.6	-33.3	-30.0	20.0	50.0	28.6	-16.7	100.0	22.2
0.013	0.007	0.020	-33.3	16.7	-16.7	—	-25.0	-8.3	62.5	133.3	81.8
28.7	28.9	57.6	19.7	-8.8	5.0	0.9	30.6	14.1	23.2	18.9	21.8
292.7	442.2	735.0	-1.3	6.4	2.9	2.4	13.0	8.4	5.2	11.1	8.7

**6 03(d). SEASONWISE CONSUMPTION OF N+P₂O₅+K₂O
1980-81 to 1982-83**

Zone/State	Consumption of N+P ₂ O ₅ +K ₂ O ('000 tonnes)								
	1980-81			1981-82			1982-83@		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
Central	453.7	1033.6	1487.3	522.3	1130.4	1652.7	465.2	1416.1	1881.3
Madhya Pradesh	69.1	127.7	196.8	98.3	137.9	236.3	94.0	145.5	239.5
Rajasthan	46.5	88.6	135.4	47.5	90.5	138.0	45.8	115.3	161.0
Uttar Pradesh	336.6	814.0	1150.6	374.1	895.5	1269.6	324.4	1150.0	1474.4
Delhi	1.5	3.3	4.8	2.4	6.5	8.9	1.0	5.3	6.2
East	191.4	390.9	581.2	207.0	359.0	566.0	214.1	371.1	585.2
Arunachal Pradesh	0.023	0.034	0.057	0.060	0.04	0.10	0.07	0.05	0.12
Assam	5.1	4.3	9.3	5.9	4.9	10.8	6.9	6.6	13.5
Bihar	46.3	158.2	204.5	49.9	155.4	205.3	43.2	167.4	210.6
Manipur	2.2	0.8	3.0	2.3	1.0	3.3	2.4	1.8	4.2
Meghalaya	1.49	1.08	2.56	0.9	1.3	2.2	1.1	1.6	2.7
Nagaland	0.06	0.02	0.08	0.22	0.13	0.35	0.09	0.22	0.31
Orissa	34.6	41.8	76.4	38.4	43.6	82.0	38.5	50.7	89.2
Sikkim	0.21	0.22	0.42	0.22	0.57	0.79	0.55	0.48	1.03
Tripura	0.92	1.06	1.98	1.74	0.94	2.68	1.40	1.53	2.93
West Bengal	100.4	182.4	282.8	107.3	151.1	258.4	119.8	140.7	260.5
Mizoram	0.02	0.05	0.07	0.013	0.036	0.049	0.040	0.034	0.074
Andaman & Nicobar Islands	3.10	0.04	0.14	0.047	0.002	0.007	0.053	0.027	0.080
North	327.3	696.1	1023.5	348.4	764.5	1112.9	348.6	811.3	1156.9
Haryana	75.7	155.1	230.8	75.5	176.1	251.6	77.8	184.1	261.9
Himachal Pradesh	9.4	6.7	16.2	10.6	7.6	18.2	9.8	8.4	18.2
Jammu & Kashmir	13.8	6.9	20.7	17.0	4.6	21.6	13.7	18.3	31.9
Punjab	227.6	526.0	753.6	245.0	575.5	820.5	247.1	600.0	847.1
Chandigarh	0.8	1.4	2.2	0.3	0.7	1.0	0.2	0.5	0.7
South	674.7	845.7	1520.4	655.3	1004.8	1659.6	706.6	986.0	1692.6
Andhra Pradesh	226.2	349.4	575.6	239.0	416.5	655.5	264.2	431.1	695.3
Karnataka	180.9	163.0	343.9	201.9	181.7	383.6	211.9	214.7	426.6
Kerala	50.8	46.7	97.5	48.5	46.3	94.8	48.9	57.4	106.3
Tamil Nadu	210.1	281.2	491.3	159.2	353.4	512.6	74.6	275.6	450.3
Pondicherry	6.7	5.4	12.1	6.7	6.4	13.1	7.0	7.2	14.2
West	423.4	358.9	782.3	502.9	432.3	935.1	448.4	482.1	930.5
Gujarat	190.7	166.2	356.9	197.3	204.1	401.4	197.6	205.0	402.6
Maharashtra	230.0	191.0	421.0	302.6	226.5	529.1	248.2	275.0	523.2
Goa, Daman & Diu	2.5	1.6	4.1	2.8	1.6	4.4	2.4	2.0	4.4
Dadra & Nagar Haveli	0.18	0.06	0.23	0.16	0.07	0.23	0.23	0.10	0.33
Others*	67.4	52.6	121.0	74.3	66.5	140.8	84.0	84.4	168.4
All India	2137.8	3377.7	5515.6	2310.2	3757.0	6067.2	2266.9	4151.0	6417.9

@Provisional

* Includes plantations

Source: Ministry of Agriculture, New Delhi.

BY STATES AND THEIR PERCENTAGE INCREASE
(Feb.—Jan.)

± % increase over the previous year								
1980-81			1981-82			1982-83@		
Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
4.9	16.3	12.6	15.1	9.4	11.1	-10.9	25.3	13.8
0.6	40.8	23.2	42.3	8.0	20.0	-4.4	5.5	1.4
5.4	-14.1	-8.2	2.2	22.1	2.1	-3.6	27.4	16.7
5.6	17.9	14.0	11.1	10.0	10.3	-13.3	28.4	16.1
47.1	-20.0	-8.3	60.0	97.0	85.4	-58.3	-18.5	-30.3
15.0	14.6	14.5	8.2	-8.2	-2.6	3.4	3.4	3.4
-80.9	10.3	28.7	160.9	17.6	75.0	16.7	25.0	20.0
75.9	10.3	36.8	15.7	14.0	14.9	16.9	34.7	25.0
5.0	12.8	10.9	7.8	-1.8	0.4	-13.4	7.7	2.6
67.9	-52.9	3.2	4.5	25.0	10.0	4.3	80.0	27.3
123.9	-7.6	34.4	-39.6	-16.7	-14.1	22.2	23.1	22.7
-14.3	—	1.3	266.7	550.0	337.5	-59.1	69.2	-11.4
18.9	6.4	13.4	11.0	4.3	7.3	0.3	16.3	8.8
-54.5	-24.1	-42.4	4.8	159.1	88.1	150.0	-75.8	30.4
5.7	-15.9	-7.0	89.1	-11.3	35.4	-19.5	62.8	9.3
15.7	18.5	17.5	6.9	-17.2	-8.6	-11.6	-6.9	0.8
-26.7	12.5	-4.7	-50.0	-18.0	-30.0	207.7	-5.6	51.0
1800.0	320.0	813.4	-53.0	-95.0	-65.0	12.8	1250.0	1042.9
3.4	12.5	9.5	6.4	9.8	8.7	0.1	8.1	4.2
7.4	6.9	7.1	-0.3	13.5	9.0	3.0	4.5	4.1
14.6	15.6	15.7	12.8	13.4	12.3	-7.5	10.5	—
—	2.8	-1.0	23.2	-33.3	4.3	-19.4	297.8	47.7
-1.9	-14.6	-10.5	7.6	9.4	8.9	0.9	4.3	3.2
-7.0	-10.0	-9.1	-62.5	-50.0	-54.5	-33.3	-28.6	-30.0
1.8	-5.1	-2.2	-2.9	18.8	9.2	7.8	-1.8	2.0
20.6	0.6	7.6	5.7	19.2	13.9	10.5	3.5	6.1
-13.0	2.9	-6.1	11.6	11.5	11.5	5.0	18.2	11.2
-3.2	-12.1	-7.7	-4.5	-0.9	-2.8	0.8	24.0	12.1
-0.1	-14.2	-8.7	-24.2	25.7	4.3	9.7	-22.0	-12.2
42.6	8.0	24.7	—	18.5	8.3	4.5	12.5	8.4
2.7	-8.3	-2.6	18.8	20.5	19.5	-10.8	11.5	-0.5
4.3	-14.6	-5.5	3.5	22.8	12.5	0.2	0.4	0.3
1.8	-2.1	-0.1	31.6	18.6	25.7	-18.0	21.4	-1.1
-13.8	-5.9	2.5	12.0	—	7.3	-14.3	25.0	—
6.3	8.3	5.9	-11.1	16.7	—	43.8	42.9	43.5
-1.3	-19.8	-10.3	10.2	26.4	16.4	13.1	26.9	19.6
3.8	5.7	5.9	8.1	11.2	10.0	-1.9	10.5	5.8

6.04. STATES ACCORDING TO DESCENDING ORDER OF CONTRIBUTION TO TOTAL INCREASE IN CONSUMPTION (N+P₂O₅+K₂O) 1982-83 OVER 1981-82 AND 1982-83 OVER 1977-78

Ranking in terms of increase in consumption in 1982-83 over 1981-82	1982-83 over 1981-82			Ranking in terms of increase in consumption in 1982-83 over 1977-78	1982-83 over 1977-78				
	State	Increase in absolute terms ('000 tonnes)	Share in contribution to all India increase (per cent)		Cumulative share (per cent) †	State	Increase in absolute terms ('000 tonnes)	Share in contribution to all India increase (per cent)	Cumulative share (per cent)
1.	Uttar Pradesh	204.8	52.4	52.4	1.	Uttar Pradesh	614.6	28.8	28.8
2.	Karnataka	43.0	11.0	63.4	2.	Punjab	394.1	18.5	47.3
3.	Andhra Pradesh	39.8	10.2	73.6	3.	Andhra Pradesh	173.5	8.1	55.4
4.	Punjab	26.6	6.8	80.4	4.	Maharashtra	163.2	7.7	63.1
5.	Rajasthan	23.0	5.9	86.3	5.	Karnataka	157.7	7.4	70.5
6.	Kerala	11.5	2.9	89.2	6.	Gujarat	112.6	5.3	75.8
7.	Jammu & Kashmir	10.3	2.6	91.8	7.	West Bengal	88.3	4.1	79.9
8.	Haryana	10.3	2.6	94.4	8.	Madhya Pradesh	80.4	3.8	83.7
9.	Orissa	7.2	1.8	96.2	9.	Haryana	73.2	3.4	87.1
10.	Bihar	5.3	1.4	97.6	10.	Rajasthan	48.0	2.3	89.4
11.	Madhya Pradesh	3.2	0.8	98.4	11.	Bihar	37.4	1.8	91.2
12.	Assam	2.7	0.7	99.1	12.	Kerala	27.8	1.3	92.5
13.	West Bengal	2.1	0.5	99.6	13.	Orissa	25.3	1.2	93.7
14.	Gujarat	1.2	0.4	100.0	14.	Tamil Nadu	23.6	1.1	94.8
	Sub-total	391.0			15.	Jammu & Kashmir	19.5	0.9	95.7
	Negative rate of growth				16.	Himachal Pradesh	8.2	0.4	96.1
15.	Tamil Nadu	62.3	91.3	91.3	17.	Assam	7.6	0.4	96.5
16.	Maharashtra	5.9	8.7	100.0					
	Sub-total	68.2							
	All India net increase 350.7*						2132.1*		

*Include small states/UTs/plantations

Note: i) For consumption figures see Tables 6.03 (d)

ii) Figures for 1982-83 are provisional

6.05. SEASONWISE SHARE OF CONSUMPTION OF N, P₂O₅ & K₂O BY STATES
1981-82 and 1982-83

(per cent)

Zone/State	1981-82								1982-83@							
	N		P ₂ O ₅		K ₂ O		Total		N		P ₂ O ₅		K ₂ O		Total	
	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi
Central	34	66	24	76	27	73	32	68	27	73	19	81	18	82	25	75
Madhya Pradesh	40	60	44	56	49	51	42	58	36	64	43	57	48	52	39	61
Rajasthan	36	64	31	69	29	71	34	66	29	71	27	73	32	68	28	72
Uttar Pradesh	33	67	17	83	22	78	29	71	26	74	12	88	13	87	22	78
Delhi	31	69	8	92	13	87	27	73	19	81	3	97	18	82	16	84
East	38	62	33	67	37	63	37	63	37	63	37	63	36	64	37	63
Arunachal Pradesh	52	48	64	36	68	32	60	40	57	43	74	26	74	26	58	42
Assam	55	45	50	50	60	40	55	45	52	48	42	58	56	44	51	49
Biher	25	75	22	78	24	76	24	76	21	79	18	82	18	82	21	79
Manipur	71	29	50	50	60	40	70	30	57	43	50	50	31	69	57	43
Meghalaya	42	58	38	62	37	63	41	59	38	62	45	55	39	61	41	59
Nagaland	71	29	71	29	—	—	63	37	33	67	20	80	—	—	29	71
Orissa	45	55	51	49	51	49	47	53	42	58	45	55	46	54	43	57
Sikkim	39	61	23	77	14	86	28	72	50	50	55	45	57	43	53	47
Tripura	66	34	58	42	68	32	65	35	52	48	46	54	38	62	48	52
West Bengal	46	54	32	68	38	62	42	58	48	52	45	55	39	61	46	54
Mizoram	37	63	10	90	60	40	27	73	50	50	63	37	56	44	54	46
Andaman & Nicobar Island	89	11	96	4	100	—	71	29	78	22	45	55	—	—	66	34

(Continued)

6.05. SEASONWISE SHARE OF CONSUMPTION OF N, P₂O₅ & K₂O BY STATES
1981-82 and 1982-83 (Concluded)

(per cent)

Zone/State	1981-82								1982-83@							
	N		P ₂ O ₅		K ₂ O		Total		N		P ₂ O ₅		K ₂ O		Total	
	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi	Kharif : Rabi
North	35	65	20	80	26	74	31	69	33	67	20	80	28	72	30	70
Haryana	33	67	15	85	14	86	30	70	33	67	14	86	18	82	30	70
Himachal Pradesh	61	39	52	48	52	48	58	42	58	42	39	61	35	65	54	46
Jammu & Kashmir	84	16	62	38	78	22	79	21	48	52	30	70	18	82	43	57
Punjab	34	66	19	81	27	73	30	70	33	67	20	80	30	70	29	71
Chandigarh	29	71	6	94	72	28	30	70	33	67	29	71	30	70	29	71
South	38	62	43	57	42	58	39	61	39	61	46	54	45	55	42	58
Andhra Pradesh	37	63	38	62	30	70	36	64	36	64	44	56	39	61	38	62
Karnataka	49	51	58	42	55	45	53	47	46	54	57	43	52	48	50	50
Kerala	50	50	55	45	51	49	51	49	43	57	46	54	49	51	46	54
Tamil Nadu	30	70	32	68	34	66	31	69	38	62	36	64	43	57	39	61
Pondicherry	51	49	48	52	54	46	51	49	52	48	42	58	47	53	49	51
West	51	49	58	42	57	43	54	46	45	55	54	46	53	47	48	52
Gujarat	44	56	57	43	55	45	49	51	44	56	56	44	57	43	49	51
Maharashtra	56	44	58	42	58	42	57	43	45	55	52	48	52	48	47	53
Goa	64	36	62	38	67	33	64	36	57	43	55	45	45	55	55	45
Dadra & Nagar Haveli	62	38	78	22	73	27	70	30	50	50	75	25	65	35	70	30
Others	58	42	51	49	49	51	53	47	50	50	50	50	50	50	50	50
All India	38	62	36	64	41	59	38	62	35	65	34	66	40	60	35	65

@ Provisional

**6.66. ALL INDIA CONSUMPTION RATIO OF N & P₂O₅ IN RELATION TO
K₂O AND N IN RELATION TO P₂O₅,
1951-52 to 1982-83**

Year	N/K ₂ O	P ₂ O ₅ /K ₂ O	N/P ₂ O ₅
1951-52	7.6	0.9	8.5
1952-53	17.5	1.4	12.6
1953-54	11.9	1.1	10.8
1954-55	8.5	1.4	6.3
1955-56	10.0	1.3	8.3
1956-57	8.3	1.1	7.7
1957-58	11.6	1.7	6.8
1958-59	7.7	1.3	5.8
1959-60	10.8	2.5	4.3
1960-61	7.3	1.8	4.0
1961-62	8.9	2.2	4.1
1962-63	9.1	2.3	4.0
1963-64	7.4	2.3	3.2
1964-65	8.0	2.1	3.7
1965-66	7.4	1.7	4.3
1966-67	6.5	2.2	3.0
1967-68	5.5	2.0	3.1
1968-69	7.1	2.2	3.2
1969-70	6.5	2.0	3.3
1970-71	6.3	2.3	2.7
1971-72	6.0	1.9	3.2
1972-73	5.3	1.7	3.2
1973-74	5.1	1.8	2.8
1974-75	5.3	1.4	3.7
1975-76	7.7	1.7	4.6
1976-77	7.7	2.0	3.9
1977-78	5.8	1.7	3.4
1978-79	5.8	1.9	3.1
1979-80	5.8	1.9	3.0
1980-81	5.9	1.9	3.0
1981-82	6.0	1.9	3.1
1982-83 (Provisional)	5.8	1.9	3.0

**6.07. STATEWISE CONSUMPTION RATIO OF N & P₂O₅ IN RELATION TO K₂O AND N IN RELATION TO P₂O₅
1981-82 & 1982-83**

Zone/State	1981-82			1982-83@		
	N/K ₂ O	P ₂ O ₅ /K ₂ O	N/P ₂ O ₅	N/K ₂ O	P ₂ O ₅ /K ₂ O	N/P ₂ O ₅
Central	10.6	2.9	3.7	9.7	2.8	3.5
Madhya Pradesh	7.7	3.9	2.0	7.9	4.1	1.9
Rajasthan	19.1	4.6	4.2	22.9	6.4	3.6
Uttar Pradesh	10.6	2.6	4.1	9.3	2.5	3.8
Delhi	10.4	1.4	7.2	16.0	4.0	4.1
East	5.7	1.7	3.4	5.5	1.6	3.5
Assam	5.3	0.8	6.7	3.6	0.8	4.8
Bihar	9.9	1.8	5.4	9.2	1.9	4.8
Manipur	37.3	5.3	7.0	35.0	6.0	5.8
Meghalaya	10.3	6.8	1.5	7.0	5.5	1.2
Nagaland	—	—	1.2	—	—	1.0
Orissa	5.5	1.8	2.0	5.4	1.8	3.0
Tripura	4.3	1.2	3.5	2.8	1.2	2.4
West Bengal	4.0	1.6	2.5	4.1	1.4	2.9
North	17.4	5.5	3.2	17.5	5.3	3.3
Haryana	19.3	3.0	6.5	23.1	3.5	6.6
Himachal Pradesh	6.3	1.4	4.6	8.4	1.4	6.2
Jammu & Kashmir	18.3	4.7	3.9	14.2	3.6	4.0
Punjab	17.4	6.6	2.6	16.6	6.1	2.7
South	3.8	1.3	2.9	3.5	1.3	2.8
Andhra Pradesh	9.3	3.1	3.0	7.0	2.3	3.1
Karnataka	2.7	1.2	2.3	2.7	1.2	2.3
Kerala	1.3	0.8	1.7	1.2	0.7	1.7
Tamil Nadu	2.9	0.9	3.4	2.7	0.9	3.0
Pondicherry	2.0	0.6	3.6	2.3	0.7	3.4
West	4.4	1.8	2.4	4.5	2.0	2.3
Gujarat	5.9	2.8	2.1	7.2	3.5	2.1
Maharashtra	3.7	1.4	2.7	3.5	1.4	2.5
Goa, Daman & Diu	2.4	1.4	1.7	1.9	1.1	1.9
All India	6.0	1.9	3.1	5.8	1.9	3.0

@Provisional.

**6.08. ALL-INDIA CONSUMPTION OF PLANT NUTRIENTS PER UNIT OF
GROSS CROPPED AREA
(1951-52 to 1982-83)**

Year	Gross cropped area ('000 ha)	Consumption per hectare (kg)			
		N	P ₂ O ₅	K ₂ O	Total
1951-52	133,214	0.44	0.05	0.06	0.55
1952-53	137,675	0.42	0.03	0.02	0.47
1953-54	142,480	0.63	0.06	0.05	0.74
1954-55	144,087	0.66	4.10	0.08	0.84
1955-56	147,311	0.73	0.09	0.07	0.89
1956-57	149,492	0.82	0.11	0.10	1.03
1957-58	145,832	1.02	0.15	0.09	1.26
1958-59	151,529	1.13	0.19	0.15	1.47
1959-60	152,824	1.50	0.35	0.14	1.99
1960-61	151,772	1.39	0.35	0.19	1.93
1961-62	156,209	1.60	0.39	0.18	2.17
1962-63	156,760	2.12	0.53	0.23	2.88
1963- 4	156,963	2.40	0.74	0.32	3.46
1964-65	159,229	3.49	0.93	0.44	4.86
1965-66	155,276	3.70	0.85	0.50	5.05
1966-67	157,355	4.69	1.58	0.73	7.00
1967-68	163,736	6.32	2.04	1.04	9.40
1968-69	159,529	7.58	2.40	1.07	11.05
1969-70	162,265	8.36	2.56	1.29	12.21
1970-71	165,791	8.92	3.26	1.43	13.61
1971-72	165,194	10.88	3.38	1.88	16.14
1972-73	162,150	11.34	3.58	2.14	17.06
1973-74	169,871	10.77	3.82	2.12	16.71
1974-75	164,190	10.75	2.87	2.05	15.67
1975-76	170,994	12.57	2.73	1.63	16.93
1976-77	167,280	14.09	3.80	1.90	20.39
1977-78	172,310	16.91	5.03	2.94	24.88
1978-79	175,177	19.52	6.31	3.38	29.21
1979-80	*	19.97	6.57	3.43	30.00
1980-81	*	21.00	6.93	3.56	31.49
1981-82	*	23.23	7.55	3.86	34.64
1982-83	*	24.30	8.10	4.20	36.60

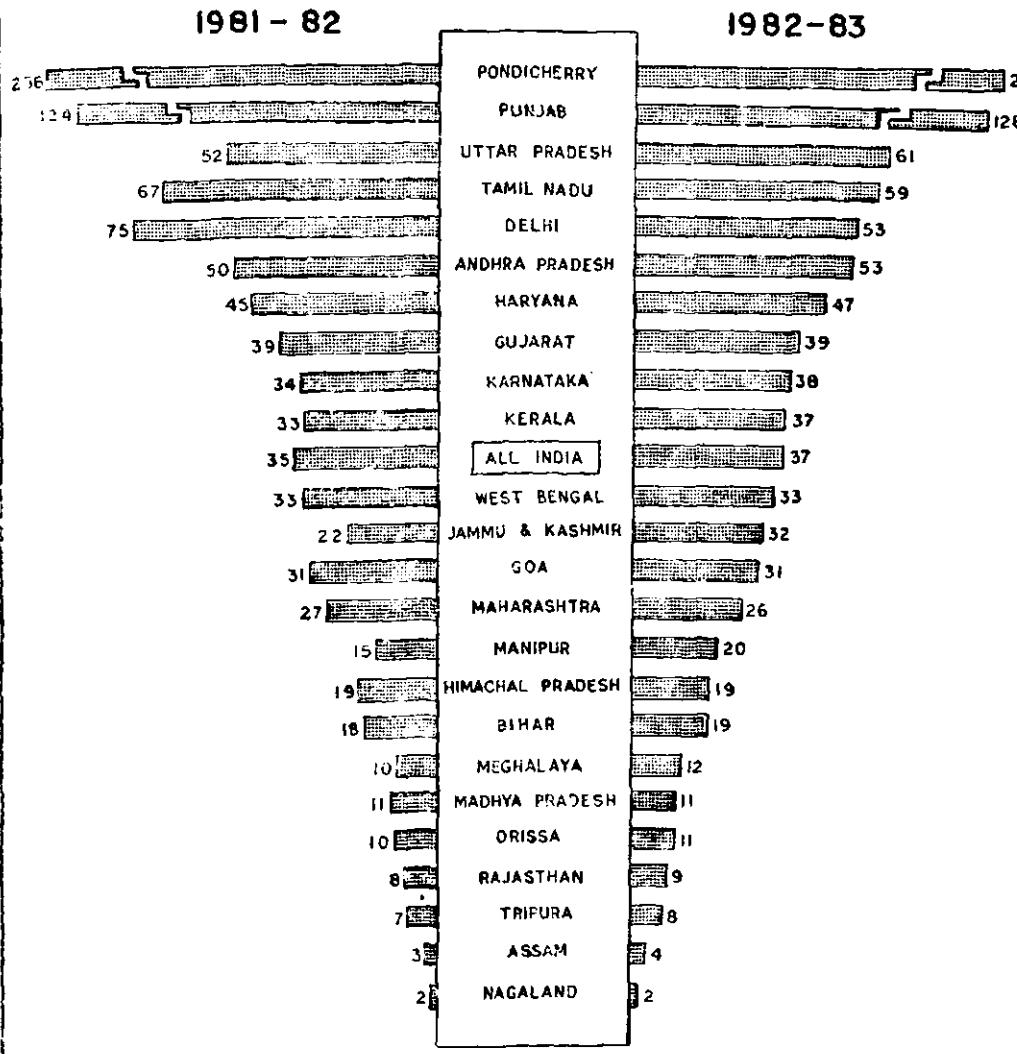
*Figures of consumption and gross cropped area refer to the same year, except last four years, where gross cropped area is for the year 1978-79.

* Provisional.

Note: Calculated on the basis of consumption figures given in chapter "Summary Tables" (Part I) and gross cropped area under "Classification of area" (Part II).

CONSUMPTION OF PLANT NUTRIENTS (KG.)

(N + P₂O₅ + K₂O)



* PER HECTARE OF CROPPED AREA

6.09. STATEWISE CONSUMPTION OF PLANT NUTRIENTS PER UNIT OF GROSS CROPPED AREA—1981-82 AND 1982-83

(kg/hectare)

Zone/State	1981-82				1982-83*			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
Central	19.0	5.2	1.8	26.0	21.2	6.2	2.2	29.6
Madhya Pradesh	6.7	3.3	0.9	10.9	6.7	3.5	0.8	11.0
Rajasthan	6.1	1.5	0.3	7.9	6.9	1.9	0.3	9.1
Uttar Pradesh	39.1	9.4	3.7	52.2	44.2	11.7	4.7	60.6
Delhi	60.7	8.4	5.8	74.9	40.6	10.1	2.4	53.3
East	12.0	3.5	2.1	17.6	12.4	3.6	2.2	18.2
Assam	2.4	0.4	0.5	3.3	2.8	0.6	0.7	4.1
Bihar	14.0	2.6	1.4	18.0	14.0	3.0	1.5	18.5
Manipur	13.1	1.9	0.4	15.4	16.4	2.9	0.5	19.8
Meghalaya	5.4	3.6	0.5	9.5	6.2	5.1	0.9	12.2
Nagaland	1.1	0.9	—	2.0	1.0	1.0	—	2.0
Orissa	6.5	2.2	1.2	9.9	7.1	2.4	1.3	10.8
Tripura	4.6	1.3	1.1	7.0	4.4	1.8	1.4	7.6
West Bengal	19.9	7.9	5.0	32.8	20.8	7.1	5.1	33.0
North	57.5	18.2	3.3	79.0	60.4	18.5	3.5	82.4
Haryana	37.8	5.8	1.9	45.5	39.7	6.0	1.7	47.4
Himachal Pradesh	14.2	3.1	2.2	19.5	15.2	2.4	1.9	19.5
Jammu & Kashmir	16.7	4.2	0.9	21.8	24.4	6.2	1.7	32.3
Punjab	86.1	32.7	4.9	123.7	89.4	33.0	5.4	127.8
South	29.5	10.3	7.8	47.6	29.4	10.7	8.4	48.5
Andhra Pradesh	34.8	11.5	3.7	50.0	36.0	11.8	5.2	53.0
Karnataka	19.0	8.6	7.1	34.4	21.3	9.1	7.9	38.3
Kerala	14.1	18.7	10.7	32.9	15.3	8.8	12.8	36.9
Tamil Nadu	40.8	11.9	14.0	66.7	34.4	11.6	12.6	58.6
Pondicherry	144.2	40.4	71.2	255.8	158.2	45.6	68.6	272.4
West	18.8	7.7	4.3	30.8	18.5	8.0	4.1	30.6
Gujarat	23.6	11.0	4.0	38.6	23.9	11.5	3.3	38.7
Maharashtra	16.3	5.9	4.4	26.6	15.6	6.2	4.5	26.3
Goa, Daman & Diu	15.4	9.1	6.3	30.8	14.8	8.3	7.4	30.5
All India	23.2	7.5	3.9	34.6	24.3	8.1	4.2	36.6

*Provisional.

6.10. SHARE OF GROSS CROPPED AREA AND FERTILISER CONSUMPTION TO ALL-INDIA TOTAL—STATEWISE - 1982-83

Zone/State	Share of State to all-India gross cropped area (%)	Share of State to all-India consumption (N+P+K) (%)	N+P+K consumption per hectare of gross cropped area (kg)	Col. 3 vs col. 2*
1	2	3	4	5
Central	36.3	29.3	29.6	Lower
Madhya Pradesh	12.4	3.7	11.0	Lower
Rajasthan	10.0	2.5	9.1	Lower
Uttar Pradesh	13.9	23.0	60.6	Higher
Delhi	0.06	0.1	53.1	Higher
East	18.4	9.1	18.2	Lower
Assam	1.9	0.2	4.1	Lower
Bihar	6.5	3.3	18.5	Lower
Orissa	4.7	1.4	10.8	Lower
West Bengal	4.5	4.1	33.0	Lower
North	8.0	18.1	82.4	Higher
Haryana	3.2	4.1	47.4	Higher
Himachal Pradesh	0.5	0.3	19.5	Lower
Jammu & Kashmir	0.6	0.5	32.3	Lower
Punjab	3.8	13.2	127.8	Higher
South	19.9	26.4	48.5	Higher
Andhra Pradesh	7.5	10.8	53.0	Higher
Karnataka	6.4	6.6	38.3	Higher
Kerala	1.6	1.7	36.9	Higher
Tamil Nadu	4.4	7.0	58.6	Higher
Pondicherry	0.02	0.2	272.4	Higher
West	17.4	14.5	30.6	Lower
Gujarat	5.9	6.3	38.7	Higher
Maharashtra	11.3	8.2	26.3	Lower
Goa, Daman & Diu	0.1	0.1	30.5	Lower
All India	100.0	100.0	36.6	

*In a State where total nutrient (N+P+K) consumption share is higher than gross cropped area share, consumption of plant nutrients (N+P+K) in that State (kg/ha) is above all-India average of 36.6 kg/ha.

Note: Zonal percentage of consumption (N+P+K) do not add upto 100 per cent due to omission of small States, U. Ts. and plantations.

**6 11. STATEWISE FERTILISER CONSUMPTION PER HECTARE OF FERTILISED LAND
1975-76**

States	Ratio of Fertiliser Users to Total Cultivating Households	Ratio of Fertilised Area to Total Cropped Area	Fertiliser use per Hectare of Fertilised Land
	(%)	(%)	(kgs)
Andhra Pradesh	61.8	41.7	111.7
Assam	6.5	4.9	49.4
Bihar	42.3	35.3	49.4
Gujarat	62.3	43.1	45.8
Haryana	69.2	48.7	76.6
Himachal Pradesh	33.8	27.6	28.4
Jammu & Kashmir	40.5	28.5	46.9
Karnataka	49.9	33.4	104.6
Kerala	65.3	72.6	92.0
Madhya Pradesh	15.4	10.8	46.5
Maharashthra	42.2	27.3	77.3
Orissa	21.4	20.7	90.8
Punjab	91.9	76.3	90.8
Rajasthan	30.8	20.1	55.5
Tamil Nadu	69.7	55.4	128.1
Uttar Pradesh	44.2	32.1	64.6
West Bengal	66.0	49.8	89.5
All India	45.1	32.9	78.0

Source: NCAER Fertiliser Demand Study 1975-76.

**6.12. STATEWISE NUMBER OF HOUSEHOLDS USING FERTILISERS
1975-76**

States	@ Ratio of fertilisers to total cultivating households	No. of operational holdings*	(nos)	
			No. of households using fertilisers	Non- fertiliser users
1	2	3	4=(2)×(3)	5=(3-4)
Andhra Pradesh	61.8	6,154	3,803	2,351
Assam	6.5	2,254	147	2,107
Bihar	42.3	9,936	4,203	5,733
Gujarat	62.3	2,713	1,690	1,023
Haryana	69.2	999	691	308
Himachal Pradesh	33.8	621	210	411
Jammu & Kashmir	40.5	971	393	578
Karnataka	49.9	3,811	1,902	1,909
Kerala	65.3	3,501	2,286	1,215
Madhya Pradesh	15.4	6,061	933	5,128
Maharashtra	42.2	5,764	2,432	3,332
Orissa	21.4	3,576	765	2,811
Punjab	91.9	1,504	1,382	122
Rajasthan	30.8	4,365	1,344	3,021
Tamil Nadu	69.7	6,112	4,260	1,852
Uttar Pradesh	44.2	16,971	7,501	9,470
West Bengal	66.0	5,276	3,476	1,791
All India	46.1	81,555	36,781	44,774

*Data based on 1976-77.

@NCAER Fertiliser Demand Study 1975-76.

Source: Worked out in FAI.

**6.13. STATEWISE FERTILISED AND NON-FERTILIZED AREA
1975-76**

States	@ Ratio of fertilized area to total cropped area (%)	Total cropped area ('000 hectares)	Fertilised area ('000 hectares)	Non-fertilised area ('000 hectares)
1	2	3	4=(3×2)	5=(3-4)
Andhra Pradesh	41.7	12,958	5,403	7,555
Assam	4.9	3,177	156	3,021
Bihar	35.3	11,287	3,984	7,303
Gujarat	43.1	10,198	4,395	5,803
Haryana	48.7	5,451	2,655	2,796
Himachal Pradesh	27.6	924	255	669
Jammu & Kashmir	28.5	923	263	660
Karnataka	33.4	11,159	3,727	7,432
Kerala	72.6	2,981	2,164	817
Madhya Pradesh	10.8	21,356	2,306	19,050
Maharashtra	27.3	19,664	5,368	14,296
Orissa	20.7	7,733	1,601	6,132
Punjab	76.3	6,255	4,773	1,482
Rajasthan	20.1	17,146	3,446	13,700
Tamil Nadu	55.4	7,235	4,008	3,227
Uttar Pradesh	32.1	23,098	7,414	15,684
West Bengal	49.8	7,958	3,963	3,995
All India	32.9	170,994	56,257	114,737

④ NCAER Fertiliser Demand Study 1975-76.

Source: Worked out in the FAI.

6.14. PATTERN OF FERTILISER CONSUMPTION BY SIZE OF FARMS

Item	Size of farm (hectares)					All households
	Below 1	1-2	2-4	4-10	10 and above	
1. Distribution of cultivator households (per cent)	40.7	24.8	19.8	12.1	2.6	100.0
2. Area cultivated (per cent)	9.7	15.7	24.3	31.6	18.7	100.0
3. Cultivator households using ferils. (per cent)	36.8	44.8	55.3	55.4	58.8	45.2
4. Proportion of fertilised area to gross cropped area (per cent)	31.3	32.7	36.1	35.2	34.2	34.4
5. Proportion of fertilised area to gross cropped area of households using fertilisers (per cent)	79.9	70.3	62.4	58.9	49.8	61.5
6. Fertiliser input per fertilised hectare (kg)	92.3	85.8	80.1	71.1	59.0	76.4
7. Distribution of fertilisers consumption (N + P ₂ O ₅ + K ₂ O) (per cent)	12.2	18.5	22.8	20.9	11.2	100.0

Source: Adapted from "Fertiliser use in India: Role of Small and Marginal Farmers"—T. K. Roy and H. Y. Siddiqi (NCAER)—Fertiliser Marketing News—October 1980.

6 15. SEASONWISE CONSUMPTION OF N, P₂O₅ AND K₂O--BY DISTRICTS
1982-83

(tonnes)

Districts	Kharif 1982				Rabi 1982-83				Total 1982-83			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
CENTRAL ZONE												
Madhya Pradesh												
1. Raipur	7,971	4,009	1,061	13,041	4,647	919	424	5,990	12,618	4,928	1,485	19,031
2. Durg	1,932	1,197	334	3,463	3,089	672	237	3,998	5,021	1,869	571	7,461
3. Rajnandgaon	1,065	1,022	220	2,307	1,384	273	52	1,709	2,449	1,295	272	4,016
4. Bastar	293	160	44	497	254	50	15	319	547	210	59	815
5. Bilaspur	2,585	1,468	275	4,328	3,710	853	116	4,679	6,295	2,321	291	9,007
6. Raigarh	1,494	1,326	125	2,945	2,867	656	103	3,626	4,361	1,982	228	6,571
7. Surguja	445	417	81	943	484	339	40	863	929	756	121	1,806
8. Jabalpur	359	226	52	637	2,677	2,062	320	5,059	3,036	2,288	372	5,696
9. Mandla	151	29	4	184	220	40	11	271	371	69	15	455
10. Balaghat	1,476	1,098	258	2,832	914	151	22	1,087	2,390	1,249	280	3,919
11. Chhindwara	1,711	740	254	2,705	972	352	141	1,465	2,683	1,092	395	4,170
12. Seoni	183	121	21	325	275	57	10	342	458	178	31	667
13. Narsinghpur	171	68	15	254	1,480	1,019	172	2,671	1,651	1,087	187	2,925
14. Sagar	251	272	46	569	1,062	888	137	2,087	1,313	1,160	183	2,655
15. Damoh	25	44	10	79	677	590	64	1,331	702	634	74	1,410
16. Panna	18	20	6	44	595	605	46	1,246	613	625	52	1,290
17. Chhatarpur	44	86	25	155	1,956	1,322	201	3,479	2,000	1,408	226	3,634
18. Tikamgarh	27	25	7	59	4,970	3,429	657	9,056	4,997	3,454	664	9,115
19. Rewa	221	61	14	296	2,671	2,193	224	5,088	2,892	2,254	238	5,384
20. Satna	104	56	9	169	2,498	1,983	121	4,602	2,602	2,039	130	4,771
21. Sidhi	93	45	14	152	325	208	38	571	418	253	52	723
22. Shehdol	63	37	8	108	349	282	53	684	412	319	61	792

(Continued)

**6.15. SEASONWISE CONSUMPTION OF N, P₂O₅ AND K₂O—BY DISTRICTS
1982-83 (Continued)**

(tonnes)

Districts	Kharif 1982				Rabi 1982-83				Total 1982-83			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
CENTRAL ZONE												
Madhya Pradesh (Concluded)												
23. Indore	1,522	1,381	443	3,346	2,084	2,044	514	4,642	3,606	3,425	957	7,988
24. Dhar	4,061	1,523	460	6,044	3,026	1,273	367	4,666	7,087	2,796	827	10,710
25. Jabua	625	184	32	841	462	96	30	588	1,087	280	62	1,429
26. Khandwa	1,906	525	621	3,052	2,442	692	1,070	4,204	4,348	1,217	1,691	7,256
27. Kargone	5,093	1,992	837	7,922	2,709	903	416	4,024	7,800	2,895	1,253	11,948
28. Ujjain	3,220	2,887	884	7,001	2,432	1,650	367	4,489	5,652	4,577	1,251	11,480
29. Ratlam	3,351	1,720	475	5,546	3,143	770	226	4,139	6,494	2,490	701	8,934
30. Mandsaar	3,387	2,527	647	6,561	4,621	1,992	501	7,114	8,008	4,519	1,148	13,675
31. Dewas	2,427	1,737	481	4,645	1,896	1,395	292	3,583	4,323	3,132	773	8,228
32. Shajapur	668	1,201	232	2,101	1,752	1,178	192	3,052	2,420	2,309	424	5,153
33. Gwalior	541	176	44	761	2,564	1,042	189	3,795	3,105	1,218	233	4,556
34. Shivpuri	173	145	32	350	1,383	865	73	2,321	1,556	1,010	105	2,271
35. Guna	140	78	13	231	711	371	61	1,143	853	449	74	1,374
36. Dafia	45	39	17	101	1,020	405	85	1,510	1,065	444	102	1,611
37. Morena	766	185	52	1,003	11,533	2,546	715	14,794	12,299	2,731	267	15,797
38. Bhind	203	51	14	268	4,954	1,138	346	6,438	5,157	1,189	370	6,706
39. Bhopal	289	187	44	480	752	532	119	1,403	1,041	719	163	1,923
40. Sehore	800	698	82	1,580	1,165	856	55	2,076	1,965	1,556	137	3,658
41. Raisen	375	517	64	956	2,180	2,180	116	4,476	2,555	2,697	180	5,432
42. Vidisha	150	204	29	383	941	1,076	75	2,092	1,091	1,280	104	2,475
43. Betul	1,385	566	162	2,113	1,006	323	97	1,426	2,391	889	259	3,539
44. Rajgarh	245	274	41	560	770	402	81	1,253	1,015	676	122	1,813
45. Hoshangabad	960	860	207	2,027	3,380	2,269	322	5,971	4,340	3,129	529	7,998
Total	52,974	32,184	8,808	93,964	95,000	44,911	9,511	149,422	147,974	77,095	18,317	243,386

Rajasthan

1. Ajmer	254	122	21	387	1,065	349	58	1,472	1,319	471	79	1,869
2. Alwar	1,309	48	18	1,369	4,984	453	140	5,577	6,293	501	158	5,946
3. Bharatpur	706	19	1	726	4,248	515	100	4,863	4,954	544	101	5,589
4. Jaipur	921	110	46	1,077	3,168	479	137	3,784	4,089	589	183	4,861
5. Dausa	521	208	18	747	3,610	516	140	4,266	4,131	724	158	5,013
6. Sikar	394	18	9	421	1,128	70	19	1,217	1,522	88	28	1,638
7. Jhunjhunu	232	4	3	241	1,437	61	18	1,516	1,669	65	21	1,755
8. Sawai Madhopur	1,040	465	14	1,519	7,509	1,473	93	9,075	8,549	1,933	107	10,594
9. Bikaner	978	32	9	1,019	1,963	225	109	2,297	2,941	267	118	3,316
10. Churu	26	10	5	41	26	8	4	38	52	18	9	79
11. Ganganagar	8,269	698	113	9,080	10,158	2,950	585	13,693	18,427	3,648	698	22,773
12. Hanumangarh	6,818	219	39	7,076	9,921	2,735	480	13,136	16,739	2,954	519	20,212
13. R. C. P. Anupgarh	1,710	66	15	1,791	3,021	530	115	3,666	4,731	596	130	5,457
14. Jodhpur	221	84	64	369	1,431	221	140	1,792	1,652	305	204	2,161
15. Jaisalmer	—	—	—	—	—	—	—	—	—	—	—	—
16. Jalore	106	18	1	125	1,353	295	49	1,697	1,459	313	50	1,822
17. Barmer	12	1	—	13	384	16	1	401	396	17	1	414
18. Nagaur	184	10	4	198	1,094	176	63	1,333	1,278	186	67	1,531
19. Pali	471	110	29	610	4,465	998	171	5,635	4,936	1,109	200	6,245
20. Sirohi	342	68	26	436	764	116	18	898	1,106	184	44	1,334
21. Kota CAD	1,963	1,082	296	3,341	7,824	3,789	858	12,471	9,787	4,871	1,154	15,812
22. Baran Non CAD	462	280	60	802	1,826	1,139	197	3,162	2,288	1,419	257	3,964
23. Bundi Non CAD	1,346	580	176	2,102	4,078	1,930	250	6,267	5,424	2,510	426	8,369
24. Jhalawar	533	409	77	1,019	1,228	646	72	1,946	1,761	1,055	149	2,965
25. Tonk	232	56	3	291	1,453	347	31	1,831	1,685	403	34	2,122
26. Banswara	917	196	15	1,128	1,150	460	10	1,620	2,067	656	25	2,748
27. Shilwara	1,451	770	201	2,422	3,067	1,225	146	4,438	4,518	1,995	347	6,960
28. Chittorgarh	2,473	3,030	353	5,856	6,111	2,248	232	8,591	8,584	5,278	585	14,447
29. Dungarpur	117	78	24	219	296	160	13	469	413	238	37	688
30. Udaipur	331	195	11	537	921	162	12	1,095	1,252	357	23	1,632
31. Kankroli	503	296	12	811	760	165	5	930	1,263	461	17	1,741

Total	34,842	9,276	1,663	45,781	91,022	24,458	4,266	119,746	125,864	33,734	5,929	165,527
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(Continued)

6.15. SEASONWISE CONSUMPTION OF N, P₂O₅ AND K₂O—By DISTRICTS
1982-83 (Continued)

(tonnes)

Districts	Kharif 1982				Rabi 1982-83				Total 1982-83			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
CENTRAL ZONE (Concluded)												
Uttar Pradesh												
1. Saharanpur	17,392	1,473	523	19,388	22,817	8,596	2,892	34,305	40,209	10,069	3,415	53,693
2. Muzaffarnagar	18,669	1,384	429	20,482	20,524	7,535	3,959	32,016	39,193	8,919	4,388	52,500
3. Meerut	20,301	1,311	599	22,211	21,663	8,874	2,672	33,205	41,964	10,185	3,271	55,420
4. Ghaziabad	10,881	1,112	422	12,415	12,656	6,077	2,467	21,200	23,537	7,189	2,889	33,615
5. Bulandshahr	11,741	792	275	12,808	30,706	9,997	4,475	45,179	42,447	10,789	4,751	57,987
6. Moradabad	14,374	1,312	541	16,227	26,261	7,233	3,371	36,865	40,635	8,545	3,912	53,092
7. Bijnor	12,980	1,131	657	14,768	15,663	6,098	2,525	24,286	28,643	7,229	3,182	39,054
8. Rampur	8,108	1,178	648	9,934	13,884	5,740	2,187	21,611	21,792	6,918	2,835	31,545
9. Bareilly	6,830	766	414	8,010	19,579	5,164	2,233	26,976	26,409	5,930	2,647	34,986
10. Budaun	5,245	553	257	6,055	21,951	7,600	2,229	31,780	27,196	8,153	2,486	37,835
11. Shahjahanpur	8,224	1,252	820	10,296	19,723	7,361	2,942	30,026	27,947	8,612	3,762	40,322
12. Pilibhit	8,837	1,547	615	10,999	18,967	5,031	2,801	26,879	27,804	6,578	3,496	37,878
13. Aligarh	2,397	233	66	2,694	22,043	8,694	2,919	33,656	24,440	8,927	2,983	36,350
14. Mathura	888	96	26	1,010	13,041	5,794	1,878	20,713	13,929	5,890	1,904	21,723
15. Agra	1,024	84	34	1,145	17,761	8,353	2,355	28,469	18,788	8,437	2,389	29,614
16. Mainpuri	2,623	185	75	2,883	16,265	6,283	2,488	25,035	18,888	6,468	2,563	27,919
17. Etah	1,513	186	45	1,744	13,566	5,916	1,680	21,162	15,079	6,102	1,725	22,906
18. Farrukhabad	4,731	859	213	5,803	30,480	10,844	4,290	45,614	35,211	11,703	4,503	51,417
19. Etawah	2,137	383	146	2,666	21,406	6,412	2,316	30,134	23,543	6,795	2,462	32,800
20. Kanpur	3,106	443	185	3,734	25,334	7,029	1,929	34,292	28,440	7,472	2,114	38,026
21. Fatehpur	1,787	218	126	2,131	17,153	3,586	1,777	22,216	18,940	3,804	1,603	24,347
22. Allahabad	3,489	210	84	3,783	25,630	7,635	2,500	35,765	29,119	7,845	2,584	39,548
23. Lalitpur	26	15	3	44	1,636	1,949	92	3,677	1,662	1,964	95	3,721
24. Jhansi	343	105	24	472	4,672	2,217	389	7,278	5,015	2,322	413	7,350

25. Jalaun	252	51	16	319	7,127	3,685	594	11,406	7,379	3,736	610	11,725
26. Hamirpur	46	17	2	65	1,991	1,378	116	3,485	2,037	1,395	118	3,570
27. Varanasi	2,517	493	291	3,311	24,223	8,223	6,213	38,659	26,740	8,716	6,504	41,960
28. Banda	690	159	38	887	5,064	2,318	313	7,695	5,754	2,479	351	8,582
29. Mirzapur	640	282	114	1,036	8,243	3,632	1,116	12,991	8,883	3,914	1,230	14,027
30. Jaunpur	5,342	1,053	613	7,008	22,714	7,503	5,313	35,530	28,056	8,556	5,976	42,538
31. Ghazipur	2,757	460	226	3,443	18,751	6,700	3,935	29,386	21,508	7,160	4,161	32,829
32. Ballia	2,396	595	324	3,315	15,859	4,534	2,853	23,246	18,255	5,129	3,177	26,561
33. Gorakhpur	8,077	662	323	9,062	24,338	9,467	4,042	37,847	32,415	10,129	4,365	46,909
34. Deoria	10,744	1,765	538	13,047	27,863	10,613	4,733	43,209	38,607	12,378	5,271	56,256
35. Basti	8,559	890	384	9,813	18,769	8,452	3,385	30,606	27,328	9,342	3,749	40,419
36. Azamgarh	2,940	716	379	4,035	20,778	7,660	3,950	32,388	23,718	8,376	4,329	36,423
37. Lucknow	2,371	369	184	2,924	13,228	3,150	2,057	18,435	15,599	3,519	2,241	21,359
38. Unnao	1,937	343	180	2,460	14,928	3,475	1,755	20,158	16,865	3,818	1,935	22,618
39. Rae Bareilly	2,459	351	160	2,970	14,463	4,528	1,946	20,937	18,922	4,879	2,106	23,907
40. Sitapur	3,558	322	148	4,028	14,453	4,554	2,266	21,275	18,013	4,876	2,414	25,303
41. Hardoi	2,804	603	318	3,725	16,882	4,353	1,530	22,765	19,686	4,956	1,848	26,490
42. Kheri	10,093	1,350	605	12,048	14,953	7,553	3,105	25,613	25,048	8,903	3,710	37,661
43. Faizabad	4,794	759	328	5,881	26,226	8,920	3,754	38,900	31,020	9,679	4,082	44,781
44. Gonda	5,332	708	256	6,196	17,930	8,263	2,547	28,740	23,262	8,971	2,803	35,036
45. Bahraich	5,734	1,187	486	7,407	12,681	6,094	2,270	21,045	18,415	7,281	2,756	28,452
46. Sultanpur	2,337	329	168	2,834	16,782	5,100	2,396	24,278	19,119	5,429	2,564	27,112
47. Pratapgarh	2,303	442	201	2,946	15,688	5,816	2,390	23,894	17,991	6,258	2,591	26,840
48. Barabanki	5,082	258	196	5,536	18,580	3,831	2,199	24,610	23,662	4,089	2,395	30,146
49. Nainital	11,700	3,611	1,409	16,720	20,856	9,254	4,259	34,369	32,556	12,865	5,668	51,089
50. Almora	241	134	26	401	185	45	28	258	426	179	54	659
51. Pithoragarh	75	30	7	112	62	41	7	110	137	71	14	222
52. Dehradun	547	77	28	652	894	221	75	1,190	1,441	298	103	1,842
53. Tehriparhwal	38	24	5	67	68	34	6	101	106	58	11	175
54. Uttar Kashi	82	64	3	141	52	71	5	128	134	135	8	277
55. Garhwal	62	25	7	94	149	51	8	208	211	76	15	302
56. Chamoli	80	37	36	153	30	18	1	49	110	55	37	202

Total	274,238	34,994	15,204	324,436	867,995	309,555	128,314	1,305,864	1,142,233	344,549	143,518	1,630,300
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(Continued)

6.15. SEASONWISE CONSUMPT ON OF N, P₂O₅ AND K₂O -BY DISTRICTS
1982-83 (Continued)

(tonnes)

Districts	Kharif 1982				Rabi 1982-83				Total 1982-83			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
EAST ZONE												
Assam												
1. Goalpara	267	42	67	376	499	174	92	765	766	261	159	1,141
2. Kamrup	464	172	293	929	314	144	83	541	770	316	376	1,470
3. Darrang	969	112	280	1,361	858	232	151	1,241	1,827	344	431	2,602
4. Nowgong	652	96	118	866	576	111	85	772	1,228	207	203	1,638
5. Sibsagar	736	115	228	1,079	355	90	139	584	1,091	205	367	1,663
6. Dibrugarh	499	184	157	840	567	116	278	961	1,066	300	435	1,801
7. Lakhimpur	135	15	38	188	59	20	45	124	194	35	83	312
8. Cachar	914	111	173	1,198	528	170	254	952	1,442	281	427	2,150
9. K. Anglong & N. C. Hills:	41	5	10	56	23	9	12	44	64	14	22	100
Total	4,677	852	1,364	6,893	3,779	1,066	1,139	5,984	8,456	1,918	2,503	12,877
Bihar												
1. Patna	1,792	105	42	1,939	8,335	1,257	597	10,189	10,127	1,362	639	12,128
2. Nalanda	1,113	87	10	1,210	4,235	576	220	5,031	5,348	663	230	6,241
3. Bhojpur	1,636	188	89	1,913	10,489	1,496	494	12,479	12,125	1,684	583	14,392
4. Rohtas	2,976	428	117	3,521	10,549	1,752	514	12,815	13,525	2,180	631	16,336
5. Gaya	1,591	155	107	1,853	7,152	1,068	535	8,755	8,743	1,223	642	10,608
6. Aurangabad	997	128	36	1,161	5,232	698	116	6,046	6,229	826	152	7,207
7. Nawadah	732	98	63	893	2,835	503	245	3,583	3,567	601	308	4,476
8. Saran	1,876	308	116	2,300	5,238	1,508	941	7,587	7,014	1,816	1,057	9,887
9. Siwan	744	123	49	916	4,652	1,205	542	6,399	5,396	1,328	591	7,315
10. Gopalganj	2,410	364	206	2,980	3,296	1,205	484	4,985	5,705	1,569	690	7,965
11. E. Champaran	2,035	244	77	2,356	6,100	1,370	605	8,075	8,135	1,614	682	10,431
12. W. Champaran	2,454	518	369	3,341	3,787	1,155	655	5,593	6,241	1,673	1,020	8,934
13. Muzaffarpur	687	207	124	1,018	3,777	1,381	756	5,914	4,464	1,588	880	6,932
14. Vaishali	379	94	39	512	2,293	1,018	445	3,756	2,672	1,112	484	4,268
15. Sitamarhi	810	137	39	986	3,531	615	399	4,545	4,341	752	438	5,531

16. Darbhanga	399	49	56	504	1,651	541	511	2,703	2,050	590	567	3,267
17. Madhubani	280	82	50	412	2,064	634	401	3,099	2,344	716	451	3,511
18. Samastipur	1,145	276	108	1,529	3,913	1,086	642	5,641	5,058	1,362	750	7,170
19. Begusarai	577	55	24	656	2,433	882	515	3,830	3,010	937	539	4,486
20. Monghyr	513	90	46	649	4,771	704	502	5,977	5,284	794	548	6,626
21. Khagaria	481	124	91	696	1,257	425	298	1,980	1,738	549	369	2,676
22. Bhagalpur	1,997	409	201	2,607	5,811	1,711	793	8,315	7,808	2,120	994	10,922
23. Santhal Parganas	739	143	33	915	1,837	542	225	2,604	2,576	685	258	3,519
24. Saharsa	427	143	58	628	2,770	979	621	4,370	3,197	1,122	679	4,998
25. Madhepura	456	120	70	654	1,088	387	208	1,663	1,544	507	286	2,337
26. Purnea	1,661	389	337	2,387	3,500	1,306	728	5,534	5,161	1,695	1,065	7,921
27. Katihar	520	78	53	651	1,413	395	287	2,095	1,933	473	340	2,746
28. Hazaribagh	395	80	23	498	744	139	76	959	1,139	219	99	1,457
29. Girdih	132	30	30	192	622	126	74	822	754	156	104	1,014
30. Dhanbad	71	17	5	93	187	34	17	230	258	51	22	331
31. Ranchi	1,326	618	308	2,252	1,685	514	287	2,486	3,011	1,132	595	4,738
32. Palamau	360	76	37	473	1,064	205	71	1,340	1,424	281	100	1,813
33. Singhbhum	263	167	39	369	611	199	115	925	874	366	154	1,394

Total	33,974	6,130	3,060	43,164	118,822	27,616	13,915	160,353	152,796	33,746	16,975	203,517
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Orissa

1. Balasore	1,308	403	294	2,015	2,251	770	370	3,391	3,559	1,173	664	5,396
2. Bolangir	1,027	457	176	1,660	1,518	934	507	2,959	2,545	1,391	683	4,619
3. Cuttack	4,899	1,517	1,223	7,639	5,360	1,368	1,342	8,070	10,259	2,885	2,565	15,709
4. Dhenkanal	612	246	84	942	1,152	414	263	1,829	1,764	660	347	2,771
5. Ganjam	4,667	653	577	5,897	9,915	1,079	446	11,440	14,582	1,732	1,023	17,337
6. Kalahandi	189	103	92	384	195	80	75	350	384	183	167	734
7. Keonjhar	337	300	95	722	259	141	112	512	596	441	207	1,244
8. Koraput	672	155	133	960	1,591	696	351	2,638	2,263	851	484	3,598
9. Mayurbhanj	402	298	140	840	514	255	131	900	916	553	271	1,740
10. Phulbani	148	83	69	300	281	122	93	496	429	205	162	796
11. Puri	3,362	635	631	4,628	3,855	613	643	5,111	7,217	1,248	1,274	9,739
12. Sambalpur	6,053	3,339	1,141	10,535	4,294	2,301	803	7,398	10,347	5,640	1,944	17,931
13. Sundargarh	983	628	393	2,004	1,000	630	419	2,049	1,983	1,258	812	4,053

Total:	24,659	8,817	5,048	38,524	32,185	9,403	5,555	47,143	58,844	18,220	10,803	85,867
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(Continued)

6.15. SEASONWISE CONSUMPTION OF N, P₂O₅ AND K₂O—BY DISTRICTS
1982-83 (Continued)

(tonnes)

Districts	Kharif 1982				Rabi 1982-83				Total 1982-83			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
EAST ZONE (Continued)												
West Bengal												
1. Darjeeling	1,230	800	200	2,230	1,730	910	700	3,340	2,960	1,710	900	5,570
2. Jalpaiguri	1,680	900	900	2,880	1,580	1,020	1,310	3,950	2,660	1,920	2,250	6,830
3. Cooch Behar	1,587	1,305	590	3,482	2,287	1,400	1,540	5,227	3,874	2,705	2,130	8,709
4. West Dinajpur	4,500	2,220	801	7,521	5,300	2,420	1,201	8,921	9,800	4,640	2,002	16,442
5. Malda	4,000	1,500	1,500	7,000	5,468	1,802	2,800	10,070	9,468	3,302	4,300	17,070
6. Murshidabad	7,890	2,330	1,750	11,970	8,432	2,839	2,660	13,931	16,322	5,169	4,410	25,901
7. Nadia	6,500	1,558	1,002	9,060	8,208	1,958	1,504	11,670	14,708	3,516	2,506	20,730
8. 24 Parganas	8,028	2,200	1,270	11,498	8,530	3,100	1,504	13,534	16,558	5,300	3,174	25,032
9. Howrah	4,870	1,090	650	6,610	4,470	1,590	1,350	7,410	9,340	2,680	2,000	14,020
10. Hooghly	11,056	2,900	1,664	15,620	10,466	4,100	2,674	17,240	21,522	7,000	4,338	32,860
11. Burdwan	11,250	2,650	1,764	15,664	11,665	3,000	2,164	16,829	22,915	5,650	3,928	32,493
12. Birbhum	5,900	1,300	1,001	8,201	6,020	1,600	1,213	8,833	11,920	2,900	2,214	17,034
13. Bankura	2,522	1,199	850	4,571	2,626	1,320	1,060	5,006	5,148	2,510	1,910	9,577
14. Purulia	1,280	810	450	2,540	1,380	910	585	2,855	2,660	1,720	1,015	5,385
15. Midnapore	7,050	2,490	1,418	10,958	8,260	2,990	1,738	12,988	15,310	5,480	3,158	23,946
Total	78,743	25,252	15,810	119,805	86,422	30,959	24,423	141,804	165,165	56,211	40,233	261,609

Districts	1982-83 (Kharif & Rabi)			
	N	P ₂ O ₅	K ₂ O	Total
EAST ZONE (Concluded)				
Nagaland				
1. Kohima	46.9	36.7	—	83.6
2. Mokokchung	4.8	2.8	—	7.6
3. Tuensang	3.3	1.4	—	4.7
4. Phek	2.9	3.9	—	6.8
5. Wokha	6.4	10.6	—	17.0
6. Zunheboto	6.4	4.5	—	10.9
7. Mon	1.8	—	—	1.8
Total	72.5	59.9	—	132.4
Tripura				
1. West	381.9	95.9	54.2	532.0
2. South	232.5	62.6	24.4	319.5
3. North	84.3	17.2	10.6	112.1
Total	698.7	175.7	89.2	963.6

6.15. SEASONWISE CONSUMPTION OF N, P₂O₅ AND K₂O—BY DISTRICTS
1982-83 (Continued)

(tonnes)

Districts	Kharif 1982				Rabi 1982-83				Total 1982-83			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
NORTH ZONE												
Haryana												
1. Ambala	9,009	1,204	303	15,515	22,487	3,908	1,338	27,733	31,496	5,112	1,641	38,249
2. Kurukshetra	16,486	1,303	614	18,403	48,704	6,534	1,867	57,105	65,190	7,837	2,481	75,508
3. Karnal	18,067	1,478	506	20,051	45,553	7,893	2,304	55,750	63,620	9,371	2,810	75,801
4. Rohtak	2,621	35	9	2,665	8,364	1,401	219	9,984	10,985	1,436	228	12,649
5. Sonapat	3,151	85	51	3,287	11,009	2,089	497	13,595	14,160	2,174	548	16,882
6. Bhiwani	554	2	1	557	3,130	552	3	3,685	3,684	554	4	4,242
7. Hissar	7,374	203	45	7,622	24,256	5,007	1,358	30,621	31,630	5,210	1,403	38,243
8. Sirsa	7,467	287	85	7,839	22,607	4,668	1,071	28,446	30,074	4,955	1,156	36,185
9. Gurgaon	524	14	9	547	4,571	838	82	5,491	5,015	857	91	6,038
10. Faridabad	1,020	14	-	1,040	6,382	1,315	448	8,195	7,402	1,379	454	9,235
11. Mohindergarh	282	9	5	296	5,156	1,186	92	6,434	5,438	1,195	97	6,730
12. Jind	4,919	76	36	5,031	13,956	1,796	438	16,190	18,875	1,872	474	21,221
Total	71,474	4,710	1,670	77,854	216,175	37,337	9,717	263,229	287,649	42,047	11,387	341,083
Himachal Pradesh												
1. Bilaspur	696	25	17	738	263	51	29	343	959	76	46	1,061
2. Chamba	311	22	16	349	104	9	6	119	415	31	22	468
3. Hamirpur	925	7	3	935	235	58	15	308	1,160	65	18	1,243
4. Kangra	1,578	79	67	1,724	1,408	445	316	2,169	2,986	524	389	3,893
5. Kinnaur	15	6	5	26	37	9	8	54	52	15	13	880
6. Kulu	121	6	10	137	192	38	52	282	313	44	62	419
7. Lahaul Spiti	109	110	73	292	88	88	44	220	197	198	117	512
8. Mandi	1,324	76	89	1,489	1,340	171	151	1,662	2,564	247	240	3,151
9. Simla	793	371	226	1,390	636	323	325	1,284	1,429	694	551	2,674
10. Sirmur	603	61	55	719	233	77	39	349	836	138	94	1,068
11. Solan	1,024	61	49	1,134	561	105	49	715	1,585	166	98	1,849
12. Una	807	61	37	905	692	103	47	842	1,499	164	84	1,747
Total	8,306	865	647	9,838	5,789	1,477	1,141	8,407	14,095	2,362	1,788	18,245

Punjab

1. Amritsar	24,556	4,859	1,347	30,762	40,548	18,162	2,163	60,871	65,102	23,021	3,510	91,633
2. Bhatinda	10,987	447	50	11,484	28,825	14,775	1,144	44,744	39,812	15,222	1,194	56,228
3. Faridkot	25,470	5,748	1,161	32,379	59,445	30,510	3,492	93,447	84,915	36,258	4,653	125,826
4. Ferozepur	24,906	6,348	1,110	32,364	49,910	20,025	1,651	71,586	74,816	26,373	2,781	103,950
5. Gurdaspur	15,657	3,662	706	20,025	36,080	11,917	1,720	49,717	51,737	15,579	2,426	69,742
6. Hoshiarpur	5,446	859	324	6,629	13,587	5,207	1,264	20,058	19,033	6,066	1,588	26,687
7. Jullundur	13,409	3,855	1,431	18,695	26,718	13,320	3,365	43,403	40,127	17,127	4,796	62,049
8. Kapurthala	10,274	2,981	454	13,709	19,553	7,320	1,554	28,427	29,827	10,301	2,008	42,136
9. Ludhiana	20,573	6,870	2,170	29,613	43,350	24,064	4,419	71,833	63,923	30,934	6,589	101,446
10. Patiala	23,546	3,890	1,113	28,549	47,013	18,810	1,636	67,459	70,559	22,700	2,749	96,008
11. Ropar	5,391	1,189	173	6,753	8,033	4,030	795	12,858	13,424	5,219	968	11,611
12. Sangrur	12,365	3,088	720	16,175	51,447	20,954	2,481	74,882	63,812	24,042	3,201	91,055

Total

192,580 43,796 10,759 247,135 424,507 189,094 25,684 639,282 617,087 232,890 36,443 886,420

SCUTH ZONE**Andhra Pradesh**

1. Srikakulam	4,489	591	16	5,096	9,57	757	40	10,654	14,346	1,348	56	15,750
2. Vizianagram	2,850	728	38	3,616	8,033	683	77	8,793	10,883	1,411	115	12,409
3. Visakhapatnam	3,690	598	19	4,307	2,513	292	102	2,907	6,023	890	121	7,214
4. East Godavari	11,907	2,223	1,174	15,304	25,882	3,601	2,872	32,355	37,789	5,824	4,046	47,659
5. West Godavari	10,645	4,745	2,046	17,436	27,270	7,552	3,822	38,644	37,915	12,297	5,868	56,080
6. Krishna	18,832	5,086	2,595	26,513	23,520	7,979	3,228	34,727	42,352	13,085	5,823	61,240
7. Guntur	26,830	13,257	6,228	46,315	58,155	17,004	992	76,51	84,985	30,261	7,220	122,466
8. Prakasam	2,480	1,381	506	4,367	18,127	7,418	5,401	30,946	20,607	8,799	5,907	35,313
9. Nellore	3,105	1,216	893	5,214	9,343	2,294	2,404	14,041	12,448	3,510	3,297	19,255
10. Kurnool	7,692	4,725	1,995	14,412	23,707	9,853	7,192	40,852	31,399	14,678	9,187	55,264
11. Anantapur	2,523	1,495	835	4,853	4,479	1,633	1,139	7,251	7,002	3,128	1,974	12,104
12. Cuddapah	3,782	2,182	699	6,663	8,095	2,568	827	11,490	11,877	4,750	1,526	18,153
13. Chittoor	4,389	2,205	948	7,535	4,684	1,908	1,097	7,689	9,073	4,113	2,038	15,224
14. Ranga Reddy	3,209	1,433	803	5,445	3,698	688	330	4,716	6,907	2,121	1,133	10,161
15. Hyderabad												
16. Nizamabad	21,808	7,170	1,916	30,594	25,560	3,462	1,223	30,245	47,368	10,632	3,039	61,139
17. Medak	5,569	2,362	436	8,367	5,758	2,015	282	8,055	11,327	4,377	718	16,422
18. Mehbubnagar	5,154	2,190	966	8,310	8,282	3,713	1,331	13,326	13,436	5,903	2,297	21,636
19. Nalgonda	6,810	5,046	1,037	12,893	15,025	4,060	1,147	20,232	21,835	9,106	2,164	33,125

(Continued)

6.15. SEASONWISE CONSUMPTION OF N, P₂O₅ AND K₂O—BY DISTRICTS
1982-83 (Continued)

(tonnes)

Districts	Kharif 1982				Rabi 1982-83				Total 1982-83			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
SOUTH ZONE (Concluded)												
Andhra Pradesh (Concluded)												
20. Warangal	10,555	4,539	1,325	16,419	10,402	5,058	1,524	25,984	29,957	9,597	2,849	42,403
21. Khammam	1,960	1,148	481	3,589	11,992	4,108	1,443	17,543	13,952	5,256	1,924	21,403
22. Karimnagar	9,153	3,531	1,060	13,744	16,450	2,997	2,112	21,559	25,603	6,528	3,172	35,303
23. Adilabad	2,056	806	42	2,904	3,441	477	131	4,049	5,497	1,283	173	6,953
Total	169,486	68,661	26,051	264,200	333,273	90,220	38,716	462,209	502,761	158,881	64,767	726,409
Karnataka												
1. Bangalore	5,724	2,215	2,177	10,116	8,784	3,070	2,027	13,881	14,508	5,285	4,204	23,997
2. Belgaum	11,909	4,950	3,391	20,250	10,155	2,905	2,991	16,051	22,064	7,855	6,382	36,301
3. Bellary	10,084	5,219	5,991	21,294	15,113	4,860	4,726	24,699	25,197	10,079	10,717	45,993
4. Bidar	2,705	1,169	465	4,339	1,691	369	1,113	3,173	4,396	1,538	1,578	7,512
5. Bijapur	4,052	1,882	1,654	7,588	4,582	1,277	1,272	7,131	8,634	3,159	2,926	14,719
6. Chickmagalur	3,177	1,925	1,668	6,770	1,823	794	1,182	3,799	5,000	2,719	2,850	10,569
7. Chitradurga	7,428	3,750	2,317	13,495	5,543	3,017	1,694	10,454	12,971	6,767	4,211	23,949
8. Dakshina Kannada	1,864	527	1,801	4,192	2,303	1,877	1,497	5,477	4,167	2,204	3,298	9,669
9. Dharwar	9,700	7,161	4,914	21,775	5,267	2,516	2,369	10,152	14,967	8,677	7,283	31,927
10. Gulbarga	940	936	303	2,179	1,019	514	177	1,710	1,959	1,950	480	3,889
11. Hassan	5,136	2,472	2,254	9,862	2,729	1,129	1,536	5,394	7,865	3,601	3,790	15,256
12. Kodagu	5,447	3,884	2,396	11,727	1,309	471	720	2,500	6,756	4,355	3,116	14,227
13. Kolar	4,218	2,031	980	7,229	5,425	1,494	1,109	8,028	9,643	3,525	2,089	15,257
14. Mandya	8,848	3,869	3,297	16,014	13,522	4,156	4,807	22,485	22,370	8,025	8,104	38,499
15. Mysore	6,696	4,335	3,005	14,036	6,920	1,551	2,350	10,829	13,616	5,894	5,355	24,865
16. Raichur	8,312	3,531	3,159	15,002	14,150	5,463	4,521	24,134	22,462	8,994	7,680	39,136
17. Shimoga	7,297	4,624	4,279	16,200	8,431	3,104	1,951	13,486	15,728	7,728	6,230	29,686
18. Tumkur	4,014	2,800	1,100	7,914	2,579	960	600	4,139	6,593	3,670	1,700	12,053
19. Uttara Kannada	747	479	610	1,836	1,519	252	241	2,052	2,306	731	851	3,888
Total	108,298	57,759	45,761	211,818	112,904	39,587	37,083	189,574	221,202	97,346	82,844	401,392

Kerala												
1. Alleppey	2,091	1,310	2,049	5,450	3,560	2,090	2,194	7,844	5,651	3,400	4,243	13,294
2. Cannanore	1,350	1,310	1,867	4,527	826	479	671	1,976	2,176	1,789	2,538	6,502
3. Ernakulam	782	888	954	2,624	1,253	1,330	1,428	4,411	2,435	2,218	2,382	7,035
4. Iducki	324	320	356	1,000	874	1,025	863	2,762	1,198	1,345	1,219	3,762
5. Kottayam	1,369	1,069	1,343	3,781	3,900	2,366	2,431	8,697	5,269	3,435	3,774	12,478
6. Kozhikode	1,888	1,467	2,829	6,184	1,185	1,205	3,214	5,604	3,073	2,672	6,043	11,738
7. Mallapuram	1,347	919	1,263	3,529	1,302	800	1,475	3,577	2,649	1,719	2,738	7,106
8. Palghat	4,320	1,081	2,394	7,795	5,455	1,006	1,487	7,948	9,775	2,087	3,881	15,743
9. Quilon	1,740	1,365	1,532	4,637	2,078	1,389	1,780	5,247	3,818	2,754	3,312	9,884
10. Trichur	1,518	742	1,481	3,741	2,447	1,315	1,601	5,363	3,965	2,057	3,081	9,104
11. Trivandrum	1,555	1,111	1,308	3,674	2,205	1,209	2,235	5,649	3,760	2,020	3,543	9,323
12. Wynad	800	518	682	2,000	1,664	541	628	1,833	1,464	1,059	1,310	3,833
Total	19,084	11,800	18,058	48,942	26,149	14,755	20,007	60,911	45,233	26,555	38,065	109,853

Tamil Nadu

1. Chengalpattu	12,220	3,012	3,343	18,575	9,195	4,620	3,015	16,830	21,415	7,632	6,358	35,405
2. Coimbatore	9,987	2,561	5,468	18,016	12,709	4,951	4,824	22,484	22,696	7,512	10,292	40,500
3. Dharmapuri	1,067	386	434	1,887	2,017	1,155	1,241	4,413	3,084	1,541	1,675	6,300
4. Kanyakumari	1,254	474	478	2,206	4,416	1,312	1,131	6,859	5,670	1,786	1,609	9,065
5. Madurai	9,242	3,015	4,809	17,066	18,671	7,662	7,343	33,676	27,913	10,677	12,152	50,742
6. North Arcot	11,582	3,319	4,349	19,250	5,455	2,601	2,008	10,064	17,037	5,920	1,357	29,314
7. Periyar	6,244	2,167	2,253	10,664	13,065	5,508	4,058	22,631	19,309	7,675	6,311	33,295
8. Pudukkottai	1,373	423	649	2,445	4,557	1,676	1,647	7,880	5,930	2,099	2,296	10,325
9. Ramanathapuram	4,636	1,067	788	6,491	7,803	1,892	1,457	11,152	12,439	2,959	2,245	17,643
10. Salem	4,420	2,530	2,989	9,939	6,306	3,079	4,022	13,407	10,726	5,609	7,011	23,346
11. South Arcot	12,968	3,322	4,661	20,951	8,570	4,884	4,014	17,468	21,538	8,206	8,675	38,419
12. Thanjavur	9,117	4,419	4,885	18,421	37,148	12,720	11,078	60,946	46,265	17,139	16,963	79,367
13. The Nilgiris	758	518	235	1,511	1,394	1,215	988	3,597	2,152	1,733	1,223	5,108
14. Tiruchirapalli	7,968	2,487	4,173	14,628	16,452	6,311	6,004	28,767	24,420	8,798	10,177	43,395
15. Tirunelveli	8,203	2,384	2,006	12,593	18,073	6,072	6,438	30,583	26,276	8,456	8,444	43,176
Total	101,039	32,084	41,520	174,643	165,831	65,658	59,268	290,757	266,870	97,742	100,788	465,400

(Continued)

6.15. SEASONWISE CONSUMPTION OF N, P₂O₅ AND K₂O—BY: DISTRICTS
1982-83 (Continued)

(tonnes)

Districts	Kharif 1982				Rabi 1982-83				Total 1982-83			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
WEST ZONE												
Gujarat												
1. Ahmednagar	8,112	1,918	252	10,282	5,869	1,312	334	7,515	13,981	3,230	586	17,797
2. Kaira	11,083	983	205	12,271	19,042	1,813	367	21,222	30,125	2,796	572	33,493
3. Baroda	9,894	1,831	955	12,680	11,014	1,249	1,153	13,416	20,908	3,080	2,108	26,096
4. Panchmahal	2,710	1,794	82	3,886	2,977	1,102	41	4,120	5,687	2,196	123	8,006
5. Broach	3,305	1,071	259	4,635	2,972	187	489	3,648	6,277	1,258	748	8,283
6. Surat	14,287	6,439	5,240	25,966	6,027	2,233	1,839	10,099	20,314	8,672	7,079	36,065
7. Bulsar	5,392	2,241	741	8,374	1,584	508	208	2,300	6,976	2,749	949	10,674
8. Dangs	9	5	—	14	7	—	—	7	16	5	—	21
9. Gandhinagar	836	255	61	1,152	994	212	60	1,266	1,830	467	121	2,418
10. Mehsana	7,054	1,221	133	8,408	11,621	3,561	288	15,470	18,675	4,782	421	23,878
11. Sabarkantha	9,790	6,452	3,008	19,270	9,866	3,459	2,707	16,032	19,656	9,931	1,715	35,302
12. Banskantha	2,029	621	32	2,682	7,120	1,751	526	9,397	9,149	2,372	558	12,079
13. Rajkot	10,018	10,574	2,916	23,508	12,935	7,389	2,500	22,824	22,953	17,963	5,416	46,332
14. Surendranagar	2,336	2,151	83	4,570	2,998	1,440	81	4,519	5,334	3,591	164	9,089
15. Bhavnagar	7,694	7,580	1,251	16,525	7,300	4,661	573	12,534	14,994	12,241	1,824	29,059
16. Amrali	5,436	8,269	1,684	15,389	6,057	4,156	962	11,175	11,493	12,425	2,646	26,564
17. Jamnagar	3,148	4,159	840	8,153	5,843	4,741	826	11,410	8,991	8,900	1,672	19,563
18. Junagarh	6,521	10,212	1,862	18,606	9,664	7,865	1,647	19,176	16,196	18,077	3,509	37,782
19. Kutch	844	417	4	1,265	1,987	583	106	2,676	2,831	1,000	110	3,941
Total	110,509	67,505	19,614	197,628	125,277	48,222	14,695	188,794	236,386	115,727	34,309	386,422

Maharashtra

1. Thane	1,290	116	116	1,522	1,639	417	417	2,473	2,929	553	553	4,035
2. Raigad	1,447	247	157	1,851	3,471	37	32	3,540	4,918	284	189	5,391
3. Ratnagiri	1,825	696	546	3,067	477	58	37	572	2,302	754	583	3,639
4. Sindhudurg	1,129	356	256	1,741	1,200	485	575	2,260	2,329	841	83	4,001
5. Nasik	6,392	2,268	1,495	10,775	5,729	2,439	2,080	10,248	12,121	5,327	3,575	21,023

6.	Dhule	7,565	3,355	1,209	12,129	6,112	1,757	1,311	9,180	13,677	5,112	2,520	21,309
7.	Jalgaon	9,808	3,760	3,696	17,264	17,912	5,630	7,008	30,550	27,720	9,390	10,704	47,814
8.	Ahmednagar	6,197	2,879	2,569	11,645	8,288	3,568	2,018	13,874	14,485	6,447	4,587	25,519
9.	Pune	9,000	5,300	4,300	18,600	14,300	6,600	5,900	26,800	23,310	11,900	10,200	45,400
10.	Sholapur	5,902	2,406	1,642	9,950	6,533	3,183	1,724	11,440	12,435	5,589	3,366	21,390
11.	Satara	4,605	1,964	1,832	8,401	2,961	644	725	4,330	7,566	2,608	2,557	12,731
12.	Sangli	4,864	1,890	1,949	8,703	4,578	1,130	1,483	7,191	9,442	3,020	3,432	15,894
13.	Kolhapur	17,840	9,776	9,524	37,140	9,845	2,951	2,948	15,744	27,685	12,727	12,472	52,884
14.	Aurangabad	5,700	2,290	1,200	9,190	3,451	1,435	740	5,628	9,151	3,725	1,940	14,816
15.	Jalna	1,204	662	331	2,197	7,156	2,389	2,121	11,666	8,360	3,051	2,452	13,863
16.	Parbhani	4,031	1,797	1,422	7,250	3,926	960	581	5,467	7,957	2,757	2,003	12,717
17.	Bhir	734	461	392	1,587	3,199	1,515	702	5,416	3,933	1,976	1,094	7,003
18.	Nanded	3,398	1,210	992	5,600	3,873	1,421	801	6,095	7,271	2,631	1,793	11,695
19.	Osmanabad	3,338	1,447	844	5,629	2,255	685	581	3,471	5,593	2,132	1,375	9,100
20.	Buldhana	8,724	3,858	3,442	16,024	4,590	2,220	3,014	9,824	13,314	6,078	6,456	25,848
21.	Akola	7,096	3,124	2,600	12,820	4,582	1,500	960	7,042	11,678	3,624	3,560	19,862
22.	Amravati	5,404	2,593	1,406	9,403	5,227	1,942	1,565	8,734	10,631	4,535	2,971	18,137
23.	Yeotmal	3,244	2,337	1,380	6,961	3,906	3,049	1,180	8,135	7,150	5,386	2,560	15,096
24.	Wardha	5,656	2,551	464	8,671	5,052	2,736	1,234	9,022	10,708	5,287	1,698	17,693
25.	Nagpur	5,314	2,896	1,113	9,323	10,750	4,314	2,400	17,464	16,064	7,210	3,513	26,787
26.	Bhandara	3,676	1,634	547	5,857	6,794	4,833	1,832	13,459	10,470	6,467	2,379	19,316
27.	Chandrapur	3,071	1,308	492	4,871	5,102	1,264	565	6,931	8,173	2,572	1,057	11,802
Total		136,454	63,801	45,916	248,171	152,973	59,314	45,010	257,302	291,427	123,120	90,926	505,473

6 16(a). NUMBER OF DISTRICTS ACCORDING TO THE RANGE OF FERTILISER CONSUMPTION (N + P₂O₅ + K₂O) IN 1982-83

Sl. No.	Consumption range (tonnes)	No. of Districts	Fertiliser consumption (tonnes)	Cumulative fertiliser consumption (tonnes)	Per cent share of all India consumption	Per cent cumulative share of all India consumption	Average consumption in the range (tonnes)
1.	1,00,000 and above	4	453,688	453,688	7.1	7.1	113,422
2.	1,00,000—95,001	1	96,008	549,696	1.5	8.6	96,008
3.	95,000—90,001	2	182,688	732,384	2.8	11.4	91,344
4.	90,000—85,001	—	—	732,384	—	11.4	—
5.	85,000—80,001	—	—	732,384	—	11.4	—
6.	80,000—75,001	3	230,676	963,060	3.6	15.0	76,892
7.	75,000—70,001	—	—	963,060	—	15.0	—
8.	70,000—65,001	1	69,742	1032,802	1.1	16.1	69,742
9.	65,000—60,001	3	184,428	1217,230	2.9	19.0	61,476
10.	60,000—55,001	6	337,235	1554,465	5.3	24.3	56,206
11.	55,000—50,001	7	365,417	1919,882	5.7	30.0	52,202
12.	50,000—45,001	6	280,107	2199,989	4.4	34.4	46,685
13.	45,000—40,001	10	421,630	2621,619	6.6	41.0	42,163
14.	40,000—35,001	22	818,013	3439,632	12.7	53.7	37,182
15.	35,000—30,001	12	393,114	3832,746	6.1	59.8	32,760
16.	30,000—25,001	19	514,779	4347,525	8.0	67.8	27,094
17.	25,000—20,001	21	472,538	4820,063	7.4	75.2	22,502
18.	20,000—15,001	29	497,053	5317,116	7.7	82.9	17,140
19.	15,000—10,001	33	405,782	5722,898	6.3	89.2	12,296
20.	10,000—5,001	66	504,161	6227,059	7.9	97.1	7,639
21.	5,000—1	152	190,816	6417,875	2.9	100.0	1,255

6 16(b). CLASSIFICATION OF DISTRICTS ACCORDING TO THE PERCENTAGE SHARE OF TOTAL CONSUMPTION OF PLANT NUTRIENTS (N+P₂O₅+K₂O) IN 1982-83

No. of districts in the classification	Sl. No.	Name of the districts	State	Consumption (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all India consumption
6	1.	Faridkot	Punjab	125,826		
	2.	Guntur	Andhra Pradesh	122,466		
	3.	Ferozepur	Punjab	103,950		
	4.	Ludhiana	Punjab	101,446		
	5.	Patiala	Punjab	96,008		
	6.	Amritsar	Punjab	91,633		
				641,329	641,329	18
7	7.	Sangrur	Punjab	91,055		
	8.	Thanjavur	Tamil Nadu	79,357		
	9.	Karnal	Haryana	75,801		
	10.	Kurukshetra	Haryana	75,508		
				321,731	963,060	15
5	11.	Gurudaspur	Punjab	69,742		
	12.	Jullandhur	Punjab	62,049		
	13.	Krishna	Andhra Pradesh	61,200		
	14.	Nizamabad	Andhra Pradesh	61,139		
	15.	Bulandshahar	Uttar Pradesh	57,987		
				312,157	1275,217	20
6	16.	Deoria	Uttar Pradesh	56,256		
	17.	Bhatinda	Punjab	56,228		
	18.	West Godavari	Andhra Pradesh	56,080		
	19.	Meerut	Uttar Pradesh	55,420		
	20.	Kurnool	Andhra Pradesh	55,264		
	21.	Saharanpur	Uttar Pradesh	53,693		
				332,941	1608,158	25

(Continued)

6.16(b). CLASSIFICATION OF DISTRICTS ACCORDING TO THE PERCENTAGE SHARE OF TOTAL CONSUMPTION OF PLANT NUTRIENTS (N + P₂O₅ + K₂O) IN 1982-83 (Continued)

No. of districts in the classification	Sl. No.	Name of the districts	State	Consumptions (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all India consumption
6	22.	Moradabad	Uttar Pradesh	53,092		
	23.	Kolhapur	Maharashtra	52,884		
	24.	Muzaffarnagar	Uttar Pradesh	52,500		
	25.	Farukhabad	Uttar Pradesh	51,417		
	26.	Nanital	Uttar Pradesh	51,089		
	27.	Madurai	Tamil Nadu	50,742		
				311,724	1919,882	30
7	28.	Jalgaon	Maharashtra	47,814		
	29.	E. Godavari	Andhra Pradesh	47,659		
	30.	Gorakhpur	Uttar Pradesh	46,909		
	31.	Rajkot	Gujarat	46,332		
	32.	Bellary	Karnataka	45,993		
	33.	Pune	Maharashtra	45,400		
	34.	Faizabad	Uttar Pradesh	44,781		
			324,888	2244,770	35	
7	35.	Tiruchirappalli	Tamil Nadu	43,395		
	36.	Tirunelveli	Tamil Nadu	43,176		
	37.	Jaunpur	Uttar Pradesh	42,538		
	38.	Warangal	Andhra Pradesh	42,403		
	39.	Kapurthala	Punjab	4,136		
	40.	Varanasi	Uttar Pradesh	41,960		
	41.	Coimbatore	Tamil Nadu	40,500		
			296,108	2540,878	40	
9	42.	Basti	Uttar Pradesh	40,419		
	43.	Shahjahanpur	Uttar Pradesh	40,322		
	44.	Alfahabad	Uttar Pradesh	39,548		
	45.	Raichur	Karnataka	39,136		
	46.	Bijnor	Uttar Pradesh	39,054		
	47.	Mandya	Karnataka	38,499		
	48.	South Arcot	Tamil Nadu	38,419		
	49.	Ambala	Haryana	38,249		
	50.	Hissar	Haryana	38,243		
				351,889	2892,767	45

(Continued)

6 16(b). CLASSIFICATION OF DISTRICTS ACCORDING TO THE PERCENTAGE SHARE OF TOTAL CONSUMPTION OF PLANT NUTRIENTS (N + P₂O₅ + K₂O) IN 1982-83 (Continued)

No. of districts in the classification	Sl. No.	Name of the district	State	Consumption (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all India consumption
9	51.	Kanpur	Uttar Pradesh	38,026		
	52.	Philibhit	Uttar Pradesh	37,878		
	53.	Badaun	Uttar Pradesh	37,835		
	54.	Junagarh	Gujarat	37,782		
	55.	Kheri	Uttar Pradesh	37,661		
	56.	Azamgarh	Uttar Pradesh	36,423		
	57.	Aligarh	Uttar Pradesh	36,350		
	58.	Belgaon	Karnataka	36,301		
	59.	Sirsa	Haryana	36,185		
				334,441	3227,208	53
9	60.	Surat	Gujarat	36,065		
	61.	Chinglepattu	Tamil Nadu	35,405		
	62.	Prakasam	Andhra Pradesh	35,313		
	63.	Karimnagar	Andhra Pradesh	35,303		
	64.	Sabarkantha	Gujarat	35,302		
	65.	Gonda	Uttar Pradesh	35,036		
	66.	Bareilly	Uttar Pradesh	34,986		
	67.	Ghaziabad	Uttar Pradesh	33,615		
68.	Kaira	Gujarat	33,493			
				314,518	3541,726	55
10	69.	Periyar	Tamil Nadu	33,295		
	70.	Nalgonda	Andhra Pradesh	33,125		
	71.	Hooghly	West Bengal	32,860		
	72.	Gazipur	Uttar Pradesh	32,829		
	73.	Etawah	Uttar Pradesh	32,800		
	74.	Burdwan	West Bengal	32,493		
	75.	Dharwar	Karnataka	31,927		
	76.	Rampur	Uttar Pradesh	31,545		
	77.	Barabanki	Uttar Pradesh	30,146		
	78.	Shimoga	Karnataka	29,686		
				320,706	3862,432	60

(Continued)

**6.16(b). CLASSIFICATION OF DISTRICTS ACCORDING TO THE PERCENTAGE
SHARE OF TOTAL CONSUMPTION OF PLANT NUTRIENTS
(N+P₂O₅+K₂O) IN 1982-83 (Continued)**

No. of districts in the classification	Sl. No.	Name of the districts	State	Consumptions (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all India consumption
12	79.	Agra	Uttar Pradesh	29,614		
	80.	North Arcot	Tamil Nadu	29,314		
	81.	Bhavanagar	Gujarat	29,059		
	82.	Bahraich	Uttar Pradesh	28,452		
	83.	Mainpuri	Uttar Pradesh	27,919		
	84.	Sultanpur	Uttar Pradesh	27,112		
	85.	Pratapgarh	Uttar Pradesh	26,840		
	86.	Nagpur	Maharashtra	26,787		
	87.	Hoshiarpur	Punjab	26,687		
	88.	Amreli	Gujarat	26,564		
	89.	Balia	Uttar Pradesh	2,561		
	90.	Hardoi	Uttar Pradesh	26,490		
				331,399	4193,831	65
13	91.	Baroda	Gujarat	26,096		
	92.	Murshidabad	West Bengal	25,901		
	93.	Buldhana	Maharashtra	25,848		
	94.	Ahmednagar	Maharashtra	25,519		
	95.	Sitapur	Uttar Pradesh	25,303		
	96.	24 Parganas	West Bengal	25,032		
	97.	Mysore	Karnataka	24,865		
	98.	Fatehpur	Uttar Pradesh	24,347		
	99.	Bangalore	Karnataka	23,997		
	100.	Chitradurga	Karnataka	23,949		
	101.	Midnapur	West Bengal	23,946		
	102.	Rae Bareilly	Uttar Pradesh	23,907		
	103.	Mehsana	Gujarat	23,878		
				322,588	4516,419	70
14	104.	Salem	Tamil Nadu	23,346		
	105.	Etah	Uttar Pradesh	22,906		
	106.	Ganganagar	Rajasthan	22,773		
	107.	Unnao	Uttar Pradesh	22,618		
	108.	Mathura	Uttar Pradesh	21,723		

(Continued)

6 16(b). CLASSIFICATION OF DISTRICTS ACCORDING TO THE PERCENTAGE SHARE OF TOTAL CONSUMPTION OF PLANT NUTRIENTS (N + P₂O₅ + K₂O) IN 1982-83 (Continued)

No. of districts in the classification	Sl. No.	Name of the district	State	Consumption (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all India consumption
	109.	Mehabubnagar	Andhra Pradesh	21,623		
	110.	Khammam	Andhra Pradesh	21,403		
	111.	Solapur	Maharashtra	21,390		
	112.	Lucknow	Uttar Pradesh	21,359		
	113.	Dhule	Maharashtra	21,309		
	114.	Jind	Haryana	21,221		
	115.	Nasik	Maharashtra	21,023		
	116.	Nadia	West Bengal	20,730		
	117.	Hanumangarh	Rajasthan	20,212		
				303,649	4820,068	75
17	118.	Akola	Maharashtra	19,862		
	119.	Ropar	Punjab	19,611		
	120.	Jamnagar	Gujarat	19,563		
	121.	Bhandara	Maharashtra	19,316		
	122.	Nellore	Andhra Pradesh	19,255		
	123.	Raipur	Madhya Pradesh	19,031		
	124.	Cuddapah	Andhra Pradesh	18,153		
	125.	Amravati	Maharashtra	18,137		
	1 6.	Sambalpur	Orissa	17,931		
	127.	Ahmedabad	Gujarat	17,797		
	128.	Wardha	Maharashtra	17,693		
	129.	Ramanathapuram	Tamil Nadu	17,643		
	130.	Ganjam	Orissa	17,337		
	131.	Malda	West Bengal	17,070		
	132.	Birbhum	West Bengal	17,034		
	133.	Sonepat	Haryana	16,882		
	134.	W. Dinajpur	West Bengal	16,442		
				308,757	5128,825	80
22	135.	Medak	Andhra Pradesh	16,422		
	136.	Rohtas	Bihar	16,336		
	137.	Sangli	Maharashtra	15,894		
	138.	Kota	Rajasthan	15,812		
	139.	Morena	Madhya Pradesh	15,797		

(Continued)

6.16(b). CLASSIFICATION OF DISTRICTS ACCORDING TO THE PERCENTAGE SHARE OF TOTAL CONSUMPTION OF PLANT NUTRIENTS (N+P₂O₅+K₂O) IN 1982-83 (Concluded)

No. of districts in the classification	Sl. No.	Name of districts	State	Consumption (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all India consumption
	140.	Palghat	Kerala	15,743		
	141.	Srikakulam	Andhra Pradesh	15,750		
	142.	Cuttack	Orissa	15,709		
	143.	Kolar	Karnataka	15,257		
	144.	Hassan	Karnataka	15,256		
	145.	Chittoor	Andhra Pradesh	15,224		
	146.	Yeotmal	Maharashtra	15,096		
	147.	Aurangabad	Maharashtra	14,816		
	148.	Bijapur	Karnataka	14,719		
	149.	Chittorgarh	Rajasthan	14,447		
	150.	Bhojpur	Bihar	14,392		
	151.	Kodagu	Karnataka	14,227		
	152.	Mirzapur	Uttar Pradesh	14,027		
	153.	Howrah	West Bengal	14,020		
	154.	Jalna	Maharashtra	13,833		
	155.	Mandsaur	Madhya Pradesh	13,675		
	156.	Alleppey	Kerala	13,294		
				329,777	5458,602	85

6.17. FERTILISER CONSUMPTION IN THE DISTRICTS SELECTED UNDER INTENSIVE FERTILISER PROMOTION CAMPAIGN—SEASONWISE

Zone/State/District	Gross cropped area ('000 hectare)	Pre-campaign season		Campaign season						
		Consumption of N+P+K (tonnes)		Consumption of N+P+K (tonnes)						
		Kharif 1975	Rabi 1975-76	Kharif 1976	Rabi 1976-77	Kharif 1977	Rabi 1977-78	Kharif 1978	Rabi 1978-79	Kharif 1979
CENTRAL										
Madhya Pradesh										
1. Balaghat	375	1,190*	369*	66	1,135	1,023	1,188	1,366	1,017	1,049
2. Tikamgarh	285	281*		466	4,749*	226	4,688	138	6,339	145
3. Chhatarpur	388	72*	1,387*	10	1,534*	39	1,589	68	2,600	
4. Gwalior	272	724*	2,574*	1,375	4,017	407	4,210	996	4,416	
5. Hoshangabad	448		1,912*		2,408	589*	2,097	744	3,259	
6. Morena	419				7,137*	748*	9,258	766	9,749	731
7. Raisen	408				2,113*	125*	2,556	145	3,139	388
8. Narsinghpur	286		1,810*		2,350					
9. Dhar	565							4,124*		3,881
Rajasthan										
1. Ajmer	369	239*	744*	474	1,070	454	1,247	544	1,331	541
2. Alwar	662	133*	2,086*	881	2,126	798	3,259	1,018	4,331	1,253
3. Bhilwara	356	641*	1,782*	973	3,199	1,718				
4. Pali	587	335*	2,529*	336	3,804	605				
5. Banswara	231			455		449				
6. Bundi	245			2,731*		3,444				
7. Chittorgarh	418		3,469*	3,127*	4,389	3,972	4,040	4,206	5,380	4,395
8. Dungarpur	145			161*		273				
9. Bharatpur	661			585*	2,645*	260	2,131	567	2,482	
10. Ganganagar	1,498			11,368*	19,849*	8,113	12,282	6,480	13,635	10,456
11. Kota	611			2,979*	10,412*	1,623	9,840	2,742	11,747	
12. Jhalawar	331			427*		505				
13. Sirohi	83	156*		103		228				
14. Sawai Madhopur	568			795*	3,470	872	4,081	1,108	4,243	1,123

(Continued)

**8.17. FERTILISER CONSUMPTION IN THE DISTRICTS SELECTED UNDER INTENSIVE
FERTILISER PROMOTION CAMPAIGN—SEASONWISE (Continued)**

Zone/State/District	Gross cropped area ('000 hectare)	Pre-campaign season		Campaign season						
		Consumption of N+P+K (tonnes)		Consumption of N+P+K (tonnes)						
		Kharif 1975	Rabi 1975-76	Kharif 1976	Rabi 1976-77	Kharif 1977	Rabi 1977-78	Kharif 1978	Rabi 1978-79	Kharif 1979
CENTRAL (Concluded)										
Rajasthan (Concluded)										
15. Udaipur	387			1,125*		1,018				
16. Tonk	397			376*	879*	337	990	371	1,077	446
17. Jaipur	872		2,420*	780*	4,412*	974	2,318	757	3,245	
Uttar Pradesh										
1. Meerut	469	13,042*	22,327*	19,879	29,768	28,795	23,848	15,764	24,890	18,846
2. Gazipur	331	1,111*	9,852*	3,274	13,743	4,400	17,290	6,804	19,491	7,293
3. Jaunpur	399	2,892*	8,511*	3,107	14,537	5,126	17,996	8,624	22,076	
4. Rae Bareli	358	683*	4,371*	£34	6,714	1,597	6,788	2,124	12,069	2,440
5. Azamgarh	377	2,398*	10,517*	3,018	15,944	4,731	19,009	6,189	20,547	6,275
6. Etawah	377	658*	4,747*	1,408	8,027	1,886	9,634	3,047	13,958	
7. Mainpuri	401	1,178*	7,719*	1,209	11,299	2,176	14,763	9,930	17,408	3,393
8. Etah	455	1,504*	6,317*	2,005	9,710	2,054	12,906	1,449	15,200	2,254
9. Mathura	410	485*	3,471*	538	6,964	900	11,241	1,265	13,343	945
10. Aligarh	600	1,376*	11,537*	2,210	16,408	3,149	18,911	3,723	22,538	3,604
11. Bulandshahr	527		14,801*	9,125*	20,243	9,514	21,346	11,522	23,937	10,892
12. Agra	454				12,632*	992*	14,645	1,505	17,543	1,502
13. Kanpur	509				8,543*	1,643*	11,862	3,393	16,053	
14. Allahabad	574				12,370*	2,881*	15,650	5,621	21,577	
15. Sitapur	510				4,440*	2,406*	7,107	3,187	11,260	4,928
16. Barabanki	415				13,333*	3,317*	16,670	6,859	17,772	5,975
17. Banda	574							531*		760
EAST										
Assam										
1. Goalpara	513	87*	181*	131	121	207	160	250	369	187
2. Nowgong	375			256*	71*	337	124	396	245	463

Bihar											
1.	Aurangabad	249	560*	2,333*	1,277	2,831					
2.	Bhojpur	483	1,652*	8,426*	2,027	13,035	1,856	13,256	2,765	14,678	2,709
3.	Rohtas	601	2,588*	9,646*	2,396	13,798	2,359	13,931	3,725	16,081	3,842
4.	Gaya	483	1,699*		945	5,797*	3,104	7,977	4,461	9,546	4,454
5.	Bhagalpur	377	914*		1,217	4,940*	2,201	6,020	2,704	6,330	2,333
6.	Palamau	315	349*		279						
7.	Saran	293			1,405	5883*	1,117	6,156	1,815	7,436	
8.	East Champaran	444			1,325*	6,262*	1,489	6,541	2,210	7,592	1,991
9.	Purnea	778		3,120*		3,912	673*	3,462	959	4,100	1,390
10.	Saharsa	560		2,133*		2,236					
11.	Muzaffarpur	355		5,737*		6,012					
12.	Darbhanga	237		2,013*		1,566					

Orissa											
1.	Balasore	507		1,613*	1,571	2,191	2,547*	3,044	2,759	3,516	2,016
2.	Bolangir	449	1,784*	2,162*		1,796	1,867	1,887	2,334	3,433	2,073
3.	Cuttack	1,060	4,192*		7,243	7,277*	9,494	7,021	8,524	6,757	6,736
4.	Dhenkanal	443		1,102*		1,243					
5.	Ganjam	671		6,514*		6,343					
6.	Puri	669	2,048*	2,124*	3,955	3,014	3,549	2,387	4,348	3,196	2,615

West Bengal											
1.	Burdwan	583	6,773*	9,945*	7,267	15,261	7,635	17,665	10,482	23,796	11,127
2.	Birbhum	470	5,869*	7,750*	5,875	8,538	6,262	9,606	1,738	10,488	7,368
3.	Nadia	509		7,188*		8,256	6,002*	12,132	7,523	15,162	7,498

NORTH

Haryana											
1.	Jind	456	1,571*	3,384*	1,846	5,055	2,914	6,768	2,962	9,192	
2.	Rohtak	471	1,340*	2,956*	2,167	3,099	2,307	4,453	1,881	6,164	1,889
3.	Gurgaon	517	733*	4,210*	1,050	5,588	1,567	8,120	1,189	10,240	1,263

(Continued)

**6.17. FERTILISER CONSUMPTION IN THE DISTRICTS SELECTED UNDER INTENSIVE
FERTILISER PROMOTION CAMPAIGN—SEASONWISE (Continued)**

Zone/State/District	Gross cropped area ('000 hectare)	Pre-campaign season		Campaign season						
		Consumption of N+P+K (tonnes)		Consumption of N+P+K (tonnes)						
		Kharif 1975	Rabi 1975-76	Kharif 1976	Rabi 1976-77	Kharif 1977	Rabi 1977-78	Kharif 1978	Rabi 1978-79	Kharif 1979

NORTH (Concluded)

Himachal Pradesh

1. Sirmur	34	280*	183*	294	347	278	312	583		
2. Solan	21						368*		282	684

Jammu & Kashmir

1. Srinagar	52	1,175*		326		N.A.				
2. Anantnag	146	2,307*		1,482		N.A.				N.A.
3. Jammu	169		1,112*		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Punjab

1. Kapurthala	200	3,611*		4,387						
2. Gurdaspur	442			7,508*	20,532*	10,624	19,046	18,844	24,494	
3. Bhatinda	739				21,921*	2,522	27,974	14,317	32,415	
4. Faridkot	776				36,089	22,331	43,342	22,503	48,836	28,308
5. Ropar	194		4,500*		5,496	3,214	7,439	3,628	7,614	5,587

SOUTH**Andhra Pradesh**

1. Srikakulam	568	2,807*	7,261*	3,754	6,471	5,092	7,384	3,648	8,092	3,526
2. Visakhapatnam	522	2,105*	6,095*	3,345	6,748	7,024	7,287	2,608	9,966	1,905
3. Nellore	379	3,883*	9,448*	4,879	10,446	7,683	12,598	5,257	12,600	5,209
4. Nizamabad	350	9,099*	15,718*	14,761	14,594	13,281	12,993	32,331	33,598	
5. Anantpur	957	1,441*	4,820*	2,758	4,264	3,457	6,931	5,864	10,431	
6. Chittoor	556	4,388*		5,196						
7. Medak	464	2,841*		4,844						4,150

Karnataka

1. Shimoga	299	8,644*	6,483	9,663	7,419	10,819	6,545	15,654	10,462	16,228
2. Bidar	398	1,389*			835*	2,831*	629	1,994	853	3,218
3. Bellary	389		11,124*		10,384*					
4. Tumkur	364							7,165*		7,130

Kerala

1. Malappuram	277			1,881*	2,355*	2,731	2,497	3,144	2,993	3,109
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Tamil Nadu

1. Tirunelveli	573	6,386*	9,882*	6,566	11,700	9,108	17,838	10,282	16,621	11,289
2. South Arcot	739				19,168*	22,094*	31,240	24,902	26,748	23,281

WEST**Gujarat**

1. Gandhinagar	51	384*	472*	418	695	499	959	661	1,402	325
2. Banaskantha	980	819*	3,118*	1,004	3,811	1,367	5,241	2,042	7,392	1,921
3. Mehsana	909	2,436*	5,346*	3,159	7,646	4,341	10,789	7,543	13,885	7,242

(Continued)

**6.17. FERTILISER CONSUMPTION IN THE DISTRICTS SELECTED UNDER INTENSIVE
FERTILISER PROMOTION CAMPAIGN—SEASONWISE (Concluded)**

Zone/State/District	Gross cropped area ('000 hectare)	Pre-campaign season		Campaign season					
		Consumption of N+P+K (tonnes)		Consumption of N+P+K (tonnes)					
		Kharif 1975	Rabi 1975-76	Kharif 1976	Rabi 1976-77	Kharif 1977	Rabi 1977-78	Kharif 1978	Rabi 1978-79

WEST (Concluded)

Maharashtra

1. Solapur	1,200	4,216*		4,358	6,943*	4,968	7,725	5,900	7,571	6,339
2. Bhandara	506	4,592*	4,103*	3,871	3,834	3,886	3,594	3,964	2,339	4,806
3. Chandrapur	719	4,453*	4,199*	4,223	4,034		4,423		1,844	5,010
4. Aurangabad	1,384	3,897*		3,585	8,142*	5,906	9,898	6,650	10,585	10,573
5. Parbhani	1,105					1,174*	5,907*	2,814	5,012	
6. Kolaba	208					5,840*	1,543*	6,414	1,993	5,981
7. Jalgaon	922					19,437*	15,299*	25,750	15,884	29,750
8. Nasik	980		12,170*		14,814		4,425			

*Refer to consumption of N+P+K in pre-campaign season.

6.18. FERTILISER PROMOTION PROGRAMME IN SELECTED DISTRICTS—Kharif 1981

Zone/State/District	Lead manufacturer	Fertiliser consumption (T)		Best season year	Fertiliser consumption (T)		Per cent increase/decrease in Kharif 1981	
		Kharif	Best season		Target Kharif 1981	Actuals Kharif 1981	Over Kharif 1981	Over best season
SOUTH								
Karnataka								
1. Dharwar	Zuari	15,026	16,981	1979	18,540	16,126	7.3	(-) 5.0
2. Tumkur	Zuari	8,093	7,165	1978	9,860	6,299	3.4	(-)12.1
3. Raichur	IFFCO	16,439	22,072	1979	28,520	21,624	31.5	(-) 2.0
Tamil Nadu								
1. Dharamapuri	MFL	1,069	3,042	1979	N.A.	1,706	59.6	(-)43.9
2. Ramnad	SPIC	4,597	4,597	1980	N.A.	4,657	1.3	1.3
3. Puddukotai	FACT	2,884	2,884	1980	N.A.	1,658	(-)35.8	(-)35.8
4. Tirunelveli	SPIC	11,681	11,681	1980	N.A.	13,213	(-)13.1	(-)13.1
Kerala								
1. Mallapuram	FACT	3,114	3,144	1978	2,517	3,502	12.5	11.4
2. Gannanore	FACT	4,348	4,397	1978	3,488	4,293	(-) 1.3	(-) 2.3
3. Quilon	FACT	4,151	4,277	1978	3,305	4,514	8.7	5.5
Andhra Pradesh								
1. Srikakulam	SPIC	2,567	5,092	1977	4,481	4,841	88.6	(-) 4.9
2. Visakhapatnam	Coromandel	2,287	7,024	1977	3,461	3,429	49.9	(-)51.2
3. Vijainagram	RCF	1,576	1,576	1980	2,298	2,387	51.5	51.5
4. Nalgonda	Zuari	8,881	12,088	1978	12,035	6,358	(-)28.4	(-)47.8
5. Medak	FACT	4,457	6,059	1978	6,685	8,665	54.2	43.0
WEST ZONE								
Gujarat								
1. Mehsana	IFFCO	8,055	8,055	1980	9,530	8,159	1.3	1.3
2. Ahmedabad	IFFCO	6,541	6,541	1980	7,342	4,247	(-)35.0	(-)35.0
3. Broach	GNFC	4,399	5,588	1979	7,019	5,895	34.0	5.5
4. Bular	GNFC	6,721	6,721	1980	8,060	6,165	(-) 8.2	(-) 8.2
Rajasthan								
1. Bhilwara	IFFCO	2,591	2,591	1980	3,992	2,439	(-) 5.8	(-) 5.8
2. Jaipur	Shriram	1,768	1,768	1980	3,560	1,760	(-) 0.4	(-) 0.4
3. Udaipur	GSFC	1,845	1,845	1980	2,630	1,531	(-)17.1	(-)17.1
4. Bharatpur	NFL	722	722	1980	1,425	1,222	69.2	69.2

(Continued)

6.18. FERTILISER PROMOTION PROGRAMME IN SELECTED DISTRICTS—KHARIF 1981 (Concluded)

Zone/State/District	Lead manufacturer	Fertiliser consumption (T)		Best season year	Fertiliser consumption (T)		Per cent increase/decrease in Kharif 1981	
		Kharif	Best season		Target Kharif 1981	Actuals Kharif 1981	Over Kharif 1981	Over best season

WEST ZONE (Concluded)

Rajasthan (Concluded)

5. Alwar	NFL	1,447	1,447	1980	2,400	1,480	2.3	2.3
6. Banswara	GSFC	969	969	1980	1,146	1,092	12.7	12.7
7. Ajmer	Shriram	613	613	1980	836	473	(-)22.8	(-)2.8
3. Jhansar	IFFCO	823	823	1980	1,100	906	19.8	19.8

Maharashtra

1. Aurangabad	IFFCO	10,464	10,573	1979	12,500	12,348	18.0	16.8
2. Pune	RCF	12,267	12,267	1980	13,700	18,379	49.8	49.8
3. Nanded	Zuari	5,844	5,844	1980	6,800	8,207	40.4	40.4
4. Parbhani	RCF	3,177	3,912	1976	3,900	4,871	53.3	24.5
5. Osmanabad	Zuari	4,898	6,520	1976	5,600	7,950	62.3	21.9
6. Akola	RCF	8,094	8,094	1980	9,30	9,495	17.3	17.3

Madhya Pradesh

1. Hoshangabad	IFFCO	1,067	1,067	1980	1,620	2,253	111.1	111.1
2. Sagar	SPIC	23	300	1975	465	480	115.2	60.0
3. Shajapur	Shriram	1,166	1,166	1980	1,495	2,279	95.4	95.4
4. Vidisha	IFFCO	113	183	1975	2,330	1,206	967.2	559.0
5. Rajnandgaon	HFC	1,957	1,957	1980	2,910	4,206	114.9	114.9
6. Damoh	FCI	32	170	1975	145	118	260.7	(-)30.6
7. Raipur	DMCC	11,633	11,633	1980	23,760	19,258	65.5	65.5

EAST ZONE

Bihar*

1. Purnea	HFC	1,448	1,448	1980	NA	1,580	9.0	9.1
2. Saharsa	HFC	560	560	1980	NA	955	70.5	70.5
3. West Champaran	HFC	1,783	1,804	1978	NA	2,560	43.6	34.4
4. Aurangabad	FCI	959	1,277	1976	NA	893	(-) 6.9	(-)30.1
5. Samastipur	IFFCO	1,496	1,709	1979	NA	1,391	(-) 7.0	(-)18.6

West Bengal

1. West Dinajpur	HFC	5,484	5,484	1980	5,800	5,847	6.6	6.6
2. 24 Pargana	IFFCO	10,379	10,379	1980	14,829	10,975	5.7	5.7

Assam

1. Dibrugarh	HFC	803	803	1980	NA	466	(-)41.9	(-)41.9
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Orissa

1. Ganjam	IFFCO	3,364	4,992	1977	NA	3,989**	18.6	(-)20.1
2. Dhenkanal	FCI	539	1,083	1978	NA	741	37.5	(-)31.6
3. Sundargarh	FCI	772	979	1979	NA	1,096	41.9	11.9
4. Phulbani	HFC	386	386	1980	NA	225	(-)41.7	(-)41.7

NORTH ZONE**Haryana**

1. Curgeon	NFL	374	1,263	—	1,755	580	55.1	(-)54.0
2. Rohtak	NFL	1,427	2,307	1977	130	2,544	78.2	10.2
3. Mohinder Garh	NFL	315	826	1975	1,830	502	59.3	(-)39.2

Punjab

1. Ropar	NFL	4,466	5,587	1979	NA	7,300	63.4	30.6
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Uttar Pradesh*

1. Etah	Shriram	1,817	2,254	1979	2,740	1,800	(-) 3.8	(-)20.1
2. Unnao	FCI	2,026	2,026	1980	2,540	1,957	(-) 3.8	(-) 3.8
3. Hardoi	IEL	3,427	3,427	1980	4,010	3,019	(-)11.9	(-)11.9
4. Baharich	IFFCO	5,393	5,807	1978	8,640	7,620	41.3	31.2
5. Banda	FCI	944	944	1980	1,230	909	(-) 3.7	(-) 3.7
6. Mirzapur	IFFCO	5,528	5,903	1978	6,780	4,759	(-)13.9	(-)19.3
7. Almorā	IEL	383	404	1976	500	380	(-) 0.8	(-) 5.9
8. Pauri Garhwal	FCI	127	179	1978	150	95	(-)26.7	(-)48.0

Jammu & Kashmir

1. Anantnag	IFFCO	NA	NA	NA	NA	NA		
2. Kathua	NFL	NA	NA	NA	NA	NA		

Himachal Pradesh*

1. Sirmur	NFL	469	583	1977		678	44.5	16.3
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*Kharif 1981 achievements not yet received.

**Figure taken from FAI Eastern Region Stat. Series Vol. 9, No. 3 (March 1982).

NA=Not available.

Source: Ministry of Agriculture, New Delhi.

**6.10. FERTILISER PROMOTION PROGRAMME IN SELECTED DISTRICTS—KHARIF 1982
AND TARGET FOR KHARIF 1983**

(Consumption in tonnes)

Name of the State/district	Lead manufacturer	Best season	Fertiliser consumption in best season	Fertiliser consumption		± % during kharif 1982 over kharif 1981	Consumption target for kharif 1983
				Kharif 1981	Kharif 1982		
SOUTH ZONE							
Karnataka							
1. Dharwar	Zuari	1982	21,775	16,126	21,775	35.0	24,600
2. Tumkur	Zuari	1982	7,914	6,299	7,914	25.6	9,800
3. Raichur	IFFCO	1979	22,072	21,624	15,002	-30.6	27,000
4. Bangalore	FACT	1979	12,260	10,734	10,116	-5.8	13,000
5. Kolar	SPIC	1982	7,229	6,267	7,229	-15.4	8,300
6. Bidar	RCF	1982	4,339	4,268	4,339	1.2	5,207
7. Hassan	MFL	1979	14,505	10,082	9,862	-2.2	11,300
Tamil Nadu							
8. Dharmapuri	MFL	1979	3,042	2,343	1,887	-19.5	2,500
9. Salem	MFL	1978	12,374	6,862	9,939	44.8	10,500
10. Ramnad	SPIC	1982	6,491	4,657	6,491	39.4	7,200
11. Kanyakumari	SPIC	1981	2,251	2,251	2,206	-2.0	2,500
12. Tirunelveli	SPIC	1981	13,213	9,988	12,593	26.1	15,000
13. Pudukotai	FACT	1980	2,884	1,638	2,445	49.3	2,700
Kerala							
14. Mallapuram	FACT	1982	3,529	3,502	3,529	0.8	4,000
15. Cannanore	FACT	1982	4,527	4,293	4,527	5.5	5,200
16. Quillon	FACT	1982	4,637	4,514	4,637	2.7	5,200
Andhra Pradesh							
17. Srikakulam	Coromandel	1982	5,096	4,841	5,096	5.3	6,115
18. Vishakapatnam	Coromandel	1982	4,226	1,813	4,226	133.1	4,700

19. Cuddapah	Coromandel	1982	6,667	5,885	6,667	13.3	7,500
20. Vijayanagram	RCF	1982	3,616	2,387	3,616	51.5	4,339
21. Adilabad	RCF	1982	2,904	2,173	2,904	33.6	3,485
22. Nalgonda	Zuari	1982	12,893	6,358	12,893	102.8	15,000
23. Medak	FACT	1981	8,665	8,665	8,367	-3.4	10,000
24. Chittoor	MFL	1977	9,465	5,601	7,535	34.5	10,500
25. Nellore	SPIC	1977	7,683	7,662	5,214	-31.9	8,000

WEST ZONE

Gujarat

1. Mehsana	IFFCO	1982	8,408	8,159	8,408	3.1	10,089
2. Ahmedabad	IFFCO	1982	7,668	4,247	7,668	80.6	9,202
3. Broach	GNFC	1981	5,895	5,895	4,635	-21.4	7,074
4. Bulsar	GNFC	1982	8,374	6,165	8,374	35.8	10,049
5. Gandhinagar	GSFC	1981	1,395	1,395	1,152	-17.4	1,674
6. Banskantha	GSFC	1981	2,840	2,840	2,682	-5.6	3,408
7. Panchmahal	GSFC	1982	3,886	3,342	3,886	16.3	4,663

Rajasthan

8. Bhitwara	IFFCO	1980	2,591	2,439	2,422	-0.7	3,109
9. Jhalawar	IFFCO	1982	1,019	986	1,019	3.3	1,223
10. Ganganagar	IFFCO	1982	18,547	8,939	18,547	107.5	22,256
11. Jaipur	Sriram	1982	1,824	1,128	1,824	61.7	2,189
12. Ajmer	Sriram	1980	813	491	397	-19.1	736
13. Chittorgarh	Sriram	1982	5,856	5,625	5,856	4.1	7,027
14. Kota	Sriram	1981	4,302	4,362	4,143	-5.0	5,162
15. Udaipur	GSFC	1980	1,845	632	1,348	113.3	2,214
16. Banswara	GSFC	1982	1,128	1,092	1,128	3.3	1,354
17. Bharatpur	NFL	1981	1,222	1,222	726	-40.6	1,466
18. Alwar	NFL	1981	1,480	1,480	1,369	-7.5	1,776

(Continued)

**6.18. FERTILISER PROMOTION PROGRAMME IN SELECTED DISTRICTS—KHARIF 1982
AND TARGET FOR KHARIF 1983 (Continued)**

(Consumption in tonnes)

Name of the State/district	Lead manufacturer	Best season	Fertiliser consumption in best season	Fertiliser consumption		± % during kharif 1982 over kharif 1981	Consumption target for kharif 1983
				Kharif 1981	Kharif 1982		
WEST ZONE (Continued)							
Maharashtra							
19. Pune	RCF	1982	18,600	18,379	18,600	1.2	22,320
20. Parbhani	RCF	1982	7,250	4,871	7,250	48.8	8,700
21. Akola	RCF	1982	12,820	9,495	12,820	35.0	15,384
22. Bhandara	RCF	1982	5,860	5,213	5,860	12.6	7,032
23. Satara	RCF	1977	14,356	13,250	8,371	-36.8	17,227
24. Nanded	Zuari	1981	8,207	8,207	5,600	-31.8	9,848
25. Osmanabad	Zuari	1981	7,950	7,950	5,679	-28.6	9,540
26. Aurangabad	IFFCO	1981	12,348	12,283	9,190	-25.2	14,817
Madhya Pradesh							
27. Hoshangabad	IFFCO	1982	1,704	1,685	1,704	1.1	2,045
28. Vidisha	IFFCO	1982	383	368	383	4.1	459
29. Bilaspur	IFFCO	1981	6,274	6,294	N.A.		7,529
30. Rajnandgaon	HFC	1981	2,315	2,315	2,307	-0.3	2,778
31. Tikamgarh	HFC	1976	466	201	N.A.		559
32. Raipur	DMCC	1981	19,258	17,050	13,041	-23.5	23,109
33. Morena	DMCC	1981	1,165	1,165	N.A.		1,398
34. Shajapur	Sriram	1982	2,101	1,941	2,101	8.2	2,521
35. Damoh	FCI	1975	170	51	79	54.9	204
36. Sagar	GNFC	1982	569	272	569	109.2	683
37. Durg	DMCC	1981	4,315	4,315	N.A.		5,178

NORTH ZONE**Haryana**

1. Rohtak	NFL	1982	2,665	2,544	2,665	4.8	3,196
2. Mohindergarh	NFL	1975	826	502	296	-41.0	991
3. Jind	NFL	1982	5,031	4,372	5,031	15.1	6,037
4. Gurgaon	NFL/IFFCO	1981	580	580	547	-5.7	696
5. Hisar	IFFCO	1982	7,622	5,311	7,622	43.5	9,146

Punjab

6. Ropar	NFL	1981	7,300	7,300	6,753	-7.5	8,760
7. Hoshiarpur	NFL	1980	7,427	7,038	6,629	-5.8	8,912

Uttar Pradesh

8. Bahraich	IFFCO	1982	8,571	7,620	8,571	12.5	10,285
9. Mirzapur	IFFCO	1978	5,903	4,759	1,036	-78.2	7,084
10. Badaun	IFFCO	1981	6,801	6,801	6,275	-7.7	8,161
11. Fatehpur	IFFCO	1980	2,422	2,924	2,207	-24.5	2,906
12. Unnao	FCI	1982	2,639	1,957	2,639	34.8	3,167
13. Banda	FCI	1980	944	909	438	-51.8	1,133
14. Pauri Garhwal	FCI	1978	179	93	109	17.2	215
15. Rai Bareilly	FCI	1981	3,580	3,580	2,945	-17.7	4,296
16. Hardoi	IEL	1982	3,993	3,019	3,993	32.3	4,792
17. Almora	IEL	1976	404	380	345	-9.2	485
18. Etah	Sriram	1979	2,254	1,800	1,865	3.6	2,705
19. Agra	GNFC	1976	2,200	1,265	1,275	0.8	2,640

Himachal Pradesh

20. Sirmur	NFL	1982	719	980	719	-26.6	863
21. Solan	NFL	1982	1,134	678	1,134	67.3	1,361
22. Kangra	NFL	1980	1,944	1,621	1,724	6.4	2,333

(Continued)

**6.19. FERTILISER PROMOTION PROGRAMME IN SELECTED DISTRICTS—KHARIF 1982
AND TARGET FOR KHARIF 1983 (Concluded)**

(Consumption in tonnes)

Name of the State/district	Lead manufacturer	Best season	Fertiliser consumption in best season	Fertiliser consumption		±% during kharif 1982 over kharif 1981	Consumption target for kharif 1983
				Kharif 1981	Kharif 1982		
NORTH ZONE (Concluded)							
Jammu & Kashmir							
23. Anantnag	IFFCO	N.A.	N.A.	N.A.	2,828	—	—
24. Kathua	NFL	N.A.	N.A.		N.A.	—	—
EAST ZONE							
Assam							
1. Dibrugarh	HFC	1982	840	466	840	80.3	1,008
Bihar							
2. Purnea	HFC	1981	1,580	1,580	2,387	51.1	1,896
3. Saharsa	HFC	1981	955	816	1,282	57.1	1,146
4. West Champaran	HFC	1981	2,560	2,560	3,341	30.5	3,072
5. Bhagalpur	HFC	1981	2,725	2,727	2,607	-4.4	3,270
6. Aurangabad	FCI	1976	1,277	893	1,161	30.0	1,532
7. Darbhanga	FCI	1981	423	423	504	19.1	507
8. Patna	FCI	1976	3,123	2,083	1,939	-6.9	3,747
9. East Champaran	FCI	1981	2,587	2,587	2,356	-8.9	3,104
10. Samastipur	IFFCO	1979	1,709	1,391	1,529	9.9	2,050

Orissa

11. Dhenkanal	FCI	1978	1,083	741	942	27.1	1,299
12. Sundergarh	FCI	1982	2,004	1,096	2,004	82.8	2,405
13. Ganjam	IFFCO	1982	5,897	3,989	5,897	47.8	7,076
14. Phulbani	HFC	1980	366	225	300	33.3	463
15. Sambalpur	Coromandal	1981	11,478	11,436	10,533	-7.9	13,774

West Bengal

16. West Dinajpur	HFC	1982	7,521	5,847	7,521	28.6	9,025
17. Birbhum	HFC	1982	8,001	9,161	8,201	-10.5	9,841
18. 24-Parganas	IFFCO	1982	11,498	10,975	11,498	4.8	13,798

7.00. PRICES AND SUBSIDIES

7.01. PRICES OF FERTILISERS IN TERMS OF NUTRIENTS
(inclusive of excise duty)
(50 kg packing)

(Rs/kg)

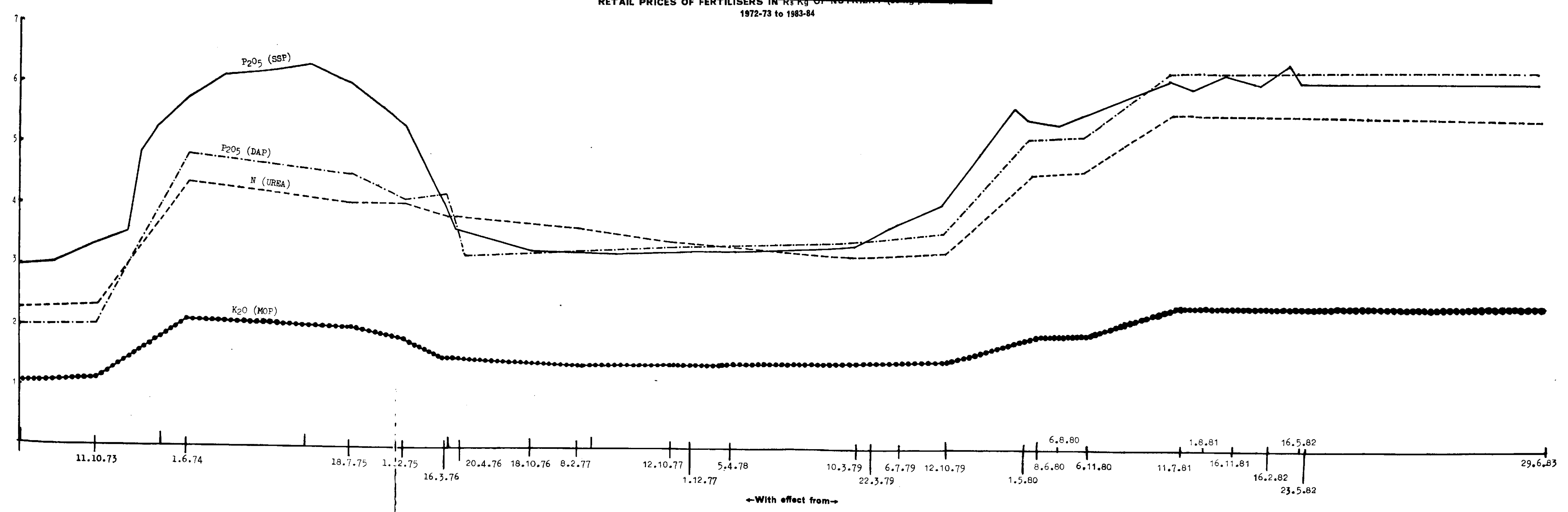
As on	Maximum retail price of nutrient through					
	Ammonium sulphate (20.6% N)	Urea (46% N)	Calcium ammonium nitrate (25% N)	Diammonium phosphate (18-46-0)	Super phosphate (16% w.s. P ₂ O ₅)	Muriate of potash (60% K ₂ O)
Nutrient	(N)	(N)	(N)	(P ₂ O ₅)	(P ₂ O ₅)	(K ₂ O)
30-3-1972	2.72	2.08	2.26	1.98 ¹	3.17 ²	0.92 ¹
11-10-1973	2.96	2.28	2.46	2.01	3.27 ²	1.13
1-6-1974	4.54	4.35	4.33	4.83	6.53 ²	2.05
18-7-1975	4.54	4.02	4.38	4.52	6.78 ²	1.97
				4.08 ²	5.85 ²	1.83 ²
16-3-1976	4.54	3.80	4.38	4.17	4.51	1.52
8-2-1977	4.54	3.59	4.38	3.40	3.57	1.34
12-10-1977	4.54	3.37	4.06	3.49	3.57	1.34
2-2-1979	4.54	3.37	4.06	3.49	3.61 ⁴	1.34
10-3-1979	4.37	3.15	4.00	3.55	3.65 ⁵	1.34
8-6-1980*	Decontrolled	4.35	Decontrolled	4.93	5.27 ⁶	1.83
2-7-1980*	7.28 ⁷	4.35	6.40	4.93	5.27 ⁶	1.83
11-7-1981*	7.28 ⁷	5.11	6.40	5.83	5.74 ⁸	2.17
					(5.87)	
29-6-1983		4.67		5.46	5.31	2.00

¹w.e.f. March 17, 1972.²As on April 1, 1972.³w.e.f. December 1, 1975.⁴w.e.f. November, 1978.⁵w.e.f. March 22, 1979.⁶w.e.f. June 7, 1980.⁷For imported pool material.⁸w.e.f. August 1, 1981.

()=w.e.f. 23-5-1982. .

* Prices effective 8-6-1980 (and thereafter) exclude excise duty as, it is withdrawn with effect from 7-6-1980 on all fertilisers, except ammonium sulphate and calcium ammonium nitrate in which case, it is 7.5 per cent *ad valorem* plus 5% special duty on excise duty. This is also withdrawn with effect from 28-2-1983.

RETAIL PRICES OF FERTILISERS IN R₹ Kg OF NUTRIENT (1972-73 to 1983-84)



7.02. PRICES OF FERTILISERS

(A) CURRENT PRICES

(Exclusive of Central and State sales tax and local taxes)

(Rs. per tonne net)

Fertiliser		Maximum retail price (50 kg packed)	Effective from
(A) STATUTORILY CONTROLLED			
1. Ammonium sulphate		Decontrolled	June 8, 1980
2. Calcium ammonium nitrate	26% N } 25% N }	-do-	-do-
3. Urea 46% N grade		2,150	June 29, 1983
4. Triple superphosphate	Granular	2,400	-do-
	Powder	2,200	-do-
5. Urea ammonium phosphate	24-24-0	2,800	-do-
	28-28-0	3,350	-do-
	14-35-14	3,150	-do-
6. Ammonium phosphate sulphate	16-20-0	2,150	-do-
	20-20-0	2,400	-do-
7. Diammonium phosphate	18-46-0	3,350	-do-
8. Nitrophosphate	15-15-15	1,950	-do-
	20-20-0	2,200	-do-
9. NP/NPK fertilisers	17-17-17	2,400	-do-
	14-28-14	2,800	-do-
	19-19-19	2,750	-do-
	10-26-26	2,750	-do-
	12-32-16	3,000	-do-
10. a) Single superphosphate	Granulated	1,000	-do-
	(16% w.s. P ₂ O ₅)		
	Powder	650	-do-
b) Single superphosphate	Powder	750	-do-
	(14% w.s. P ₂ O ₅)		
(B) IMPORTED—POOL FERTILISERS			
11. Ammonium sulphate		1,500 (1,490)	July 2, 1985
12. Calcium ammonium nitrate (26% N)		1,614	-do-

(Continued)

7.02. PRICES OF FERTILISERS (Continued)**(A) CURRENT PRICES (Concluded)****(Exclusive of Central and State sales tax and local taxes)**

Fertiliser	(Rs. per tonne net)	
	Maximum retail price (50 kg packing)	Effective from
13. Muriate of potash (60% K ₂ O)	1,200 (1,190)	June 29, 1983
14. Sulphate of potash (50% K ₂ O)	1,950	-do-
(C) OTHER THAN STATUTORILY CONTROLLED		
1. Ammonium sulphate	1,550-1,650 (1,540-1,640)	June 8, 1980
2. Ammonium chloride (25% N)	1,790-1,807	August, 1983
3. Calcium ammonium nitrate (25% N)	1,700	August 23, 1982

() For material packed in 100 kg capacity bags.

- Note:** 1) w.e.f. 7-6-1980, excise-duty is withdrawn on all fertilisers except ammonium sulphate and calcium ammonium nitrate in which case it is 7.5 per cent *ad valorem*, plus 5% special duty on excise duty. This is also withdrawn with effect from 28-2-1983.
- 2) Prices of fertilisers when sold in bulk by the manufacturers at the factory gate are lower by Rs. 150/- per tonne with effect from 27th April 1982 except, single superphosphate in which case it is lower by Rs. 95 per tonne with effect from July 13, 1982.

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES

(Exclusive of sales taxes and local taxes and inclusive of excise duty)

(Rs. per tonne)

Date	Maximum retail price (50 kg packing)							Ammonium sulphate nitrate
	Ammonium sulphate†		Urea		Calcium ammonium nitrate			
	White	Coloured	46% N	45% N	20 5% N	25% N	20% N	

A. STATUTORILY CONTROLLED‡

1-2-1966	405	—	680	—	365	—	@	515
1-2-1967	405	—	680	—	385	—	@	515
1-4-1967	492	—	840	—	437	510	@	577
19-4-1968	502	—	860	—	37	510	@	577
17-4-1969 ¹	539	479	943	924	473	545	575	626
9-3-1971 ¹	529	429	923	904	473	545	575	626
	(5-8-1969)	(16-3-1970)		(9-4-1970)		(26-5-1969)	(1-3-1969)	
30-3-1972 ¹	549	449	959	940	—	565	594	*
11-10-1973 ¹	600	—	1,050	1,030	—	615	645	*
1-6-1974	925	—	2,000	1,960	—	1,095	1,145	*
18-7-1975 ¹	—	—	1,850	1,810	—	—	—	*
16-3-1976 ¹	—	—	1,750	1,710	—	—	—	*
8-2-1977 ¹	—	—	1,650	1,610	—	—	—	*
12-10-1977 ¹	—	—	1,550	1,510	—	1,015	1,060	*
10-3-1979	890	—	1,450	1,410	—	1,000	1,040	*
8-6-1980 ¹ ‡	Decontrolled	—	2,000	—	—	Decontrolled	Decontrolled	*
11-7-1981	-do-	—	2,350	—	—	-do-	-do-	*

1-145

(Continued)

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES (Continued)

(Exclusive of sales tax and local taxes and inclusive of excise duty)

(Rs. per tonne)

Fertiliser	Maximum retail price (50 kg packing)			
a. STATUTORILY CONTROLLED‡ (Concluded)				
	Effective from July 18, 1975			
1. Calcium ammonium nitrate 28% N grade	1,140			
77% N grade	1,109			
	Effective from			
	Feb., 2 '79	March 10, '79	June 8, 1980††	July 11, 1981
2. a) Triple superphosphate (Granular)	1,640	1,600	2,200	2,600
b) Triple superphosphate (Powder)		1,500	2,050	2,400
3. Urea ammonium phosphate	24-24-0	1,950	1,900	2,600
28-28-0		2,340	2,200	3,050
14-35-14		2,230	2,100	2,900
4. Ammonium phosphate sulphate	16-20-0	1,700	1,400	1,950
20-20-0		1,845	1,600	2,200
18-9-0		1,320	—	—
5. Diammonium phosphate	18-46-0	2,210	2,200	3,050
6. Nitrophosphate	15-15-15	1,520	1,300	1,800
20-20-0		1,760	1,500	2,050
7. NP/NPK Fertilisers	17-17-17	1,810	1,500	2,200
14-28-14		1,950	1,900	2,600
19-19-19		2,020	1,800	2,500
10-26-26		1,890	1,800	2,500
12-32-16		2,090	2,000	2,750
8. a) Single Superphosphate (16% w. s. P ₂ O ₅)				1,070 ¹
(Granulated)				940 ²
(Powder)				820 ¹
b) Single Superphosphate (Powder)				820 ¹
(14% w. s. P ₂ O ₅)				

(Continued)

7.02. PRICES OF FERTILISERS (Continued)**B. PREVIOUS PRICES (Continued)
DUTIES ON FERTILISERS (Per cent)**

With effect from	Excise duty	Auxiliary duty	Special duty
1-3-1969	10	—	—
17-3-1972	10+5=15	—	—
1-3-1973	15	5	—
		(replaced regulatory duty at 2½% w.e.f. 16-12-1971)	
1-3-1978	15	5	5
1-3-1979	7.5	5	5
7-6-1980††	—	—	—

† For both Pool and indigenous fertilisers.

* Decontrolled with effect from 20-10-1971. See under "Imported Pool Fertilisers" and "Indigenous Fertilisers".

@ See under "Imported Pool Fertilisers".

() Effective from date.

† For 100 kg packing. Retail price is higher by Rs. 11 a tonne upto 10-10-1973 and Rs. 10 a tonne w.e.f. 11-10-1973 when supplied in 50 kg capacity packing.

†† w.e.f. 7-6-1980, excise-duty is withdrawn on all fertilisers except ammonium sulphate and calcium ammonium nitrate in which case it is 7.5 per cent *ad valorem* + 5% special duty on excise duty. This is also withdrawn which effect from 28-2-1983.

Note: 1. With effect from 1st February 1966, prices of nitrogenous fertilisers distributed through the Pool have been fixed on all-India basis, thereby equalising 'cultivators' and 'plantation' price in each State.

2. Pool fertilisers are delivered per tonne gross, f.o.r. work/ports freight paid by Central Fertiliser Pool upto railhead destination by shortest and cheapest route.

3. All retail prices listed above are Rs. per tonne gross upto 30th April 1975 and on net basis with effect from 1st May, 1975.

4. Prices of fertilisers when sold in bulk by the manufacturers at the factory gate are lower by Rs. 150/- per tonne with effect from 27th April, 1982, except, single superphosphate in which case it is lower by Rs. 95 per tonne w.e.f. July 13, 1982.

(Continued)

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES (Continued)

(State sales tax and local taxes extra)

(Rs. per tonne)

Fertiliser	Maximum price (50 kg packing)		Effective from
	Pool issue price	Retail	
b. IMPORTED—POOL FERTILISERS			
1. Ammonium sulphate nitrate (26% N)	715.00 ^d	775 00 ^d	May, 1974
	1,085.00 ^d	1,145.00 ^d	June, 1974
	1,000.00 ^d	1,060.00 ^d	July, 1975
2. Ammonium chloride (25% N)	400.00	455.00	April, 1965
	450.00	505.00	April, 1967
	484.00 ^a	539.00 ^d	March, 1969
	(489.50) ^a		
	1,040.00 ^d	1,095.00 ^d	June, 1974
	940 00 ^d	July, 1975	
*3. Calcium ammonium nitrate (23% N)	430.00	485.00	May, 1968
4. Calcium ammonium nitrate (26% N)	425.00	485 00	August, 1966
	475.00	535.00	April, 1967
*5. Chilean natural nitrate of soda (non-Pool fertiliser) (16% N)		301.17	July, 1960
		294.28	April, 1961
		290.00	March, 1962
		283.00	May, 1963
6. Triple superphosphate	2,570.00	2,710.00	July, 1975
	1,735.00	1,875.00	December, 1975
	1,435 00	1,575.00	February, 1977
7. Ammonium phosphate (19-20-0)	2,340.00 ^d	2,470.00 ^d	July, 1975
	2,030.00 ^d	2,160.00 ^d	December, 1975
	1,900.00 ^d	2,030.00 ^d	February, 1977
8. Ammonium phosphate (20-20-0)	556.00	{ 771.00 (in AP only) }	August, 1963
		{ 610 00 (in other States) }	
	590.00	660.00	February, 1966
	738.00	818.00	April, 1967
	814.00 ^a	894.00 ^a	March, 1972
	(822.00) ^a		
	1,140.00 ^d	1,122.00 ^d	October, 1973
1,775.00 ^d	1,855.00 ^d	June, 1974	
1,670.00 ^d	1,780.00 ^d	July, 1975	

(Continued)

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES (Continued)

(State sales tax and local taxes extra)

(Rs. per tonne)

Fertiliser	Maximum price (50 kg packing)		Effective from
	Pool issue price	Retail	
b. IMPORTED—POOL FERTILISERS (Continued)			
8. Ammonium phosphate (20-20-0) (Continued)	1,550.00 ^d	1,660.00 ^d	December, 1975
	1,480.00 ^d	1,590.00 ^d	February, 1977
9. Monoammonium phosphate (11-55-0)	1,225.00 ^d	1,335.00 ^d	January, 1973
	3,040.00 ^d	3,140.00 ^d	June, 1974
	2,795.00 ^d	2,935.00 ^d	July, 1975
	2,985.00 ^d	2,985.00 ^d	December, 1975
10. Ammonium nitrophosphate (20-20-0)			February, 1977
	738.00	818.00	May, 1968
	800.00 ^a	880.00 ^a	March, 1969
	(808.00) ^a		
	829.00 ^d	909.00 ^d	March 17, 1972
	1,120.00 ^d	1,200.00 ^d	October, 1973
	1,775.00 ^d	1,855.00 ^d	June, 1974
	1,670.00 ^d	1,780.00 ^d	July, 1975
1,550.00	1,660.00	December, 1975	
1,408.00	1,590.00	February, 1977	
11. Ammonium nitrophosphate (23-23-0)	2,040.00 ^d	2,120.00 ^d	June, 1974
	1,920.00 ^d	2,035.00 ^d	July, 1975
	1,795.00 ^d	1,910.00 ^d	December, 1975
	1,645.00 ^d	1,760.00 ^d	February, 1977
12. Ammonium nitrophosphate (24-24-0)	2,940.00 ^d	3,080.00 ^d	July, 1975
	2,510.00 ^d	2,650.00 ^d	December, 1975
	2,155.00 ^d	2,295.00 ^d	March, 1976
	2,130.00	2,270.00	April, 1976
	1,905.00	2,045.00	February, 1977
13. Ammonium nitrophosphate (26-14-0)	1,200.00 ^d	1,280.00 ^d	May, 1974
	1,740.00 ^d	1,820.00 ^d	June, 1974
	1,635.00 ^d	1,745.00 ^d	July, 1975
	1,535.00	1,645.00	December, 1975
	1,445.00	1,555.00	February, 1977

(Continued)

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES (Continued)

(State sales tax and local taxes extra)

(Rs. per tonne)

Fertiliser	Maximum price (50 kg packing)		Effective from
	Pool Issue price	Retail	
b. IMPROVED—POOL FERTILISERS (Continued)			
14. Diammonium phosphate (18-46-0)	750.00	830.00	April, 1966
	1,000.00	1,095.00	April, 1967
	1,122.00 ^d	1,217.00 ^a	March, 1969
	(1,131.50) ^a		
	1,151.00 ^d	1,246.00 ^d	March 17, 1972
	1,240.00 ^d	1,335.00 ^d	October, 1973
		[1435.00] ¹	
	2,910.00 ^d	3,005.00 ^d	June, 1974
	2,665.00 ^d	2,805.00 ^d	July, 1975
	2,460.00 ^d	2,600.00 ^d	December, 1975
2,070.00 ^d	2,210.00 ^d	April, 1976	
* 15. Nitrophosphate (12.9-12.9-0)	375.00	410.00	August, 1963
16. NPK fertilisers (11-11-11)	1,190.00 ^d	1,620.00 ^d	June, 1974
	1,173.00 ^d	1,260.00 ^d	July, 1975
	1,130.00 ^d	1,220.00 ^d	December, 1975
	1,060.00 ^d	1,150.00 ^d	February, 1977
(13-13-13)	710.00 ^a	782.00 ^a	June, 1978
	(717.00) ^a		
	1,405.00 ^d	1,475.00 ^d	June, 1974
	1,380.00 ^d	1,475.00 ^d	July, 1975
	1,330.00 ^d	1,425.00 ^d	December, 1975
	1,245.00 ^d	1,340.00 ^d	February, 1977
(13-13-20)	2,010.00 ^d	2,130.00 ^d	July, 1975
	1,870.00 ^d	1,990.00 ^d	December, 1975
	1,785.00 ^d	1,905.00 ^d	February, 1977
(14-14-14)	700.80	775.00	April, 1967
	(755.00) ^a		
	763.50 ^a	830.00 ^a	March, 1969
	784.00 ^d	859.00 ^d	March 17, 1972
	1,515.00 ^d	1,590.00 ^a	June, 1974
	1,495.00 ^c	1,590.00 ^d	July, 1975
	1,445.00 ^d	1,540.00 ¹	December, 1975
	1,355.00 ^d	1,450.00 ^d	February, 1977
(12-42-12)	830.00	—	February, 1968
	830.00 ^a	915.00 ^a	March, 1969
	(838.50) ^a		
	1,270.00 ^a	1,345.00 ^d	October, 1973

(Continued)

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES (Continued)

(State sales tax and local taxes extra)

(Rs. per tonne)

Fertiliser	Maximum price (50 kg packing)		Effective from
	Pool issue price	Retail	
b. IMPORTED—POOL FERTILISERS (Continued)			
16. NPK Fertilisers (Continued)	1,860.00 ^d	1,945.00 ^a	June, 1974
(12-24-12)	1,830.00 ^d	1,945.00 ^d	July, 1975
	1,610.00 ^d	1,725.00 ^d	December, 1975
	1,455.00 ^d	1,570.00 ^d	February, 1977
15-15-15	760.00	840.00	February, 1968
	832.00 ^b	912.00 ^a	March, 1969
	(840.00) ^d		
	862.00 ^d	942.06 ^d	March 17, 1972
	1,295.00 ^d	1,375.00	October, 1973
	1,620.00 ^d	1,700.00 ^d	June, 1974
	1,595.00 ^d	1,700.00	July, 1975
	1,540.00 ^d	1,645.00	December, 1975
	1,465.00 ^d	1,570.00	April, 1976
	1,415.00 ^d	1,520.00	February, 1977
*(16-16-16)	920.00 ^d	1,000.00	November, 1972
(17-17-16)	2,430.00 ^d	2,265.90	July, 1975
	2,265.00 ^d	2,400.00	December, 1975
	1,955.00 ^d	2,050.00	February, 1977
(17-17-17)	2,455.00 ^d	2,590.00	July, 1975
	2,290.00 ^d	2,425.00	December, 1975
	1,990.00 ^d	2,125.00 ^d	March, 1976
	1,835.00 ^d	1,970.00	April, 1976
	1,675.00 ^d	1,810.00	February, 1977
(20-10-10)	2,050.00 ^d	2,170.00	July, 1975
	1,715.00 ^d	1,835.00	December, 1975
	1,650.00 ^a	1,770.00	February, 1977
*(17-8-9)	12,60.00 ^d	1,330.00	June, 1974
	1,240.00 ^d	1,330.30	July, 1975
	1,100.00 ^d	1,190.00	December, 1975
(14-28-14)	970.00 ^d	1,060.00	April, 1968
	1,047.00 ^d	1,137.00	March, 1969
	(1 056.00) ^d		
	1,030.00 ^a	1,170.00	March 17, 1972
	1,470.20 ^d	1,560.00	October, 1973

(Continued)

7.02. PRICES OF FERTILISERS (Continued)
B. PREVIOUS PRICES (Continued)
 (State sales tax and local taxes extra)

(Rs. per tonne)

Fertiliser	Maximum price (50 kg packing)		Effective from
	Pool issue price	Retail	
b. IMPORTED—POOL FERTILISERS (Continued)			
(14-28-14) (Continued)	2,170.00 ^d	2,260.00 ^d	June, 1974
	2,140.00 ^d	2,260.00 ^d	July, 1975
	2,082.00 ^d	2,202.00 ^d	December, 1975
	1,735.00 ^d	1,855.00 ^d	February, 1977
(10-26-26)	1,025.00	—	Sept. 26, 1970
	1,060.00	1,161.00 ^d	March 17, 1972
	2,145.00 ^d	2,245.00 ^d	June, 1974
	2,124.00 ^d	2,245.00 ^d	July, 1975
	2,080.00 ^d	2,202.00 ^d	December, 1975
(12-32-16)	1,045.00 ^d	—	Sept. 26, 1970
	1,047.00 ^d	1,177.00 ^d	March 17, 1972
	2,315.00 ^d	2,415.00 ^d	June, 1974
	2,285.00 ^d	2,415.00 ^d	July, 1975
	2,220.00 ^d	2,350.00 ^d	December, 1975
* (14-36-12)	1,135.00	—	Sept. 26, 1970
	1,161.00 ^d	1,271.00 ^d	March 17, 1972
	2,505.00 ^d	2,605.00 ^d	June, 1974
	2,470.00 ^d	2,605.00 ^d	July, 1975
	2,400.00 ^d	2,535.00 ^d	December, 1975
*17. Basic slag (18% P ₂ O ₅)	260.00	—	September, 1966
	260.00	304.00	November, 1967
*18. Dicalcium phosphate (28% P ₂ O ₅)	455.00	510.00	April, 1968
19. Muriate of potash (60% K ₂ O)* *			
(for 100 kg packing)	405.00	440.00	October, 1967
	445.00	488.00	April, 1968
	483.00 ^a	523.00 ^a	March, 1969
	(487.00) ^a		
	493.00 ^d	543.00 ^d	March 17, 1972
	620.00 ^d	570.10 ^d	October, 1973
		[705.00] ^d	
	1,170.00 ^d	1,220.00 ^d	June, 1974
	1,080.00 ^d	1,170.00 ^d	July, 1975

(Continued)

7.02. PRICES OF FERTILISERS (Continued)
B. PREVIOUS PRICES (Continued)
 (State sales tax and local taxes extra)

(Rs. per tonne)

Fertiliser	Maximum price (50 kg packing)		Effective from
	Pool issue price	Retail	

b. IMPORTED—POOL FERTILISERS (Continued)

19. Muriate of potash (60% K ₂ O) ^a (for 100 kg packing) (Continued)	1,005.00 ^d	1,085.00 ^d	December, 1975
	820.00 ^d	900.00 ^d	March, 1976
	705.00	795.00 ^d	February 8, 1977
	1,000.00	1,090.00 ^c	June 8, 1980
	1,200.00	1,290.00 ^c	July 11, 1981
*20. Muriate of potash ^a (40% K ₂ O) (for 100 kg packing)	270.00 (273.00)	300.00	March, 1963
21. Muriate of potash ^a (for 100 kg packing)			

60% K ₂ O		50% K ₂ O	
Ex-godown at port	Ex-jetty	Ex-godown at port	Ex-jetty

328.73	—	—	—	Jan./March, 1960
318.97	—	—	—	April, 1960
313.96	—	—	—	July, 1960
295.28	—	—	—	May, 1961
285.28	273.45	237.73	27.88	April, 1963
—	—	230.78	220.88	September, 1963
299.00	290.00	244.00	235.00	February, 1965
314.00	305.00	259.00	250.00	April, 1966
392.00	383.00	324.00	315.00	April, 1967
412.00	403.00	339.00	330.00	December, 1967
439.50	433.50	367.00	358.00	May, 1968
478.00 ^a	469.00 ^a	398.00 ^a	389.00	June, 1969
—	483.00 ^{a b}	—	403.00 ^{a b}	December, 1969
—	473.00 ^{a b}	—	393.00 ^{a b}	January, 1971

*22. Kamex (38/42% K ₂ O) ^a (for 100 kg packing)	210.00 (ex-godown at part)		May, 1966
23. Sulphate of potash ^a (48% K ₂ O) (for 100 kg packing)	377.85 ^b	—	June, 1966
	563.84 ^b	—	April, 1967

(Continued)

7.02. PRICES OF FERTILISERS (Continued)
B. PREVIOUS PRICES (Continued)
 (State sales tax and local taxes extra)

(Rs. per tonne)

Fertiliser	Maximum price (50 kg packing)		Effective from
	Pool issue price	Retail	
b. IMPORTED—POOL FERTILISERS (Concluded)			
24. Sulphate of potash (50% K ₂ O) (for 10 kg packing)	390.00	445.00	September, 1966
	585.00	655.00	May, 1967
	(592.00)		
	661.00 ^a	731.00 ^a	March 1, 1971
	(668.00)		
	730.00 ^a	800.00 ^d	March 17, 1972
	1,495.00 ^{c d}	1,565.00 ^{c d}	June, 1974
	1,415.00 ^{e d}	1,510.00 ^{e d}	July, 1975
	1,295.00 ^{c d}	1,390.00 ^{e d}	December, 1975
	1,200.00 ^{c d}	1,295.00 ^{e d}	February 8, 1977
1,705.00 ^c	1,800.00 ^c	June 8, 1980	
2,005.00 ^c	2,100.00 ^c	July 11, 1981	

() Pool prices for Food Corporation of India effective from December 22, 1969.

[] Pool issue price as intermediate for complex fertiliser and mixture manufacturers.

^a These prices include the incidence of excise duty (10%) on fertilisers brought into force from March 1, 1969.

^b F.O.R. despatching station/port of import, freight prepaid to destination station.

^c Distributed by M/s. Indian Potash Ltd., Madras.

^d These prices include, besides the incidence of excise duty at 15%, regulatory duty at 2½% brought into force from December 16, 1971. The latter is replaced by 5% auxiliary duty with effect from March 1, 1973.

^e For 50 kg packing, Rs. 10 a tonne extra w.e.f. October 11, 1973 as against Rs. 11 prescribed till October 10, 1973.

^{*} Now not marketed.

Note: All prices listed above are Rs. per tonne gross till 30th April 1975 and on net basis with effect from 1st May 1975.

(Continued)

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES (Continued)

(Exclusive of sales tax and local taxes)

(Rs. per tonne)

Fertiliser	Retail price (50 kg packing)	Effective from
c. INDIGENOUS FERTILISERS		
(Other than statutory controlled)		
1. Ammonium sulphate nitrate (20% N)	650.00 ^a ^b	September 16, 1973
	715.00 ^a ^b	October 14, 1972
	1,085.00 ^a ^b	April 1, 1971
2. Ammonium chloride (25% N) (75 kg packing)	452.00	January, 1962
	445.00	May, 1966
	540.00	July, 1967
	545.00 ^a	in U.P. & Bihar in M.P., West Bengal, Haryana, A.P. and Eastern Rajasthan Gujarat, Maharashtra, Punjab and Western Rajasthan
	555.00 ^a	
	570.00 ^a	
	570.00 ^a	
	760.00 ^a	
	1,415.08	March 17, 1972
	1,345.00	October 16, 1973
1,385.00	June 4, 1974	
1,265.00	July 22, 1975	
1,305.00	July 22, 1975	
1,205.00	July 22, 1975	
1,245.00	March 25, 1976	
2,003-2,650	March 25, 1976	
	March 9, 1977	
	March 9, 1977	
	February 9, 1981	
3. Calcium ammonium nitrate (25% N)	1,600.00	June 8, 1980
4. Ammonium phosphate sulphate (10-20-0)	815.00	(ex-depot, inclusive of sales tax) April, 1967
	865.15 ^a	(F.O.R. destination, local taxes extra) March, 1969
	915.00 ^a	in Kerala in Tamil Nadu, Karnataka and Andhra Pradesh
	935.00 ^a	
	980.00 ^a	
	1,300.00 ^a	March 27, 1972
	2,100.00	October 19, 1973
	2,300.00	June 6, 1974
	2,525.00	August 3, 1974
	2,430.00 ^a	April, 1975
	2,230.00 ^a	July, 1975
	1,930.00 ^a	December, 1975
	1,840 ^a	(two factories)
	1 870.00	
	@1,700.00 ^a	March, 1976
	March 24, 1976	
	February 8, 1977	

(Continued)

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES (Continued)

(Exclusive of sales tax and local taxes)

		(Rs. per tonne)
Fertiliser	Retail price (50 kg packing)	Effective from
c. INDIGENOUS FERTILISERS (Continued)		
(Other than statutorily controlled)		
	1,035.00	April 7, 1972
	1,400.00 ^a	October 19, 1973
	2,300.00	June 6, 1974
	2,500.00	August 3, 1974
	2,750.00	April, 1975
	2,650.00 ^a	July, 1975
	2,450.00 ^a	December, 1975
	2,150.00 ^a	March, 1976
	2,000.00 ^a	March 24, 1976
	@1,845.00 ^a	February 8, 1977
* (19.5-19.5-0)	2,300.00 ^a	April, 1975
	2,200.00 ^a	July, 1975
	1,890.00 ^a	March, 1976
	@1,820.00 ^a	February 8, 1977
* (18-9-0)	1,528.00 ^a	July, 1975
	1,380.00 ^a	March, 1976
	@1,320.00 ^a	February 8, 1977
*5. Diammonium phosphate (20-48-0)	1,250.80 ^a	March, 1969
*6. Diammonium phosphate (18-46-0)	1,354.00 ^a	May 13, 1971
	1,402.00 ^a	April 1, 1972
	1,402.00 ^a	April 1, 1973
	3,005.00 to 3,100.00 ^a	September 15, 1974
	2,805.00 to 2,900.00 ^a	July, 1975
	@2,120.00 to 2,200.00 ^a	@ March 16, 1977
*7. Nitrophosphate (18-13-0)	380.00 ^b	March 1966
	410.00 ^b	October, 19
	485.00 ^b	November, .
	550.00 ^b	June 7
	585.00 ^b	August, 1967
	683.00	August, 1967
8. Nitrophosphate (20-20-0)	900.00 ^a	March, 1967
	972.00 ^a	April 1, 1972
	2,240.00 ^a (Restarted marketing)	November, 1975
	1,950.00 ^a	March, 1976
	@1,760.00 ^a	February 8, 1977
9. Nitrophosphate (15-15-15)	870.00 ^a	March, 1969
	942.00 ^a	April 1, 1972
	1,150.00 ^{a b}	October 14, 1973
	1,800.00 ^{a b}	September 16, 1974
	1,140.00 ^a	July, 1975
	1,570.00 ^a	March, 1976
	@1,520.00 ^a	February 8, 1977

(Continued)

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES (Continued)

(Exclusive of sales tax and local taxes)

(Rs. per tonne)

Fertiliser	Retail price (50 kg packing)	Effective from
c. INDIGENOUS FERTILISERS (Continued)		
(Other than statutorily controlled)		
10. Urea ammonium phosphate (28-28-0)	1,232.00 ^d	March, 1969
	1,252.00 ^d	September, 1971
	1,312.00 ^d	March, 21, 1972
	1,493.00 ^d	September 1, 1973
	2,850.00 ^d	July, 13, 1974
	2,935.00 ^d	January 8, 1975
	3,280.00 ^d	April, 1975
	3,500.00 ^d	March, 1975
	3,180.00 ^d	} (for two factories)
	3,300.00 ^d	
	3,030.00 ^d	July, 1975
	2,600.00 ^d	December, 1975
	@2,340.00 ^a	March, 1976
		February, 1977
* (20-20-0)	938.00 ^d	September 1, 1971
	983.00 ^d	March 21, 1972
	1,122.00 ^d	September 1, 1973
* (22-22-11)	1,126.00 ^d	September 1, 1971
	2,100.00 ^d	February 8, 1977
(14-35-14)	1,350.00 ^d	April 1, 1972
	1,493.00 ^d	September 1, 1973
	2,850.00 ^a	July 13, 1974
	2,935.00 ^d	January 8, 1975
	3,280.00 ^d	April, 1975
	3,180.00 ^d	July, 1975
	2,930.00 ^a	December, 1975
	2,355.00 ^d	March, 1976
	@2,230.00 ^d	February, 1977
11. NPK fertilisers		
* (14-14-14)	1,100.00 ^d	March, 1969
(17-17-17)	1,260.00 ^a	June 1, 1972
	2,505.00 ^d	October 1, 1973
	2,775.00 ^a	October 1, 1974
(two factories)	2,640.00 ^d ; 2,625.00 ^a	October 1, 1975
	(Sept. 75) (July 75)	April 1, 1975
(two factories)	2,300.00 ^d	December, 1975
	1,970.00 ^d	March, 1976
	@1,810.00 ^d	February 8, 1977

(Continued)

7.02. PRICES OF FERTILISERS (Continued)

B. PREVIOUS PRICES (Continued)

(Exclusive of sales tax and local taxes)

(Rs. per tonne)

Fertiliser	Retail prices (50 kg packing)	Effective from
c. INDIGENOUS FERTILISERS (Continued)		
(Other than statutorily controlled)		
(19-19-19)	3,100.00 ^a	March, 1975
	2,950.00 ^a	July, 1975
	2,750.00 ^a	December, 1975
	2,200.00 ^a	March, 1976
	@2,020.00 ^a	February, 1977
(14-18-14)	1,215.00 ^a	June 1, 1972
	1,430.00 ^a	October 1, 1973
	2,850.00 ^a	October 1, 1974
	3,400.00 ^a	April 1, 1975
	2,920.00 ^a	March, 1976
	@1,950.00 ^a	February, 1977
(10-26-26)	3,060.00 ^a	November, 1974
	2,700.00 ^a	December, 1975
	2,220.00 ^a	March, 1976
	1,990.00 ^a	February, 1977
	@1,890.00 ^a	September 8, 1977
(12-32-16)	3,175.00 ^a	November, 1974
	3,700.00 ^a	July, 1975
	3,000.00 ^a	December, 1975
	2,470.00 ^a	March, 1976
	2,220.00 ^a	February, 1977
	@2,090.00 ^a	September 8, 1977
(24-24-0)	3,150.00 ^a	April, 1975
	(two factories) 2,875.00 ^a ; 3,000.00 ^a	
	(Oct. 75) (July 75)	
	(two factories) 2,270.00 ^a ; 2,330.00 ^a	March, 1976
	(two factories) 2,700.00 ^a ; 2,650.00 ^a	December, 1975
(two factories) 2,100.00 ^a ; 2,080.00 ^a	March, 1976	
@2,045.00 ^a	February 8, 1977	
*(22-22-11)	3,125.00 ^a	April, 1975
	2,975.00 ^a	July, 1975
	2,650.00 ^a	December, 1975
	2,270.00 ^a	March, 1976
	2,100.00 ^a	February 8, 1977

(Continued)

7.02. PRICES OF FERTILISERS (Continued)
B. PREVIOUS PRICES (Continued)
 (Exclusive of sales tax and local taxes)

(Rs. per tonne)

Fertiliser	Retail price (50 kg packing)	Effective from
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c. INDIGENOUS FERTILISERS (Continued)
 (Other than statutorily controlled)

12. Superphosphate ^a	177.16	March 12, 1950
(Minimum 16% w.s. P ₂ O ₅) ^d	182.40	May 11, 1961
(100 kg packing)	188.20	June 2, 1962
	193.50	June 27, 1962
	202.64	November 28, 1964
	210.88	June 26, 1965
	212.04	March 15, 1966
	212.90	May 10, 1966
	260.88	August 16, 1966
	249.39	October 1, 1966

(100 kg packing)

Year	Effective from			
	January 1	April 1	July 1	October 1
1967	272.95	300.95	294.54	311.70
1968	311.70	311.70	301.70	312.00
1969	299.78	299.78	299.78	281.67
1970	281.67	274.40	280.47	319.16
1971	319.46	301.79	291.18	291.18
1972	291.18	291.18	301.85	301.85
1973	302.00	302.00	316.00	353.00
385.00			January 1, 1976	
570.00			February 1, 1974	
627.00			March 7, 1974	
690.00			June 1, 1974	
747.00			September 1, 1974	
769.00			January 1, 1975	
779.00			April 1, 1975	
735.00			July 15, 1975	
683.00			October 1, 1975	
483.00†			March 17, 1976	
432.00†			April 9, 1976	
332.00†			October 18, 1976	
349.00†			December 1, 1977	

(Continued)

7.02. PRICES OF FERTILISERS (Concluded)
B. PREVIOUS PRICES (Concluded)
(Exclusive of sales tax and local taxes)

(Rs. per tonne)

Fertiliser	Retail price (50 kg packing)	Effective from
c. INDIGENOUS FERTILISERS (Concluded)		
(Other than statutorily controlled)		
12. Superphosphate ^a (Concluded) (Minimum 16% w.s. P ₂ O ₅) ^d (100 kg packing)	371.00†	March 22, 1979
	418.00†	July 6, 1979
	475.00†	October 12, 1979
	516.00†	February 26, 1980
	604.00†	May 1, 1980
	620.00†	November 6, 1980
	655.00†	May 2, 1981
	695.00†	August 1, 1981
	707.00†	November 16, 1981
	681.00†	February 16, 1982
672.00†	May 16, 1982	
**	May 23, 1982**	
13. Pelofos (18% total P ₂ O ₅)	540.00 ^b	February 5, 1974
	636.00 ^b	June 19, 1974
	825.00 ^b	August, 1974
	419.25†	December, 1977
	397.75	October 1, 1978
14. Superphosphate *(18% w.s. P ₂ O ₅)	207.50 ^e	August, 1963
	312.01 ^e	August, 1966
	326.71 ^b	January, 1967
	(for 50 kg bags)	
15. Triple superphosphate ^a (42.5% w.s. P ₂ O ₅)	875.00	March, 1968
	1,106.50 ^a	March, 1971
	(for 50 kg bags)	
	1,152.25 ^a	April 1, 1972
	1,271.90 ^a	July 23, 1973
	2,600.15 ^a	September, 1974
2,875.00 ^a	April 7, 1975	
1,640.00 ^a	November 8, 1977	

^a Includes the incidence of excise duty (10%) brought into force from March 1, 1969 and another 5% from March 17, 1972. It also includes 5% auxiliary duty brought into force from 1-3-1973.

^b Ex-factory price.

^c Ex-works price for 'port' factories (within 161 km of a port). Excludes excise duty at 15% which has been reduced to 7.5% w.e.f. 1-12-1975 and 3.75% w.e.f. 1-3-1979. It also excludes special duty at 5% of excise duty brought into force from 1-3-1978. With effect from 7-6-80, excise duty has been withdrawn.

^d Rs. 5.00 per tonne should be added which was allowed extra for packing superphosphate in 50 kg bags till 9th May 1966 and thereafter, Rs. 12.00 per tonne.

^e F.O.R. Ambernath.

^{*} Now not manufactured/marked.

[†] After deducting the incidence of subsidy which is Rs. 1,250/- tonne of P₂O₅ in force from 16-3-1976.

[@] Maximum prices are statutorily controlled with effect from Feb. 2, 1979. See (a) statutorily controlled table 7.01. Price of SSP is statutorily controlled w.e.f. 23-5-1982.

^{**} Statutorily controlled See 7.02 B-8 (a, b).

7.03. PRICES OF FERTILISER RAW MATERIALS

**(a) The basic ceiling selling prices for naphtha and furnace oil—ex-companies storage points etc.
(for fertiliser industry)**

(Rs).

Product/effective from	Unit	Gauhati/ Barauni/ Digboi/ Haldia	Kandla	Okha	Koyali/ Bombay/ Mathura	Goa	Cochin	Madras	Vizag	Calcutta	Increase/ decrease in price
1. Naphtha											
Before											
1-6-1972	MT		90.40	90.05	89.65	87.45	88.46	105.82	95.97	104.70	
1-6-1970			114.90	114.55	114.15	111.95	112.96	130.32	120.47	129.20	+24.50
28-5-1971			144.88	144.53	144.13	141.93	142.94	160.30	150.45	159.18	+29.98
11-6-1973			193.00	192.65	192.25	190.05	191.06	208.42	198.57	207.30	+48.12
1-9-1973			253.00	252.65	252.25	250.05	251.06	268.42	258.57	267.30	+60.00
1-6-1974			487.05	486.70	486.31	484.10	485.11	502.48	429.63	501.36	+234.06
1-9-1975			650.92	658.83	596.31	654.57	595.11	612.48	602.63	653.58	+110.00
17-8-1979		611.36	650.92	658.83	596.31	654.57	595.11	612.48	602.63	653.58	Nil
8-6-1980		1,086.36	1,125.92	1,133.38	1,071.31	1,129.57	1,070.11	1,087.48	1,077.63	1,128.58	+475.00
11-7-1981		1,438.36	1,477.92	1,485.83	1,423.31	1,481.57	1,442.11	1,439.48	1,429.63	1,480.58	+352.00
18-3-1983‡		1,738.36	1,777.92	1,785.83	1,723.31	1,781.57	1,742.11	1,739.48	1,729.63	1,780.58	+300.00
2. Furnace oil (Inclusive of duties)											
(a) Ex-storage point											
28-5-1971	KL		233.73	233.40	232.78	231.19	232.06	247.50	239.11	246.53	
11-6-1973			249.65	249.32	248.71	247.98	247.98	263.43	255.04	262.46	+15.93
2-3-1974			605.07	604.73	604.12	602.52	603.39	618.84	610.45	617.87	+355.41
18-9-1974			655.07	654.73	654.12	652.52	653.39	668.84	660.45	667.87	+50.00
1-3-1975			684.02	683.68	683.07	681.47	682.34	697.79	689.40	696.82	+28.95
14-7-1975			805.17	817.88	763.07	800.38	762.34	777.79	769.40	801.13	+80.00
1-12-1975			925.17	937.88	883.07	920.38	882.34	897.79	889.40	921.13	+120.00
1-3-1978		902.81	931.16	943.87	889.06	926.37	885.33	903.78	895.39	927.12	+5.99
17-8-1979		842.81	871.16	883.87	829.06	863.37	828.83	843.78	835.39	867.12	-60.00
11-7-1981		1,077.81	1,106.16	1,118.87	1,064.06	1,101.37	1,063.33	1,078.78	1,070.39	1,102.12	+235.00
18-3-1983‡		1,287.81	1,316.16	1,328.87	1,274.06	1,311.37	1,273.33	1,288.78	1,280.39	1,312.12	+21.00

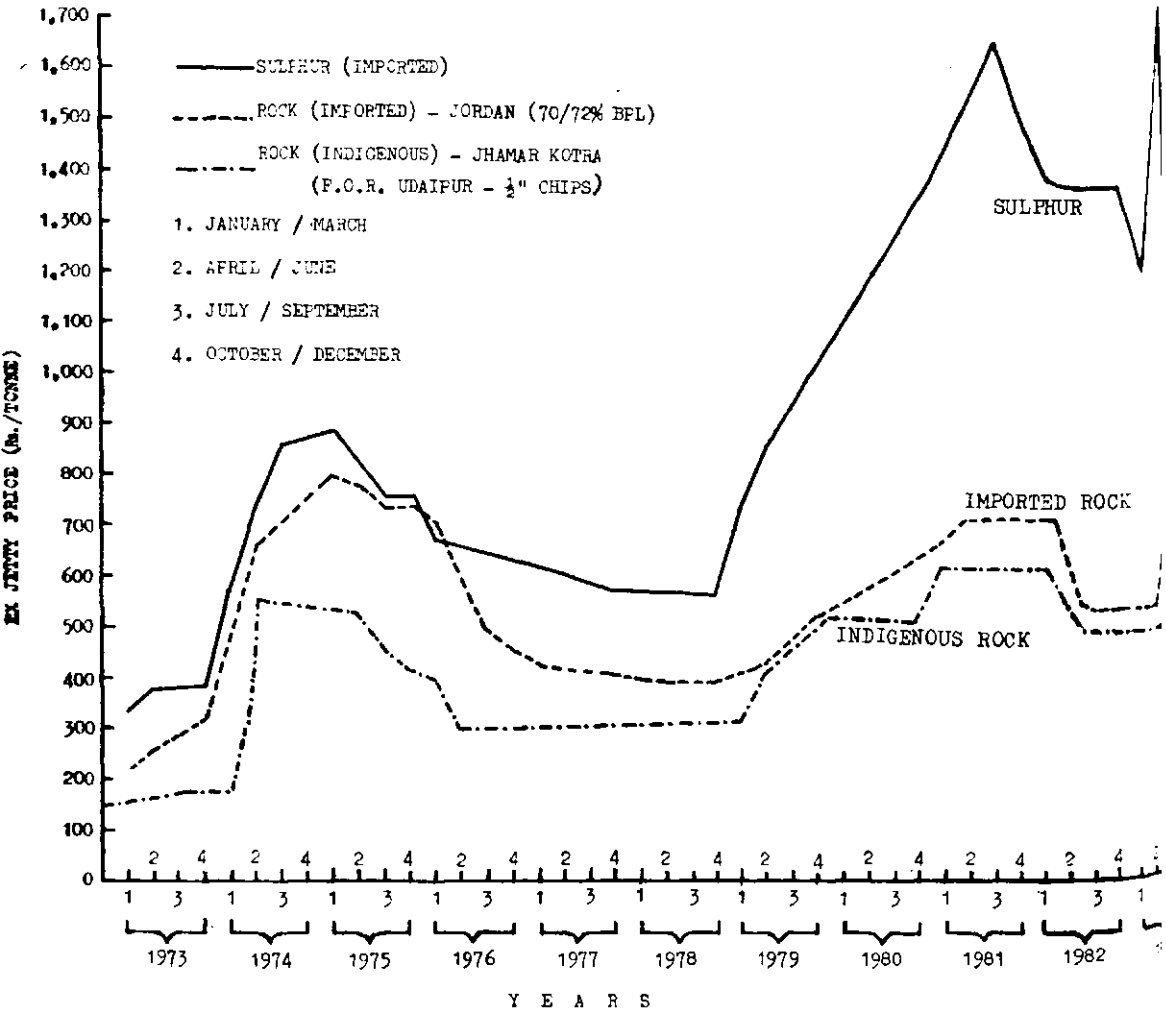
Note: 1. The price of naphtha is exclusive of basic customs/excise duties chargeable extra at applicable rates.

2. Excise duty on furnace oil, when used for fertiliser manufacture, was withdrawn with effect from September 25, 1972. Its incidence was Rs. 113.00 per tonne.

‡ Mathura also in operation.

(Continued)

**Ex-Jetty Prices of Rock Phosphate and Sulphur for Fertiliser Industry
(1973-74 to 1983-84)**



7.03. PRICES OF FERTILISER RAW MATERIALS (Continued)
(b) Rockphosphate

Raw material/effective during the period	Price (Rs./tonne)	
	C.I.F.	Ex-jetty ^{a b}
I. IMPORTED ROCKPHOSPHATE		
1. Jordan (70/72% BPL)		
January/June 73	155	219
April/June 73	185	263
July/September 73	211	291
October/December 73	235	318
January/June 74*	525	669
July 75/March 75*	630	800
April/June 75	600	785
July/September 75*	560	740
October/December 75*	570	745
January/March 76*	540	706
April/September 76*	440‡	500‡
October/December 76*	410‡	463‡
January/March 77*	376‡	433‡
April/December 77*	359‡	415‡
January/March 78*	355‡	410‡
April/June 78*	355‡	410‡
July/December 78*	345‡	400‡
January/June 79*	363‡	425‡
July/December 79*	400‡	536‡
January 80/February 81*	567‡	651‡
Since March 81*	618‡	708‡
May/June 82*	495‡	585‡
July 82*	484‡	574‡
October 83*	600‡	691‡
2. Jordan (73/75% BPL)		
January/June 74*	534	—
July/December 74*	639	—
January 75/March 76*	—	—
April/December 76*	420‡	—
January/March 77*	405‡	—
July 82*	542 to 667‡	—
3. Jordan (75/77% BPL)		
January/March 73	(—)	(—)
April/June 73	(142)	(—)
July/December 73	163	—
	—	—
	216	—

(Continued)

7.03. PRICES OF FERTILISER RAW MATERIALS (Continued)
(b) Rockphosphate (Continued)

Raw material/effective during the period	Price (Rs./tonne)	
	C.I.F.	Ex-factory ^a b
I. IMPORTED ROCKPHOSPHATE (Concluded)		
4. Morocco rock (70/72% BPL)		
July/September 73	211	291
October/December 73	235	318
January/March 74	—	—
April/June 74	689	—
July/December 74	630	800
January/March 76	656	—
January/June 79	519‡	—
July/December 79	616‡	—
January 1980	672‡	—
July 1982	537 to 688‡	—
5. Morocco (75/77% BPL)	(172)	224
	(167)	(—)
January/March 73	202	—
April/June 73	230	—
July/September 73	309	—
October/December 73	325	426
April/June 74	686	—
July/September 74	705	—
October/December 74	906	—
January/March 75	881	—
April/September 75	796	—
October/December 75	810	—
January/March 76	733	—
April/September 76	524‡	—
April/June 77	509‡	—
July 1982	688‡	—
6. Senegal (81/83% BPL)	(195)	(—)
	(204)	(—)
January/March 73	214	—
April/June 73	—	—
July/September 73	319	—
October/December 73	325	—
January/March 76	586	—
July 1982	635 to 687	—

(Continued)

7.03. PRICES OF FERTILISER RAW MATERIALS (Continued)
b. Rockphosphate (Continued)

Effective from	Price (Rs /tonne) F.O.R. despatching station		Remarks
	- ½" chips (-22mm)	60 Mesh	

II. INDIGENOUS ROCKPHOSPHATE

1. Udaipur Rockphosphate^a

1-4-1969	120	132	
1-1-1971	150	162	
16-11-1973	180	192	
1-1-1974	180	195	
24-1-1974	300	320	
1-3-1974	400	420	
1-4-1974	550	570	
5-4-1975	525 ^d	—	Freight rebate Rs. 25.00/tonne for distances beyond 1000 km.
26-7-1975	450 ^d	—	-do-
2-12-1975	425 ^d	—	-do-
5-1-1976	400 ^d	—	Freight rebate Rs. 40.00/tonne for distances beyond 100 km.
1-4-1976	300 ^e	—	{ Freight rebate Rs. 15.00/tonne for distances beyond 1500 km. Also, sea-freight concession Rs. 3000/tonne.
6-1-1979	318 ^d	—	{ -do-
5-7-1979	415 ^d	500 ^d	{ -do-
3-1-1980	522 ^d	607 ^d	{ -do-
5-12-1980	522 ^d	622 ^d	{ -do-
5-3-1981	600 ^d	700 ^d	{ -do-
1-5-1982	510 ^d	610 ^d	{ -do-

(Continued)

7.03. PRICES OF FERTILISER RAW MATERIALS (Continued)
b. Rockphosphate (Concluded)

Effective from	Price (Rs./tonne) F.O.R. despatching station (- $\frac{1}{2}$ " chips)			Remarks
	Grade-I	Grade-II	Grade-III	

II. INDIGENOUS ROCKPHOSPHATE (Concluded)

2. Jhabua Rockphosphate^d

18-5-1975	435-400	390-325	Upto 250	Freight discount for grade I & II Rs. 20.00/tonne for distance beyond 1000 km.
19-1-1976	385-350	330-275	Upto 250	Freight discount for all grades Rs. 20.00/tonne for distance beyond 500 kg.
24-4-1976	285-250	210-175	Upto 150	Freight discount for all grades Rs. 20.00/tonne for distance beyond 500 km. and Rs. 10.00/tonne for distances below 500 km.
1-8-1979	340-290	165-137.50	112.50-81.00	Road freight rebate:—
				1. Upto 300 km. nil.
				2. Beyond 300 to 500 km. Rs. 10/tonne
4-2-1980	425	320		3. Beyond 500 to 700 km. Rs. 15/tonne
20-6-1980	535	480		4. Beyond 700 to 1000 km. Rs. 25/tonne
1-9-1982	418	237.50-285	144-200	5. Beyond 1000 km. Rs. 35/tonne
23-5-1983	400	250	Rs. 8 per unit of P ₂ O ₅	Road freight rebate increased by Rs. 5/-, Rs. 10/-, Rs. 15/- and Rs. 20/- per tonne for distance slabs mentioned above against item 2 to 5, respectively. Likewise rail freight discount of Rs. 10/- per tonne for 500 to 1000 km. and Rs. 15/- per tonne beyond 1000 km.

(Continued)

7.03. PRICES OF FERTILISER RAW MATERIALS (Continued)

c. Sulphur

Effective during the period	Price Rs /tonne			Remarks
	Shipload	Ex-jetty ^a	Ex-godown ^a	

I. SULPHUR (IMPORTED)

April/June 1970	275.40	325	—	If more than 1,000 tonnes
		340	—	If less than 1,000 tonnes
July/September 1970	280	340	—	
October 1970/March 1971	272.50	325	—	
April/September 1971	262	313	—	
October/December 1971	300	352	370	
January/March 1972	302	361	381	
April/December 1972	300	359	379	
January/March 1973	300	340	360	

Effective during the period	Price (Rs./tonne)		
	Shipload	Ex-jetty ^a	Ex-godown ^a
April/June 1973	320	380	400
July/December 1973	336.50	386	406
January/March 1974			
For Fert. Industry	514	572	592
For non-Fert. Industry	528	586	606
April/June 1974			
For Fert. Industry	676	742	762
For non-Fert. Industry	696	762	782
July/September 1974			
For Fert. Industry	789	864	884
For non-Fert. Industry	812	887	907

(Continued)

7 03. PRICES OF FERTILISER RAW MATERIALS (Continued)
c. Sulphur (Continued)

Effective during the period	Price (Rs /tonne)		
	Shipload	Ex-jetty ^a	Ex-godown ^a
I. SULPHUR (IMPORTED) (Continued)			
October 1974/March 1975			
For Fert. Industry	810	890	910
For non-Fert. Industry	840	915	935
April/September 1975			
For Fert. Industry	679	753	773
For non-Fert. Industry	699	773	793
October/December 1975			
For Fert. Industry	679	753	773
For non-Fert. Industry	740	815	835
January/March 1976			
For Fert. Industry	670	680	700
For non-Fert. Industry	630	700	720
April 1976/June 1977			
For Fert. Industry	540	605	625
For non-Fert. Industry	555	620	640
July/December 1977			
For Fert. Industry	520	585	605
For non-Fert. Industry	535	600	620
January/June 1978			
Both for Fertiliser and non-Fertiliser Industry	520	585	605
July/December 1978	525	580	600
January/March 1979	655	745	765
April/June 1979	770	860	880
July/December 1979			
For Fert. Industry	910	1,015	1,035
For non-Fert. Industry	1,160	1,265	1,285

(Continued)

7.03. PRICES OF FERTILISER RAW MATERIALS (Concluded)
c. Sulphur (Concluded)

Effect during the period	Price (Rs./tonne)		
	Shipload	Ex-jetty ^a	Ex-godown ^a
I. SULPHUR (IMPORTED) (Concluded)			
January 1980/February 1981			
For Fert. Industry	1,240	1,390	1,410
For non-Fert. Industry	1,490	1,640	1,660
March/September 1981			
For Fert. Industry	1,554	1,651	1,671
For non-Fert. Industry	1,804	1,901	1,921
October 1981/January 1982			
For Fert. Industry	1,426	1,526	1,546
For non-Fert. Industry	1,676	1,776	1,796
Feb. and March 1982			
For Fert. Industry	1,302	1,400	1,420
For non-Fert. Industry	1,552	1,650	1,670
April/September 1982			
For Fert. Industry	1,280	1,378	1,398
For non-Fert. Industry	1,530	1,628	1,648
October/December 1982			
For Fert. Industry	1,170	1,268	1,288
For non-Fert. Industry	1,420	1,518	1,538
January/March 1983			
For Fert. Industry	1,072	1,170	1,190
For non-Fert. Industry	1,322	1,420	1,440
April/May 1983			
For Fert. Industry	1,122	1,630 [@]	1,650 [@]
For non-Fert. Industry	1,372	1,880 [@]	1,900 [@]
June 1983			
For Fert. Industry	1,122	1,218	1,238
For non-Fert. Industry	1,372	1,468	1,488
July/September 1983			
For Fert. Industry	1,079	1,176	1,196
For non-Fert. Industry	1,329	1,426	1,446
Since Oct 1983			
For Fert. Industry	1,036	1,132	1,152
For non-Fert. Industry	1,286	1,382	1,402

^a Includes regulatory duty (2½%) effective from 16-12-71. This was replaced by 5% auxiliary duty w.e.f. March 1, 1973. This has been withdrawn w.e.f. 16-3-1976.

^b Includes countervailing duty (only on ex-jetty prices of rockphosphate):
 —at 10% from 1-6-69 to 16-3-72.
 —at 15% from 17-3-72. This has been withdrawn w.e.f. 16-3-1976.

^c Excluding royalty which was Rs. 4.25/tonne upto 25-7-75, Rs. 5.00/tonne upto 22-7-81 and Rs. 15/tonne, thereafter.

^d 25% of the price can be paid at the time of despatch and the balance within 60 days from the date of despatch.

^e 15% import duty as well as 5% auxiliary duty have been withdrawn with effect from 16-3-1976.

^f For Fertiliser Industry.

[@] Includes customs duty.

7.04. ECONOMICS OF APPLICATION OF N, P₂O₅ & K₂O ON PADDY, WHEAT, GRAM AND SORGHUM

Particulars	1971-72	1974-75	1979-80	1980-81	1981-82		1982-83			1983-84		
			w.e.f.	w.e.f.	w.e.f.	w.e.f.	w.e.f.	w.e.f.	w.e.f.	w.e.f.	w.e.f.	w.e.f.
			21-9-79	8-6-80	2-5-81	11-7-81	15-4-82	23-5-82	4-10-82	7-4-83	29-6-83	2-7-83

A. FERTILISER & FOODGRAINS PRICES (Rs /kg)

Nutrient prices (Rs./kg)

1. N—based on urea	2.01	4.35	3.15	4.35	4.35	5.11	5.11	5.11	5.11	5.11	4.67	4.67
2. P ₂ O ₅ —based on SSP	2.89	5.33	3.54	4.72	4.88	4.88	5.29					
	to	to	to	to	to	to	to	5.87	5.87	5.87	5.31	5.31
	3.53	5.93	4.60	5.82	6.11	6.11	6.44					
— based on DAP	1.86	4.83	3.55	4.93	4.83	5.83	5.83	5.83	5.83	5.83	5.46	4.46
— based on complex	2.46	5.00	4.18	5.81	5.81	6.72	6.72	6.72	6.72	6.72	6.33	6.33
	to	to	to	to	to	to	to	to	to	to	to	to
	2.97	9.92	4.98	6.98	6.98	8.25	8.25	8.25	8.25	8.25	7.80	7.80
3. K ₂ O—based on MOP	0.89	2.05	1.34	1.83	1.83	2.17	2.17	2.17	2.17	2.17	2.00	2.00

Output prices (Rs./kg)

4. Procurement prices of paddy	0.53	0.74	0.95	0.90	1.05	1.05	1.15	1.15	1.22	1.22	1.22	1.32
5. Procurement prices of wheat	0.76	1.05	1.15	1.17	1.30	1.30	1.42	1.42	1.42	1.51	1.51	1.51
6. Procurement prices of gram			1.40	1.45	1.45	1.45	1.45	1.45	1.45	2.35*	2.35	2.35
7. Procurement prices of sorghum	0.55	0.74	0.95	0.95	1.05	1.05	1.16	1.16	1.18	1.18	1.18	1.24

B. PHYSICAL RETURNS

Paddy

8. Kg of paddy required to buy 1 kg N	3.79	5.88	3.32	4.58	4.14	4.87	4.44	4.44	4.19	4.19	3.83	3.54
9. Kg of paddy required to buy 1 kg P ₂ O ₅												
— as SSP	5.45	7.20	3.73	4.97	4.51	4.65	4.60		5.10	4.81	4.81	4.35
	to	to	to	to	to	to	to		to	to	to	to
	6.6 ^F	8.01	4.84	6.13	5.82	5.82	5.60					
— as DAP	3.51	6.53	3.74	5.19	4.70	5.55	5.07	5.07	4.78	4.78	4.48	4.14
— as complex	4.64	7.57	4.40	6.12	5.53	6.40	5.84	5.84	5.51	5.51	5.19	4.80
	to	to	to	to	to	to	to	to	to	to	to	to
	5.60	13.41	5.24	7.35	6.65	7.86	7.17	7.17	6.76	6.76	6.39	5.91
10. Kg of paddy required to buy 1 kg K ₂ O	1.68	2.77	1.41	1.93	1.74	2.07	1.89	1.89	1.78	1.78	1.64	1.52

Wheat													
11.	Kg of wheat required to buy 1 kg N		2.64	4.14	2.74	3.72	3.35	3.93	3.60	3.60	3.38	3.09	3.09
12.	Kg of wheat required to buy 1 kg P ₂ O ₅												
	—as SSP		3.80	4.08	3.08	4.03	3.75	3.75	3.73				
	to to		to	to	to	to	to	to	to	4.13	4.13	3.89	3.52
	—as DAP		4.64	5.65	4.00	4.97	4.70	4.70	4.54				
	—as complex		2.45	4.60	3.09	4.21	3.79	4.48	4.11	4.11	4.11	3.86	3.62
	to to		3.24	5.33	3.63	4.97	4.47	5.17	4.73	4.73	4.73	4.45	4.19
	to to		to	to	to	to	to	to	to	to	to	to	to
	to to		3.91	9.45	4.33	5.97	5.37	6.35	5.81	5.81	5.81	5.46	5.17
13.	Kg of wheat required to buy 1 kg K ₂ O		1.17	1.95	1.17	1.56	1.41	1.67	1.53	1.53	1.53	1.44	1.32

Gram

14.	Kg of gram required to buy 1 kg N				2.25	3.00	3.00	3.52	3.52	3.52	3.52	2.17	1.99	1.99
15.	Kg of gram required to buy 1 kg P ₂ O ₅													
	—as SSP				2.53	3.26	3.37	3.37	3.65					
	to to				to	to	to	to	to	4.05	4.05	2.50	2.26	2.26
	—as DAP				3.29	4.01	4.21	4.21	4.44					
	—as complex				2.54	3.40	3.40	4.02	4.02	4.02	4.02	2.48	2.32	2.32
	to to				2.99	4.01	4.01	4.01	4.63	4.63	4.63	2.86	2.69	2.69
	to to				to	to	to	to	to	to	to	to	to	to
	to to				3.56	4.81	4.81	5.69	5.69	5.69	5.69	3.51	3.32	3.32
16.	Kg of gram required to buy 1 kg K ₂ O				0.96	1.26	1.26	1.50	1.50	1.50	1.50	0.92	0.85	0.85

Sorghum

17.	Kg of sorghum required to buy 1 kg N		3.65	5.88	3.32	4.58	4.14	8.87	4.41	4.41	4.33	4.33	3.96	3.77
18.	Kg of sorghum required to buy 1 kg P ₂ O ₅													
	—as SSP		5.25	7.20	3.73	4.97	4.55	4.65	4.56					
	to to		to	to	to	to	to	to	to	5.06	4.97	4.97	4.50	4.28
	—as DAP		6.42	8.01	4.84	6.13	5.82	5.82	5.55					
	—as complex		3.38	6.53	3.74	5.19	4.70	5.55	5.03	5.03	4.94	4.94	4.63	4.40
	to to		4.47	7.57	4.40	6.12	5.53	6.40	5.79	5.79	5.69	5.69	5.36	5.10
	to to		to	to	to	to	to	to	to	to	to	to	to	to
	to to		5.40	13.41	5.24	7.35	6.65	7.86	7.11	7.11	6.99	6.99	6.61	6.29
19.	Kg of sorghum required to buy 1 kg K ₂ O		1.62	2.77	1.41	1.93	1.74	2.07	1.87	1.87	1.84	1.84	1.69	1.61

(Continued)

7.04. ECONOMICS OF APPLICATION OF N, P₂O₅ & K₂O ON PADDY, WHEAT, GRAM AND SORGHUM (Concluded)

Particulars	1971-72	1974-75	1979-80	1980-81	1981-82		1982-83			1983-84		
			w.e.f.	w.e.f.	w.e.f.	w.e.f.	w.e.t.	w.e.f.	w.e.f.	w.e.f.	w.e.f.	w.e.f.
			21-9-79	8-6-80	2-5-81	11-7-81	15-4-82	23-5-82	4-10-82	7-4-83	29-6-83	2-7-83

C. GROSS FINANCIAL RETURN ON EVERY RUPEE INVESTED IN FERTILISERS (Rs.)

Paddy

20. Return from nutrient N	2.64	2.04	3.62	2.62	2.90	2.47	2.70	2.70	2.86	2.86	3.13	3.39
21. Return from nutrient P ₂ O ₅												
—based on SSP	1.10	0.97	1.88	1.41	1.51	1.51	1.52					
to to	to	to	to	to	to	to	to	1.37	1.45	1.45	1.61	1.74
to to	0.90	0.87	1.45	1.14	1.20	1.20	1.25					
—based on DAP	1.71	1.07	1.87	1.35	1.49	1.26	1.38	1.38	1.46	1.46	1.56	1.69
—based on complex	1.29	0.93	1.59	1.14	1.27	1.09	1.20	1.20	1.27	1.27	1.35	1.46
to to	to	to	to	to	to	to	to	to	to	to	to	to
to to	1.07	0.52	1.34	0.95	1.05	0.89	0.98	0.98	1.04	1.04	1.09	1.18
22. Return from nutrient K ₂ O	2.38	0.80	3.54	2.60	2.87	2.42	2.65	2.65	2.81	2.81	3.05	3.30

Wheat

23. Return from nutrient N	3.78	2.90	4.38	3.23	3.59	3.05	3.33	3.33	3.33	3.55	3.88	3.88
24. Return from nutrient P ₂ O ₅												
—based on SSP	1.58	1.38	2.27	1.74	1.86	1.86	1.88					
to to	to	to	to	to	to	to	to	1.69	1.69	1.80	1.99	1.99
to to	1.29	1.24	1.75	1.41	1.49	1.49	1.54					
—based on DAP	2.45	1.52	2.27	1.66	1.85	1.56	1.70	1.70	1.70	1.81	1.94	1.94
—based on complex	1.85	1.31	1.93	1.41	1.57	1.35	1.48	1.48	1.48	1.57	1.67	1.67
to to	to	to	to	to	to	to	to	to	to	to	to	to
to to	1.54	0.74	1.62	1.17	1.30	1.10	1.20	1.20	1.20	1.28	1.36	1.36
25. Return from nutrient K ₂ O	3.42	2.56	4.29	3.20	3.56	3.00	3.27	3.27	3.27	3.48	3.79	3.78

Gram

26. Return from nutrient N			3.56	2.67	2.67	2.27	2.27	2.27	2.27	3.68	4.03	4.03
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27. Return from nutrient P_2O_5 based on SSP	1.98	1.54	1.48	1.48	1.37						
	to	to	to	to	to	1.24	1.24	2.00	2.21	2.21	
	1.52	1.25	1.19	1.19	1.13						
—based on DAP	1.97	1.47	1.47	1.24	1.24	1.24	1.24	2.02	2.15	2.15	
—based on complex	1.67	1.25	1.25	1.08	1.08	1.08	1.08	1.75	1.86	1.86	
	to	to	to	to	to	to	to	o	to	to	
	1.41	1.04	1.04	0.68	0.88	0.88	0.88	1.42	1.51	1.51	
28. Return from nutrient K_2O	12.01	9.11	9.11	7.68	7.68	7.68	7.68	12.45	13.51	13.51	
Sorghum											
29. Return from nutrient N	0.95	1.69	1.22	1.35	1.15	1.27	1.27	1.29	1.29	1.41	1.49
30. Return from nutrient P_2O_5 based on SSP	0.56	1.07	0.81	0.86	0.86	0.88					
	to	to	to	to	to	to	0.79	0.80	0.08	0.89	0.93
	0.50	0.83	0.65	0.69	0.69	0.72					
—based on DAP	0.61	1.07	0.77	0.85	0.72	0.80	0.80	0.81	0.81	0.86	0.91
—based on complex	0.53	0.91	0.65	0.72	0.63	0.69	0.69	0.70	0.70	0.75	0.78
	to	to	to	to	to	to	to	to	to	to	to
	0.30	0.76	0.54	0.60	0.51	0.56	0.56	0.57	0.57	0.61	0.64
31. Return from nutrient K_2O	4.15	8.15	5.97	6.60	5.56	6.15	6.15	6.25	6.25	6.79	7.13

* Since February, 1983.

For 1971-72, incremental response ratios (kg of extra product per additional kg of nutrient) for paddy and wheat assumed for analysis are:

$$N=10 \quad P_2O_5=6 \quad K_2O=4$$

For 1974-75 and thereafter, incremental response ratios assumed are:

Nutrient	Paddy & Wheat	Gram	Sorghum
N	12.0	8.0	5.6
P_2O_5	7.0	5.0	4.0
K_2O	5.0	11.5	11.5

Note: Prices of fertilisers mentioned against years 1971-72 and 1974-75 are as on 1st April.

7.05. SALES TAX ON FERTILISERS

Zone/State ^{1, 2}	Rate
Central	
Madhya Pradesh	2% sales tax on all fertilisers plus surcharge at 1% on the final sale value.
Rajasthan	5% sales tax plus 1-1.5% multipoint octroi on the value of fertilisers.
Uttar Pradesh	3% on all fertilisers plus turnover tax of 1% on sales exceeding Rs. 21 lakhs in a year plus 1% surcharge.
Delhi	No tax on fertilisers is levied. However, octroi at the rate of Rs. 12 per tonne is charged by Delhi Administration.
East	
Bihar	5%
Orissa	4%
West Bengal	5%
South	
Andhra Pradesh³	A single point levy of 3.99% at the point of first sale including a surcharge of 10% on general sales tax. A turnover tax of 0.5 per cent is leviable on turnover exceeding Rs. 3 lakhs. This additional tax can be passed on to the buyers.
Karnataka³	2% sales tax on all fertilisers and 10% surcharge on sales tax. A turnover tax to be levied @ of 0.5% is applicable to all dealers whose total turnover exceeds 1.5 lakhs per annum. This levy has been made multi point with effect from March 29, 1981. This tax cannot be passed on to buyers.
Kerala²	A single point levy of 2.2% inclusive of 10% surcharge at the point of first sale on all fertilisers except standard mixture for paddy 9:9 (4.5):9, 12:12 (6): 6 and 20:0:20 which have been exempted from sales tax.
Tamil Nadu³	<p>i. Single-point levy of 3.5% at the point of sale.</p> <p>ii. Surcharge on sales tax.</p> <p>A 10% surcharge on sales tax is levied in Madras city and a 32 km. belt around it. A 5% is levied in the towns of Coimbatore, Madurai, Tiruchirappalli and Salem. This surcharge was extended with effect from April 1, 1979 to cover all special grade, selection grade and first grade Municipalities-Vide the list furnished below*—and a 16 km. belt skirting Coimbatore, Madurai, Tiruchirappalli and Salem:—</p>

(Continued)

7.05. SALES TAX ON FERTILISERS (Concluded)

Zone/State ^{1,2}	Rate																																						
Tamil Nadu (Concluded)	*List of Municipalities																																						
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Pondicherry	A single point levy of 1 per cent on all fertilisers																																						
West																																							
Gujarat	4% on sales of fertilisers through cooperatives and private channels.																																						

1. Interstate movements of Chemical fertilisers is liable to Central sales tax at 4% with effect from 1-7-75 when covered by ('C' and 'D') forms otherwise at 10%.

2. States where there is no sales tax have not been included.

3. Repeated from Fertiliser Statistics 1981-82 for want of latest informations

7.06. SUBSIDY ON FERTILISERS AND SOIL CONDITIONERS

Zone/State	Fertilisers and Soil conditioners	Subsidy
EAST		
Arunachal Pradesh	Amm. Sulphate, CAN, Urea, SSP, MCP Nitrophosphate 15-15-15, 20.7-20.7-0/20-20-0, DAP	50% subsidy in developed areas 75% subsidy in partially developed and border areas
Assam	Fertilisers & Soil conditioners	50% subsidy on total cost of fertilisers in 'Tribal Sub-Plan Scheme'. Transport subsidy @ Rs. 20 to 50 per tonne beyond 15 km. to 30 km. from District/Subdivisional Headquarter on fertiliser and soil conditioner.
Bihar	Soil amendments	66⅔%
Manipur	Urea	20%
	DAP	30%
	MOP	35%
	Rock phosphate	42%
	CAN	15%
Meghalaya*	DAP and SSP	Transport subsidy from Calcutta @ Rs. 71 per tonne on SSP Rs. 126 per tonne on DAP
Mizoram*	Urea, MOP, Nitrophosphate Slacked Lime Lime Powder	50%
Orissa	Phosphatic fertilisers	50% subsidy when applied to pulses and oilseeds
West Bengal	Dolomite, Basic Slag	50% to the farmers holding more than 3 hectares of land. 75% to the small and marginal farmers if they get the supply directly from the dealers of West Bengal Agro Industries Corpn., and North Bengal Dolomite Company Ltd. 100% if the supply is effected through panchayat.
North Haryana	Phosphatic Fertilisers Zinc Sulphate Gypsum	20% for gram crop 25% for all crops 75% for farmers owning 3 hectares or less land area 30% for farmers owning more than 3 hectares of land area

(Continued)

7.06. SUBSIDY ON FERTILISERS AND SOIL CONDITIONERS (Concluded)

Zone/State	Fertilisers and Soil conditioners	Subsidy
Himachal Pradesh	All fertilisers	50% to scheduled castes and scheduled tribes farmers 33% to other farmers upto a limit of 3 bags. Besides, 100% subsidy on transportation charges from the nearest railhead to the registered sale point.
Punjab	Gypsum	75% to small and marginal farmers holding upto 3 hectares are less and 50% to farmers having more than 3 hectares of land.
South Karnataka*	P ₂ O ₅ & K ₂ O	25% and 33½% subsidy respectively to small and marginal farmers, subject to a maximum of Rs. 100 per farmer per cultivating season.
Kerala*	Gypsum Soil Conditioner	25% free for demonstration purposes 50%
Pondicherry	P ₂ O ₅ & K ₂ O	25% and 33½% to small and marginal farmers respectively.

*Latest information not received.

Note: Government of India have announced a subsidy scheme beginning Rabi 1979-80 for the purchase of seeds, fertilisers and pesticides ranging from 25% in the case of small farmers, 33½% in the case of marginal farmers and 50% in the case of scheduled tribes.

8.00. SUMMARY TABLES

8.01. PRODUCTION, IMPORTS, DISTRIBUTION
1951-52 to

Year	Nitrogenous (N)				Phosphatic (P ₂ O ₅)**			
	Pro-duced*	Impor- ted	Distri- buted	Con- sumed	Pro- duced	Impor- ted	Distri- buted	Con- sumed
1951-52 } 1952-53	28.9	28.8	58.7	58.7	9.8	15.5	6.9	6.9
1953-54 } I Plan	53.1	44.0	57.8	57.8	7.4	—	4.6	4.6
1954-55	52.9	19.0	89.3	89.3	13.8	—	8.3	.3
1955-56 } 1956-57 } 1957-58	68.5	20.0	94.8	94.8	14.3	—	15.0	15.0
1958-59 } II Plan	76.9	53.0	107.5	107.5	12.4	—	13.0	13.0
1959-60	78.8	57.0	123.1	123.1	17.6	—	15.9	15.9
1960-61 } 1961-62 } 1962-63	81.1	110.0	149.0	149.0	25.8	—	21.9	21.9
1963-64 } III Plan	80.8	97.0	172.6	172.0	31.0	—	29.5	29.5
1964-65	83.7	142.0	229.3	229.3	51.4	4	53.9	53.9
1965-66 } 1966-67 } 1967-68	112.0	399.0	211.7	211.7	53.7	—	53.1	53.1
1968-69 } 1969-70 } 1970-71	154.3	307.0	291.5	249.8	65.4	—	63.9	60.5
1971-72 } IV Plan	194.2	244.0	360.0	333.0	88.3	10.0	81.4	82.8
1972-73	219.1	228.0	407.0	376.8	107.8	13.0	116.7	116.5
1973-74 } 1974-75 } 1975-76	243.2	232.0	434.5	555.2	131.0	12.0	147.7	148.7
1976-77 } V Plan	237.9	326.0	547.4	547.8	118.8	14.0	132.2	132.5
1977-78	309.0	632.0	838.7	737.8	145.7	148.0	248.6	248.6
1978-79 } 1979-80 } 1980-81	402.6	867.0	1,051.8	1,034.6	207.1	349.0	422.1	334.8
1981-82 } 1982-83 } 1983-84	563.0	844.0	1,254.9	1,208.6	213.2	138.0	318.8	382.1
1984-85 } 1985-86 } 1986-87	730.6	667.0	1,040.2	1,356.0	223.7	94.0	234.9	416.0
1987-88 } 1988-89 } 1989-90	832.5	477.0	1,310.0	1,479.0	228.1	32.0	505.1	541.0
1990-91 } 1991-92 } 1992-93	949.2	481.0	1,652.7	1,753.0	290.3	248.0	473.6	558.2
1993-94 } 1994-95 } 1995-96	1,054.5	665.0	1,742.1	1,839.0	330.3	204.0	534.3	581.3
1996-97 } 1997-98 } 1998-99	1,049.9	659.9	1,613.0	1,829.0	324.5	2.3	541.1	649.7
1999-00 } 2000-01 } 2001-02	1,186.6	884.0	1,845.2	1,765.7	331.2	26.0	497.4	471.5
2002-03 } 2003-04 } 2004-05	1,508.0	996.0	1,908.7	2,148.6	319.7	361.0	373.6	466.8
2005-06 } 2006-07 } 2007-08	1,862.4 + 47.1 ‡	750.1	2,351.7	2,456.9	478.3	22.8	642.5	634.7
2008-09 } 2009-10 } 2010-11	1,999.8 + 37.5 ‡	758.1	2,833.3	2,913.0	669.9	163.9	773.1	866.6
2011-12 } 2012-13 } 2013-14	2,173.0 + 46.9 ‡	1,233.1	2,985.3	3,419.5	778.0	243.5	950.6	1,106.0
2014-15 } 2015-16 } 2016-17	2,224.3 + 32.1 ‡	1,295.3	3,444.2	3,498.1	763.1	237.1	997.9	1,150.9
2017-18 } 2018-19 } 2019-20	2,163.9 + 56.9 ‡	1,510.4	3,522.0	3,678.1	841.5	452.1	1,074.1	1,213.6
2020-21 } 2021-22 } 2022-23	3,143.3 + 37.2 ‡	1,005.1	3,281.7	4,068.7	949.7	343.2	1,154.7	1,322.3
2023-24 } 2024-25 } 2025-26	3,429.7 + 39.2 ‡	424.6	4,043.0	4,262.7 @	983.7	63.4	1,182.5	1,420.2 @

@ Provisional.

* Excludes nitrogen meant for non-agricultural purposes.

** Excludes data in respect to bonemeal and rockphosphate.

‡ Meant for non-agricultural purposes.

AND CONSUMPTION OF FERTILISERS

1982-83 (April/March)

('000 tonnes)

Potassic (K ₂ O)			Total (N + P ₂ O ₅ + K ₂ O)				Total value of import (Rs. million)	Year
Imported	Distributed	Consumed	Produced	Imported	Distributed	Consumed		
7.7	—	—	38.7	52.0	65.6	65.6	—	I Plan
3.0	3.3	3.3	60.5	47.0	65.7	65.7	45.6	
7.0	7.5	7.5	66.7	26.0	105.0	105.0	25.2	I Plan
11.0	11.1	11.1	82.8	31.0	120.9	120.9	30.2	
10.0	10.3	10.3	89.2	63.0	130.8	130.8	73.3	I Plan
15.0	14.8	14.8	96.4	72.0	153.7	153.7	77.7	
13.0	12.8	12.8	106.6	123.0	183.7	183.7	158.8	II Plan
22.0	22.4	22.4	111.8	119.0	223.8	223.8	113.1	
33.0	21.3	21.3	135.1	179.0	304.6	304.6	162.9	II Plan
20.0	29.0	29.0	165.7	419.0	293.8	293.8	121.8	
75.0	28.0	28.0	219.7	382.0	383.5	338.3	141.2	III Plan
41.0	36.4	36.4	282.5	295.0	477.9	452.2	236.9	
40.0	50.6	50.6	326.9	281.0	574.2	543.9	187.1	III Plan
57.0	70.4	69.3	374.3	301.0	652.6	773.2	220.8	
73.0	77.7	77.3	356.7	413.0	757.3	784.6	411.9	III Plan
118.0	115.7	114.2	454.7	398.3	1,203.0	1,100.6	1,288.2	
270.0	265.6	169.6	609.8	1,486.9	1,739.5	1,539.9	1,933.0	IV Plan
213.0	177.6	170.0	776.2	1,195.0	1,751.3	1,760.7	1,622.9	
120.0	132.5	210.0	954.3	881.0	1,407.6	1,982.4	1,197.7	IV Plan
120.0	197.7	236.3	1,060.6	629.0	1,812.8	2,256.0	767.8	
268.0	256.3	300.6	1,239.5	997.0	2,382.6	2,656.9	899.7	IV Plan
325.0	312.1	347.6	1,384.8	1,194.0	2,588.5	2,767.9	1,212.6	
370.0	381.0	359.8	1,374.4	1,242.0	2,535.1	2,838.6	1,767.5	V Plan
437.0	317.5	336.1	1,517.2	1,607.0	2,660.1	2,573.3	5,991.3	
278.0	227.0	278.4	1,827.7	1,635.0	2,509.3	2,893.7	7,227.7	V Plan
277.8	377.3	319.2	2,387.8	1,050.7	3,327.3	3,410.9	2,203.6	
598.9	482.7	506.2	2,706.9	1,520.9	4,069.1	4,285.8	3,064.4	V Plan
517.4	560.1	591.5	2,997.9	1,994.0	4,497.0	5,116.9	4,600.3	
473.2	545.5	606.4	3,019.5	2,005.6	4,987.6	5,255.4	5,545.0	V Plan
796.5	617.6	623.9	3,062.3	2,769.0	5,213.7	5,515.6	9,252.2	
643.8	670.4	676.2	4,130.2	2,042.1	5,706.8	6,067.2	7,166.3	V Plan
643.7	621.7	735.0@	4,452.6	1,131.7	5,847.2	6,417.9@	2,735.3	

Note: 1. From 1952-53 to 1960-61, distribution figures are treated as consumption. From 1961-62 onwards, consumption figures have been taken from *Indian Agriculture in Brief*, Ministry of Agriculture, New Delhi.

2. Imports and value have been taken from the Ministry of Agriculture, New Delhi.

8.02. PRODUCTION IMPORTS & DISTRIBUTION OF FERTILISERS 1981-82 & 1982-83

('000 tonnes)

Material	Grade	Production		Imports		Distribution	
		1981-82	1982-83	1981-82	1982-83	1981-82	1982-83
I. Straight Nitrogenous							
1. Ammonium sulphate	20.6% N	443.2	477.7	6.0	—	501.5	508.9
2. Urea	46% N	5384.4	6019.9	1999.0	868.0	6701.4	7130.7
3. Calcium ammonium nitrate	25% N	403.8	290.0	—	—	412.6	319.3
4. Calcium ammonium nitrate	26% N	—	—	—	—	61.6	34.5
5. Ammonium chloride	25% N	—	37.2	—	—	—	—
Total straight N		2673.6	2949.4	920.8	399.3	3309.7	3473.4
		(85.0)	(86.0)	(87.3)	(94.0)	(85.3)	(85.9)
II. Straight Phosphate							
1. Single superphosphate	16% P ₂ O ₅	1202.6	1320.6	—	—	1163.8	1242.9
2. Single superphosphate	14% P ₂ O ₅	6.6	—	—	—	5.7	—
3. Triple superphosphate	46% P ₂ O ₅	48.0	23.4	—	—	46.5	32.8
Total straight P₂O₅		215.4	222.0	—	—	208.4	214.0
		(22.2)	(22.6)	(—)	(—)	(18.0)	(18.0)
III. Straight Potassic							
1. Muriate of Potash	60% K ₂ O	—	—	1063.0	1063.0	1108.3	1026.0
2. Sulphate of Potash	50% K ₂ O	—	—	12.0	—	10.9	12.2
Total straight K₂O		—	—	643.8	637.8	349.6	324.2
		(—)	(—)	(100.0)	(99.9)	(55.1)	(52.1)
IV. NP/NPK Fertilisers							
1.	16-20-0	105.0	98.9	—	—	105.7	95.1
2.	20-20-0	43.8	126.3	—	—	43.7	125.2
3.	20.7-20.7-0	255.2	230.7	—	—	252.8	206.3
4.	18-46-0	277.9	461.0	746.0	136.0	722.8	858.1
5.	24-24-0	35.4	13.1	—	—	24.3	14.0
6.	28-28-0	297.3	244.2	—	—	299.5	233.8
7.	15-15-15	283.1	246.1	—	—	304.0	248.4
8.	17-17-17	602.8	583.3	—	5.0	609.4	541.3
9.	10-26-26	111.1	92.8	—	—	122.9	96.8
10.	12-32-16	661.5	554.1	—	—	672.2	685.4
11.	14-35-14	33.7	44.1	—	—	35.1	37.4
12.	14-28-14	44.7	20.3	—	—	43.8	22.4
13.	19-19-19	115.7	140.0	—	—	11.0	131.8

(Continued)

3.02. PRODUCTION IMPORTS AND DISTRIBUTION OF FERTILISERS

1981-82 & 1982-83 (Concluded)

('000 tonnes)

Material	Grade	Production		Imports		Distribution	
		1981-82	1982-83	1981-82	1982-83	1981-82	1982-83
Total through NP/NPK fertilisers							
	N	469.5 (14.9)	481.0 (14.0)	134.3 (12.7)	25.3 (6.0)	572.0 (14.7)	569.6 (14.1)
	P₂O₅	734.3 (77.3)	762.0 (77.4)	343.2 (166.6)	63.4 (100.0)	946.3 (82.0)	968.5 (82.0)
	K₂O	— (—)	— (—)	— (—)	0.9 (0.1)	320.8 (47.9)	297.5 (47.9)
Grand Total	N	3143.3 37.2* (100.0)	3429.7 39.2* (100.0)	1055.1 (100.0)	424.6 (100.0)	3881.7 (100.0)	4943.0 (100.0)
	P₂O₅	949.7 (100.0)	983.9 (100.0)	343.2 (100.0)	63.4 (100.0)	1154.7 (100.0)	1182.5 (100.0)
	K₂O	— (—)	— (—)	643.8 (100.0)	838.6 (100.0)	670.4 (100.0)	621.7 (100.0)

‡ K₂O derived from MOP/SOP distributed to the manufacturers of NPK complex fertilisers has been excluded from this figure.

* Meant for non-agricultural purposes.

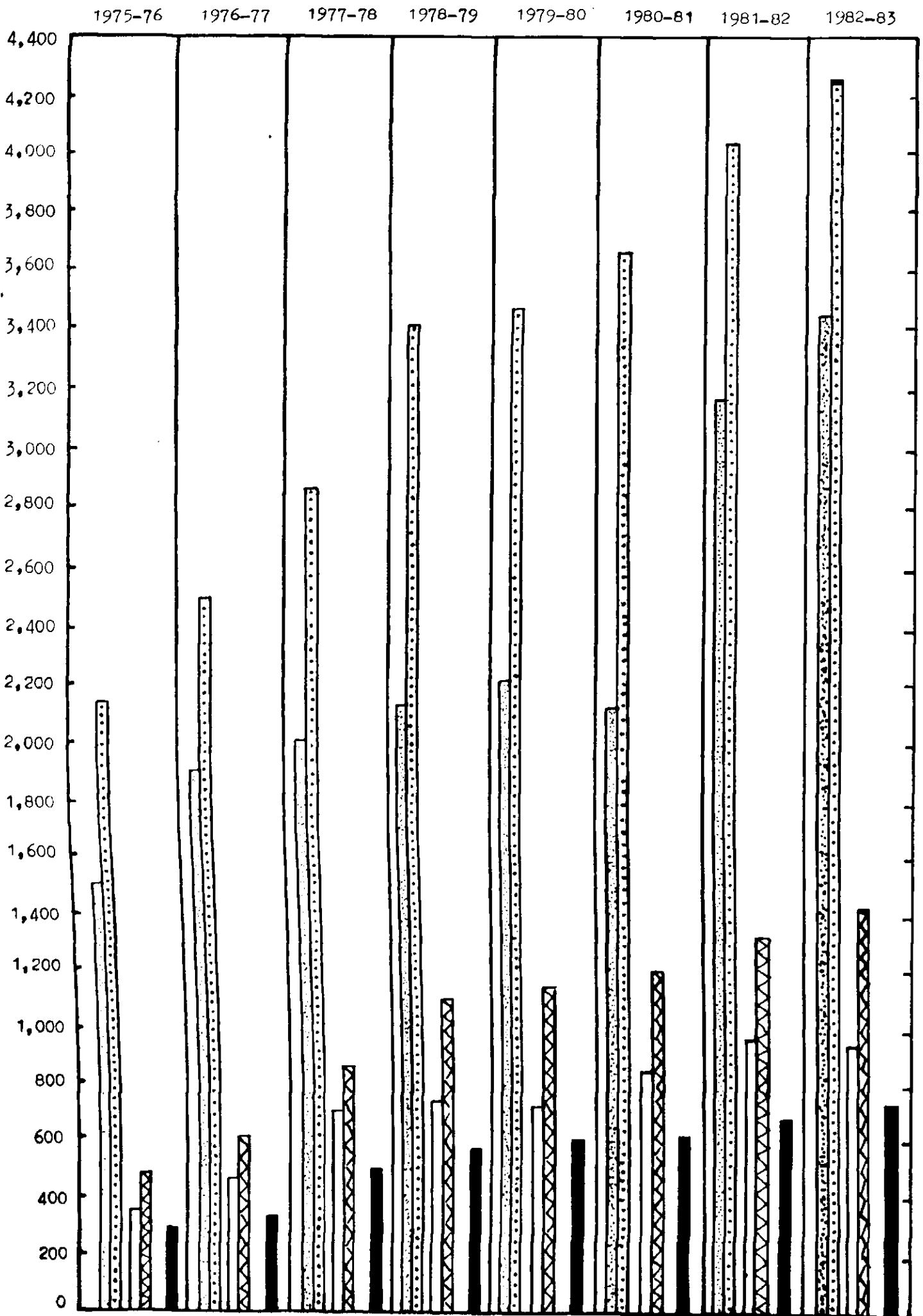
**8.03. RATE OF GROWTH OF PRODUCTION AND CONSUMPTION OF
N, P₂O₅ & K₂O
1961-62 to 1982-83**

('000 tonnes)

Year	N		P ₂ O ₅		K ₂ O	Total N+P ₂ O ₅ +K ₂ O	
	Production	Consumption	Production	Consumption	Consumption	Production	Consumption
1961-62	154	250	65	61	28	220	339
1962-63	194 (26.0)	333 (33.2)	88 (35.4)	83 (36.1)	36 (28.6)	283 (28.6)	452 (33.3)
1963-64	219 (12.9)	377 (13.2)	108 (22.7)	116 (39.1)	51 (41.7)	327 (15.5)	544 (20.4)
1964-65	243 (1.09)	555 (47.2)	131 (21.3)	149 (28.4)	69 (35.3)	374 (15.5)	773 (42.1)
1965-66	238 (-2.1)	575 (3.6)	119 (-9.2)	132 (-11.4)	77 (11.6)	357 (-4.7)	784 (1.4)
1966-67	309 (29.8)	738 (28.3)	146 (22.7)	249 (88.6)	114 (48.1)	455 (27.5)	1,101 (40.4)
1967-68	403 (30.4)	1,035 (40.2)	207 (41.8)	335 (34.5)	170 (49.1)	610 (34.1)	1,540 (39.9)
1968-69	63 (39.7)	1,208 (16.7)	213 (2.9)	382 (14.0)	170 (-)	776 (27.3)	1,760 (14.3)
1969-70	731 (29.8)	1,356 (12.3)	224 (5.2)	416 (3.9)	210 (23.5)	954 (22.9)	1,982 (12.6)
1970-71	833 (14.0)	1,479 (9.9)	228 (1.8)	541 (30.0)	236 (12.4)	1,061 (11.1)	2,556 (13.8)
1971-72	949 (13.9)	1,798 (21.6)	290 (27.2)	558 (3.1)	300 (27.1)	1,240 (16.9)	2,556 (17.7)
1972-73	1,054 (11.1)	1,840 (2.3)	330 (13.8)	581 (4.1)	348 (16.0)	1,385 (11.7)	2,769 (4.3)
1973-74	1,050 (-0.4)	1,829 (-0.6)	325 (-1.5)	650 (11.9)	360 (3.4)	1,374 (-0.8)	2,839 (2.5)
1974-75	1,186 (12.9)	1,766 (-3.5)	331 (1.8)	472 (-27.4)	336 (-6.7)	1,517 (10.4)	2,574 (-9.3)
1975-76	1,508 (27.2)	2,149 (21.7)	320 (-3.3)	467 (-1.1)	278 (17.3)	1,828 (20.5)	2,894 (12.4)
1976-77	1,862 (23.5)	2,456 (14.3)	478 (49.4)	635 (36.0)	319 (14.7)	2,340 (28.0)	3,411 (17.9)
1977-78	2,000 (7.4)	2,913 (18.6)	670 (40.2)	67 (36.7)	506 (58.6)	2,670 (14.1)	4,286 (25.7)
1978-79	2,173 (8.7)	3,420 (17.4)	778 (16.1)	1,106 (27.6)	592 (17.0)	2,951 (10.5)	5,117 (19.3)
1979-80	2,224 (2.3)	3,498 (2.3)	763 (-1.9)	1,151 (4.1)	606 (2.4)	2,987 (1.2)	5,255 (2.7)
1980-81	2,164 (-2.7)	3,678 (5.1)	842 (10.4)	1,214 (5.5)	624 (3.0)	3,006 (0.6)	5,516 (5.0)
1981-82	3,143 (45.2)	4,069 (10.6)	950 (12.8)	1,322 (8.9)	676 (8.3)	4,093 (36.2)	6,067 (10.0)
1982-83	3,430 (9.1)	4,263@ (4.8)	984 (3.6)	1,420@ (7.4)	735@ (8.7)	4,414 (7.8)	6,418@ (5.8)

Note: Figures in brackets indicate percentage increase over the previous year.

@Provisional.



PRODUCTION N PRODUCTION P₂O₅
CONSUMPTION N CONSUMPTION P₂O₅ CONSUMPTION K₂O

**8 04. STATEWISE PRODUCTION AND CONSUMPTION OF N, P₂O₅ AND K₂O
1982-83 (April-March)**

('000 tonnes)

Zone/State	N			P ₂ O ₅			K ₂ O	Total		
	Production	Consumption@	Surplus/Deficit	Production	Consumption@	Surplus/Deficit	Consumption@	Production	Consumption@	Surplus/Deficit
Central	653.3	1,346.7	-693.4	63.3	395.3	-332.0	139.1	716.6	1,881.3	-1,164.7
Madhya Pradesh	5.5	146.1	-140.6	21.6	75.0	-53.4	18.4	27.1	239.5	-212.4
Rajasthan	142.0	121.6	20.4	14.6	34.1	-19.5	5.3	156.6	161.0	-4.4
Uttar Pradesh	505.8	1,074.2	-568.4	9.6	285.0	-275.4	115.2	515.4	1,474.4	-259.0
Delhi	—	4.8	-4.8	17.5	1.18	16.3	0.28	17.5	6.2	11.3
East	385.2	399.1	-13.9	32.2	114.2	-82.0	72.0	417.4	585.2	-167.8
Arunachal Pradesh	—	0.06	-0.06	—	0.027	0.027	0.027	—	0.12	-0.12
Assam	99.5	9.1	90.4	1.8	1.9	-0.1	2.5	101.3	13.5	87.8
Bihar	209.9	159.7	50.2	10.9	33.6	-22.7	17.3	220.8	210.6	10.2
Manipur	—	3.5	-3.5	—	0.6	-0.6	0.107	—	4.2	-4.2
Meghalaya	—	1.3	-1.3	—	1.1	-1.1	0.190	—	2.7	-2.7
Nagaland	—	0.15	-0.15	—	0.15	-0.15	—	—	0.31	-0.31
Orissa	33.4	58.9	-25.5	—	19.4	-19.4	10.9	33.4	89.2	-55.8
Sikkim	—	0.44	-0.44	—	0.38	-0.38	0.207	—	1.03	-1.03
Tripura	—	1.68	-1.68	—	0.69	-0.69	0.56	—	2.93	-2.93
West Bengal	42.4	164.1	-121.7	19.4	56.2	-36.8	40.2	61.8	260.5	-198.7
Mizoram	—	0.046	-0.046	—	0.019	-0.019	0.009	—	0.074	-0.074
Andaman & Nicobar Islands	—	0.051	-0.51	—	0.029	-0.029	—	—	0.080	-0.080

(Continued)

8 04. STATEWISE PRODUCTION AND CONSUMPTION OF N, P₂O₅ AND K₂O
1982-83 (April-March) (Concluded)

('000 tonnes)

Zone/State	N			P ₂ O ₅			K ₂ O	Total		
	Production	Consumption@	Surplus/Deficit	Production	Consumption@	Surplus/Deficit	Consumption@	Production	Consumption@	Surplus/Deficit
North	496.9	850.9	-354.0	15.7	200.4	-244.7	48.7	512.6	1,159.9	-647.3
Haryana	162.6	219.2	-56.6	7.2	33.1	-25.9	9.5	169.8	261.9	-92.1
Himachal Pradesh	—	14.2	-14.2	—	2.3	-2.3	1.7	—	18.2	-18.2
Jammu & Kashmir	—	24.2	-24.2	—	6.1	-6.1	1.7	—	31.9	-31.9
Punjab	334.3	592.6	-258.3	8.5	218.8	-210.3	35.8	342.8	847.1	-504.3
Chandigarh	—	0.6	-0.6	—	0.007	—	0.020	—	0.7	-0.7
South	868.9	1,026.4	-157.5	374.6	373.2	1.4	293.0	1,243.5	1,692.6	-449.1
Andhra Pradesh	136.9	472.9	-336.0	86.8	154.7	-67.9	67.7	223.7	695.3	-471.6
Karnataka	97.1	237.0	-139.9	6.9	101.7	-94.8	87.9	104.0	426.6	-322.6
Kerala	157.2	44.0	113.2	70.5	25.4	45.1	36.9	227.7	106.3	121.4
Tamil Nadu	477.7	264.3	213.4	210.4	89.0	121.4	97.0	688.1	450.3	237.8
Pondicherry	—	8.2	-8.2	—	2.4	-2.4	3.6	—	14.2	-14.2
West	1,025.4	561.3	464.1	497.9	244.5	253.4	124.6	1,523.3	930.5	592.8
Gujarat	642.5	248.5	394.0	331.4	119.5	211.9	34.6	973.9	402.6	571.3
Maharashtra	208.9	310.5	-101.6	132.7	123.8	8.9	88.9	341.6	523.2	181.6
Goa, Daman & Diu	174.0	2.1	171.9	33.8	1.1	32.7	1.1	207.8	4.4	203.4
Dadra & Nagar Haveli	—	0.2	-0.2	—	0.12	-0.12	0.020	—	0.33	-0.33
Others	—	78.3	-78.3	—	32.5	-32.5	57.6	—	168.4	-168.4
All India	3,429.7	4,262.7	-833.0	983.7	1,420.2	-436.5	735.0	4,413.4	6,417.9	-2,004.5

@ Provisional.

Note: K₂O consumption is treated as deficit since entire requirement is met through imports.

9.00. AGRICULTURAL INSTITUTIONS, FERTILISER AND SOIL TESTING

9.01. RESEARCH INSTITUTIONS AND AGRICULTURAL UNIVERSITIES (a) I.C.A.R. Research Institutions and National Research Centres

ICAR Institutes

- | | |
|--|---|
| <p>1. Director
Indian Agricultural Research Institute
New Delhi-110 012</p> | <p>10. Director
Indian Institute of Horticultural Research
255, Upper Place Orchards
Bangalore-560 006, Karnataka</p> |
| <p>2. Director
Indian Agricultural Statistics
Research Institute
Library Avenue
New Delhi-110 012</p> | <p>11. Director
Central Potato Research Institute
Simla-171 001 (H.P.)</p> |
| <p>3. Director
Central Arid Zone Research Institute
Jodhpur-342 003
Rajasthan</p> | <p>12. Director
Central Rice Research Institute
Cuttack-753 006 (Orissa)</p> |
| <p>4. Director
Cotton Technological Research
Laboratory
Adenwala Road
Matunga, Bombay-400 019
Maharashtra</p> | <p>13. Director
Central Plantation Crops Research
Institute
Post Kudlu, Kasaragod-670 124
(Kerala)</p> |
| <p>5. Director
Central Institute for Cotton Research
95, 'Pushp Kunj'
Canal Road, New Ramdaspet
Nagpur-440 010
(Maharashtra)</p> | <p>14. Director
Indian Institute of Sugarcane Research
Raibareilly Road, P.O. Dilkusha
Lucknow-226 002 (U.P.)</p> |
| <p>6. Director
Jute Agricultural Research Institute
Nilganj, P.O. 743 101
Barrackpore (W.B.)</p> | <p>15. Director
Sugarcane Breeding Institute
Lawley Road
Coimbatore-641 007, Tamil Nadu</p> |
| <p>7. Director
Jute Technological Research
Laboratories
12-Regent Park, Calcutta-700 040
West Bengal</p> | <p>16. Director
Central Tuber Crops
Research Institute
Sreekariyan
Trivandrum-695 017 (Kerala)</p> |
| <p>8. Director
Indian Lac Research Institute
P.O. Namkum
Ranchi-834 010
(Bihar)</p> | <p>17. Director
Central Tobacco Research Institute
Rajamundry-533 104 (A.P.)</p> |
| <p>9. Director
Indian Grassland & Fodder Research
Institute
Gwalior-Jhansi Road
Jhansi-284 001 (U.P.)</p> | <p>18. Director
National Bureau of Plant
Genetic Resources
IARI Campus
New Delhi-110 012</p> |
| | <p>19. Director
ICAR Research Complex for North
Eastern Hill Region Cedar Lodge
Jowai Road
Shillong-793 003
Meghalaya</p> |

(Continued)

9.01. RESEARCH INSTITUTIONS AND AGRICULTURAL UNIVERSITIES (Continued)**(a) I. C. A. R. Research Institutions and National Research Centres (Concluded)**

20. Director
Vivekanand Parvatiya
Krishi Anusandhan Shala
Almora-263 601 (U.P.)
21. Director
Central Agricultural Research Institute
for Andaman & Nicobar Group of Islands
Port Blair-744 101 (A & N)
22. Director
Central Instt. of Agricultural Engineering
Shri Guru Tegh Bahadur Complex
Add'l 'A' Block, New Market
T. T. Nagar
Bhopal-462 203 (M.P.)
23. Director
Central Soil Salinity Research Institute
Karnal-132 001 (Haryana)
24. Director
Central Soil & Water Conservation
Research and Training Institute
218, Kaulagarh Road
Dehradun-248 001 (U.P.)
25. Director
National Bureau of Soil Survey and Land
Use Planning
Seminary Hills
Nagpur-440 006 (Maharashtra)
26. Director
Central Ariane Research Institute
Izatnagar-243 122 (U.P.)
27. Director
Indian Veterinary Research Institute
Izatnagar-243 122 (U.P.)
28. Director
National Dairy Research Institute
Karnal-132 001 (Haryana)
29. Director
Central Inland Fisheries Research
Institute
Barrackpore-743 101
24-Parganas (West Bengal)
30. Director
Central Marine Fisheries Research
Institute
P.O. No. 1912
Cochin-682 018
(Kerala)
31. Director
Central Institute of Fisheries Technology
Willingdon Island
Cochin-682 029
(Kerala)
32. Director
Central Sheep & Wool Research
Institute
P.O. Avikanagar-304 501
Via Jaipur (Rajasthan)
33. Director
Central Institute of Fisheries Education
Post Box No. 7392
Kakori Camp, Jaiprakash Road
Bombay-410 058
34. Director
Central Institute for Research on Goat
Makhdoom, P.O. Farah-281 122
Distt. Mathura (U.P.)
35. Director
National Academy for Agricultural
Research Management
Rajendranagar
Hyderabad-500-030
(A.P.)
36. Chief Soil Scientist and Officer in Charge
Advance Centre for Research on Black
Cotton Soils of Karnataka
University of Agricultural Sciences
College of Agriculture
Dharwad-580 005
(Karnataka)
37. Director
National Research Centre for Groundnut
Maharshi Dayanand Farm
Gujarat Agricultural University
Junagadh-362 002
(Gujarat)

9.01. RESEARCH INSTITUTIONS AND AGRICULTURAL UNIVERSITIES (Continued)
(b) I.C.A.R. Co-ordinated Projects

1. **Project Director**
All India Coordinated Rice Improvement Project
Rajendranagar
Hyderabad-500 030 (A.P.)
2. **Project Director**
All India Coordinated Wheat Improvement Project
Cummings Laboratory
I.A.R.I., New Delhi-110 012
3. **Project Coordinator**
All India Coordinated Sorghum Improvement Project
Regional Research Centre of IARI
Rajendranagar
Hyderabad-500 030 (A.P.)
4. **Project Coordinator**
All India Coordinated Research Project (Maize)
Cummings Laboratory
Indian Agricultural Research Institute
New Delhi-110 012
5. **Project Coordinator (Barley)**
Regional Station of IARI
Karnal-132 001 (Haryana)
6. **Project Coordinator**
All India Coordinated Research Project (Millets)
College of Agriculture
Shivajinagar
Pune-411 005 (Maharashtra)
7. **Project Director (Pulses)**
IARI Regional Research Station
Kalyanpuri
Kanpur-208 024 (U.P.)
8. **Project Coordinator**
All India Coordinated Research Project (Pulses)
Department of Genetics
Indian Agricultural Research Institute
New Delhi-110 012
9. **Project Director (Oilseeds)**
Directorate of Oilseeds Research
'D' Block, College of Agriculture
Rajendranagar
Hyderabad-500 030 (A.P.)
10. **Project Coordinator (Groundnut)**
Punjabrao Krishi Vidyapeeth
Akola-444 104 (Maharashtra)
11. **Project Coordinator (Rapeseed, Mustard)**
Haryana Agricultural University
Hissar-125 004 (Haryana)
12. **Project Coordinator (Linseed)**
C.S.A. Univ. of Agriculture & Technology
Kanpur-208 145 (U.P.)
13. **Project Coordinator (Sunflower)**
University of Agril. Sciences
Hebbal
Bangalore-560 024 (Karnataka)
14. **Project Coordinator (Niger, Sesamum)**
Jawaharlal Nehru Krishi Vishwa Vidyalyaya
Jabalpur-482 004 (M.P.)
15. **Project Coordinator (Safflower)**
145, Railway Lines
Solapur-413 001 (Maharashtra)
16. **Project Coordinator (Soybean)**
G.B. Pant University of Agriculture and Technology
Pantnagar-263 145
Distt. Nainital (U.P.)
17. **Project Coordinator**
All India Coordinated Research Project on Sugarcane
Indian Institute of Sugarcane Research
Lucknow-226 002 (U.P.)
18. **Project Coordinator**
All India Coordinated Potato Improvement Project
Central Potato Research Institute
Simla-171 001 (H.P.)
19. **Project Coordinator (Cotton) & Head**
All India Coordinated Research Project (Cotton)
CICP Regional Station
Lawley Road
Coimbatore-641 007 (Tamil Nadu)
20. **Project Coordinator (Sugarbeet)**
G.B. Pant University of Agriculture and Technology
Pantnagar-263 145
Distt. Nainital (U.P.)

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9.01. RESEARCH INSTITUTIONS AND AGRICULTURAL UNIVERSITIES (Continued)
(b) I.C.A.R. Co-ordinated Projects (Continued)

- | | |
|---|---|
| <p>21. Project Coordinator
All India Coordinated Agronomic
Research Project (ICAR)
University of Agricultural Sciences
Library Building, G.K.V.K. Campus
Bangalore-560 065 (Karnataka)</p> | <p>29. Project Coordinator (Forage Crops)
Indian Grassland and Fodder Research
Institute
Jhansi-234 001 (U.P.)</p> |
| <p>22. Project Director
All India Coordinated Research Project
for Dryland Agriculture
Behind Old Santoshnagar Colony
Saidabad P.O.
Hyderabad-500 659</p> | <p>30. Project Coordinator (Fruits)
Department of Horticulture
Haryana Agricultural University
Hissar-125 004 (Haryana)</p> |
| <p>23. Project Coordinator (Research)
All India Coordinated Research Project
for Dryland Agriculture
Behind Old Santoshnagar Colony
Saidabad P.O.
Hyderabad-500 659</p> | <p>31. Project Coordinator (Citrus)
Indian Institute of Horticultural Research
255, Upper Orchards Palace
Bangalore-560 006 (Karnataka)</p> |
| <p>24. Project Coordinator (Micronutrients)
College of Agriculture
Punjab Agricultural University
Ludhiana-141 004 (Punjab)</p> | <p>32. Project Coordinator (Semi-arid-Fruits)
Department of Horticulture
Haryana Agricultural University
Hissar 125 004 (Haryana)</p> |
| <p>25. Project Coordinator
All India Soil Test Crop Response
Correlation Project
Behind Old Santoshnagar Colony
Saidabad P.O.
Hyderabad-500 659 (A.P.)</p> | <p>33. Project Coordinator (Vegetables)
Division of Vegetable Crops & Floriculture
Indian Agricultural Research Institute
New Delhi-110 012</p> |
| <p>26. Project Coordinator
Soil Salinity and Water Management
Central Soil Salinity Research Institute
Karnal-132 001 (Haryana)</p> | <p>34. Project Coordinator (Floriculture)
Division of Vegetable Crops
and Floriculture
Indian Agricultural Research Institute
New Delhi-110 012</p> |
| <p>27. Project Coordinator (Improvement of
Drylands)
College of Agriculture
Rajendra Agricultural University
Sabour P.O.
Bhagalpur-813 210 (Bihar)</p> | <p>35. Project Coordinator
(Medicinal & Aromatic Plants)
C/o National Bureau of Plant Genetics
Resources
Indian Agricultural Research Institute
New Delhi-110 012</p> |
| <p>28. Project Coordinator
All India Coordinated Project on
Long-term Fertiliser Experiments
Division of Soil Science and Agricultural
Chemistry
Indian Agricultural Research Institute
New Delhi-110 012</p> | <p>36. Project Coordinator (Tobacco)
Gujarat Agricultural University
Anand P.O. 388 001
Distt. Kaira (Gujarat)</p> |
| | <p>37. Project Coordinator (Tuber Crops)
Rajendra Agricultural University
Dholi-843 121
Distt. Muzaffarpur (Bihar)</p> |
| | <p>38. Project Coordinator
(Spices & Cashewnut)
Central Plantation Crops Research
Institute
Post Kudlu
Kasaragod-670 124 (Kera'a)</p> |

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9.01. RESEARCH INSTITUTIONS AND AGRICULTURAL UNIVERSITIES (Continued)
(b). I C A R. Co-ordinated Projects (Continued)

39. All India Coordinated Coconut & Arecanut Improvement Project
 Central Plantation Crops Research Institute
 Post Kudlu
 Kasaragod - 670 124 (Kerala)
40. Project Coordinator (Jute & Allied Fibres)
 Jute Agricultural Research Institute
 Nilganj P. O. 743 101
 Barrackpore, 24 Parganas (West Bengal)
41. Project Coordinator (Blue Green Algae)
 Division of Microbiology
 Indian Agricultural Research Institute
 New Delhi - 110 012
42. The Project Coordinator
 (Biological Nitrogen Fixation)
 Division of Microbiology
 Indian Agricultural Research Institute
 New Delhi
43. Project Coordinator
 (Microbial Decomposition and Recycling
 of Farm & City Wastes)
 H.P.K.V.V.
 Palampur - 176 062 (H.P.)
44. Project Coordinator
 (Improvement of Soil Physical conditions)
 and Head
 Division of Agricultural Research Institute
 New Delhi - 110 012
45. Project Coordinator
 (Optimisation of Ground Water Utilisation
 Through open Wells and Pumps)
 Water Technology Centre
 Indian Agricultural Research Institute
 New Delhi - 110 012
46. National Project Director
 FAO/UNDP Project & Head
 Fresh Water Agriculture Research &
 Training Centre
 P. O. Kausalyagang
 Via. Bhubaneswar - 751 002 (Orissa)
47. Project Coordinator
 (Energy Requirements Scheme)
 Punjab Agricultural University
 Ludhiana - 141 004 (Punjab)
48. Zonal Coordinator (Water Management)
 College of Agriculture
 Dharwad - 580 005 (Karnataka)
49. Project Coordinator
 (Agricultural Drainage)
 Water Technology Centre
 Indian Agricultural Research Institute
 New Delhi - 110 012
50. Project Coordinator
 (Research & Development Farm
 Machinery, Implements & Production of
 Prototypes)
 Shri Guru Teg Bahadur Complex
 T. T. Nagar
 Bhopal - 462 001 (M.P.)
51. Project Coordinator
 All India Coordinated Research Project
 (Post Harvest Technology)
 Shri Guru Teg Bahadur Complex
 T. T. Nagar
 Bhopal - 462 001 (M.P.)
52. Project Coordinator
 (Renewable Energy Sources)
 Central Institute of Agricultural
 Engineering
 Shri Guru Teg Bahadur Complex
 T. T. Nagar
 Bhopal - 462 001 (M.P.)
53. Project Coordinator
 (Intensive Testing of Power Tiller and
 Development of Matching Implement)
 Central Institute of Agricultural
 Engineering
 Shri Guru Teg Bahadur Complex
 T. T. Nagar
 Bhopal - 462 001 (M.P.)

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9.01. RESEARCH INSTITUTIONS AND AGRICULTURAL UNIVERSITIES (Continued)
(b). I.C.A.R. Co-ordinated Projects (Continued)

54. Project Coordinator
 All India Coordinated Project on Post Harvest Technology of Horticultural Crops (PL 480 Schemes)
 Division of Horticulture & Fruits Technology
 Indian Agricultural Research Institute
 New Delhi - 110 012
55. Project Coordinator
 All India Coordinated Project on Tribal Area Research
 Regional Research Centre
 Morshi Road
 Amravati - 444 602 (Maharashtra)
56. Project Coordinator (WBCP)
 Central Institute of Cotton Research
 95, Push Kunj
 Canal Road, New Ramdaspath
 Nagpur - 440 010
57. Project Coordinator
 All India Coordinated Research Project on Biological Control of Crop Pests and Weeds
 National Centre for Biological Control
 141-111, Main Road
 Ganganahalli Lay Out
 Bangalore - 560 032 (Karnataka)
58. Project Coordinator
 All India Coordinated Research Project on Rodent Control
 Central Arid Zone Research Institute
 Jodhpur - 342003 (Rajasthan)
59. Project Coordinator
 All India Coordinated Research Project on Nematode Pests and its Control
 Division of Nematology
 Indian Agricultural Research Institute
 New Delhi - 110 012
60. Project Coordinator
 All India Coordinated Research Project on Seed Borne Diseases
 Division of Seed Technology
 Indian Agricultural Research Institute
 New Delhi - 110 012
61. Project Coordinator
 (Agril. Byproducts, & Industrial Waste Material for evolving Economic Rations for Livestock)
 Veterinary College
 Jabalpur - 482 001 (M.P.)
62. Project Coordinator and National Project Director
 Fresh Water Aquaculture Research and Training Centre
 Dhauli, Kausalyaganj P. O.
 Cuttack - 751 002 (Orissa)
63. Project Coordinator
 AICRP on Ecology and Fisheries of Fresh Water Reservoirs
 Central Inland Fisheries Research Institute
 Barrackpore, 24 Parganas
 PIN-743 101 (West Bengal)
64. Project Coordinator
 AICRP on Air Breathing Fish Culture
 Central Inland Fisheries Research Institute
 Barrackpore, 24 Parganas
 West Bengal, PIN - 743 101
65. Director
 Central Research Institute and Project Coordinator AICRP on Honey Bees
 839/1, Deccan Gymkhana
 Pune - 411 004
66. Head and Project Coordinator
 AICRP on White Grubs
 Department of Entomology
 Marathwada Agricultural University
 Parbhani - 431 402 (Maharashtra)
67. AICRP on Economic Ornithology
 Insectory Building
 Veterinary College Campus
 Rajendranagar
 Hyderabad - 500 030
68. Project Coordinator (B)
 Division of Dairy Cattle Genetics
 National Dairy Research Institute
 Karnal - 132 001 (Haryana)

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901. RESEARCH INSTITUTIONS AND AGRICULTURAL UNIVERSITIES (Continued)
(b). I.C.A.R. Co-ordinated Projects (Concluded)

- | | |
|---|--|
| 69. Project Coordinator (AB)
Central Institute for Research on Goats
Makhdoom, P. O, Farah
Distt. Mathura - 281 122 (U.P.) | 73. Project Coordinator (Pigs)
Indian Veterinary Research Institute
Izatnagar - 243 122 (U.P.) |
| 70. Project Coordinator (Poultry)
Indian Veterinary Research Institute
Izatnagar - 243 122 (U.P.) | 74. Project Coordinator (Goat)
National Goat Research Centre
P.O. Farah
Distt. Mathura (U.P.) PIN - 281 122 |
| 71. Project Coordinator (Sheep)
Central Sheep & Wool Research Institute
Avikanagar
Via Jaipur (Rajasthan) - 304 501 | 75. Director & Project Coordinator
AICRP on Brackish Water Fish Farming
Centra: Inland Fisheries Research Institute
Barrackpore, 24 Parganas
(West Bengal) PIN - 743 101 |
| 72. Project Coordinator
(Coordinated Project for Epidemiological
Study on Foot & Mouth Diseases)
Indian Veterinary Research Institute
Campus
Hebbal
Bangalore - 560 024 | |
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9.01. RESEARCH INSTITUTIONS AND AGRICULTURAL UNIVERSITIES (Continued)
(c) Agricultural Universities

- | | |
|---|---|
| 1. Andhra Pradesh Agricultural University
Rajendranagar
Hyderabad-500 030 (A.P.) | 13. Mahatma Phule Krishi Vishwa
Vidyalyaya
Rahuri-413 722
Dist. Ahmednagar (Maharashtra) |
| 2. Assam Agricultural University
Jorhat—785 004 (Assam) | 14. Marathwada Krishi Vidyapeeth
Parbhani-431 402
Maharashtra |
| 3. Bidhan Chandra Krishi Vishwa Vidyalyaya
P.O. Mohanpur-741 235
Dist. Nadia (West Bengal) | 15. Narendra Dev University of
Agriculture & Technology
Faizabad-224 001 (U.P.) |
| 4. Birsa Agricultural University
P.O. Kanke
Ranchi-834 006 (Bihar) | 16. Orissa University of
Agriculture & Technology
Bhubaneswar-751 003
Orissa |
| 5. Chandra Shekhar Azad University of
Agriculture & Technology
Kanpur-208 002 (U.P.) | 17. Punjab Agricultural University
Ludhiana-141 004 (Punjab) |
| 6. G.B. Pant University of
Agriculture & Technology
Pantnagar-263-145
Dist. Nainital (U.P.) | 18. Punjabrao Krishi Vidyapeeth
Krishinagar
Akola-444 004
(Maharashtra) |
| 7. Gujarat Agricultural University
Ahmedabad-380 004 (Gujarat) | 19. Rajendra Agricultural University
P.O. Pusa-848 101
Dist. Samastipur (Bihar) |
| 8. Haryana Agricultural University
Hissar-125 004 (Haryana) | 20. Tamil Nadu Agricultural University
Coimbatore-641 003
Tamil Nadu |
| 9. Himachal Pradesh Krishi Vishwa
Vidyalyaya
Palampur-176 062
Dist. Kangra
Himachal Pradesh | 21. University of Agricultural
Sciences
Hebbal
Bangalore-560 024 (Karnataka) |
| 10. Jawaharlal Nehru Krishi Vishwa
Vidyalyaya
Jabalpur-482 004
Madhya Pradesh | 22. University of Udaipur
Udaipur-313 001
Rajasthan |
| 11. Kerala Agricultural University
Vellanikkara
Trichur-610 001 (Kerala) | 23. Sher-E-Kashmir
Jammu & Kashmir University of
Agricultural Sciences & Technology
<i>In summer</i>
Shalimar
Srinagar-190 001 |
| 12. Konkan Krishi Vidyapeeth
Dapoli-415 612
Dist. Ratnagiri (Maharashtra) | <i>In winter</i>
Gandhinagar
Jammu 180 001 |

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9.01. RESEARCH INSTITUTIONS AND AGRICULTURAL UNIVERSITIES (Concluded)
(d) Other Institutes

-
- | | |
|--|---|
| <p>1. Director
Institute of Agricultural Sciences
Banaras Hindu University
Varanasi-221 005 (U.P.)</p> | <p>8. School of Environmental Sciences
Jawaharlal Nehru University
New Delhi-110 067</p> |
| <p>2. Director
Shiela Dhar Institute of Soil Science
Allahabad-211 001 (U.P.)</p> | <p>9. Director
Scientific Department
UPASI Tea Research Station
Cinchona 642 106
Dist. Coimbatore (Tamil Nadu)</p> |
| <p>3. Director
Tocklai Experiment Station
Jorhat-8 (Assam)</p> | <p>10. Director
Central Coffee Research Instt.
Belihonnur
Chikmagalur Dist. (Karnataka)
Pin-577 101</p> |
| <p>4. Forest Research Institute
Dehradun (U.P.)</p> | <p>11. Director
Central Institute of
Medical & Aromatic Plants
Kukrail
P O. Ghazipur
Lucknow-233 001 (U.P.)</p> |
| <p>5. Director
The Rubber Board
Kottayam-686 001
(Kerala)</p> | <p>12. Director
Potash Research Institute of
India
V. Daruhera (New IDPL)
Sector 19, Gurgaon
Haryana-122 991</p> |
| <p>6. Director
Nimbkar Agril. Research
Institute
Phallan
Dist. Satara-415 001
(Maharashtra)</p> | <p>13. Director
Central Plant Protection
Training Institute
Hyderabad-500 030</p> |
| <p>7. Executive Director
Society for Promotion of Wastelands
Development
26, Community Centre
Basant Lok, Vasant Vihar
New Delhi-110 057</p> | |
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**9 02 STATEWISE SOIL TESTING CAPACITY IN OPERATION AND THEIR
CVERAGE PER UNIT CROPPED AREA**

Sl. No.	State Union territory	Total soil testing capacity per annum (No. of samples)	Net cropped area ('00 ha)	No. of soil sample/net cropped area per thousand ha
1.	Andhra Pradesh	3,01,100	11,349	27
2.	Assam	70,000	2,679	26
3.	Bihar	2,43,000	8,532	28
4.	Gujarat	—	9,543	—
5.	Haryana**	2,84,000	3,000	78
6.	Himachal Pradesh***	60,000	561	—
7.	Jammu & Kashmir**	51,000	724	70
8.	Karnataka	6,58,000	10,315	64
9.	Kerala	2,09,200	2,204	95
10.	Madhya Pradesh***	1,88,500	18,847	—
11.	Maharashtra***	1,83,800	18,245	—
12.	Manipur	15,000	140	107
13.	Madhya Pradesh*	—	193	—
14.	Nagaland	30,000	150	200
15.	Orissa	3,58,000	6,197	58
16.	Punjab**	3,00,000	4,177	72
17.	Rajasthan**	92,000	15,471	6
18.	Tamil Nadu	11,25,000	6,251	180
19.	Tripura	20,000	246	81
20.	Uttar Pradesh**	1,74,000	17,482	10
21.	West Bengal	1,48,000	5,539	27
22.	Pondicherry	26,000	31	839
23.	Mizoram**	12,000	77	156
24.	Andaman & Nicobar Islands**	7,200	32	225
25.	Arunachal Pradesh	5,000	112	45
26.	Delhi***	3,000	73	—
27.	Goa***	10,000	134	—

*Data not available.

**Latest data awaited.

***Incomplete data

**9.03. STATEWISE NUMBER OF FERTILISER CONTROL LABORATORIES, THEIR
LOCATION AND ANALYSING CAPACITY**

Sl. No.	State	No. of labs.	Location of labs	Total analysing capacity (no. of samples)
1.	Andhra Pradesh	5	Anantpur Bapatla Hyderabad Tradepalligudem Warangal	6,300
2.	Assam	1	Gauhati	120
3.	Bihar	1	Patna	2000
4.	Gujarat	2	Junagarh Gandhinagar	4000
5.	Himachal Pradesh	1	Sundernagar	1000
6.	Haryana	1	Karnal	1200
7.	Jammu & Kashmir	2	Talab tillo Jammu, Srinagar	1000
8.	Karnataka	2	Bangalore Dharwar	4800
9.	Kerala	2	Trivandrum Pattambi	4000
10.	Madhya Pradesh	2	Jabalpur Raipur	3000
11.	Maharashtra	2	Pune Amravati	3500
12.	Orissa	2	Bhubneshwar Sambalpur	3000
13.	Punjab	1	Ludhiana	1000
14.	Rajasthan	2	Jaipur Jodhpur	4000 4000
15.	Tamil Nadu	4	Coimbatore Kovilpatti Mudurai Trichi	7000
16.	Uttar Pradesh	3	Lucknow Varanasi Meerut	4000
17.	West Bengal	2	Behrampore Calcutta	2500
18.	Pondicherry	1	Pondicherry	350
19.	Central Fertilisers Quality Control & Training Institute (GOI)	1	Faridabad	5000
All India		37		57,770

9.04. AGRO ECONOMIC RESEARCH CENTRES

AERCs associated with Universities at	Covering the area
1. Delhi	Haryana, Punjab, Western U.P., Delhi
2. Vallabh Vidyanagar (Gujarat)	Gujarat and Rajasthan
3. Jabalpur	M.P.
4. Pune	Maharashtra and Goa
5. Bangalore	Karnataka
6. Madras	Tamil Nadu and Kerala
7. Waltair (Andhra Pradesh)	Andhra Pradesh and the tribal areas of Orissa
8. Shantiniketan (West Bengal)	West Bengal, Bihar excluding north Bihar and Orissa excluding the tribal areas
9. Jorhat (Assam)	Assam and the other eastern states
10. Allahabad (U.P.)	Eastern U.P. and North Bihar
11. Simla (H.P.)	Himachal Pradesh and other adjoining hill areas

- Notes:**
1. AERCs receive financial support from the Directorate of Economic and Statistics, Ministry of Agriculture, New Delhi. AERCs are field oriented regional research centres carrying out research based on primary data.
 2. AERCs were initiated in the late 1950s ad hoc regional research schemes of the DES in selected regions with an objectives of as carrying out village surveys and re-surveys to document rural change and identify the forces of change.

10.00. NUTRIENT CONTENT/REMOVAL

10.01. PRIMARY NUTRIENT REMOVED BY CROPS

Crop	Variety/soil/location		Nutrients removed (kg/tonne)		
			Nitrogen (As N)	Phosphate (as P ₂ O ₅)	Potash (As K ₂ O)
A. GRAIN CROPS					
1. Paddy	Sona	Grain	9.74	3.12	3.26
		Straw	4.56	0.27	14.50
	Jaya & IET 2815	Grain	14.9	6.9	10.0
		Straw	12.8	1.25	19.2
		Rasi	11.6	5.08	9.20
2. Wheat	Arjun	Grain	15.96	1.89	3.43
		Straw	4.34	0.09	17.50
3. Jowar	—	Grain + Straw	9.28	3.21	15.35
4. Bajra	—	Grain + Straw	6.69	2.45	22.54
5. Maize	Gaga 4	Grain + Straw	8.9	3.1	11.7
	Malan	Grain + Straw	8.1	1.7	13.2
6. Barley	—	Grain + Straw	7.30	3.92	16.91
B. OIL SEEDS					
1. Groundnut		Seed	41.05	11.57	23.68
2. Mustard		Seed	32.83	16.41	41.79
3. Castor		Seed	30.00	12.00	10.00
4. Linseed		—	19.00	12.00	33.00
C. SUGARCANE					
in Andhra Pradesh	Co. 419	Cane	0.67	0.30	1.34
in Maharashtra	Co. 740	Cane	1.22	0.79	1.55
in Bihar	Bo. 70	Cane	3.08	0.26	3.13

(Continued)

10.01. PRIMARY NUTRIENT REMOVED BY CROPS (Concluded)

Crop	Variety/soil/location		Nutrients removed (kg/tonne)		
			Nitrogen (As N)	Phosphate (As P ₂ O ₅)	Potash (As K ₂ O)
D. FIBRE CROPS					
1. Cotton (Rainfed)		Seed	75.34	20.69	129.06
2. Jute	JRO-623	Fibre	9.22	0.06	0.45
E. PLANTATION CROPS					
1. Rubber		Latex	143.75	17.50	66.56
2. Coffee		Chemier	22.25	8.06	27.25
3. Tea		Made tea	45.4	5.0	20.0
4. Coconut Palms (70 nuts)			55.5	27.1	84.4
F. OTHER CROPS					
1. Potato		Kufri Jyoti Acid boron Tropical Soil, Simla	4.70	1.31	9.26
		Kufri Chandramukhi Alluvial soil, Ludhiana	4.66	0.71	5.91
2. Tobacco (Flue Cured virgina)		Light soil	13.5	16.0	20.9
		Heavy soil	19.6	22.6	23.0

- Source:** 1. Sharma, S. N and Prasad, Rajendra. Fert. News. 25(10), 34-36 & 44 (1980).
 2. Mandal, A. K. Roy, A. B. and Goswami, N. N. Fert. News 25(9), 60-65 (1980).
 3. All India Coordinated Rice Improvement Project, Hyderabad.
 4. All India Coordinated Maize Improvement Project, Udaipur.
 5. Sugarcane, The Fertiliser Association of India, New Delhi.
 6. Gopalachari, N. C., Fert. News, 25(9), 69-73 (1980).

10.92. MICRONUTRIENT REQUIREMENTS OF DIFFERENT CROPS

Crop	Fe	Mn	B	Zn	Cu	Mo
	←————— g/tonne dry matter —————→					
Cotton	106	14	15	16	8	0.77
Cowpea	260	89	53	17	11	1.36
Mung	170	38	32	13	11	1.05
Jowar	360	27	27	36	3	0.98
Cabbage	205	28	25	21	8	0.98
Guar	71	15	29	15	9	1.14
Castor	223	41	31	14	9	1.01
Hy. Bajra	264	23	27	22	9	0.84
Groundnut	499	39	44	9	5	1.32
Wheat	232	26	18	21	8	0.87
Potato	160	12	50	9	9	0.84
Brinjal	320	36	45	23	12	0.23
Tobacco leaves	692	132	96	21	11	0.60
Lucerne	420	41	36	21	10	2.59
Bajra	349	44	—	50	12	—
Wheat	222	35	—	19	10	—
Maize (Fodder)	287	74	—	30	31	—

Source: 11th Annual Report of All India Coordinated Scheme of Micronutrients in Soils and Plants (1977-78).

10.03. CROP YIELDS AND NUTRIENT REMOVAL IN TWO CROPPING SEQUENCES INVOLVING WHEAT AT LUDHIANA (1974-75)

Crop	Grain (q/ha)	Total Uptake** kg/ha			
		N	P	K	Total
Maize	31.3	105	8	98	211
Wheat	42.5	125	13	144	252
Mung*	7.8	65	6	29	100
Total	81.6	295	27	241	563
Paddy	69.5	224	18	236	478
Wheat	38.6	92	10	101	203
Mung	5.8	67	5	27	99
Total	113.9	383	33	364	780

*Greengram **Nutrient removal in elemental form.

Source: Tandon, H.L.S. *Fert. News*, 25(10), 45-78 (1980).

10.04. AGRO-CLIMATIC ZONES IN INDIA

Zone No.	Name of the Zone	Area under Zone
I.	Humid Western Zone	Jammu & Kashmir, Himachal Pradesh, Kumaon and Garhwal division of Uttar Pradesh
II.	Humid Bengal-Assam Zone	West Bengal and Assam
III.	Humid Eastern Himalayan Zone	Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Sikkim, Meghalaya and Andaman & Nicobar Islands
IV.	Sub Humid Sutlej-Ganga alluvial plains	Punjab, Delhi, Uttar Pradesh plains and Bihar
V.	Subhumid to Humid Eastern and South Eastern uplands	Eastern Madhya Pradesh, (Districts of Balaghat, Mandla, Shahdol, Sidhi, Surguja, Raigarh, Bilaspur, Raipur, Durg and Bastar), Orissa and Andhra Pradesh.
VI.	Arid Western plains	Haryana, Rajasthan, Gujarat, and Dadra and Nagar Haveli
VII.	Semi-arid lava Plateaus and Central Highland	Maharashtra, Western and Central Madhya Pradesh and Goa, Damman & Diu
VIII.	Humid to semi-arid Western Ghats of Karnataka Plateaus	Karnataka, Tamil Nadu, Kerala, Pondicherry and Lakshadweep Islands.

Source: Annual Report—1980-81, All India Coordinated Agronomic Research Project (ICAR) UAS, Bangalore.

10.05. DISTRIBUTION OF THE DISTRICTS IN DIFFERENT FERTILITY CLASSES IN RESPECT OF NITROGEN, PHOSPHORUS AND POTASSIUM ACCORDING TO THE LATEST SOIL FERTILITY MAPS

Sl. No.	Fertility Class Group			No. of districts	State, districts and union territories
	N	P	K		
1.	L	L	L	28	Andhra Pradesh : Anantapur, Karimnagar Karnataka : North Canara Madhya Pradesh : Bhind, Datia Orissa : Balasore Pondicherry : Pondicherry Uttar Pradesh : Allahabad, Azamgarh, Ballia, Barabanki, Bulandshahr, Deoria, Etawah, Ghazipur, Gorakhpur, Jhansi, Kanpur, Lucknow, Meerut, Muzaffarnagar, Pratapgarh, Ra Bareli, Saharanpur, Sultanpur, Unnao, Varanasi West Bengal : Birbhum
2.	L	L	H	23	Andhra Pradesh : Hyderabad, Khammam, Warangal Haryana : Jind, Kurukshetra Karnataka : Bijapur, Dharwar, Gulbarga Madhya Pradesh : Dewas, Indore, Panna, Raipur, Shahajpur Maharashtra : Akola, Amraoti, Buldhana, Yeotmal Punjab : Faridkot Rajasthan : Bikaner Tamil Nadu : Dharampuri, Ramanathapuram, Salem Uttar Pradesh : Pauri
3.	L	L	M	43	Andhra Pradesh : Chittoor, Guntur, Kurnool, Mahbubnagar, Medak, Nalgonda, Prakasam Bihar : Begusarai, Singhbhum Chandigarh : Chandigarh Delhi : Delhi Karnataka : Bangalore, Hasan, Shimoga Madhya Pradesh : Bastar, Chhaterpur, Tikamgarh Maharashtra : Bhandara, Chandrapur, Nagpur, Wardha Orissa : Koraput Punjab : Jullundur, Kapurthala, Ropar

(Continued)

10.05. DISTRIBUTION OF THE DISTRICTS IN DIFFERENT FERTILITY CLASSES IN RESPECT OF NITROGEN, PHOSPHORUS AND POTASSIUM ACCORDING TO THE LATEST SOIL FERTILITY MAPS (Continued)

Sl. No.	Fertility Class Group			No. of districts	State, districts and union territories
	N	P	K		
					Tamil Nadu : Chingleput, Kanyakumari, North Arcot, South Arcot, Thanjavur
					Uttar Pradesh : Agra, Aligarh, Etah, Fatehpur, Hamirpur, Jalaun, Jaunpur, Mainpuri, Mathura, Mirzapur
					West Bengal : Bankura, Malda, Purulia
4.	L	M	L	14	Kerala : Alleppey, Ernakulam, Quilon
					Madhya Pradesh : Shivpuri
					Uttar Pradesh : Bahraich, Bareilly, Bijnor, Badaun, Faizabad, Gonda, Lakhimpur Kheri, Moradabad, Rampur, Shahjahanpur
5.	L	M	H	63	Bihar : Hazaribagh, Palamau
					Gujarat : Ahmedabad, Banaskantha, Baroda, Broach, Mehsana, Sabarkantha, Surat
					Haryana : Bhiwani, Hissar, Karnal, Mohindergarh, Rohtak, Sirsa, Sonapat
					Karnataka : Mysore
					Madhya Pradesh : Betul, Chindwara, Damoh, Dewas, Hoshangabad, Khandwa, Khargone, Mandla, Raigarh, Ratlam, Rewa, Raisen, Rajgarh, Sagar, Satna, Sehore, Surguja, Ujjain, Vidisha
					Maharashtra : Ahmednagar, Aurangabad, Bhandara, Nanded, Osmanabad, Solapur
					Punjab : Amritsar, Bhatinda, Ferozepur, Sangrur
					Rajasthan : Banswara, Barmer, Bhilwara, Chittorgarh, Dungarpur, Jaisalmer, Jalore, Jhunjhunu, Jodhpur, Nagaur, Pali, Sikar, Udaipur
					Tamil Nadu : Madurai, Tiruchirappalli, Tirunelveli
					West Bengal : Burdwan

(Continued)

10.05. DISTRIBUTION OF THE DISTRICTS IN DIFFERENT FERTILITY CLASSES IN RESPECT OF NITROGEN, PHOSPHORUS AND POTTASSIUM ACCORDING TO THE LATEST SOIL FERTILITY MAPS (Continued)

Sl. No.	Fertility Class Group			No. of districts	State, districts and union territories
	N	P	K		
6.	L	M	M	30	Andhra Pradesh : Nellore Bihar : Patna, Shahabad Haryana : Ambala, Gurgaon Karnataka : Mandya Madhya Pradesh : Guna, Gwalior, Shahdol, Sidhi Maharashtra : Dhulla, Jalgaon Orissa : Ganjam, Sundargarh Punjab : Gurdaspur, Hoshiarpur, Ludhiana, Patiala Rajasthan : Bundi, Ganganagar, Kota, Tonk Tamil Nadu : Coimbatore Uttar Pradesh : Farrukhabad, Hardoi, Sitapur West Bengal : Midnapur, Murshidabad, Nadia, West Dinajpur
7.	M	L	L	9	Jammu & Kashmir : Anantnag Karnataka : Tumkur Kerala : Trivandrum Meghalaya : Garo Hills Tripura : North Tripura, South Tripura, West Tripura Uttar Pradesh : Nainital, Pilibhit
8.	M	L	M	23	Andhra Pradesh : East Godavari, Nizamabad Assam : Cachar Bihar : Bhagalpur Himachal Pradesh : Bilaspur, Una Karnataka : Chikmagalur, Chitradurg, Coorg, Raichur Kerala : Kottayam Maharashtra : Kolaba, Kolhapur, Ratnagiri, Satara, Thana Orissa : Dhenkanal, Keonjhar, Mayurbhanj Uttar Pradesh : Banda, Chamoli, Pithoragarh, Tehri Garhwal
9.	M	L	H	18	Andhra Pradesh : Adilabad, Cuddapah, West Godavari Gujarat : Amereli, Bhavnagar, Jamnagar, Rajkot, Surendranagar Madhya Pradesh : Balaghat, Durg, Jabalpur, Narsinghpur

(Continued)

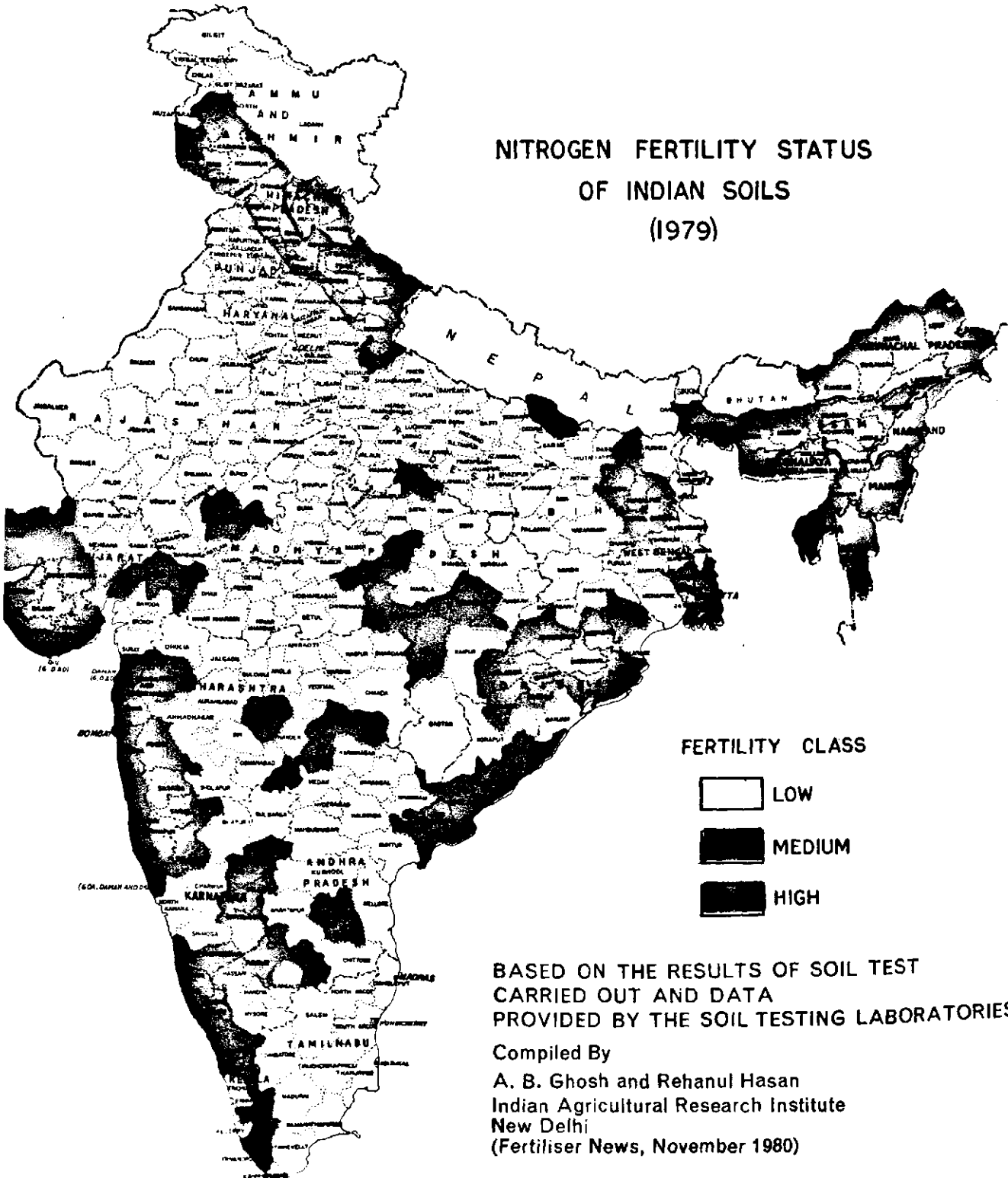
10.05. DISTRIBUTION OF THE DISTRICTS IN DIFFERENT FERTILITY CLASSES IN RESPECT OF NITROGEN, PHOSPHORUS AND POTASSIUM ACCORDING TO THE LATEST SOIL FERTILITY MAPS (Concluded)

Sl. No.	Fertility Class Group			No. of districts	State, Districts and union territories
	N	P	K		
					Karnataka : Belgaum, Bellary
					Maharashtra : Parbhani, Pune
					Uttar Pradesh : Almora, Dehradun
10.	M	M	L	15	Assam : Dibrugarh, Mikir & Cachar Hills, Nowgong, Sibsagar, Tezpur
					Himachal Pradesh : Hamirpur, Kangra, Sirmur, Solan
					Jammu & Kashmir : Baramula, Doda, Punch
					Orissa : Sambalpur
					West Bengal : Cooch Behar
11.	M	M	M	28	Andhra Pradesh : Krishna, Srikakulam, Visakhapatnam
					Assam : Goalpara
					Himachal Pradesh : Chamba, Simla
					Jammu & Kashmir : Jammu, Mirpur, Riasi
					Karnataka : Kolar
					Kerala : Cannanore, Kozhikhode, Malapuram, Palghat
					Madhya Pradesh : Jhabua, Mandasaur
					Maharashtra : Nasik, Sangli
					Orissa : Bolangir, Cuttack, Kalahandi, Phulbani, Puri
					Rajasthan : Jhalawar
					Tamil Nadu : Nilgiris
					West Bengal : Hooghly, Howrah, 24-Parganas
12.	M	M	H	10	Gujarat : Bulsar, Dangs, Gandhinagar, Junagadh, Kutch, Panchmahals
					Himachal Pradesh : Mandi
					Madhya Pradesh : Bilaspur, Seoni
					Uttar Pradesh : Uttar Kashi
Total No. of districts				304	

L, M, H respectively represent low, medium and high fertility nutrient index.

Source: Velayutham, M and Ghosh, A. B., Proc. FAI National Seminar on Strategies for Achieving Fertiliser Consumption Targets and Improving Fertiliser Use Efficiency (1981).

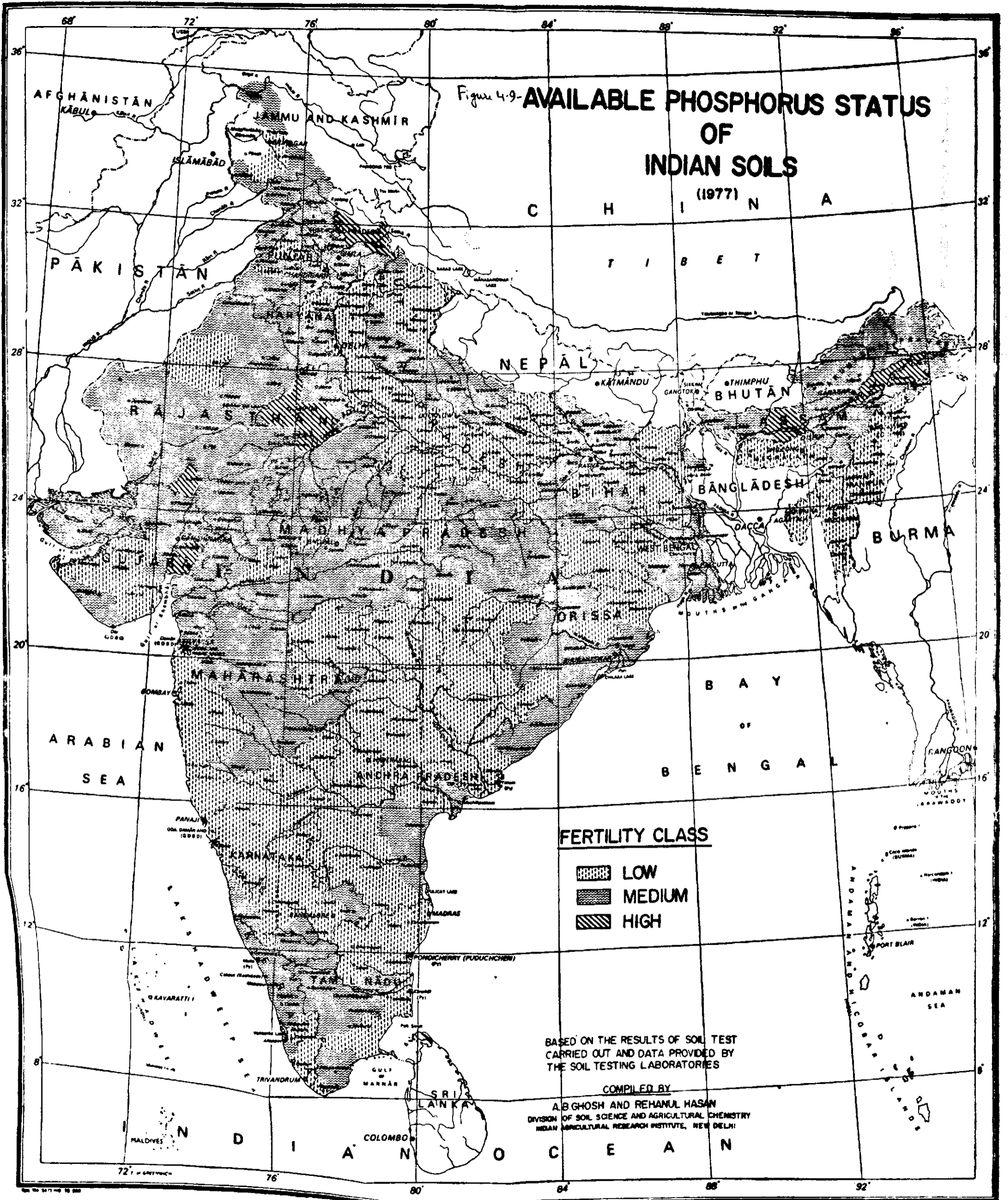
NITROGEN FERTILITY STATUS OF INDIAN SOILS (1979)



BASED ON THE RESULTS OF SOIL TEST
CARRIED OUT AND DATA
PROVIDED BY THE SOIL TESTING LABORATORIES

Compiled By

A. B. Ghosh and Rehanul Hasan
Indian Agricultural Research Institute
New Delhi
(Fertiliser News, November 1980)



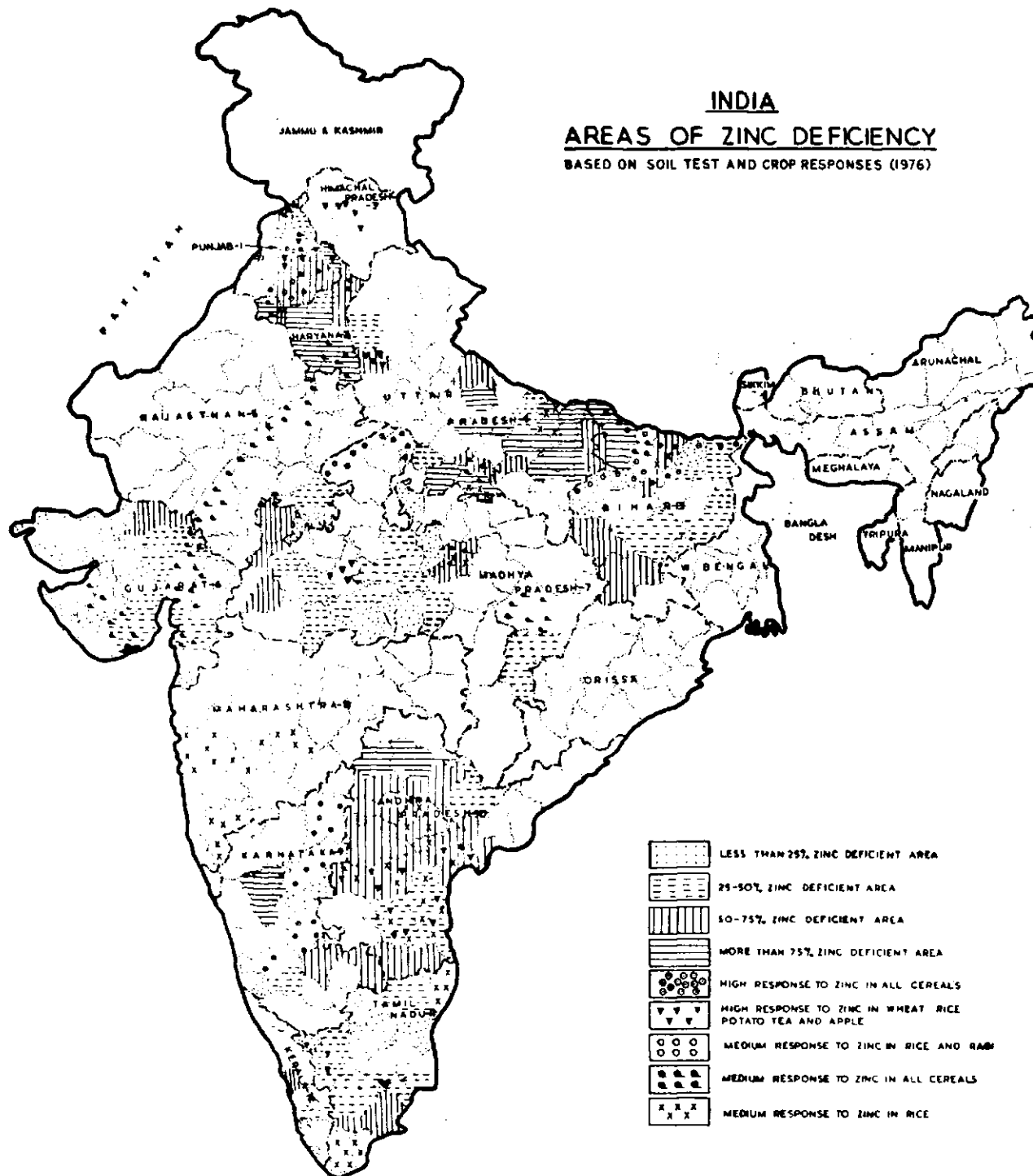
Based upon Survey of India Map with the permission of the Surveyor General of India.
The boundary of Meghalaya shown on this map is as interpreted from the North-Eastern Areas (Reorganisation) Act, 1971, but has yet to be verified.
The administrative headquarters of Maryana and Punjab are at Chandigarh.
The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.

POTASSIUM



Available potassium status of Indian soils by A. B. Ghosh and R. Hasan, I.A.R.I., New Delhi (*Fertiliser News*, April 1977)

INDIA
AREAS OF ZINC DEFICIENCY
 BASED ON SOIL TEST AND CROP RESPONSES (1976)



Source: Micronutrients in Indian Agriculture, P.N. Thakkar and N.S. Randhawa, PAU, Ludhiana (Punjab), *Fertiliser News*, August 1978.

**10.06 MICRONUTRIENT CONTENTS OF SOME IMPORTANT
FERTILISERS AND MANURES**

(parts per million)

Fertilisers	Copper	Zinc	Manganese	Boron	Molybdenum
NITROGENOUS FERTILISERS					
Ammonium sulphate	Tr-0.5	0.33	70	6.0	0.1
Urea	0-3.6	0.5	0.5	0.5	0.7-6.2
Calcium ammonium nitrate	Tr-18.0	8.35	10.50	Tr	—
PHOSPHATIC FERTILISERS					
Single superphosphate	26.0	59-165	65-270	9.5	3.3
Triple superphosphate	2-12	53-100	165-245	529	9.1
Basic slag	9.2-56.4	4-59	68,000	33.4	10.0
	9.0-85.0	19-29	28,000	—	—
Rockphosphate	5.6-9.5	24-137	130,320	16	5.6
Bonemeal	270	660	500	715	—
POTASSIC FERTILISERS					
Potassium chloride	3.0	3.0	8.0	14.0	0.2
Potassium sulphate	5.6-10.4	2.0	2.2-13.0	4.0	0.2
Farmyard manure	10	43-247	201	17.4	0.13
Compost	300-600	9.40	1,240	5.8	0.10
COMPLEX FERTILISERS					
Ammonium phosphate	3-4	about 80	115-220	—	2.2

Tr=Traces.

Source: Micronutrients: New Dimensions in Agriculture, J.S. Kanwar, *Indian Farming* 18(10), 5-8 (Jan. 1979).

**10.06 MICRONUTRIENT CONTENTS OF SOME IMPORTANT
FERTILISERS AND MANURES**

(parts per million)

Fertilisers	Copper	Zinc	Manganese	Boron	Molybdenum
NITROGENOUS FERTILISERS					
Ammonium sulphate	Tr-0.5	0.33	70	6.0	0.1
Urea	0-3.6	0.5	0.5	0.5	0.7-6.2
Calcium ammonium nitrate	Tr-18.0	8.85	10.50	Tr	—
PHOSPHATIC FERTILISERS					
Single superphosphate	26.0	59-165	65-270	9.5	3.3
Triple superphosphate	2-12	53-100	165-245	529	9.1
Basic slag	9.2-56.4	4-59	68,000	33.4	10.0
	9.0-85.0	19-29	28,000	—	—
Rockphosphate	5.6-9.5	24-137	130,320	16	5.6
Bonemeal	270	660	500	715	—
POTASSIC FERTILISERS					
Potassium chloride	3.0	3.0	8.0	14.0	0.2
Potassium sulphate	5.6-10.4	2.0	2.2-13.0	4.0	0.2
Farmyard manure	10	43-247	201	17.4	0.13
Compost	300-600	9.40	1,240	5.8	0.10
COMPLEX FERTILISERS					
Ammonium phosphate	3-4	about 80	115-220	—	2.2

Tr=Traces.

Source: Micronutrients: New Dimensions in Agriculture, J.S. Kanwar, *Indian Farming* 18(10), 5-8 (Jan. 1979).

10.07. NUTRIENT CONTENTS

Sl. No.	Material	Total nitrogen	Ammoniacal nitrogen	Nitrate nitrogen	Amide nitrogen
NITROGENOUS MATERIALS					
1.	Ammonia anhydrous ^a	81.5	81.5	—	—
2.	Ammonium chloride ^b	25.0	25.0 ^a	—	—
3.	Ammonium sulphate ^b	20.6 ^a	20.6 ^a	—	—
4.	Calcium ammonium nitrate ^b 25% N	25.0 ^a	12.50	12.50	—
5.	Calcium ammonium nitrate ^b 26% N	26.0 ^a	13.0	13.0	—
6.	Urea ^b	46.0 ^a	—	—	46.0
PHOSPHATIC MATERIALS					
7.	Single superphosphate ^b (grade I, 16% P ₂ O ₅)	— ^a	—	—	—
8.	Single superphosphate ^b (grade II, 14% P ₂ O ₅)	—	—	—	—
9.	Triple superphosphate ^b	—	—	—	—
10.	(a) Rockphosphate (Imported)	—	—	—	—
	(b) Udaipur rockphosphate	—	—	—	—
	(c) Mussoorie rockphosphate	—	—	—	—
	(d) Jhabua rockphosphate	—	—	—	—
POTASSIC MATERIALS					
11.	Potassium chloride ^d (Muriate of potash)	—	—	—	—
12.	Potassium sulphate ^d	—	—	—	—
COMPLEXES					
13.	Diammonium phosphate (18-46-0) ^b	18.0 ^a	18.0 ^a	—	—
14.	Ammonium phosphate sulphate (16-20-0) ^b	16.0	16.0	—	—
15.	Ammonium phosphate sulphate (20-20-0) ^b	20.0	18.0 ^a	—	2.0 ^a
16.	Ammonium phosphate sulphate nitrate (20-20-0) ^b	20.0 ^a	17.0 ^a	3.0 ^a	—
17.	Urea ammonium phosphate (28-28-0) ^b	28.0 ^a	9.0 ^a	—	19.0
18.	Urea ammonium phosphate (24-24-0) ^b	24.0 ^a	7.5 ^a	—	16.5 ^a
19.	Nitrophosphate (20-20-0) ^b	20.0 ^a	10.6	9.4	—

OF FERTILISERS

(per cent)

Available phosphate (P ₂ O ₅)	Water soluble phosphate (P ₂ O ₅)	Total phosphate (P ₂ O ₅)	Water soluble potash (K ₂ O)	Total (lime) (CaO)	Total magnesia (MgO)	Equivalent acidity ^a	Equivalent basicity ^b
—	—	—	—	—	—	148	—
—	—	—	—	—	—	128-140	—
—	—	—	—	—	—	110	—
—	—	—	—	10-20	0-7.5	Neutral	—
—	—	—	—	—	—	Neutral	—
—	—	—	—	—	—	80	—
16.5-17.0	16.0 ^a	18.0-20.0	—	25.0-30.0	0.5	—	—
14.5-16.0	14.0 ^a	16.0-18.0	—	—	—	—	—
43.0	42.5 ^a	46.0	—	17.0-20.0	0.5	—	—
—	—	30.0-40.0 ^a	—	—	—	—	—
—	—	20.0-35.0	—	—	—	—	—
—	—	23.0-34.0	—	—	—	—	—
—	—	31.0-38.0	—	—	—	—	—
—	—	—	60.0 ^a	—	—	—	—
—	—	—	48.0 ^a	—	—	—	—
—	46.0	46.9 ^a	—	—	—	—	—
—	19.5 ^a	20.0 ^a	—	—	—	—	—
20.0 ^a	17.0 ^a	—	—	—	—	—	—
20.0 ^a	17.0 ^a	—	—	—	—	—	—
28.0 ^a	25.2 ^a	—	—	—	—	—	—
24.0 ^a	20.4 ^a	—	—	—	—	—	—
20.0 ^a	5.4 ^a	20.0	—	—	—	—	—

(Continued)

10.07. NUTRIENT CONTENTS

Sl. No.	Materials	Total nitrogen	Ammoniacal nitrogen	Nitrate nitrogen	Amide nitrogen
NITROGEN-POTASSIUM MATERIALS					
20.	Potassium nitrate	13.0	—	13.0	—
COMPLEXES					
21.	Nitrophosphate with potash (15-15-15) ^b	15.0 ^a	—	—	—
22.	NPK (10-26-26) ^b	10.0 ^a	10.0	—	—
23.	NPK (13-32-16) ^b	12.2 ^a	12.0 ^a	—	—
24.	NPK (14-35-14) ^b	14.0 ^a	14.0 ^a	—	—
25.	NPK (17-17-17) ^a	17.0 ^a	5.0 ^a	—	12.0 ^a
26.	NPK (14-28-14) ^b	14.4 ^a	8.0 ^a	—	6.0 ^a
27.	NPK Complex (19-19-19) ^b	19.0 ^a	5.6 ^a	—	13.4 ^a
OTHERS					
28.	Zinc sulphate	Zinc	(Zn)	Content	21.0

^a Specifications prescribed in the Fertiliser (Control) Order.

^b Fertilisers manufactured in India.

^c Fertilisers to be manufactured in India.

^d Fertilisers imported.

Source: (i) Fertiliser (Control) Order, 1957 as amended up to September 1977.

(ii) Efficient Use of Fertilisers—FAO Agricultural Studies, No. 43.

OF FERTILISERS (Concluded)

(per cent)

Available phosphate (P ₂ O ₅)	Water soluble phosphate (P ₂ O ₅)	Total phosphate (P ₂ O ₅)	Water soluble potash (K ₂ O)	Total (lime) (CaO)	Total magnesia (MgO)	Equivalent acidity ^a	Equivalent basicity ^b
—	—	—	44.0	0.5	0.5	—	—
15.0 ^a	4.9 ^a	15.0	15.0 ^a	—	—	—	—
26.0 ^a	22.1 ^a	26.0	26.0 ^a	—	—	—	—
32.0 ^a	27.2 ^a	32.0	16.0 ^a	—	—	—	—
35.0 ^a	29.6 ^a	35.0	14.0 ^a	—	—	—	—
17.0 ^a	15.3 ^a	17.0	17.0 ^a	—	—	—	—
28.0 ^a	25.2 ^a	28.0	14.0 ^a	—	—	—	—
19.0 ^a	16.2 ^a	—	19.0 ^a	—	—	—	—
—	—	—	—	—	—	—	—

^a Equivalent acidity is the number of parts by weight of calcium carbonate (CaCO₃) required to neutralise the acidity resulting from the use of 100 parts of fertiliser material.

^b Equivalent basicity is the number of parts by weight of calcium carbonate (CaCO₃) that corresponds in acid neutralising power of 100 parts of fertiliser material.

10.08. AVERAGE CHEMICAL COMPOSITION OF SOME ORGANIC MANURES

(per cent)

Material	Nitrogen (As N)	Phosphate (As P ₂ O ₅)	Potash (As K ₂ O)
I. Bulky organic manures			
Farmyard manure	0.5—1.5	0.4—0.8	0.5—1.0
Compost (Urban)	1.0—2.0	1.0	1.5
Compost (Rural)	0.4—0.8	0.3—0.6	0.7—1.0
Green manures (various averages)	0.5—0.7	0.1—0.2	0.6—0.8
II. Oil cake			
(a) Non-edible cakes			
Castor cake	5.5—5.8	1.8—1.9	1.0—1.0
Mahua cake	2.5—2.6	0.1—0.9	1.8—1.9
Karanj cake	3.9—4.0	0.9—1.0	1.3—1.4
Neem cake	5.2—5.3	1.0—1.1	1.4—1.5
Safflower cake (Undecorticated)	4.8—4.9	1.4—1.5	1.2—1.3
(b) Edible cakes			
Coconut	3.0—3.2	1.8—1.9	1.7—1.8
Cotton seed (Decorticated) cake	6.4—6.5	2.8—2.9	2.1—2.2
Cotton seed (Decorticated) cake	3.9—4.0	1.1—1.9	1.6—1.7
Groundnut cake	7.0—7.2	1.5—1.6	1.3—1.4
Linseed	5.5—5.6	1.1—1.5	1.2—1.3
Niger	4.7—4.8	1.8—1.9	1.3—1.4
Rapseed	5.1—5.2	1.8—1.9	1.1—1.3
Sesamum or til cake	6.2—6.3	2.0—2.1	1.2—1.3
III. Manure of animal origin			
Dried blood	10.0—12.0	1.0—1.5	0.6—0.8
Fish manure	4.0—10.0	3.0—9.0	0.3—1.5
Bird guano	7.0—8.0	11.0—14.0	2.0—3.0
Bonemeal (Raw)	3—4	20—25	—
Bonemeal (Steamed)	1.0—2.0	25—30	—
Activated sludge (Dry)	5.0—6.5	3.0—3.5	0.5—0.7
Settled sludge (Dry)	2.0—2.5	1.0—1.2	0.4—0.5
Night Soil	1.2—1.3	0.8—1.0	0.4—0.5
Human urine	1.1—1.2	0.1—0.2	0.2—0.3
Cattle dung and urine mixed	0.60	0.15	0.45
Horse dung and urine mixed	0.70	0.25	0.55
Sheep dung and urine mixed	0.95	0.35	1.00

Source: (1) C. N. Acharya (1957), *Organic Manures*, I.C.A.R. Review Series No. 2.

(2) J. A. Doji (1955), *Manures Manuring*, I.C.A.R. Farm Bulletin No. 7.

(3) Van Slyke (1953), *Fertiliser and Crop Production*, Published by Orange Jodd Publishing Co., New York.

**10.09(a). YARDSTICKS OF ADDITIONAL PRODUCTION OF RICE AND WHEAT
FROM THE USE OF FERTILISERS UNDER IRRIGATED/ASSURED WATER
SUPPLY CONDITIONS**

State	Yardsticks of additional production in tonnes								
	Per tonne of N			Per tonne of P ₂ O ₅					Per tonne of K ₂ O
	at 40 kg N/ha	at 80 kg N/ha	at 120 kg N/ha	at 30 kg/ha		at 60 kg/ha			at 60 kg/ha
				Alone	Over 60 kg N	Alone	Over 60 kg N	Over 120 kg N	Over 120 kg N & 60 kg P ₂ O ₅
A. RICE (Kharif)									
Andhra Pradesh	11.0	10.5	10.9	12.2	1.68	11.2	11.6	15.1	5.0
Bihar	17.4	14.2	14.1	12.8	10.1	8.0	8.2	9.6	5.1
Haryana	—	—	—	6.4	8.0	4.1	7.1	11.6	1.0
Jammu & Kashmir	18.4	16.0	13.0	—	5.9*	—	—	11.4*	5.9
Karnataka	11.3	12.2	10.4	25.0	24.2	16.3	14.5	18.2	6.7
Kerala	10.0	9.2	7.0	6.6	10.3	5.6	6.9	9.4	3.6
Madhya Pradesh	17.1	13.8	9.0	26.7	18.5	17.0	10.0	12.9	6.7
Maharashtra	—	—	—	3.7	9.6	3.9	6.3	9.0	2.8
Goa	16.0	13.5	10.8	—	—	—	—	—	—
Manipur	11.0	7.9	8.8	—	12.9*	—	—	9.6*	1.1
Orissa	10.4	11.3	11.1	—	9.8*	—	—	8.7*	4.0
Tamil Nadu	9.3	8.8	9.5	19.6	21.9	18.0	17.9	24.3	4.2
Tripura	10.5	10.1	9.4	—	—	—	—	—	—
Uttar Pradesh	12.4	11.1	10.5	3.7	4.1	3.9	5.1	5.5	3.8
West Bengal	10.1	10.0	9.3	10.4	10.1	7.5	5.9	7.6	3.5
B. RICE (Rabi)									
Andhra Pradesh	10.4	10.1	10.1	13.5	17.0	10.0	11.2	17.0	6.9
Assam	11.7	6.6	5.3	—	7.7*	—	—	6.9*	5.2
Karnataka	—	—	—	27.1	35.6	20.8	25.6	25.3	7.4
Kerala	7.8	8.2	6.6	9.5	10.6	4.9	7.9	10.0	2.4
Maharashtra	8.3	9.8	8.8	—	—	—	—	—	—
Orissa	15.2	14.8	11.8	11.1	17.4	12.4	12.4	19.3	6.6
Tamil Nadu	8.8	8.4	9.0	—	9.8*	—	—	11.8*	4.4
West Bengal	16.0	11.3	10.5	—	7.9*	—	—	10.4*	6.8
C. WHEAT									
Bihar	15.6	12.8	12.3	7.5	9.5	7.4	8.3	10.3	3.8
Delhi	11.8	10.2	10.7	—	—	—	—	—	—
Gujarat	10.9	8.8	7.7	14.8	14.5	10.5	9.4	10.9	2.4
Haryana	17.4	15.3	12.9	6.5	11.3	5.6	9.8	10.9	3.0
Himachal Pradesh	—	—	—	—	17.1*	—	—	5.9*	2.1
Madhya Pradesh	17.9	15.1	9.8	6.1	18.6	6.9	13.9	19.1	4.2
Maharashtra	8.7	7.7	7.0	10.1	13.6	7.3	7.7	12.2	1.9
Punjab	17.3	14.6	10.9	15.0	19.0	9.8	13.8	18.6	0.7
Rajasthan	9.1	8.3	8.0	—	6.8*	—	—	8.3*	3.6
Tripura	6.5	6.3	6.2	6.9	7.8	6.1	6.6	8.8	4.5
Uttar Pradesh	16.7	14.5	13.4	7.3	8.6	6.3	5.2	4.3	4.1

*Response over 120 kg N and 60 kg K₂O/ha.

(Continued)

**10.09(a). COMPOSITE YARDSTICKS OF ADDITIONAL PRODUCTION OF RICE AND
WHEAT FROM THE USE OF FERTILISERS UNDER IRRIGATED/ASSURED
WATER SUPPLY CONDITIONS (Concluded)**

State	Yardsticks of additional production in tonnes/ tonne of nutrient			
	120 kg N/ha	90 kg N & 30 kg P ₂ O ₅ /ha	60 kg N/ha & 60 kg P ₂ O ₅ /ha	60 kg N, 30 kg P ₂ O ₅ & 30 kg K ₂ O/ha
RICE (Kharif)				
Andhra Pradesh	10.9	12.7	12.7	11.8
Bihar	14.1	18.0	16.4	16.9
Karnataka	10.8	15.2	17.3	17.7
Kerala	7.0	6.7	7.5	7.7
Madhya Pradesh	9.0	12.2	14.4	15.3
Maharashtra	8.2	7.6	6.8	6.9
Manipur	8.8	8.7	10.8	13.8
Orissa	11.1	13.2	13.5	13.1
Tamil Nadu	9.5	10.9	12.1	12.0
Uttar Pradesh	10.5	12.2	11.0	10.6
West Bengal	9.3	10.6	10.6	10.1
RICE (Rabi)				
Andhra Pradesh	10.1	12.7	12.4	12.8
Karnataka	12.6	14.4	17.0	17.5
Kerala	6.6	6.8	7.2	6.8
Orissa	11.8	13.4	13.3	12.4
Tamil Nadu	9.0	10.4	11.9	12.6
West Bengal	10.5	12.1	13.9	11.6
WHEAT				
Bihar	12.3	13.9	13.9	12.7
Delhi	10.7	13.2	11.4	11.6
Gujarat	7.7	9.8	10.0	10.5
Haryana	12.9	13.2	13.6	12.0
Himachal Pradesh	15.3	14.5	13.6	14.2
Madhya Pradesh	9.8	8.4	8.5	11.3
Maharashtra	7.0	8.9	8.5	8.4
Manipur	6.5	7.9	9.5	10.6
Punjab	10.9	15.4	14.0	14.7
Rajasthan	8.0	8.9	8.3	8.4
Uttar Pradesh	13.4	16.4	15.4	14.3

10.09(b). YARDSTICKS OF ADDITIONAL PRODUCTION OF DIFFERENT CROPS FROM THE USE OF FERTILISERS UNDER DRY FARMING CONDITIONS

State	Yardsticks of additional production in tonnes/tonne				
	25 kg N/ha	50 kg N/ha	25 kg P ₂ O ₅ /ha	25 kg K ₂ O/ha	
Rice (Kharif)					
Bihar	13.8	13.5	16.8	6.6	
Madhya Pradesh	19.0	17.4	24.2	8.8	
Orissa	10.2	8.4	19.4	6.8	
Uttar Pradesh	13.5	14.7	8.6	2.8	
Wheat					
Bihar	11.7	10.9	12.7	3.6	
Haryana	8.8	9.7	20.5	3.7	
Madhya Pradesh	8.5	7.9	13.3	4.3	
Orissa	3.8	2.9	7.5	1.1	
Punjab	21.0	16.6	15.8	5.2	
Uttar Pradesh	8.9	9.0	5.5	2.3	
Jowar (Kharif)					
Karnataka	25.3	24.5	29.8	8.2	
Madhya Pradesh	9.0	10.5	23.6	1.1	
Rajasthan	12.8	12.5	5.2	3.2	
Jowar (Rabi)					
Andhra Pradesh	4.2	3.5	6.0	2.5	
Karnataka	7.7	6.6	10.8	3.6	
Maharashtra	6.7	5.9	10.2	3.8	
Maize (Kharif)					
Gujarat	6.8	7.7	13.4	4.4	
Haryana	10.2	10.2	18.6	5.8	
Punjab	23.3	19.9	18.2	3.8	
Bajra (Kharif)					
Gujarat	10.3	11.7	22.6	6.1	
Maharashtra	11.5	10.5	29.5	6.9	
Rajasthan	17.0	15.1	7.0	8.2	
Uttar Pradesh	3.6	3.2	3.6	2.2	
	15 kg N/ha	30 kg N/ha	30 kg P ₂ O ₅ /ha	60 kg P ₂ O ₅ /ha	30 kg K ₂ O/ha
Gram					
Gujarat	5.5	6.9	5.9	4.2	5.6
Madhya Pradesh	13.1	10.2	8.5	5.6	4.4
Uttar Pradesh	6.5	6.6	9.0	6.5	1.2
	20 kg N/ha	40 kg N/ha	40 kg P ₂ O ₅ /ha	80 kg P ₂ O ₅ /ha	30 kg K ₂ O/ha
Groundnut					
Andhra Pradesh	3.5	3.5	3.9	2.3	1.7
Karnataka	8.4	6.2	6.4	4.4	2.4
Orissa	9.5	9.4	8.6	6.1	4.1
Tamil Nadu	1.9	2.1	2.6	2.5	1.3

(Continued)

Notes to 10.09(a) and 10.09(b) :—

1. The yardstick is a measure of average increase in production per unit area or per unit input of given improvement measure(s) simply or jointly that is expected under typical agronomic and climatic conditions of the region.
2. To estimate the average yardstick for a given level of fertiliser dose the average response for the districts from all the trials in the district in a year was obtained. The average response over the years was taken as the response for the district for estimating the yardstick. The estimate for the state was then calculated by averaging the yardsticks over all the districts within the State.
3. The yardsticks calculated were mostly concerned with the experiments conducted on high yielding varieties of different crops. Some of the varieties of rice were IR-8, IR-20, Jaya, Ratna, Jagannath, Padma and of wheat were Kalyansona, S-308, RR-21, HD 2009, HD 1982, HD 1593, UP-368, UP-301. In case of crops under dry farming conditions (rainfall less than 700 mm per annum) the varieties of different crops were mostly improved/hybrids.
4. Under irrigated/assured water supply conditions data of 3020 experiments are summarised for the evaluation of yardsticks on Kharif rice. Those on Rabi rice and wheat are 1900 and 4110 respectively. Under dry farming conditions data of about 1000 experiments on wheat and between 200-500 experiments on other cereals, pulse and oilseed crops are summarised.
5. The yardsticks of additional production of rice and wheat under irrigated/assured water supply condition have been worked out at 40, 80 and 120 kg N/ha and for phosphorus at 30 and 60 kg P_2O_5 /ha alone and over nitrogen at 60 and 120 kg N/ha. The yardsticks for potassium have been estimated at 60 kg K_2O /ha in the presence of 120 kg N/ha and 60 kg P_2O_5 /ha.
6. The change in the pattern of yardsticks for application of nitrogenous, phosphatic and potassic fertilisers to supply total nutrient of 120 kg/ha has been studied on rice and wheat.
7. Under dry farming conditions the yardsticks of additional production have been evaluated at 25 and 50 kg N, 25 kg P_2O_5 and 25 kg K_2O /ha for cereals, 15 to 30 kg N, 30 and 60 kg P_2O_5 and 30 kg K_2O /ha for gram, 20 and 40 kg N, 40 and 80 kg P_2O_5 and 40 kg K_2O for groundnut. The response to phosphorus was evaluated in the presence of nitrogen and that to potassium in the presence of nitrogen and phosphorus.

- Summary:**
1. The results under irrigated/assured water supply conditions for Kharif rice in different states showed that nitrogen yardsticks varied from 9-18 units at 40 kg N/ha. The yardsticks declined at 80 and 120 kg N/ha, the estimates being between 7-14 units for these two doses. More or less similar results were observed during rabi season although the magnitude of yardsticks in few states were slightly lower. On wheat the yardsticks for nitrogen at 40 kg N/ha varied between 9-18 units in different states. There was slight reduction in the estimates of yardsticks at higher levels of nitrogen. In case of phosphorus, application at 30 kg P_2O_5 /ha the yardsticks of phosphorus on Kharif rice varied between 12-26 units in most of the states except Maharashtra, Haryana and Uttar Pradesh. The yardsticks at 60 kg P_2O_5 /ha were slightly less than those at 30 kg P_2O_5 /ha. However, improvement was observed when phosphorus was applied over nitrogen. Phosphorus application to wheat gave yardsticks varying between 5-11 units which were improved slightly when phosphorus was applied over nitrogen. The yardsticks of potassium at 60 kg K_2O /ha for rice and wheat varied between 2-6 units in majority of states. The results on composite yardsticks showed that the application of N, P and K fertilisers at 120 kg/ha in the ratio of 2:1:1 gave higher yardsticks compared to other ratios, the variation ranges between 10-17 units for rice and 10-15 units for wheat.
 2. Yardsticks of crops under dry farming conditions i.e. rainfalls less than 700 mm per annum showed that on cereals application of 25 kg N/ha gave yardsticks between 9-15 units. Increase in dose of nitrogen to 50 kg N/ha showed slight reduction in the yardsticks. Application of 25 kg P_2O_5 /ha gave yardsticks more or less of similar order as that to nitrogen. Study with gram and groundnut showed that phosphorus application resulted in yardsticks between 4-6 units at 60 kg P_2O_5 /ha in Gujarat, Madhya Pradesh and Uttar Pradesh on gram and at 80 kg P_2O_5 /ha on groundnut in Andhra Pradesh and Orissa.

Source: Leelavathi, C. R. and Bapat, S. R., Yardsticks of additional crop production origin and development, Golden Jubilee of ICAR (1929-79), Souvenir Volume, p 56-74, IASRI, New Delhi, 1979.

(Continued)

**10.09(a) & (b). DISTRICTS COVERED UNDER IRRIGATED/ASSURED WATER SUPPLY
Y AND DRY FARMING CONDITIONS 1967-76 (Concluded)**

State	Districts covered under	
	Irrigated/assured water supply conditions	Dry farming
Andhra Pradesh	Chittoor, Nizamabad, Guntur, West Godawari, Nellore, Nalgonda, Vishakapatnam and Cuddapah	Kurnool
Bihar	Shahabad, Champaran, Patna, Bhagalpur Saran	Hajaribagh, Gaya
Goa	Goa	—
Gujarat	Mehsana, Bhavnagar, Junagadh, Sabarkantha, Rajkot, Kaira	Panchmahal, Jamnagar
Haryana	Karnal, Rohtak, Gurgaon, Jind	Ambala
Himachal Pradesh	Kangra, Una	—
Jammu & Kashmir	Jammu	—
Karnataka	Shimoga, Raichur, Mysore, Chitradurga	Dharwar, Bijapur
Kerala	Quilon, Alleppy, Palghat, Mallapuram Trivandrum	—
Madhya Pradesh	Sehore, Bilaspur, Raipur, Hoshangabad, Chatterpur	Jabalpur, Gwalior
Maharashtra	Kolaba, Nasik, Jalgaon, Ratnagiri, Satara, Osmanabad, Dhulia, Poona	Aurangabad, Sholapur
Manipur	Manipur	—
Orissa	Puri, Cuttack, Sambalpur, Balasore	Mayurbhanj, Koraput
Punjab	Sangrur, Ludhiana, Jullundur	Hoshiarpur
Pondicherry	Pondicherry	—
Rajasthan	Tonk, Ajmer, Bharatpur, Pali, Alwar	Jhalawar, Jaipur
Tamil Nadu	Chingleput, Coimbatore, Tirunelveli, Thanjavur	Ramanathpuram
Tripura	Tripura	—
Uttar Pradesh	Varanasi, Aligarh, Kanpur, Jhansi, Bullundshahar, Banda, Fatehpur, Gorakhpur	Allahabad, Jalaun
West Bengal	Midnapore, Burdwan	—

10.10 APPROVED GRADES OF FERTILISER MIXTURES—STATEWISE

Zone/State	Grade			Crops for which recommended
	N	P ₂ O ₅	K ₂ O	
Central				
Madhya Pradesh	18	18	10	
	20	20	5	
	15	10	10	
	10	30	6	
	20	20	10	
	18	18	9	
	15	15	7.5	
	8	32	8	
	12	32	6	
	10	20	10	
5	15	5		
Rajasthan	18	18	10	
	15	15	15	
	15	15	7.5	
	8	8	8	
Uttar Pradesh	8	8	8	
	10	10	10	
	15	15	7.5	
	20	20	10	
Delhi	18	18	9	
	9	22	9	
	15	15	7½	
	12	32	16	
	15	15	15	
	12	32	6	
	8	8	8	
East				
Assam	8	8	8	} For agriculture crop mainly HYV paddy, sugarcane, wheat and potato
	16	8	8	
	12	6	6	
	10	2	4	} For tea
	10	5	10	
	10	5	15	

(Continued)

10.10. APPROVED GRADES OF FERTILISER MIXTURES—STATEWISE (Continued)

Zone/State	Grade			Crops for which recommended
	N	P ₂ O ₅	K ₂ O	
East (Concluded)				
Bihar	20	10	10	} HYV paddy, wheat, maize, potato and vegetables
	8	8	8	
	6	12	6	
	15	15	15	
	18	18	6	
	13	13	20	
Orissa	15	15	15	
	8	8	8	
	12	12	12	
	13	13	13	
West Bengal	8	8	8	
	10	5	10	
North				
Haryana	15	15	15	} Wheat, paddy, maize and cotton
	10	30	10	
	15	15	7.5	
	18	27	30	
	20	20	5	
	25	25	0	
Himachal Pradesh	12	32	0	} Wheat, paddy, maize, cotton and sugarcane
	12	32	6	
	15	15	7.5	
	15	7.5	15	
	12	32	16	
	12	32	6	
Punjab	15	15	15	
	15	15	7.5	
	20	20	20	
	12	32	16	
12	25	6		
South				
Andhra Pradesh	14	7	0	Paddy mixture
	22	0	11	Paddy Top dressing
	14	6	4	Sugarcane mixture
	12	6	6	Chillies & general

(Continued)

10.10. APPROVED GRADES OF FERTILISER MIXTURES—STATEWISE (Continued)

Zone/State	Grade			Crops for which recommended	
	N	P ₂ O ₅	K ₂ O		
South (Continued)					
Andhra Pradesh (Concluded)	4	12	8(S)	FCV Mixture, Tobacco Mixture	
	6	18	12(S)	FCV Tobacco	
	18	18	9(M)	Cotton, Hybrid Seed Production	
	5	15	15(S)+ 2MgO	Tobacco in collaboration with M/s Indian Leaf Tobacco Dev. Co.	
	7	10	5	Grape	
	4	12	12	Groundnut	
	20	10	10	Sugarcane Special	
	6	12	6(S)	Natu Tobacco	
	Karnataka	9	9	9	
		12	6	6	
6		12	6		
15		5	5		
15		0	15		
3		9	9		
20		0	10		
11		11	11		
12		9	12		
7		10	5		
17	17	17			
Kerala	9	9(4.5)	9	Paddy and Tapioca	
	12	12(6.0)	6	Paddy and vegetables	
	20	0(0.0)	26	Paddy	
	10	5(2.5)	20	Coconut	
	24	0(0.0)	12	Sugarcane (Pandalam and Tiruvalla area)	
	30	0(0.0)	10	Sugarcane (Chittoor Area)	
	8	8(4.0)	16	Banana and Sesamum	
	10	4(2.0)	14	Areca nut, pepper & cocoa	
	12	6(3.0)	12	Pineapple	
	12	6(3.0)	6	Cashew	

(S) Sulphate of Potash

(M) Muriate of Potash

• 5% P₂O₅ should be in water soluble form.The figures within brackets denote water soluble P₂O₅

(Continued)

10.10. APPROVED GRADES OF FERTILISER MIXTURES STATEWISE (Continued)

Sone/State	Grade			Crops for which recommended
	N	P ₂ O ₅	K ₂ O	
Touth (Continued)				
Kerala (Concluded)	5	10(5.0)	20	Groundnut
	7	10(0.5)	5	
	24	12(12.0)	12	Vegetables & pulses
	18	18(18.0)	18	
	10	10	4	
			(with 1.5 Mgo)	Special analysis mixture
	15	10	6	
	12	12	12	
	10	10	10	
				Standard rubber mixture
Tamil Nadu	14	7(7.0)	0	Millets
	12	6(6.0)	6	Paddy, ragi, cotton, chillies tobacco, vegetables
	12	6(3.0)	6	Fruits
	8	8(4.0)	16	Coconut, tapioca, arecanut
	6	12(12.0)	6	Potato, paddy
	6	12(6.0)	6	Potato*
	9	9(9.0)	9	Paddy, millets, vegetables
	15	0(0.0)	15	Top dressing mixture
	4	8(8.0)	12	Groundnut irrigated
	6	6(6.0)	18	Banana
	10	0(0.0)	30	Banana
	15	5(2.5)	5	Sugarcane
	16	4(2.0)	4	Sugarcane
	16	0(0.0)	12	Top dressing mixture
	10	10(10.0)	0	Jowar, bajra
	12	4(2.0)	12	Coconut
	15	15(7.5)	15	Paddy, millets, vegetables, basal, dressing mixture
	20	0(0.0)	10	Sugarcane
	30	30(15.0)	50	Tea
	50	30(15.0)	50	
	60	39(15.0)	40	
	40	40(20.0)	80	
	60	45(22.5)	45	
	50	0(0.0)	50	
	60	0(0.0)	40	

*Approved grade 6-12(6.0)-6 recommended for potato in Tamil Nadu should contain 1 per cent organic nitrogen besides 5 per cent inorganic nitrogen.

10.10. APPROVED GRADES OF FERTILISER MIXTURES—STATEWISE (Continued)

Zone/State	Grade			Crops for which recommended
	N	P ₂ O ₅	K ₂ O	
South (Concluded)				
Tamil Nadu (Concluded)	11	11 (5.5)	11	Tea nursery mixture
	17	17 (17)	17	Paddy
	4	4 (4)	18	Groundnut
	10	10 (5.0)	10	Tea nursery mixture
Pondicherry	12	6	6	Paddy, ragi, cotton, chillies, tobacco and vegetables
	8	8	16	Coconut, tapioca, arecanut
	9	9	9	Paddy, millets, vegetables as basal dressing mixtures
	4	8	12	Groundnut
	7	14	21	Irrigated groundnut
	15	5	5	Sugarcane
	16	0	12	Top dressing mixture
	20	0	10	Sugarcane
	17	17	17	Paddy, millets as basal dressing mixture
West				
Gujarat	10	5	0	
	10	10	10	
	15	15	10	
	5	10	10	
	5	10	5	
	15	5	5	
	10	15	15	
	10	5	5	
	10	10	0	
	5	15	15	
	15	10	10	
	20	10	10	

(Continued)

10.10. APPROVED GRADES OF FERTILISER MIXTURES— STATEWISE (Concluded)

Zone/State	Grade			Crops for which recommended
	N	P ₂ O ₅	K ₂ O	
West (Concluded)				
Maharashtra	10	5	5	
	5	10	10	
	20	20	10	
	9	20	20	
	15	5	5	
	15	15	7.5	
	7	10	0	
	7	10	5	
	20	10	10	
	20	20	0	
	9	9	5	
	18	18	10	
	15	15	15	
Goa	15	5	5	
	15	0	15	
	20	0	20	
	10	5	5	
	5	10	5	
	7	10	5	
	9	9	9	
	6	6	12	
	5	10	10	

Source: State Departments of Agriculture.

()=The figures within brackets denote water soluble P₂O₅.

10.11. PRODUCTION OF URBAN COMPOST, RURAL COMPOST AND AREA GREEN MANURED—1980-81 & 1981-82

Sl. No	Name of States/UTs	Urban Compost (Lack tonnes)		Rural Compost (Lack tonnes)		Area green manured (Lack hectares)	
		1980-81	1981-82	1980-81	1981-82	1980-81	1981-82
1.	Andhra Pradesh	2.50*	2.50*	445.00*	445.00*	24.00*	24.00*
2.	Assam	0.10*	0.10*	4.50*	4.50*	0.15*	0.15*
3.	Bihar	1.51	1.50	128.00	135.00*	—	—
4.	Gujarat	2.53	2.25	8.92	8.93	1.84	1.74
5.	Haryana	1.75*	1.75*	65.00*	65.00*	0.26*	0.26*
6.	Himachal Pradesh	0.13	0.20	32.86	33.89	0.35	0.23
7.	Jammu & Kashmir	0.20*	0.20*	1.59	2.00*	0.002	0.002*
8.	Karnataka	8.09	9.25	89.72	101.85	5.90	8.87
9.	Kerala	0.31	0.35*	2.00*	2.00*	0.25*	0.25*
10.	Madhya Pradesh	1.70*	1.70*	75.00*	75.00*	1.00*	2.33
11.	Maharashtra	11.00*	11.00	14.00*	14.00*	0.10*	0.10*
12.	Manipur	—	—	NA	NA	NA	NA
13.	Meghalaya	—	—	0.68	0.70*	0.003	0.003*
14.	Nagaland	—	—	—	—	—	—
15.	Orissa	0.18	0.25*	92.93	100.00*	2.98	3.00*
16.	Punjab	5.40	5.75*	199.50	202.00	4.90	4.60
17.	Rajasthan	1.65	1.70*	25.91	30.00*	0.27	0.30*
18.	Sikkim	—	—	—	—	—	—
19.	Tamil Nadu	6.70	7.00*	90.08	90.00*	3.14	3.14*
20.	Tripura	—	—	0.53*	NA	—	NA
21.	Uttar Pradesh	13.60	14.22	866.48	890.50	7.15	9.84
22.	West Bengal	0.40*	0.40*	110.00	110.00*	0.13	0.15*
23.	Andaman & Nicobar	—	—	0.06*	0.06*	0.02*	0.02*
24.	Arunachal Pradesh	—	—	0.005	0.012	—	—
25.	Chandigarh	—	—	0.035	0.002	—	—
26.	Dadra & Nagar Haveli	—	—	0.012	0.012	0.003	0.004
27.	Delhi	0.40	0.45*	—	—	—	—
28.	Goa	—	—	1.18*	1.11	0.16*	0.19
29.	Lakshadweep	—	—	0.004	0.004*	0.001	0.001*
30.	Mizoram	—	—	0.02	—	—	—
31.	Pondicherry	0.45	0.43	1.38	1.37	0.093	0.095
32.	Miscellaneous	4.00	4.00	—	—	—	—
Total:		62.60	65.00	2,255.396	2,312.940	52.702	55.135

*Anticipated Achievement

Source: Ministry of Agriculture, GOI, New Delhi.

10.12. ESTIMATED COST OF GOBAR GAS PLANT

Size of plant		Estimated cost (Rs.)	Number of animals required (approx)
Cubic meters	Cubic feet		
2	70	2,332	2 to 3
3	105	3,015	3 to 4
4	140	3,359	4 to 6
6	210	4,175	6 to 10
8	280	5,000	12 to 15
10	350	6,100	16 to 20
15	525	8,500	25 to 30
20	700	11,500	35 to 40
25	875	12,800	40 to 45
35	1,237	18,400	45 to 55
45	1,590	20,740	60 to 70
140	4,948	58,000	400 to 450

Note: 1. Approx. quantity of dung available per day per animal—

- buffalo — 15 kg
- bullock/cow — 10 kg
- calf — 5 kg

2. Dung and water are normally mixed in the proportion of 4 : 5.

3. 1 kg wet dung produces 1.3 cubic feet of gas approximately.

4. Gobar gas contains approximately 55% methane and 45% carbon dioxide.

Source: Financing Agriculture, Vol. XIII, No. 2, April-June 1981 (pp 34).

11.00. CRUDE OIL, PETROLEUM PRODUCTS

**11.01. INDIGENOUS PRODUCTION OF NATURAL GAS, CRUDE OIL
AND PETROLEUM PRODUCTS
(1979-80 to 1982-83)**

Product	Unit	Production			
		1979-80	1980-81	1981-82	1982-83
I. Natural Gas	Million cubic metres	2,767	2,358	3,851	4,936
II. Crude Oil	Thousand tonnes	11,768	10,507	16,191	21,060
III. Refinery Crude Throughput	..	27,474	25,836	30,145	33,157
IV. Refinery production					
a) Light Distillates of which	..	4,459	4,101	5,138	5,316
L.P. Gas	..	406	366	410	406
Naphtha	..	2,415	2,115	3,004	2,990
Mogas	..	1,512	1,519	1,614	1,797
b) Middle Distillates of which	..	13,080	12,115	14,137	15,625
Kerosene	..	2,539	2,396	2,907	3,393
H.S.D.	..	7,975	7,371	9,045	9,761
L.D.O.	..	1,230	1,108	949	1,120
c) Heavy Ends of which	..	8,255	7,907	8,907	10,133
Fuel Oils	..	4,086	4,041	4,014	4,829
Total Fuel Oils	..	6,351	6,120	6,907	7,964
Lube Oils	..	487	426	407	434
Bitumen	..	1,103	1,082	1,297	1,397
Pet. Coke*	..	99	86	141	149
IV. Total Production	..	25,794	24,123	28,122	31,074

*Includes calcined Petroleum Coke.

Source: Indian Petroleum and Petro-Chemical Statistics—1982-83, Department of Petroleum, Ministry of Energy, Govt. of India, New Delhi.

11.02. IMPORTS OF CRUDE OIL AND PETROLEUM PRODUCTS
(1979-80 to 1982-83)

Quantity = '000 tonnes

Value = Rs. crores

Item	1979-80		1980-81		1981-82		1982-83	
	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
A. Crude Oil	16,121	2,187.53	16,248	3,348.97	15,298	3,736.38	16,955	4,844.40
B. Petroleum Products								
I. Light Distillates								
1. Naphtha	154	35.2	231	62.95	114	31.54	101	30.16
2. Others	50	24.11	157	52.65	152	49.14	90	35.52
II. Middle Distillates								
1. Kerosene Superior	1,546	379.75	2,065	591.67	1,969	606.55	1,863	586.78
2. H.S.D.	2,010	496.66	3,219	885.34	1,838	549.45	2,582	752.54
3. L.D.O.	77	21.4	68	18.41	83	24.70	19	6.15
III. Heavy Ends								
1. Furnace Oil	793	93.74	1,336	219.45	527	103.23	—	—
2. Lubes & Greases	52	20.0	182	79.25	91	52.23	103	48.96
Total	20,845	3,269.92	23,537	5,266.49	20,182	5,189.54	21,975	5,585.88

Source: Indian Petroleum & Petro-chemicals Statistics—1982-83, Department of Petroleum, Ministry of Energy, Govt. of India, New Delhi.

11.03. EXPORTS OF PETROLEUM PRODUCTS
(1979-80 to 1982-83)

Qty = '000 tonnes
Value=f.o.b. Rs. Crores

Product	1979-80		1980-81		1981-82		1982-83	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Crude Oil	—	—	—	—	838	196.23	4352	1018.33
POL products of which	88	24.02	36	8.41	55	15.13	795	133.79
Naphtha	83	24.00	36	8.34	55	15.13	96	24.81
Fuel Oil	—	—	—	—	—	—	677	103.20
L.D.O.	—	—	—	—	—	—	22	5.63
Others	Neg	0.02	Neg.	0.07	—	—	Neg	0.15
Grand total	88	24.02	36	8.41	893	211.36	5147	1152.12

Source: Indian Petroleum & Petro Chemicals Statistics 1982-83. Department of Petroleum, Ministry of Energy, Government of India, New Delhi.

11.04. GROWTH OF INDIAN PETROLEUM INDUSTRY AT A GLANCE

Item	Unit	1970-71	1975-76	1979-80	1980-81	1981-82	1982-83 (P)
1. Reserves (Balance recoverable)							
i. Crude Oil	Million tonnes	128	144	354	366	468	471
ii. Natural Gas	Billion cubic metres	62	87	345	352	411	420
2. Consumption							
i. Crude Oil (in terms of refinery crude throughput)	Million tonnes	18.38	22.28	27.47	25.84	30.15	33.16
ii. Petroleum products (excl. RBF)	"	17.91	22.45	29.88	30.80	32.52	34.28
3. Production:							
i. Crude Oil	"	6.82	8.45	11.77	10.51	16.19	21.06
ii. Petroleum Products	"	17.11	20.83	25.79	24.12	28.12	31.07
4. Imports & Exports							
a. Gross Imports							
i. Qty. Crude Oil	"	11.68	13.62	16.12	16.25	15.30	16.96
POL products	"	1.09	2.22	4.73	7.29	4.88	5.02
Total (i)	"	12.77	15.84	20.85	23.54	20.18	21.98
ii. Value: Crude Oil	Rs./crores	107	1052	2188	3349	3736	4044
POL products	"	30	204	1082	1917	1453	1541
Total (ii)	"	137	1256	3270	5266	5189	5585
b. Exports							
i. Qty.: Crude Oil	Million tonnes	—	—	—	—	0.84	4.35
POL products	"	0.32	0.17	0.09	0.04	0.05	0.80
Total (i)	"	0.32	0.17	0.09	0.04	0.89	5.15
ii. Value: Crude Oil	Rs./crores	—	—	—	—	196	1018
POL products	"	5	14	24	8	15	134
Total (ii)	"	5	14	24	8	211	1152
c. Net Imports:							
i. Qty : Crude Oil	Million tonnes	11.68	13.62	16.12	16.25	14.46	12.61
POL products	"	0.77	2.05	4.64	7.25	4.83	4.22
Total (i)	"	12.45	15.67	20.76	23.50	19.29	16.83
ii. Value: Crude Oil	Rs./crores	107	1052	2188	3349	3540	3026
POL products	"	25	190	1058	1909	1438	1407
Total (ii)	"	132	1242	3246	5258	4978	4433
d. Unit value of crude oil imports (Gross)	"	91	772	1357	2061	2442	2385
5. India's Total Exports	Rs./crores	1535	4043	6459	6711	7802	6118 [@]
6. POL imports as percentage of India's total exports							
i. Gross imports	Per cent	8.9	31.1	50.7	78.5	66.5	
ii. Net imports	Per cent	8.6	30.7	50.3	78.3	63.8	
7. Natural Gas							
i. Gross Production	Mn. Cu. Metres	1445	2368	2767	2358	3851	4936
ii. Utilisation	"	706	1286	1765	1551	2155	2735

[@] For April-December 1982.

(P) Provisional

Source: Indian Petroleum and Petro-Chemicals Statistics—1982-83, Economics and Statistics Division, Department of Petroleum, Ministry of Energy, Govt. of India, New Delhi.

12.00. SIXTH FIVE-YEAR PLAN

12.01. TARGETS FOR FERTILISERS

('000 tonnes)

Item	1984-85	1989-90	1994-95
1. Nitrogen (N)			
(i) Capacity	5,938	10,000	
(ii) Production	4,200 (4,300)	7,700	9,700
(iii) Consumption	6,000 (5,530)	8,600	
2. Phosphate (P₂O₅)			
(i) Capacity	1,825	3,500	
(ii) Production	1,400 (1,480)	2,800	3,600
(iii) Consumption	2,340 (1,710)	3,300	
3. Potash (K₂O)			
(i) Consumption	1,310 (900)		
Total			
(I) Capacity	7,763		
(II) Production	5,600 (5,780)		13,300
(iii) Consumption	9,650 (8,140)		
4. Outlays of the Central Sector for fertiliser production: (1984-85)		Rs. 2,367 crore	

Source: "Sixth Five-Year Plan - 1980-85" - Planning Commission, New Delhi.

() = Ministry of Agriculture, New Delhi.

12.02. STATEWISE FERTILISER CONSUMPTION TARGETS FOR 1983-84

('000 tonnes)

State	N	P ₂ O ₅	K ₂ O	Total
Andhra Pradesh	518	173	74	765
Kerala	50	29	41	120
Karnataka	260	108	94	462
Tamil Nadu	285	97	108	490
Gujarat	278	137	45	460
Madhya Pradesh	170	90	25	285
Rajasthan	132	41	7	180
Maharashtra	343	135	97	575
Haryana	240	42	13	295
Punjab	636	242	44	922
Uttar Pradesh	1,240	317	131	1,688
Himachal Pradesh	18	3	2	23
Jammu & Kashmir	30	5	2	37
Assam	15	2	3	20
Bihar	193	45	20	258
Orissa	68	22	12	102
West Bengal	182	65	46	293
Others	125	60	40	225
All India	4,783	1,613	804	7,200

Source: Ministry of Agriculture, New Delhi.

**12.93. STATEWISE TARGET FOR OPENING OF ADDITIONAL SALE
POINTS DURING 1983-84**

Sl. No.	Name of State	Existing sale points as on 31-3-83	Target for additional sale points for 1983-84
1.	Andhra Pradesh	19,399	
2.	Tamil Nadu	14,753	2,200
3.	Karnataka	7,725	1,000
4.	Kerala	5,876	750
5.	Poncicherry	210	600
6.	Maharashtra	9,175	50
7.	Gujarat	6,882	1,200
8.	Madhya Pradesh	6,895	400
9.	Rajasthan	4016	1,500
10.	Goa	262	900
11.	Punjab	5,075	50
12.	Haryana	2,904	1,000
13.	Uttar Pradesh	23,651	200
14.	Himachal Pradesh	1,990	3,000
15.	Jammu & Kashmir	1,472	150
16.	Delhi	124	300
17.	West Bengal	16,804	40
18.	Bihar	6,180	500
19.	Orissa	5,554	1,250
20.	Assam	1,998	400
21.	Manipur	713	400
22.	Arunachal Pradesh	48	50
23.	Mizoram	47	30
24.	Nagaland	18	20
25.	Meghalaya	504	10
26.	Tripura	253	—
27.	Sikkim	96	—
28.	Andaman & Nicobar Island	35	—
29.	Dadra & Nagar Haveli	12	—
30.	Chandigarh	5	—
Total		132,676	15,000

Source: Ministry of Agriculture, New Delhi.

12.04. TARGETS FOR AGRICULTURAL PRODUCTION

Item	Unit	1984-85	1994-95	1999-2000
1. a) Foodgrains production	Million tonnes	149-154	205	225
b) Rate of growth over 1979-80		3.9% (compound)	3.2% (compound)	
2. Sugarcane	Million tonnes	200-215	300	
3. a) Jute and mesta	Million bales (180 kg each)	9.1	12.5	
b) Out of which, Jute	"	7.0		
4. Cotton	Million bales (170 kg each)	9.2	13.5	
5. a) Oil seeds (5 major)	Million tonnes	13.0		
b) Out of which, groundnut	"	7.3	16.5-17.0	
6. Rice				
—HYV irrigated	"	44.37		
—Other irrigated	"	1.03		
—Unirrigated	"	17.76		
				63.16
7. Wheat				
—HYV irrigated	"	37.82		
—Other irrigated	"	1.03		
—Unirrigated	"	4.90		
				43.75
8. Other cereals*				
—Irrigated	"	8.35		
—Unirrigated	"	20.06		
				28.42
9. Pulses	"		15.0	
10. Tea	Million kgs.	705		
11. Coffee	"	159.45		
12. Tobacco	"	525		
13. Rubber	Million tonnes	0.2		
14. Pepper	"	0.04		

*Approx. break-up—

	1984-85
(i) Jowar	12.00 million tonnes
(ii) Bajra	5.80 "
(iii) Maize	6.80 "
(iv) Ragi	2.70 "
(v) Small millets	1.90 "
(vi) Barley	2.90 "
Total	32.10

Source: "Sixth Five-Year Plan—1980-85"—Planning Commission, New Delhi.

12.05. TARGETS OF CROPPED AREA AND COVERAGE UNDER HYV PROGRAMME

(Million hectares)

Crop	1984-85
I. Gross cropped area	181.00
II. Net sown area	145.00
III. Gross irrigated area	66.00
IV. HYV programme	
1. Paddy	25.00
2. Wheat	19.00
3. Maize	2.00
4. Jowar	5.00
5. Bajra	5.00
Total	56.00
V. Area under soil conservation	30.5
	(cumulative)

Source: "Sixth Five-Year Plan 1980-85"—Planning Commission, New Delhi.

12.06. TARGETS OF AGRICULTURAL CREDIT BY DIFFERENT INSTITUTIONS

(Rs. crore)

Agency	Level to be reached by 1984-85
I. Cooperative*	3,295
—Short term	2,500
—Medium term	240
—Long term	555
II. Commercial Banks (Including Regional Rural Banks)	2,120
—Short term	1,500
—Term loan	620
Total	5,415

* Fertiliser to be distributed through Cooperative is anticipated to be of the level of 4.5 million tonnes valued at Rs. 1,600 crore at present day costs.

Source: "Sixth Five-Year Plan—1980-85"—Planning Commission, New Delhi.

12.07. OTHER AGRICULTURE/FERTILISER RELATED TARGETS

Item	Unit	1984-85
1. Seeds (consumption requirements)		57.13
(i) Certified	Lakh quintal	54.00
(ii) Foundation	..	3.00
(iii) Breeder	..	0.12
2. Pesticides (Technical grade)	Thousand tonnes	80.00
3. Agricultural tractors		
(i) Capacity	Thousand Nos.	110
(ii) Production	..	100
4. Jute manufacture for fertiliser packings	Thousand tonnes	187
5. Non-coking coal for fertiliser production	Million tonnes	5.60

Source: "Sixth Five-Year Plan—1980-85"—Planning Commission, New Delhi.

12.08. TARGETS OF SOME IMPORTANT ITEMS

Item	Unit	1984-85	1994-95
1. Coal production	Million tonnes	165	325
2. a) Petroleum products			
—demand	"	45.55	
—production	"	35.34	
b) Crude throughput	"	38.00	
c) Crude petroleum production	"	21.60	
—on land	"	8.40	
—off-shore	"	13.20	
		<u>21.60</u>	
3. Sulphuric acid			
(i) Capacity	Thousand tonnes	5,000	
(ii) Production	"	3,600	
(iii) Demand	"	3,600	
Out of which:			
a) for P_2O_5 production		2,071	
b) for ammonium sulphate production		316	
		<u>2,387</u>	
Caustic soda			
(i) Capacity	"	1,050	
(ii) Production	"	850	
(iii) Demand	"	850	
5. Soda ash			
(i) Capacity	"	1,000	
(ii) Production	"	850	
(iii) Demand	"	850	

Source: "Sixth Five-Year Plan—1980-85"—Planning Commission, New Delhi.

12.11. CAPACITY AND FINANCIAL OUTLAY OF FERTILISER INDUSTRY
(As on 1-10-83)

Year/Period	Capacity during the* period ('000 tonnes)		Financial outlay during the period (Rs /crores)		
	N	P ₂ O ₅	Public @ sector	Private sector	Total
I In Production					
Before 1947	5 (5)	63 (63)	0.8 (0.8)	2.5 (2.5)	3.3 (3.3)
At the end of 1947	5 (10)	5 (68)	5.5 (6.3)	0.4 (2.9)	5.9 (9.2)
At the end of 1950	— (10)	34 (102)	0.4 (6.7)	1.2 (4.1)	1.6 (10.8)
1951-56 (I Plan)	90 (100)	4 (106)	53.7 (60.4)	0.4 (4.5)	54.1 (64.9)
1956-61 (II Plan)	21 (121)	22 (128)	4.5 (64.9)	5.3 (9.8)	9.1 (74.7)
1961-66 (III Plan)	349 (470)	146 (274)	113.8 (178.7)	8.2 (18.0)	122.0 (196.7)
1966-69 (Annual Plans)	385 (855)	160 (434)	94.5 (273.2)	119.3 (137.3)	213.8 (410.5)
1969-74 (IV Plan)	1,002 (1,947)	147 (581)	193.1 (466.3)	179.5 (310.8)	372.5 (783.1)
1974-79 (V Plan)	1,327 (3,274)	536 (1,177)	736.8 (1,203.1)	287.0 (553.8)	973.8 (1,756.0)
1979-80	628 (3,902)	167 (1,284)	735.7 (1,938.3)	3.5 (557.8)	739.2 (2,496.1)
1983-84 (Fourth Year of VI Plan) (as on 1-10-1983)	1,423 (5,325)	344 (1,628)	1,204.8 (3,143.1)	582.4 (1,140.2)	1,787.2 (4,283.3)
II. Under implementation:	2,121 (7,446)	638 (2,266)	2,886.0 (6,029.1)	326.3 (1,466.5)	3,212.3 (7,495.6)
III. Approved in principle:	2,415 (9,861)	486 (2,752)	2,832.9 (8,862.0)	1,916.0 (3,382.5)	4,748.9 (1,244.5)
IV. Under Consideration:	41 (9,902)	225 (2,977)	78.0 (8,940.0)	— (3,382.5)	78.0 (12,322.5)

* For details see Tables 1.01 and 1.02.

† Includes cooperative sector.

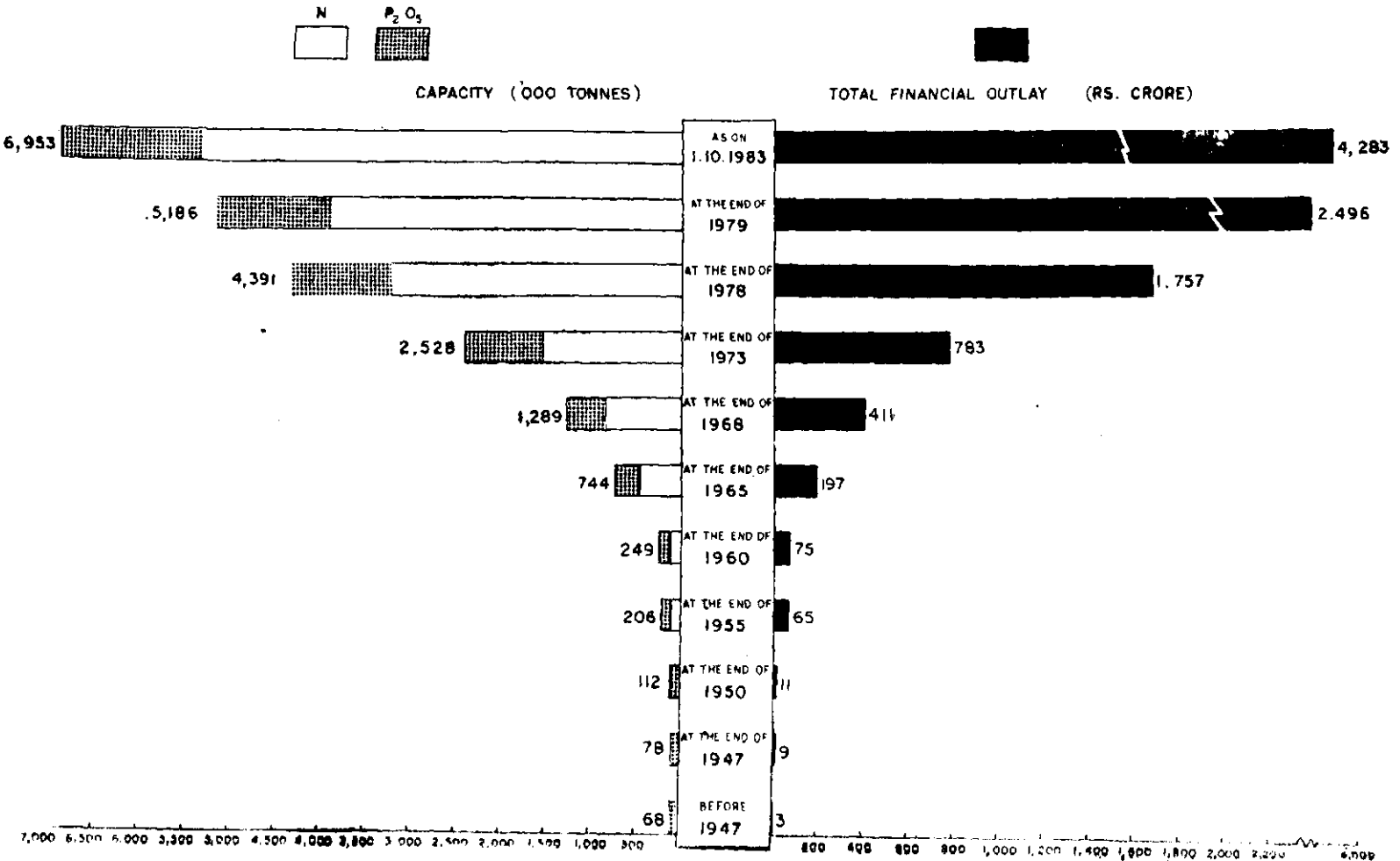
Note: 1. Calendar year can be taken as to broadly conform to the financial year, say 1951—1951-52 and so on.

2. Figures in brackets represent cumulative totals.

3. Proportionate cost of by-product ammonium sulphate capacities is not included here as this is not separately available.

4. Rupee was devalued on 6-6-1966. Projects commissioned before that date are on cost related to pre-devaluation and thereafter, to the post-devaluation of rupee.

Capacity and Financial Outlay of Fertiliser Industry (as on 1-10-83)



13.00. RAILWAY TARIFF

13.01. RAILWAY FREIGHT STRUCTURE FOR FERTILISERS AND

Chemicals manures	Classification					
	1-4-65 to 1-4-69	1-4-70	1-7-71	15-4-72	1-4-73	15-9-74
Division A	40A	45	47.5	50	52.5	52.5
Division B	35A	37.5	40	42.5	45	45

Distance (km)	As on 1-4-65	As on ¹ 1-4-66	As on ² 1-4-67	As on ³ 1-4-68	As on ⁴ 1-4-69	As on 1-4-70	As on 1-4-71	As on 1-4-72	As on 1-4-73
									DIVISION A
100	9.90	10.20	10.50	10.80	10.80	12.30	12.80	13.40	14.00
200	14.40	14.80	15.20	15.70	15.70	17.90	18.80	19.70	20.50
500	26.20	27.00	27.80	28.60	28.60	32.50	34.20	35.90	37.60
1000	41.60	42.90	44.20	45.30	45.30	53.80	56.70	59.60	62.50
2000	65.90	66.90	68.90	71.60	71.80	88.90	93.80	98.60	103.40
									DIVISION B
100	8.80	9.10	9.40	9.60	9.60	10.60	11.10	11.70	12.30
200	12.60	13.20	13.60	14.00	14.00	15.20	16.10	17.00	17.90
500	23.10	23.80	24.50	25.20	25.20	27.40	29.10	30.80	32.50
1000	36.50	37.60	38.70	39.80	39.80	45.20	48.10	51.00	53.80
2000	57.80	59.50	61.30	63.00	63.00	74.50	79.30	84.10	88.90

¹ Includes 5% supplementary charge with effect from 1-4-66;

² Includes another 3% supplementary charge with effect from 15-6-67;

³ Includes 9% supplementary charge over 1-4-65;

⁴ In the supplementary budget presented to the Lok Sabha on 21-8-74, a supplementary charge of 16½% was imposed on all commodities (except foodgrains, pulses and edible oils) upto a distance of 500 km and thereafter at 22% of the existing rates;

⁵ Additional supplementary charge of 5% for distances upto and inclusive of 500 km, and 10% for distances beyond 500 km, was levied on all commodities (except foodgrains, fertilisers, rockphosphate, pulses and edible oils);

⁶ w.e.f. 1-4-79;

(i) Exemption originally given to fertilisers and fertiliser raw materials effective 1-4-76 from additional supplementary charge (vide⁷) is withdrawn;

FERTILISER RAW MATERIALS SINCE—1-4-65

effective from

1-4-76	1-4-79	15-7-80	1-4-81	16-6-81	14-8-81	1-1-82	1-4-82	1-4-83
52.5	52.5	52.5	52.5	52.5	57.5	57.5	62.5	12.5
45	45	45	45	50	50	50	55	11.0

(Rate in Rs. per tonne)

As on 1-4-74	As on ⁴ 15-9-74	As on 1-4-76 ⁵		As on ⁶ 7 1-4-79	As on ⁸ 1-4-81	As on 15-6-81	As on 14-8-81	As on ⁹ 1-1-82	As on ¹⁰ 1-4-82	As on 1-4-83
		Fertilisers & ferti- liser raw materials	Sulphur							
14.70	17.20	17.20	18.10	19.00	21.90	21.90	23.60	27.90	32.10	36.90
21.80	25.40	25.40	26.70	28.00	32.20	32.20	34.80	41.10	47.30	
40.60	47.40	47.40	49.80	52.30	60.20	60.20	65.40	77.80	89.40	115.60
68.20	83.20	83.20	91.50	100.70	115.80	115.80	126.40	157.70	181.40	203.80
114.30	139.50	139.50	153.50	168.80	194.00	194.19	212.10	264.50	304.20	336.30
12.90	15.10	15.10	—	16.70	19.20	20.90	20.90	25.00	28.70	33.40
19.00	22.20	22.20	—	24.50	28.20	30.90	30.90	37.00	42.50	
35.10	41.00	41.00	—	45.20	52.00	57.50	57.50	69.10	79.40	102.70
58.90	71.90	71.90	—	87.00	100.10	110.40	110.40	139.30	160.20	180.20
98.40	120.00	120.00	—	145.20	167.00	185.00	185.00	233.60	268.60	296.80

(ii) Additional supplementary charge of 5% for distances upto and inclusive of 500 km, and 10% for distances beyond 500 km, is levied on all commodities (except salt).

⁵ w.e.f. 15-7-80:

Additional supplementary charge at 15% is levied on all commodities except salt for domestic use, foodgrains, pulses, sugar, fodder kerosene oil, edible and hydrogenated oils, *chemical manures*, firewood, charcoal, milk & medicines and safety matches

⁸ w.e.f. 1-4-81:

Additional supplementary charge at 15% is levied on all commodities except, salt for domestic use, firewood and charcoal, (Both for wagonloads & smalls).

⁹ w.e.f. 1-1-82:

Additional supplementary charge at 10% for distances upto and inclusive of 500 km, and 15% for distances beyond 500 km is levied.

¹⁰ w.e.f. 1-4-82:

Additional supplementary charge at 15% is levied on all commodities except firewood, medicines, fodder, kerosene oil and safety matches. Exemption granted to *chemical manures* on 15-7-80 (?) is withdrawn from 1-4-82.

**13 02. CURRENT RAILWAY FREIGHT FOR FERTILISERS AND FERTILISER
RAW MATERIALS (effective from 1.4.1983)**

Articles	Packing condition		General classification	
	Internal*	Outer*	Smalls	Wagon loads
I. Chemicals Manures—Division 'B'				
1. Ammonium chloride**	} IP/3(b)	P/7 or P/9 or P/56	150*	110*
2. Ammonium sulphate—S/44				
3. Ammonium sulphate nitrate				
4. Calcium ammonium nitrate				
5. Ground phosphate†	} IP/3(b)	P/7 or P/9 or P/56	150	110
6. Manure mixture				
7. Minerals phosphate				
8. Muriate of potash [@] —S/44	}	—	150	110
9. Gypsum { powder				
broken moulds				
10. Lime stone	—	P/36	150	85
11. Single superphosphate	IP/3(b)	P/7 or P/9 or P/56	150	110
II Chemical Manures—Division 'A'@				
12. Diammonium phos.—S/44 (DAP)	IP/3(b)	P/12 or P/56	160	125
13. Monoammonium phosphate—S/44	IP/3(b)	P/12	160	125
14. Urea**—S/44	IP/3(b)	P/9 or P/56	160	125
15. Urea sweepings—S/33	IP/3(b)	P/9 or P/56	160	125
16. Ammonium phosphate	} IP/3(b)	P/7 or P/9 or P/56	160	125
17. Ammonium nitrophosphate				
18. NPK complex fertilisers				
19. SNPK complex fertilisers				
20. Zinc sulphate—S/45	—	P/7 or P/8 or P/56 or P/56	160	125
21. Nitrophosphate	} IP/3(b)	P/7 or P/9 or P/56	160	125
22. Triple superphosphate—S/49				
23. Sulphate of potash				
III. Feedstocks/Raw materials/ Acids				
1. Sulphur	—	cP/7 or cP/8 or cP/28	160	125
2. Furnace oil	—	—	172	125
3. Naphtha—flashing point at or above 24.4.°C	—	—	160	125
—flashing point below 14.4.°C	—	—	260	100.0C.C.
4. Fuel oil	—	—	—	110.0C.C.
5. (a) Coal/soft coke	—	P/36	—	75
(b) Hard coke	—	P/36	—	85
6. Sulphuric acid	—	—	240	200
7. Phosphoric acid	—	—	260	220
IV. Organic manures, Oilcake		P/47	90	65

† w.e.f. 1.6.1981, powder rockphosphate is classified as 65 for smalls and 45 for wagonloads as against 67.5 and 47.5 respectively brought into force from 5.9.1977 and again on 15.6.81.

(Continued)

13.02. CURRENT RAILWAY FREIGHT FOR FERTILISERS AND FERTILISER RAW MATERIALS (effective from 15.9.1974) (Concluded)

* For details and "Special Conditions—S/32 and S/33" see I.R.C.A. Goods Tariff No. 33 part I.

** For agricultural purposes only.

† While availing classifications for these fertilisers, a certificate has to be obtained from the officials of the State Deptt. of Agriculture that the consignment is meant for use as manure (in force from Sept. 1, 1965).

@ From 1.4.1969, DAP and Urea are classified under 'Chemical Manures—Division A'. From 11.10.1971, Ammonium nitrophosphate, Ammonium phosphate, NPK complex fertilisers, Urea sweepings and SNPK joined this Division. From 15.11.1975 Nitrophosphate and Sulphate of Potash have also been included in Division 'A' (vide Railway Board notification No. TCR/10/15/75/44 dated 17th October 1975 and 6th December 1975).

@@ The compliance with the "Special Condition—S/33" should not be demanded where the consignments are booked as fertilisers by the Regional Director (Food) or the Food Corporation of India or MMTC or Indian Potash Ltd.

Note:

- A. (i) To all fertilisers listed under "Division A" and "Division B" the tariff rates apply to a minimum wagon load of quintals specified below:—
 On Broad Gauge (BG)—220 quintals for bogie wagon except DAP and $ZnSO_4$ —150 quintals.
 On Metre Gauge (MG)—145 quintals for bogie wagon except DAP and $ZnSO_4$ —110 quintals.
 On Narrow Gauge (NG)—80 quintals for bogie wagon except DAP and $ZnSO_4$ —65 quintals.
- (ii) For sulphur and gypsum, weight of

charges is the carrying capacity of the wagon used.

- (iii) Furnace oil, naphtha and sulphuric acid are moved in tank wagons and weight of charges is the carrying capacity (C.C.) of the wagon used, if not in tank wagons:—

Article	BG	MG	NG
Sulphuric acid	110	90	65
Furnace oil	110	90	65
Naphtha	above 24.4°C	110	90
	below 24.4°C	110	80
Phosphoric acid	100	80	55
Organic manures, oil-cake	205†	130††	80

B. (i) Since publishing railway freight rates (pp. 1-442 and 1-447) in Fertiliser Statistics 1972-73 the tariffs were revised on 1.4.1974 keeping classifications unaltered

- (ii) The above rates were revised during 1974, 1976 and 1979 with effect from 15.9.1974, 1.4.1976 and 1.4.1979 by levying a supplementary charge on the total freight charge in respect of all goods traffic (except foodgrains, pulses and edible oil) on the following scale:—

	With effect from						
	15.9.74	1.4.76 ¹	1.4.79 ²	15.7.80 ³	1.4.81 ⁴	1.1.82	1.4.82
For distances upto and inclusive of 500 km	16½%	5%	5%	15%	15%	10%	15%
For distances beyond 500 km	22%	10%	10%	15%	15%	15%	15%

† When floor area is less than 21.1 sq. metres.

†† When floor area is less than 12.5 sq. metres.

C.C.—Carrying capacity.

¹ Excluding rockphosphate and fertilisers.

² Excluding only salt (and including foodgrains, pulses and edible oil).

³ Excluding chemical manures (including raw materials).

⁴ Excluding salt, firewood and charcoal.

**13 03. STATEWISE NO. OF VILLAGES, BLOCKS AND BLOCKS HAVING NO
RAIL LINE/HEAD**

State	Villages	Blocks	No. of villages per block	No. of blocks having no rail line/head
Andhra Pradesh	29,428	324	91	227
Assam	23,331	130	179.47	85
Bihar	78,027	587	133	126
Gujarat	18,697	218	86	57
Haryana	7,064	87	81	33
Himachal Pradesh	18,929	69	274	59
Jammu & Kashmir	6,742	73	92	70
Karnataka	29,533	175	169	109
Kerala	1,268	144	9	101
Madhya Pradesh	76,847	457	168	345
Maharashtra	38,661	343	112	173
Manipur	1,993	14	142	14
Meghalaya	4,982	24	208	24
Nagaland	966	21	46	21
Orissa	51,639	314	164	245
Punjab	12,888	117	110	51
Rajasthan	35,795	232	154	116
Sikkim	215	—	215	61
Tamil Nadu	16,660	374	44	197
Tripura	5,215	17	307	16
Uttar Pradesh	124,592	875	142	540
West Bengal	41,392	335	124	158
Union Territories	4,500	96	98	72
All India	629,364	5,026	125	2,900

13.04. NO. OF RAILWAY RAKE/JUMBO RAKE/HANDLING POINTS—ZONEWISE

Railway zone	Railway rake handling points	Jumbo rake siding
C.R.	25	73
E.R.	8	18
S.R.	33	35
N.E.R.	1	1
N.E.F.R.	3	2
S.C.R.	22	23
N.R.	55	118
S.E.R.	18	22
W.R.	8	21
Total	173	313

13.05. LIST OF RAILWAY RAKE HANDLING TERMINALS

Sl. No.	Name of Stations	Sl. No.	Name of Stations
Central Railway		12.	Ongole
1.	Agra Foodgrain siding	13.	Patakoli
2.	Ambernath	14.	Rajamundry
3.	Ballabgarh	15.	Raichur
4.	Belaganj	16.	Sanatnagar FCI siding
5.	Bhopal	17.	Sangli
6.	B.P.T.	18.	Secunderabad
7.	Dehu Road foodgrain siding	19.	Tadepalligudem
8.	Ghorpuri foodgrain siding	20.	Tenali
9.	Itarsi	21.	Thimmanacheria FCI siding
10.	Jhansi Defence Siding	22.	Vijayawada
11.	Jabalpur	Eastern Railway	
12.	Jalgaon	1.	Cossipur Road
13.	Kaini-Marwara	2.	Chitpur
14.	Khandwa	3.	Danapur
15.	Manmad foodgrain siding	4.	Dighaghat
16.	Madanmahal	5.	Gaya
17.	New Muland	6.	Howrah Goods
18.	Nishalpara	7.	Kalighat
19.	Nagpur	8.	Mokameh
20.	Nasik	Northern Railway	
21.	Sayour	1.	Ahmedgarh
22.	Satna	2.	Abohar
23.	Sholapur	3.	Aligarh
24.	Vidisa	4.	Batala
25.	Wadi Bunder	5.	Butari
North Eastern Railway		6.	Bulandshahr
1.	Narainpur Anant	7.	Bhatinda
North Frontier Railway		8.	Chakki Bank
1.	Jogighopa	9.	Chanethi
2.	New Bongaigaon	10.	Dasuya
3.	New Jalpaiguri	11.	Dhariwal
South Central Railway		12.	Ferozpur City
1.	Adoni	13.	Faridkot
2.	Bhimavaram	14.	Faridabad
3.	Eluru	15.	Gidderbaha
4.	Guntur	16.	Hatheras Jn.
5.	Gudivada	17.	Harihala
6.	Hyderabad	18.	Jagraon
7.	Kakinada	19.	Jullundur City
8.	Karad	20.	Jakkhal
9.	Kothapur	21.	Kartarpur
10.	Miraj	22.	Kapurthala
11.	Nellore	23.	Khanna
		24.	Kurukshehra

(Continued)

13.05. LIST OF RAILWAY RAKE HANDLING TERMINALS (Concluded)

Sl. No.	Name of Stations	Sl. No.	Name of Stations
Northern Railway (Concluded)		15.	Rourkela
25.	Kaithal	16.	Ranchi
26.	Karnal	17.	Shalimar
27.	Kanpur	18.	Tatanagar
28.	Malerkotla	Southern Railway	
29.	Moga	1.	Alwaye
30.	Makhu	2.	Angamali
31.	Mukerian	3.	Bengarpet
32.	Malout	4.	Bangalore City
33.	Masana	5.	Bangalore Cantt.
34.	Muzaffarnagar	6.	Calicut
35.	Meerut City Mandi	7.	Cochin Harbour Terminus
36.	Philaur	8.	Cauvery
37.	Phagwara	9.	Coimbatore
38.	Patiala	10.	Cananore
39.	Patti	11.	Coimbatore North
40.	Rajpura	12.	Erode
41.	Rohtak	13.	Ernakulam Goods
42.	Sunam	14.	Komkkupat Goods
43.	Sangrur	15.	Krishmarajapuram
44.	Sultanpur	16.	Katpadi
45.	Sanehwal	17.	Kalamaseri
46.	Sirhind	18.	Keechuvalli
47.	Sitapur City (Thomasganj Siding)	19.	Kottayam
48.	Shivpur	20.	Mettupalaiyam
49.	Sonepat	21.	Mangalore
50.	Shahjahanpur	22.	Olavakot
51.	Subedarganj	23.	Podanur
52.	Tanda Umar	24.	Pilamedu
53.	Taran Taran	25.	Palghat
54.	Tangra	26.	Quilon
55.	Tohana	27.	Rayapuram
South Eastern Railway		28.	Salem
1.	Bilaspur	29.	Salem Market
2.	Barhampur	30.	Salt Cotaurs
3.	Bubaneswar	31.	Tiruppur
4.	Cuttack	32.	Tiruchirapalli Goods
5.	Chakaradharpur	33.	Trichur
6.	Durg	Western Railway	
7.	Hatia	1.	Asarva
8.	Jharsuguda	2.	Billimora
9.	Jhargram	3.	Gandhidham
10.	Khurda Road	4.	Indore
11.	Kharsia	5.	Kankaria
12.	Kharagpur	6.	Kandivali
13.	Madirhasaud	7.	Sabarmati
14.	Raipur	8.	Suret

Note: For upto date list please consult Railway Board.

Source: Ministry of Railway (Railway Board), New Delhi.

**13 06. LIST OF NAMES OF STATIONS/SIDING CAPABLE OF HANDLING
JUMBO RAKES**

Central Railway

1. Agra Cantt. Loco Shed Sdg.
2. Agra Foodgrain siding
3. Amraoti
4. Akola
5. Ambernath
6. Ajni Foodgrains siding
7. Apta HOC siding
8. Amia Loco Shed
9. Ahmednagar
10. BPT Railway
11. Belagunj
12. Ballabgarh
13. Ballabgarh Loco Shed
14. Bhopal
15. Bhopal Loco Shed
16. Bhusawal
17. BJSR Siding Satna
18. Bina
19. Badnera Loco Shed Sdg.
20. Balharshah Loco Shed Sdg.
21. Byculla BB Co. Sdg.
22. Birlanagar Industries Sdg.
23. Belapur
24. Bhigvan
25. Dehu Road Foodgrain Sdg.
26. Daund
27. Damoh Loco Shed
28. Faridabad
29. Ghorpuri Foodgrain Sdg.
30. Gwalior Goods Shed
31. Gulbarga
32. Hotgi Bagalkot Sdg.
33. Hotgi TP Loco
34. Itarsi
35. Igatpuri Loco Shed
36. Jhansi Defence Sdg.
37. Jabalpur
38. Jalgaon
39. Junnardeo Loco Shed
40. Katni Murwara
41. Khandwa
42. Kurduwadi
43. Kasbesukene HAL Sdg.
44. Kymore ACC Sdg.
45. Kalyan Chola P. House Sdg.
46. Kalyan NRC Sdg.

47. Kanchegaon
48. Kopergaon
49. Manmad Foodgrain Sdg.
50. Madanmahal
51. Mathura Goods Shed
52. MSEC Paras
53. New Mulund Goods Shed
54. Nishatpura
55. Nagpur
56. Nasik
57. Nepanagar Paper Mill Sdg.
58. New Katni Loco Shed
59. Nandgaon
60. Nagpur Coal Sdg.
61. Pune
62. Saugar
63. Satna
64. Sholapur
65. Sion
66. Shahbad ACC Sdg.
67. Trombay (Tata P.H. Sdg.)
68. Thane MISG
69. Vidisha
70. Vidya Vihar
71. Wadi Bunder
72. Wardha Loco Shed
73. Wadi Loco Shed

Eastern Railway

1. Andal
2. Asansol
3. Chitpur
4. Cossipur
5. Dalla
6. Danapur
7. Dighaghat
8. Howrah Goods
9. Gaya
10. Kausunda
11. Kalyani
12. Kalighat
13. Patherdih
14. Patratu
15. Mokamah
16. Rajbara
17. Siramptur
18. Katras

North Eastern Railway

1. Narainpur Anant

**13 06. LIST OF NAMES OF STATIONS/SIDING CAPABLE OF HANDLING
JUMBO RAKES (Continued)**

North East Frontier Railway

1. New Jalpaiguri
2. New Bongaigaon

South Central Railway

1. Adoni
2. Bhimavaram
3. Eluru
4. Guntur
5. Gudivada
6. Hyderabad
7. Kakinada
8. Karad
9. Kolhapur
10. Miraj
11. Nellore
12. Ongole
13. Palakol
14. Rajamundri
15. Raichur
16. Beddipalam (Guntur)
17. Santnagar (FG Sdg.)
18. Sangli
19. Secunderabad
20. Tadepaligudem
21. Tenali
22. Nirmalanchaerla FCI Sdg.
23. Vijayawada

Southern Railway

1. Alwaye
2. Angamally
3. Bangalore City
4. Bangarapet
5. Baiyyappanhalli
6. Bangalore Cantt.
7. Calicut
8. Cochin Harbour Terminus
9. Chingavanam
10. Cauvery
11. Coimbatore
12. Coimbatore North
13. Cannanore
14. Erode
15. Ernakulam Goods
16. Korukkupet Goods
17. Katpadi
18. Krishnarajapuram Tranship Shed
19. Kalamasjeri
20. Kottayam
21. Kochuvelli
22. Mettupalayam
23. Mangalore
24. Palghat
25. Podanur
26. Pilamedu
27. Palghat Town
28. Quilon

2. Rayapuram
30. Salt Cotaurs
31. Salem Jn.
32. Salem Market
33. Tiruppur
34. Tiruchirappalli Goods
35. Trichur

Northern Railway

1. Abohar
2. Amritsar
3. Alamnagar
4. Aligarh
5. Ahmedgarh
6. Ambala Cantt.
7. Butari
8. Baiata
9. Banga
10. Beas
11. Bhagtanwala
12. Bharoli
13. Bari Brahman
14. Bhatinda
15. Barnala
16. Barabanki
17. Bareilly
18. Bulandshahr
19. Bijnor
20. Cheharata
21. Chakki Bank
22. Chanderi
23. Chandausi
24. Chanethi
25. Dhariwal
26. Dasuya
27. Delhi Kishanganj
28. Dayabasti
29. Dhuri
30. Dankaur
31. Etawah
32. Faridkot
33. Ferozepur City
34. Ferozepur Cantt.
35. Faizabad
36. Ferozabad
37. Fazalganj
38. Giddarbaha
39. Gurdaspur
40. Ghaziabad
41. Hoshiarpur
42. Haridwar
43. Hathras Jn.
44. Hardoi
45. Hapur
46. Hardwar BHEL
47. Harthala
48. Jakhai
49. Jalalabad
50. Jaloreon
51. Jandiala

**13 06. LIST OF NAMES OF STATIONS/SIDING CAPABLE OF HANDLING
JUMBO RAKES (Concluded)**

Northern Railway (Concluded)

52. Jullundur Cantt.
53. Jullundur City
54. Jammu Tawi
55. Jagadhari
56. Juhi Goods Shed
57. Kapurthala
58. Kartarpur
59. Kaithal
60. Karnal
61. Kurukshetra
62. Khanna
63. Kashi
64. Kanpur Central
65. Khurja Jn.
66. Ludhiana
67. Leharagaga
68. Mullanpur
69. Makhu
70. Ma'erkotla
71. Malout
72. Mukerian
73. Madhopur Punjab (cement rakes)
74. Muzaffarnagar
75. Meerut City Mandi
76. Mansa
77. Modinagar
78. Mandi Gobindgarh
79. Mirzapur
80. Moradabad
81. Moga
82. N w Azadpur
83. Nangloi
84. Nabha
85. Naini
86. Phillaur
87. Phagwara
88. Patti
89. Patiala
90. Partapgarh
91. Quilla Raipur
92. Rohtak
93. Rajpura
94. Rampurphul
95. Raibareilly
96. Rampur
97. Rishikesh
98. Sultanpur Lodi
99. Sangrur
100. Sunam
101. Sabzimandi
102. Sakurbasti
103. Sanehwal
104. Saharanpur
105. Sirhind
106. Shahaanji
107. Seopur
108. Subedar Ganj
109. Shikohabad

110. Shahjehanpur
111. Sonapat
112. Tangra
113. Taran Taran
114. Talwani
115. Tanda Urmur
116. Tughlakabad
117. Thompsonganj
118. Topara

Western Railway

1. Asarva
2. Baroda
3. Carnac Bridge
4. Godhra
5. Gandhidham
6. Gwalior Rayon Sdg. St. Nagda
7. Indore
8. Kota
9. Kankaria
10. Kandivli (Foodgrains Sdg.)
11. Kandla Fort
12. Pralap Nagar
13. Sabarmati (Foodgrains Sdg.)
14. Surat

(Two Points)

1. Asoknagar-Guna
2. Ankaleswar-Bharuch
3. Bular-Bhapi
4. Nadiad-Anad
5. Navasari-Billimora
6. Rattlam-Meghnagar
7. Ujjain-Dewas

South Eastern Railway

1. Balasore
2. Bankura
3. Behrampur
4. Bilaspur
5. Bubaneswar
6. Cuttack
7. Chakradharpur
8. Durg
9. Hathia
10. Jharsuguda
11. Jhargram
12. Khurda Road
13. Kharsia
14. Kharagpur
15. Mandirbasud
16. Midnapur
17. Raipur
18. Rourkela
19. Ranchi
20. Raigarh
21. Shalimar
22. Tatanagar

Note: For up-to-date list, please consult Railway Board.

Source: Ministry of Railway (Railway Board), New Delhi.

13.07. ESTIMATES OF CAPACITY, PRODUCTION, CONSUMPTION AND GAP OF N, P₂O₅ AND K₂O
(1983-84 to 1989-90)

(Unit '000 tonnes)

Sl. No.	Year	Capacity (at the end of year)				Production				Consumption ¹						Gap			Gap as percentage of consumption			
		N	P ₂ O ₅	Total (N+P ₂ O ₅)	= per cent over previous year	N	P ₂ O ₅	Total (N+P ₂ O ₅)	= per cent over previous year	N	P ₂ O ₅	Total (N+P ₂ O ₅)	= per cent over previous year	K ₂ O	Total (N+P ₂ O ₅ +K ₂ O)	= per cent over previous year	N	P ₂ O ₅	Total (N+P ₂ O ₅)	N	P ₂ O ₅	Total (N+P ₂ O ₅)
1.	1983-84	5281	1678	6959	3.7	3500	1000	4500	1.9	4750	1619	6369	11.9	811	7810	12.0	1250	619	1869	26.3	38.2	29.3
						(2.0)	(1.7)		(11.5)	(13.2)			(12.3)									
2.	1984-85	6055	2087	8142	17.0	4131	1283	5414	20.3	5018	1691	6709	5.3	856	7565	5.4	887	408	1295	17.7	24.1	19.3
						(18.0)	(28.3)		(5.6)	(4.4)			(5.5)									
3.	1985-86	7318	2627	9945	22.1	4792	1535	6327	16.9	5369	1824	7193	7.2	917	8110	7.2	577	289	866	10.7	15.8	12.0
						(16.0)	(19.6)		(7.0)	(7.9)			(7.1)									
4.	1986-87	7833	2977	10810	8.7	5285	1901	7186	13.6	5733	1961	7694	7.0	280	8674	7.0	448	60	508	7.8	3.1	6.6
						(10.3)	(23.8)		(6.8)	(7.5)			(6.9)									
5.	1987-88	8868	2977	11845	9.6	6060	2101	8161	13.6	6109	2104	8213	6.7	1045	9258	6.7	49	3	52	0.8	0.1	0.6
						(14.7)	(10.5)		(6.6)	(7.3)			(6.6)									
6.	1988-89	9558	2977	12535	5.8	6646	2131	8777	7.5	6497	2252	8749	6.5	1113	9862	6.5	—	121	—	—	5.4	—
						(9.7)	(1.4)		(6.4)	(7.0)			(6.5)									
7.	1989-90	9903	2977	12880	2.8	7164	2131	9295	5.9	6897	2405	9302	6.3	1182	10484	6.3	—	274	7	—	11.4	0.08
						(7.8)	(—)		(6.2)	(6.8)			(6.2)									

¹= Continuous time series data on consumption—1961-62 to 1982-83 (actual) with 1983-84 (FAI est.) filled in the quadratic curve.

() = = Per cent over previous year.

Note: Entire requirement of K₂O is met through imports, therefore 'Gap' and 'Gap as percentage of consumption' have not been shown in the case of K₂O.

PART II

**AGRICULTURAL AND
ALLIED STATISTICS**

1.00. CLASSIFICATION OF AREA

1.01. ALL-INDIA CULTIVATED AND IRRIGATED AREA—GROSS AND NET (1951-52 to 1981-82)

Year	Area sown			Area irrigated			Gross area under HYV**	Share of gross irrigated to gross sown area	Increase(+)/decrease (-) over previous year	
	Gross	Net	More than once	Gross	Net	More than once			Gross sown area	Gross irrigated area
← ('000 hectares) →							← per cent →			
1951-52	133,234	119,400	13,834	23,180	21,049	2,131	—	17.4	1.0	2.7
1952-53	137,675	123,442	14,223	23,305	21,122	2,183	—	16.9	3.3	0.5
1953-54	142,480	126,806	15,674	24,303	21,869	2,494	—	17.1	3.4	4.5
1954-55	144,087	127,845	16,242	24,948	22,088	2,860	—	17.3	1.1	2.4
1955-56	147,311	129,156	18,155	25,642	22,758	2,884	—	17.4	2.2	2.8
1956-57	149,492	130,848	18,644	25,707	22,533	3,174	—	17.2	1.5	-0.3
1957-58	145,832	129,080	16,752	26,628	23,156	3,472	—	18.3	-2.4	3.5
1958-59	151,629	131,828	19,801	26,948	23,401	3,547	—	17.8	3.7	1.2
1959-60	152,824	132,939	19,885	27,454	24,037	3,417	—	18.0	0.7	1.8
1960-61	152,772	133,199	19,573	27,980	24,661	3,319	—	18.3	-0.1	1.9
1961-62	156,209	135,399	20,810	28,460	24,884	3,576	—	18.2	2.2	1.7
1962-63	156,760	136,341	20,419	29,453	25,665	3,788	—	18.8	0.3	3.5

1963-64	156,963	138,488	20,480	29,707	25,888	3,819	--	18.9	0.1	0.8
1964-65	159,229	138,120	21,109	30,705	26,600	4,105	--	19.3	1.4	3.3
1965-66	155,276	136,198	19,078	30,901	26,344	4,557	--	19.9	-2.5	0.6
1966-67	157,355	137,232	20,123	32,683	26,907	5,776	1,886	20.8	1.3	5.7
1967-68	163,736	139,876	23,860	33,207	27,193	6,014	6,036	20.3	4.0	1.6
1968-69	159,529	137,313	22,216	35,483	29,009	6,474	9,297	22.2	-2.6	6.8
1969-70	162,265	138,772	23,493	36,970	30,197	6,777	11,413	22.8	1.7	4.2
1970-71	165,791	140,784	25,007	38,194	31,103	7,091	15,383	23.0	2.2	3.3
1971-72	165,194	140,040	25,154	38,431	31,546	6,885	18,173	23.3	-0.4	0.6
1972-73	162,150	137,570	24,580	39,059	31,837	7,222	22,321	24.1	-1.9	1.6
1973-74	169,870	143,060	26,810	40,280	32,550	7,730	26,038	23.7	4.8	3.1
1974-75	164,190	138,380	25,810	41,740	33,710	8,030	27,337	24.4	-3.3	3.6
1975-76	170,994	142,224	28,770	43,190	34,491	8,699	31,888	25.3	4.1	3.5
1976-77	167,280	140,180	27,100	43,530	35,150	8,380	33,560	26.0	-2.2	0.8
1977-78	172,305	141,936	30,369	46,030	36,553	9,477	38,930	26.7	3.0	5.7
1978-79*	175,177	142,938	32,239	48,090	37,961	10,129	40,134	27.5	1.7	4.5
1979-80*	167,200	141,000	26,200	50,390	40,500	9,890	38,383	30.1	-4.6	4.8
1980-81*	173,000			55,020			45,250	31.8	3.5	9.2
1981-82*	175,000			57,700			46,500	33.0	1.2	4.9

* Provisional.

**Total area covered under HYVs of wheat, maize, bajra, jowar and paddy.

Note: HYV programme was launched in 1966-67.

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

1.02. LAND UTILISATION

Zone/State	Geo- graphical area	Reporting area for land utilisation statistics	Not available for cultivation				Other ur Permaner pastures and other grazing lands
			Forests	Area put to non-agri- cultural uses	Barren & uncultu- rable land	Total (5)+(6) = (7)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Central	108,096	108,858	21,338	5,902	6,423	12,325	5,009
Madhya Pradesh	44,284	44,198	14,205	2,182	2,303	4,485	2,877
Rajasthan	34,222	34,704 ^h	2,023	1,469	2,960	4,429	1,834
Uttar Pradesh	29,441	29,809	5,109	2,218	1,146	3,364	298
Delhi	149	147	1	33	14	17	*
East	68,815	65,274	22,261	3,350	6,402	9,753	991
Arunachal Pradesh ^{b 1}	8,358	5,550	5,154	—	19	19	—
Assam ^h	7,852	7,852	1,964	882	1,533	2,415	185
Bihar	17,388	17,330	2,758	1,660	1,008	2,668	144
Manipur ^a	2,236	2,211	602	26	1,419 [@]	1,445 [@]	'
Meghalaya	2,249	2,249	812	84	231	315	17
Nagaland	1,653	1,042	288	48	NA	49	NA
Orissa	15,578	15,540	6,655	557	279	836	534
Sikkim ^l	730	714	265	70	209	279	103
Tripura ^c	1,048	1,048	578	'	120	120	'
West Bengal ^l	8,785	8,849 ^h	1,185	'	1,382	1,382	'
Mizoram ^a	2,119	2,101	1,303	10	201	211	4
Andaman & Nicobar Islands	829	787	697	13	1	14	4
North	37,260	17,113	4,072	1,339	558	1,897	1,194
Haryana	4,422	4,404	110	378	73	451	43
Himachal Pradesh	5,567	3,002	827 ⁺⁺	198	156	354	1,024
Jammu & Kashmir	22,224	4,674 ⁻	2,918 ^d	333	230	563	124
Punjab	5,036	5,033	217	430	99	529	3
Chandigarh	11						Not
South	63,803	63,447	12,351	5,134	3,887	9,021	2,513
Andhra Pradesh	27,682	27,440	6,222	2,134	2,349	4,483	948
Karnataka	19,177	19,070	3,016	1,051	853	1,904	1,398
Kerala	3,886	3,886	1,082	260	75	335	6
Tamil Nadu	13,009	13,001	2,031	1,678	610	2,288	161
Pondicherry	48	47	—	11	*	11	*
Lakshya Deep ^b	3	3	—	*	*	*	—
West	50,804	49,989	7,419	2,076	4,227	6,303	2,448
Gujarat ^c	19,598	18,811	1,969	1,057	2,486	3,543	850
Maharashtra ^c	30,776	30,758	5,324	998	1,725	2,723	1,592
Goa Daman & Diu	381	371	105	21	16	37	1
Dadra & Nagar Haveli	49	49	21	*	—	*	5
All India	328,778	304,681	67,441	17,862	21,497	39,299	12,155

PATTERN—1978-79 (Provisional)

('000 hectares)

cultivated land excluding fallow land			Fallow land			Net area sown	Total cropped area	Area sown more than once
Land under misc. tree crops and groves not included in net area sown ¹ (9)	Culturable waste land (10)	Total (8) + (9) + (10) = (11)	Fallow lands other than current fallows (12)	Current fallows (13)	Total (12) + (13) = (14)			
834	10,070	15,913	3,673	3,736	7,409	51,873	63,660	11,787
144	1,849	4,870	933	858	1,791	18,847	21,747	2,900
10	6,882	6,726	2,118	1,937	4,055	15,471	17,496	2,025
679	1,338	2,315	607	932	1,539	17,482	24,300	6,818
1	1	2	15	9	24	73	117	44
1,880	1,487	4,358	2,452	2,592	5,044	23,858	32,148	8,290
50	85	135	105	25	130	112	128	16
249	130	564	122	108	230	2,679	3,311	632
217	468	829	924	1,619	2,543	8,532	11,381	2,849
24	f	24	—	a	a	140	213**	73@
145	455	617	261	51	312	193	223	30
45	N.A.	45	426	84	510	150	150	—
489	260	1,283	138	531	669	6,097	8,275	2,178
4	1	108	1	a	1	61	65	4
98	2	100	2	2	4	246	385	139
531	f	531	21	k	212	5,539	7,878 ^c	2,339@
3	74	81	259	171@	430	77*	106*	29@
25	12	41	2	1	3	32	33	1
153	369	1,716	12	304	316	9,112	14,077	4,955
a	36	79	—	114	114	3,650	5,522	1,872
47	136	1,207	4	49	53	561	935	374
102	149	375	8	86	94	724	990	266
4	48	55	—	55	55	4,177	6,630	2,453
Available								
840	1,904	5,257	2,153	4,512	6,665	30,153	34,879	4,726
263	888	2,099	1,053	2,234	3,287	11,349	13,121	1,772
315	530	2,243	625	967	1,592	10,315	11,133	818
67	123	196	27	42	69	2,204	2,886	682
193	362	716	448	1,267	1,715	6,251	7,684	1,433
(2)	1	3	a	2	2	31	52	21
—	a	a	—	—	—	3	3	a
203	3,118	5,769	1,257	1,299	2,556	27,942	30,413	2,471
4	2,002	2,856	414	486	900	9,543	10,389	846
198	1,021	2,811	843	812	1,655	18,245	19,860	1,615
1	93	95	‡	‡	‡	134	143	9
—	2	7	—	1	1	20	21	1
3,810	16,848	33,013	9,547	12,443	21,990	142,938	175,177	32,239

(Continued)

1.02. LAND UTILISATION PATTERN—1978-79 (Provisional) (Continued)

- a Below 500 hectares;
- b Relates to the year 1976-77 except otherwise stated;
- c Relates to the year 1977-78;
- d Includes forest area reported by State Chief Conservator of Forest.
- e Ad hoc estimates.
- f Included under the head 'Land under miscellaneous tree crops & groves etc.'
- h The figures of reporting area in case of U. P. and W.B are under verification.
- Included under the head 'Barren and unculturable land.'
- h Included under the head 'Fallow land other than current fallows'.
- † Data relates to the year 1976-77 and is based on figures collected for agricultural census 1976-77.
- o Relates to year 1974-75 except otherwise stated.
- * Estimated in relation to total area under Forecast Crops.
- ** Relates to total area under Forecast Crops.
- @ Adjusted.
- Excludes information of area under the unlawful occupation of China and Pakistan.
- Area under forest for the year 1977-7 and 1978-79 have been shown as 677,000 and 827,000 hectares as per the existing villages records. The forest area reported by the Chief Conservator of Forests for these years is 21,84,000—21,85,000 hectares, respectively. This discrepancy is under verification.
- ‡ Not available separately, included under 'culturable waste'.

DEFINITION OF LAND USE CLASSIFICATION

1. Geographical Area

The latest figure of geographical area for the State/Union Territory/District as furnished by the Central Statistical Organisation based on the Surveyor General of India's data should only be used.

2. Reporting Area for Land Utilisation Purposes

The reporting area stands for the area for which data on land use classification of area are available. In areas where land utilisation figures are based on land records, reporting area is the area according to village papers i.e., the papers prepared by the village accountants. In some cases the village papers are not prepared for forest areas but the magnitude of such areas is known; also there are tracts in many States for which no village papers exist but for which ad-hoc estimates of classification of area etc. are framed to complete the coverage. In such cases, reporting area should give the summation of the area for which village papers actually exist and the area for which ad-hoc estimates are available.

3. Forests

Area under forests includes all lands classified as forests under any legal enactment dealing with forests or administered as forests, whether State-owned or private, and whether wooded or maintained as potential forest land.

The area of crops raised in the forest and grazing lands or areas open for grazing within the forests should remain included under the forest area.

4. Area Not Available for Cultivation

Area under non-agricultural land uses

This stands for all lands occupied by buildings, roads and railways or under water e.g. rivers and canals and other lands put to uses other than agricultural.

Barren and unculturable land

This covers all barren and unculturable land like mountains, deserts, etc. Land which cannot be brought under cultivation unless at a high cost should be classed as unculturable whether such land is in isolated blocks or within cultivated holdings.

**1.02. LAND UTILISATION PATTERN—1978-79 (Provisional)
(Concluded)**

5. Other Uncultivated Land Including Current Fallow

Permanent pastures and other grazing lands

These cover all grazing lands, whether they are permanent pastures and meadows or not. Village common grazing land shall be included under this head.

Miscellaneous tree-crops and groves not included in the net area sown

Under this class is included all cultivable land which is not included under "net area sown" but is put to some agricultural use. Land under casurina trees, thaching grass, bamboo bushes and other groves for fuel etc., which are not included under orchard shall be classed under this category.

Culturable waste

These include all lands available for cultivation whether or not taken up for cultivation once, but not cultivated during the current year and last five years or more in succession. Such lands may be either fallow or covered with shrubs and jungles which are not put to any use. (They may be assessed or unassessed and may be in isolated blocks or within cultivated holdings.) Land once cultivated

for five years in succession shall also be included in this category at the end of the five years.

6. Fallow Lands

Fallow land other than current fallows

This implies all lands which were taken up for cultivation but are temporarily out of cultivation for a period of not less than one year and not more than five years. The reasons for keeping a land fallow may be one of the following: (1) poverty of cultivators, (2) inadequate supply of water, (3) material climate, (4) silting of canals and rivers, and (5) unremunerative nature of farming.

Current fallows

This class comprises cropped areas which are kept fallow during the current year. For example, if any seeding area is not cropped again in the same year it may be treated as current fallow.

7. Net Area Sown

This represents the area sown with crops and orchards counting area sown more than once in the same year only once.

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

1.03. AREA UNDER DIFFERENT SOIL TYPES—ALL INDIA

		(million hectares)
Sl. No.	Type of soils	Approximate area
1.	Alluvial Soils	101.2
2.	Alluvial Soils Highly Calcareous	8.9
3.	Coastal Alluvium	8.5
4.	Deltaic Alluvium (occasionally saline)	10.0
5.	Alluvial Soils Affected by Salinity and Alkalinity	6.9
6.	Desert Soils	14.6
7.	Deep Black Soils	6.9
8.	Medium Black Soils	18.6
9.	Shallow Black Soils	4.9
10.	Black Soils Affected by Salinity and Alkalinity	6.9
11.	Black Soils Undifferentiated	12.5
12.	Mixed Red and Black Soils	10.5
13.	Red Soils	30.4
14.	Red Gravelly Soils	1.6
15.	Red and Yellow Soils	17.8
16.	Laterite Soils	10.1
17.	Laterite and Lateritic Soils	2.0
18.	Brown Soils under Deciduous	1.6
19.	Grey and Brown Soils	3.6
20.	Hill Soils	2.4
21.	Podsolid Soils	3.6
22.	Forest Soils Laterised	6.5
23.	Foothill Terai Hill Soils	5.7
24.	Mountain Meadow Soils	11.7
25.	Skeletal Soils	2.4
26.	Peat Muck, Very Humus Soils; Also Called Bog Soils, Organic Soils and Half Bog Soils	0.2
27.	Other Soils (viz Mountain Soils Undifferentiated, Glaciers and Eternal Snow)	11.0
Total		328.0

Note: Information on areas of occurrence of different types of soils given in Indian Crop Calendar, 1967.

Source: Report of the Committee on Natural Resources (Planning Commission) on a study on waste lands of India including saline and alkaline and waterlogged lands and their reclamation measures.

**1.04. CULTIVATED AND IRRIGATED AREA IN THE STATES
1978-79 (Provisional)**

('000 hectares)

Zone/State	Total reporting area	Cultivated area		Percentage of net cultivated area to total area	Irrigated area		Percentage of net irrigated area to net cultivated area
		Net	Gross		Net	Gross	
Central	108,858	51,873	53,660	47.7	14,163	16,503	27.3
Madhya Pradesh	44,198	18,847	21,747	42.6	2,315	2,413	12.3
Rajasthan	34,704	15,471	17,496	44.6	2,895	3,451	18.7
Uttar Pradesh	29,809	17,482	24,300	58.6	8,892	10,575	50.9
Delhi	147	73	117	49.7	61	64	83.6
East	65,274	23,858	32,148	36.6	6,407	7,656	26.9
Assam	7,852	2,679	3,311	34.1	572 ^m	57 ^m	21.4
Bihar	17,330	8,532	11,381	49.2	2,960	3,707	34.7
Orissa	15,540	6,097	8,275	39.2	1,148	1,586	18.8
West Bengal	8,849	5,539	7,878	62.6	1,489 ^c	1,541 ^c	26.9
Manipur	2,211	140	213	6.3	65	75	46.4
Meghalaya	2,249	193	223	8.6	48	50	24.9
Nagaland	1,042	150	150	14.4	54	54	36.0
Sikkim	714	61	65	8.5	10	10	16.4
Tripura	1,048	246	385	23.5	29	29	11.8
Arunachal Pradesh	5,550	112	128	2.0	24	24	21.4
Andaman & Nicobar Islands	787	32	33	4.1	—	—	—
Mizoram	2,102	74	106	3.7	8	8	10.4
North	17,113	9,112	14,077	53.2	5,574	9,046	61.2
Haryana	4,404	3,650	5,522	82.9	1,918	2,979	52.5
Himachal Pradesh	3,002	561	935	18.7	89	156	15.9
Jammu & Kashmir	4,674	724	990	15.5	305	405	42.1
Punjab	5,033	4,177	6,630	83.0	3,262	5,506	78.1
South	63,447	30,153	34,879	47.5	8,192	10,629	27.2
Andhra Pradesh	27,440	11,349	13,121	41.4	3,655	4,698	32.2
Karnataka	19,070	10,315	11,133	54.1	1,409	1,718	13.7
Kerala	3,886	2,204	2,886	56.7	228 ^c	354 ^c	10.3
Tamil Nadu	13,001	6,251	7,684	48.1	2,873	3,819	46.0
Pondicherry	47	31	52	66.0	27	40	87.1
Lakshya Dweep	3	3	3	100.0	—	—	—
West	49,989	27,942	30,413	55.9	3,625	4,256	13.0
Gujarat	18,811	9,43	10,389	50.7	1,715	1,936	18.0
Maharashtra	30,759	18,245	19,860	59.3	1,896	2,306	10.4
Goa, Daman & Diu	371	134	143	36.1	13	13	9.7
Dadra & Nagar Haveli	49	20	21	40.8	1	1	5.0
All India	304,681	142,938	175,177	46.9	37,961	48,090	26.6

^c = Relates to the year 1977-78.^c = Relates to the year 1967-68.^m = Relates to the year 1953-54.

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

1.05. NET AREA IRRIGATED BY SOURCE—1978-79

('000 hectares)

Zone, State	Canals			Tanks	Wells		Other sources	Total net irrigated area	Gross irrigated area
	Government	Private	Total		Tubewells	Other wells			
Central	5,130	2	5,132	564	4,326	3,571	511	14,104	16,439
Madhya Pradesh	1,064	1	1,065	1,40	48	897	167	2,317	2,413
Rajasthan	950	—	950	192	71	1,659	23	2,895	3,451
Uttar Pradesh	3,116	1	3,117	232	4,207	1,015	321	8,892	10,575
East	2,535	622	3,157	656	796	385	1,361	6,375	7,624
Assam (b)	71	291	362	—	—	—	210	572	572
Bihar	1,074	—	1,074	113	781	236	756	2,960	3,707
Manipur (d)	—	—	—	—	—	—	65	65	75
Meghalaya	—	—	—	—	—	—	48	48	50
Nagaland	—	—	—	—	—	—	54	54	54
Orissa	761	—	761	240	15	132	—	1,148	1,586
Sikkim (e)	—	—	—	—	—	—	10	10	10
Tipura (c)	—	—	—	—	—	—	29	29	29
West Bengal (f)	629	331	960	303	—	17	209	1,469	1,541

North	2,616	184	2,800	3	2,535	108	128	5,574	9,046
Haryana	1,117	—	1,117	2	766	29	4	1,918	2,979
Himachal Pradesh	—	—	—	(a)	1	1	87	89	156
Jammu & Kashmir	105	184	289	1	2	1	12	305	405
Punjab	1,394	—	1,394	—	1,766	77	25	3,262	5,506
South	3,260	6	3,266	2,384	277	1,916	322	8,165	10,589
Andhra Pradesh	1,674	*	1,674	1,140	134	591	116	3,655	4,698
Karnataka	571	(a)	571	348	(a)	357	133	1,409	1,718
Kerala (c)	96	5	101	54	42	**	31	228	354
Tamil Nadu	919	1	920	842	101	968	42	2,873	3,819
West	702	24	726	306	204	2,243	132	2,611	4,242
Gujarat (c)	327	—	327	33	204	1,142	9	1,715	1,936
Maharashtra (e)	375	24	399	273	—	1,101	123	1,896	2,306
Union Territories	27	—	27	5	42	9	51	134	150
All India	14,270	838	15,108	3,818	8,180	8,232	2,525	37,963	48,090

* Included under Government : canals;

** Included under tubewells

(a) Below 500 hectares.

(b) Relates to the year 1953-54.

(c) Relates to the year 1977-78.

(d) Ad hoc estimates.

(e) Based on Agricultural census 1976-77.

(f) Relates to the year 1967-68.

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

**1.06. GROSS IRRIGATED AREA
1978-79**

Zone/State	Rice	Jowar	Bajra	Maize	Ragi	Wheat	Barley	Total cereals & millets
Central	2,022	8	32	187	2	8,498	827	11,601
Madhya Pradesh	821	1	(a)	3	—	980	53	1,858
Rajasthan	80	3	29	71	—	1,544	313	2,043
Uttar Pradesh	1,118	3	3	113	2	5,928	460	7,649
Delhi	3	1	(a)	(a)	—	46	1	51
East	5,226	10	(a)	179	3	1,370	24	6,817
Arunachal Pradesh	24	—	—	(a)	—	(a)	—	24
Assam*	532	—	—	—	—	—	—	532
Bihar	1,941	10	(a)	171	3	1,298	22	3,450
Manipur‡	75	—	—	—	—	—	—	75
Meghalaya	50	—	—	—	—	—	—	50
Nagaland	54	—	—	—	—	—	—	54
Orissa	1,161	—	—	2	—	38	—	1,201
Sikkim	10	—	—	—	—	—	—	10
Tripura*	18	—	—	—	—	2	—	20
West Bengal*	1,353	(a)	—	6	—	32	2	1,393
Mizoram*	8	—	—	—	—	—	—	8
North	1,734	27	112	327	1	3,941	81	6,245
Haryana	426	26	61	14	(a)	1,320	52	1,900
Himachal Pradesh	53	(a)	(a)	16	1	55	5	134
Jammu & Kashmir	241	(a)	(a)	19	—	54	1	327
Punjab	1,014	1	51	278	(a)	2,512	23	3,884
Chandigarh								
South	7,279	227	179	200	340	98	—	8,350
Andhra Pradesh	3,751	20	62	59	109	15	—	4,023
Karnataka	688	98	43	122	112	83	—	1,158
Kerala*	255	—	—	—	—	—	—	255
Tamil Nadu	2,556	109	74	18	117	(a)	—	2,882
Pondicherry	29	(a)	—	1	2	—	—	32
West	586	40	101	8	(a)	863	8	1,976
Gujarat (e)	180	56	47	2	—	378	6	678
Maharashtra@	396	344	54	6	(a)	484	2(c)	1,287
Goa, Daman & Diu	10	—	—	—	—	(a)	—	10
Dadra & Nagar Haveli	(a)	—	—	—	—	1	—	1
All India	16,847	672	424	901	346	14,770	945	34,989

* In the absence of data for the year 1978-79, latest available information has been utilised.

(a) Less than 500 hectares. (c) Based on TRS estimates of irrigated area. (e) Estimated.

@Based on irrigated area under food crops. ‡ Ad-hoc estimates.

BY CROPS—STATEWISE
(Provisional)

('000 hectares)

Gram	Total pulses including gram	Total foodgrain	Groundnut	Rapeseed and mustard	Cotton	Sugarcane	Tobacco	All crops gross irrigated area
747	1,295	12,866	19	382	430	1,395	13	16,503
124	147	2,005	1	44	58	104	1	2,413
306	325	2,368	9	181	346	55	3	3,451
317	732	8,381	(a)	157	26	1,236	9	10,575
(a)	1	52	—	(a)	(a)	(a)	(a)	64
9	160	6,977	22	41	(a)	74	5	7,656
—	—	24	—	—	—	(a)	—	24
—	6	538	—	—	—	—	—	572
9	22	3,472	(a)	13	(a)	34	5	3,707
—	—	75	—	—	—	—	—	75
—	—	50	—	—	—	—	—	50
—	—	54	—	—	—	—	—	54
—	92	1,293	22	28	—	29	—	1,586
—	—	10	—	—	—	—	—	10
—	—	20	—	—	—	(a)	—	29
—	40	1,433	—	—	—	11	—	1,541
—	—	8	—	—	—	—	—	8
356	37	6,642	23	170	901	266	1	9,046
172	288	2,188	1	67	280	168	1	2,979
1	3	137	(a)	1	(a)	1	(a)	156
(a)	4	331	(a)	35	(a)	1	(a)	405
83	102	3,986	22	74	621	96	(a)	5,506
9	29	8,379	551	(a)	289	468	47	10,629
(a)	4	4,027	213	—	24	159	32	4,698
9	14	1,172	85	(a)	99	153	2	1,718
—	—	255	—	—	—	(a)	—	354
(a)	11	2,893	251	(a)	165	154	13	3,819
—	(a)	32	2	—	1	2	—	40
69	85	2,061	104	96	402	299	24	4,256
8	15	693	64	96	303	54	23	1,936
61	70	1,357	40	(a)	99	244	1	2,306
—	—	10	—	—	—	1	—	13
—	(a)	1	—	—	—	(a)	—	1
1,190	1,876	36,865	710	689	2,022	2,502	90	48,090

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

1 (7). PERCENTAGE OF IRRIGATED AREA TO TOTAL AREA UNDER THE CROPS—STATEWISE
1978-79

State	Rice	Jowar	Bajra	Maize	Wheat	Barley	Cereals	Gram	Pulses	Food-grains	Groundnut	Rapeseed & mustard	Oilseeds	Cotton	Sugarcane	All crops
Andhra Pradesh	94.3	0.9	10.9	18.7	65.2	—	48.9	—	0.3	41.7	16.7	—	13.6	6.2	98.1	35.8
Assam (a)	33.8	—	—	—	—	—	33.6	—	9.3	32.6	—	—	—	—	—	17.3*
Bihar	34.8	55.6	—	19.2	71.9	16.1	39.3	4.1	1.5	34.0	—	14.3	5.7	31.3	26.0	32.6
Gujarat (c)	39.2	5.5	3.2	0.7	61.0	85.7	16.8	12.1	2.7	15.1	3.1	91.4	7.9	17.2	93.1	18.6
Haryana	93.0	17.8	7.0	15.7	89.1	57.8	60.5	25.6	25.4	51.2	10.0	50.8	47.0	98.2	88.4	53.9
Himachal Pradesh	55.8	—	—	5.9	16.5	13.5	17.3	2.8	3.8	16.1	—	16.6	30.0	—	25.0	16.7
Jammu & Kashmir	89.9	—	—	7.0	26.1	8.3	41.1	—	7.4	38.9	—	72.9	63.2	—	100.0	40.9
Karnataka	62.7	4.9	6.0	80.3	21.3	—	19.4	5.5	0.9	15.6	9.6	—	7.4	9.3	99.4	15.4
Kerala	31.9	—	—	—	—	—	31.7	—	—	30.4	—	—	7.8	—	—	12.3
Madhya Pradesh	17.0	0.1	—	0.4	25.9	28.5	14.2	7.1	3.1	11.2	0.2	18.4	2.5	8.6	94.5	11.1
Maharashtra	26.4	5.3	3.4	8.7	40.8	22.2	11.4	13.3	2.5	9.6	4.9	—	2.5	3.9	100.0	11.6
Manipur	46.9	—	—	—	—	—	44.4	—	—	43.1	—	—	—	—	—	35.2
Meghalaya	45.3	—	—	—	—	—	37.8	—	—	57.2	—	—	—	—	—	22.4
Nagaland	74.0	—	—	—	—	—	64.3	—	—	60.7	—	—	—	—	—	36.0
Orissa	26.6	—	—	1.5	61.3	—	23.5	—	5.9	19.4	15.3	18.4	7.3	—	63.0	19.2
Punjab	96.4	50.0	58.6	65.6	41.7	70.0	89.4	23.6	24.9	83.8	17.3	82.2	42.0	98.6	88.9	83.0
Rajasthan	37.9	0.4	0.6	8.8	77.5	77.1	23.1	17.5	9.0	19.0	2.3	57.5	14.9	85.9	93.2	19.7
Sikkim	100.0	—	0.6	—	—	—	—	—	—	—	—	—	—	—	—	15.4
Tamil Nadu	92.7	15.7	—	81.8	—	—	63.5	—	1.8	56.1	25.5	—	26.3	47.6	99.4	49.7
Tripura	6.0	—	18.1	—	66.7	—	6.6	—	—	6.5	—	—	—	—	—	7.5
Uttar Pradesh	21.7	0.5	0.3	9.5	90.2	52.9	45.4	19.3	22.8	41.8	—	54.3	20.1	83.9	71.6	43.5
West Bengal (b)	28.7	—	—	11.8	40.5	3.8	28.3	—	5.7	25.5	—	—	—	—	40.7	19.6*
All India	41.6	4.2	3.7	15.5	65.2	51.6	33.2	15.4	7.9	28.5	9.6	38.6	10.6	24.9	77.0	27.5

(a) Based on the figures for the year 1953-54. (b) Based on the figures for the year 1967-68. (c) Based on TRS estimates of irrigated area.

+ Based on irrigated area reported under forecast crops.

* Based on latest available figures of gross irrigated area and gross sown area.

Source: Area and production of principal crops in India 1980-81. Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

108 SOWING SEASON OF PRINCIPAL CROPS IN MAJOR GROWING STATES

State	Rice			Jowar		Bajra	Malze	Wheat	Gram
	Autumn	Winter	Summer	Kharif	Rabi				
Central									
Madhya Pradesh	10th June to 15th Aug.	—	—	10th June to 7th Aug.	20th Sept to Oct.	15th June-8th Aug.	June-July	Oct.-Nov.	Oct. Nov.
Rajsthan	July-Aug.	—	—	June-Aug.	—	June-July	June-July	Oct.-Dec.	Sept.-Nov.
Uttar Pradesh	May-July	June-Aug.	Jan.-Feb.	June-July	—	June-Aug.	June-July	Oct.-Dec.	Sept.-Nov.
East									
Assam	Mid-Feb.-April	May-July	—	—	—	—	April-May	Nov.-Dec.	—
Bihar	May-July	July-Sept.	Jan.-Feb.	—	—	—	June-July	Oct.-Dec.	Oct.-Dec.
Meghalaya	Mid-Feb.-April	May-July	—	—	—	—	April-May	—	—
Nagaland	March-May	May-July	—	—	—	—	—	—	—
Orissa	May-June	June-Aug.	Dec.-Jan.	June-July	—	—	June-July	Oct.-Nov.	—
West Bengal	March-June ^B March-Aug. ^T	April-June ^B June-Aug. ^T	— Oct.-Feb. ^T	— —	— —	— —	April-June	Oct.-Dec.	Nov.-Dec.
North									
Haryana	May-Aug.	—	—	June-July	—	June-Aug.	June-July	Oct.-Dec.	Sept.-Nov.
Himachal Pradesh	June-July	—	—	—	—	—	April-June	Oct.-Nov.	Sept.-Nov.
Jammu & Kashmir	—	April-July	—	—	—	June-July	April-June	Oct.-Nov.	—
Punjab	May-Aug.	—	—	June-July	—	June-July	June-July	Oct.-Dec.	Sept.-Nov.
South									
Andhra Pradesh	March-May	June-Oct.	Dec.-Feb.	June-Oct.	Nov.-Dec.	June-Aug.	June-Aug. ^K Oct.-Dec. ^R	—	Nov.-Dec.
Karnataka	May-Aug.	June-Oct.	Dec.-Feb.	May-July	Sept.-Nov.	June-Aug. Nov. ^R	April-July	Sept.-Nov.	Sept.-Dec.
Kerala	April-June	Aug.-Oct.	Nov.-Feb.	—	—	—	—	—	—
Tamil Nadu	May-Nov.	Oct.-Jan.	Feb.-April	June-Oct.	Nov.-May	May-Dec.	—	—	—
West									
Gujarat	June-Aug.	—	—	June-July	Sept.-Oct.	June-July	June-July	Oct.-Nov.	Oct.-Nov.
Maharashtra	June-July	—	—	June-July	Sept.-Nov.	June-July	June-July ^K Nov.-Dec. ^K	Oct.-Nov.	Sept.-Nov.
All India	March-Aug.	June-Oct.	Nov.-Feb.	April-Aug.	Sept.-Dec.	June-Aug.	June-Aug.^K Oct.-Dec.^R	Sept.-Dec.	Sept. Dec.

^B=Broadcasting,

^T=Transplanting,

^K=Kharif,

^R=Rabi

(Continued)

1.08. SOWING SEASON OF PRINCIPAL CROPS IN MAJOR GROWING STATES (Concluded)

State	Potatoes (Winter)		Potatoes (Summer)		Sugarcane	Tobacco	Groundnut	Cotton	Jute
	Hills	Plains	Hills	Plains					
Andhra Pradesh	—	Oct.-Nov.	—	—	June-May	Oct.	May-Oct.	June-Oct.	—
Assam	Oct.-Nov.	Oct.-Nov.	Feb.-March	—	March-April	Oct.-Nov.	—	April-May	Feb.-March
Bihar	—	Oct.-Feb.	—	—	Dec.-Feb.	—	July-Aug.	June-July	March-July
Gujarat	Nov.-Feb.	Oct.-Nov.	—	—	Oct.-May	July-Sept.	June-July	June-Sept.	—
Haryana	(Sept.-Oct. Jan.-April)	Sept.-Oct. Dec.-Jan.	Jan.-Feb. March-May	Sept.-Oct. Jan.-Feb.	Feb.-April	Nov.-March	June-July	May-June	—
Himachal Pradesh	Jan.-Feb.	—	April-May	—	March-May	May-June	June	—	—
Jammu & Kashmir	June-July Sept.-Oct.	Sept.-Oct. June-July	March-June	March-June	Feb.-March	March-July	—	—	—
Karnataka	—	July-Jan.	April-May	June-Jan.	Dec.-March	April-Sept.	June-Aug.	May-Sept.	—
Kerala	—	—	—	—	Nov.-Feb. Jan.-March	—	—	Aug.-Sept.	—
Madhya Pradesh	Oct.-7 Dec.	15 Oct.-Nov.	June-15 Aug.	10 June- 15 Aug.	15 Dec.- 8 May	10 June- 15 Nov.	10 June- July	20 May- July	—
Maharashtra	—	Nov.	—	July	Dec.-April	July-Sept.	June-July	June-Sept.	—
Meghalaya	Oct.-Nov.	Oct.-Nov.	Feb.-March	—	—	Oct.-Nov.	—	April-May	Feb.-March
Orissa	—	Oct.-Nov.	Feb.-March	—	Feb.-May	Sept.-Oct.	June-July	—	May-June
Punjab	Sept.-Oct. Jan.-April	Sept.-Oct. Dec.-Jan.	Jan.-Feb. March-May	Sept.-Oct. Jan.-Feb.	Feb.-April	Nov.-March	June-July	May-June	—
Rajasthan	—	Aug.-Nov.	—	—	Jan.-May	June-Aug. Nov.-Jan.	June-Aug.	May-July	—
Tamil Nadu	Sept.-Dec.	Oct.-Nov.	April-May	April-May	Dec.-Sept.	Sept.-Jan.	Jan.-May July-Oct.	Feb.-Nov.	—
Uttar Pradesh	Nov.-Dec.	Sept.-Oct.	Sept.-Oct.	Sept.-Oct.	Sept.-April	Sept.-Feb.	May-July	April-June	Jan.-July
West Bengal	—	Sept.-Nov.	—	—	Dec.-April	Sept.-Dec.	—	—	March-June
All India	Aug.-Dec.		Feb.-July		Dec.-May	July-Dec.	May-Aug.	March-Sept.	Feb.-July

1.09. DISTRIBUTION OF AREA ACCORDING TO ANNUAL RAINFALL IN INDIA

Rainfall amount		Approximate percentage of area receiving rainfall
Dry	0-750 mm	30.0
Medium	750-1,150 mm	42.0
Assured	1,150-2,000 mm	20.0
	above 2,000 mm	8.0
Total		100.0

1.10. DISTRIBUTION OF ANNUAL RAINFALL ACCORDING TO SEASONS IN INDIA

Rainfall	Duration	Approximation percentage to annual rainfall
South-West Monsoon	June-September	73.7
Post-Monsoon	October-December	13.3
Winter or North-East Monsoon	January-February	2.6
Pre-Monsoon	March-May	10.4
Total		100.0

Source: Report from India Meteorological Department, Pune.

1.11. RAINFALL IN INDIA*

Sl. No.	Name of the sub-division	Annual rainfall (mm)	Rainfall as percentage of annual			
			Jan. to Feb.	March to May	June to Sept.	Oct. to Dec.
1.	Bay Islands	2,994.5	2.7	15.0	59.3	23.0
2.	Assam (including Manipur & Tripura)	2,516.4	2.3	25.1	65.3	7.3
3.	Sub-Himalayan West Bengal	3,126.2	1.0	15.4	72.0	5.6
4.	Gangetic West Bengal	1,425.3	2.7	12.4	75.6	9.3
5.	Orissa	1,482.2	2.7	8.6	76.7	12.0
6.	Bihar Plateau	1,372.0	3.9	6.5	82.0	7.6
7.	Bihar Plains	1,202.9	2.9	6.1	85.0	6.0
8.	Uttar Pradesh, East	1,007.7	3.4	3.0	88.2	5.6
9.	Uttar Pradesh, West	964.2	5.1	3.9	87.0	4.0
10.	Punjab (including Delhi & Haryana)	624.7	8.6	7.2	80.0	4.2
11.	Jammu & Kashmir	994.6	19.2	24.0	47.5	9.3
12.	Rajasthan, East	704.1	2.1	2.3	92.5	3.0
13.	Rajasthan, West	311.1	3.6	4.9	89.1	2.4
14.	Madhya Pradesh, West	1,004.9	2.2	2.0	90.7	5.1
15.	Madhya Pradesh, East	1,401.7	3.1	3.5	87.7	5.7
16.	Gujarat region	976.5	0.4	1.0	95.2	3.2
17.	Saurashtra and Kutch	482.6	0.9	2.1	93.1	3.8
18.	Konkan	2,872.0	0.1	1.2	93.9	4.8
19.	Madhya Maharashtra	920.7	0.8	4.1	83.6	11.5
20.	Marathwada	773.6	1.5	4.0	83.3	11.0
21.	Vidarbha	1,099.6	2.9	3.1	87.0	7.0
22.	Coastal Andhra Pradesh	1,008.3	2.3	8.8	56.6	32.3
23.	Telengana	926.5	2.1	6.1	81.7	10.0
24.	Rayalaseema	677.8	2.2	11.3	54.4	32.0
25.	Tamil Nadu	1,008.1	5.3	14.6	33.0	47.1
26.	Coastal Karnataka	3,264.8	0.1	4.4	87.7	7.8
27.	Interior Karnataka, North	675.0	0.9	12.7	65.2	19.1
28.	Interior Karnataka, South	1,244.9	0.8	13.0	67.6	18.5
29.	Kerala	2,996.1	1.2	13.5	66.9	18.3
30.	Arabian Sea Islands	1,572.4	2.8	13.0	62.3	21.4

Note: The rainfall figures presented in this Table are based on data for the period 1901-50.

Source: Koteswaram, P., *Meteorological and Climatological Aspects of Dryland Farming in India*. Paper presented at the I.C.A.R. workshop on "Dryland Agricultural Research", Indian Agricultural Research Institute, New Delhi (September 28-October 1, 1970).

**1 12 RAINFALL IN INDIA DURING 1981-82 (MARCH 1981 TO FEBRUARY 1982) ACTUAL COMPARED TO
NORMAL—SEASONWISE**

Sub-Division	Pre-monsoon (1st March to 31st May '81)			South West monsoon (1st June to 30th Sept. '81)			Post-monsoon (1st Oct. to 31st Dec. '81)			Winter monsoon (1st Jan. to 28th Feb. '82)		
	Actual (mm)	Normal (mm)	Excess/ deficient (%)	Actual (mm)	Normal (mm)	Excess/ deficient (%)	Actual (mm)	Normal (mm)	Excess/ deficient (%)	Actual (mm)	Normal (mm)	Excess/ deficient (%)
Andaman & Nicobar Islands	354	484	-27	1,540	1,570	-2	743	716	4	3	133	-98
Arunachal Pradesh	610	729	-16	1,849	1,827	-1	136	148	-9	103	101	1
Assam & Meghalaya	501	569	-12	1,262	1,408	-10	75	145	-48	54	46	17
Nagaland, Manipur, Mizoram & Tripura	632	468	35	837	1,254	-33	51	205	-75	59	41	42
Sub-Himalayan West Bengal & Sikkim	597	545	10	1,958	2,246	-13	39	181	-79	39	49	-20
Gangetic West Bengal	421	168	150	1,309	1,078	21	89	162	-45	39	34	14
Orissa	187	106	77	1,025	1,138	-10	43	114	-75	33	34	-6
Bihar Plateau	182	103	77	995	1,092	-9	17	103	-83	28	50	-6
Bihar Plains	162	85	91	1,040	1,047	-1	12	76	-84	10	31	-45
East Uttar Pradesh Plains of East Uttar Pradesh	57	35	64	949	901	5	24	69	-65	43	35	24
Hills of West Uttar Pradesh	151	158	-5	1,074	1,496	-28	62	92	-32	116	117	-1
Haryana, Chandigarh & Delhi	69	39	76	544	513	6	63	35	82	45	49	-8
Punjab	65	46	42	357	453	-21	67	37	80	70	50	40
Himachal Pradesh	289	197	47	994	1,342	-26	88	109	19	254	182	39
Jammu & Kashmir	429	329	31	338	376	-10	49	145	-66	195	207	-6
West Rajasthan	17	18	-4	197	295	-33	37	14	170	21	10	115
East Rajasthan	31	20	50	578	653	-7	34	33	3	29	11	173
West Madhya Pradesh	31	23	31	784	933	-16	65	55	18	64	21	204
East Madhya Pradesh	62	53	18	938	1,181	-2	14	77	-81	84	44	90

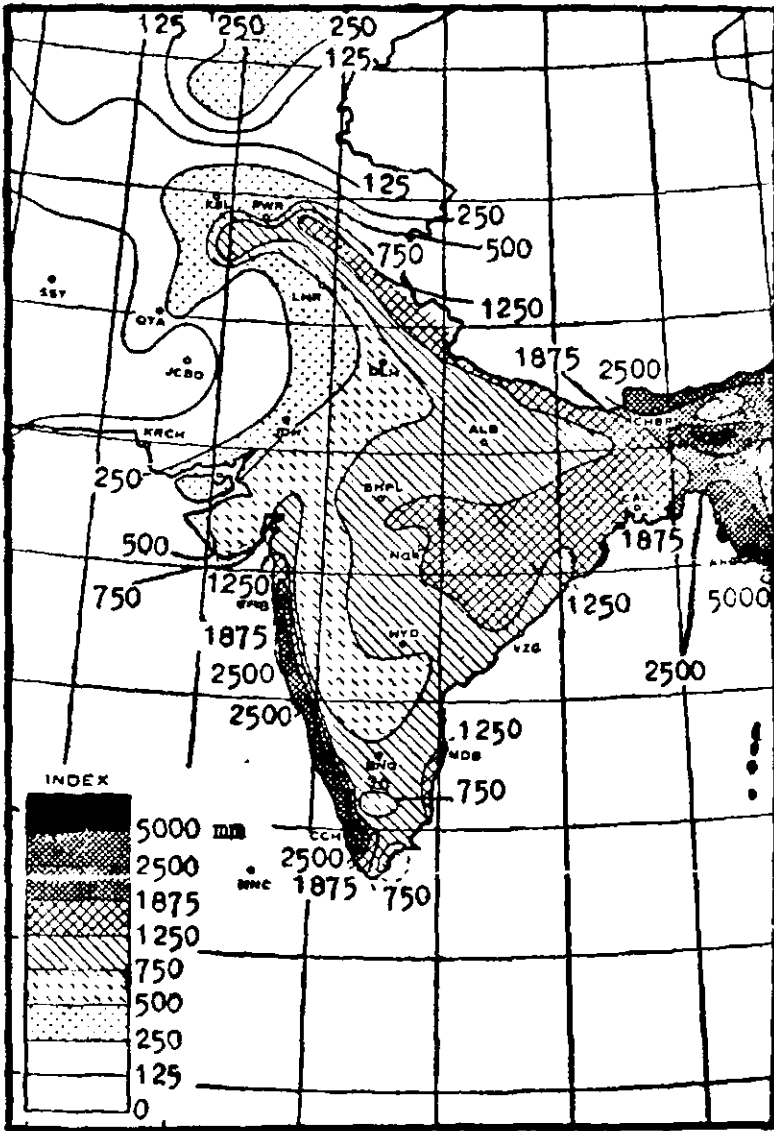
(Continued)

**1.12. RAINFALL IN INDIA DURING 1981-82 (MARCH 1981 TO FEBRUARY 1982) ACTUAL COMPARED TO
NORMAL—SEASONWISE (Concluded)**

Sub-Division	Pre-monsoon (1st March to 31st May '81)			South West monsoon (1st June to 30th Sept. '81)			Post-monsoon (1st Oct. to 31st Dec. '81)			Winter monsoon (1st Jan. to 28th Feb. '82)		
	Actual (mm)	Normal (mm)	Excess/ deficient (%)	Actual (mm)	Normal (mm)	Excess/ deficient (%)	Actual (mm)	Normal (mm)	Excess/ deficient (%)	Actual (mm)	Normal (mm)	Excess/ deficient (%)
Gujarat Region, Daman												
Dadra & Nagar Haveli	5	10	-55	904	821	10	73	31	137	4	4	16
Saurashtra, Kutch & Diu	4	6	-38	573	564	2	125	41	206	2	3	-33
Konkan & Goa	3	46	-95	2,857	2,543	12	85	132	-35	0	2	-100
Madhya Maharashtra	25	46	-47	644	513	25	62	103	-40	4	5	-18
Marthwada	50	31	60	723	645	12	93	82	14	9	13	-35
Vidarbha	40	40	-1	1,051	983	7	38	78	-51	69	23	195
Coastal Andhra Pradesh	71	70	1	607	550	10	282	341	-17	2	17	-89
Telengana	87	64	36	915	770	19	78	108	-28	1	11	-92
Rayalasila	65	65	-3	508	421	21	141	176	-20	0	11	-100
Tamil Nadu & Pondicherry	110	121	-9	382	281	36	524	542	-3	0	47	-99
Coastal Karnataka	57	153	-63	3,325	2,928	14	127	231	-45	0	4	-100
North Interior Karnataka	85	73	16	919	562	3	109	118	-7	0	10	-99
South Interior Karnataka	169	150	13	427	378	13	180	219	-18	0	12	-100
Kerala	345	495	-30	2,144	1,735	23	495	540	-8	1	39	-99
Lakshadweep	214	173	24	1,063	944	13	240	332	-28	1	36	-96

Note: In calculation of excess, deficient and their percentages rainfall figures are taken correct to 0.1 mm.

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.



Annual rainfall in India in mm
(50 years' average)

1 13 HIGH, MEDIUM AND LOW RAINFALL REGIONS

('000 hectares)

State/Union Territory	High rainfall regions (1,150 mm and above)			Medium rainfall region (750 mm to 1,150 mm)			Low rainfall region (upto 750 mm)			Total		
	Net irrigated area	Net area sown	Gross area sown	Net irrigated area	Net area sown	Gross area sown	Net irrigated area	Net area sown	Gross area sown	Net irrigated area	Net area sown	Gross area sown
Andhra Pradesh	—	—	—	2,638	7,534	8,798	643	4,102	4,440	3,281	11,636	13,238
Assam	572 ^a	2,458	3,076	—	—	—	—	—	—	572 ^a	2,458	3,076
Bihar	1,336	6,724	8,410	954	1,650	2,357	—	—	—	2,320	8,374	10,767
Gujarat ^b	106 ^a	753 ^a	802 ^a	391 ^a	2,390 ^a	2,567 ^a	956 ^a	6,281 ^a	6,761	1,453	9,424	10,130
Haryana	—	—	—	69	243	364	1,667	3,323	4,786	1,736	3,566	5,150
Himachal Pradesh	5	68	102	89	488	805	—	—	—	94	556	907
Jammu & Kashmir	42	238	353	186	354	457	74	97	102	302	689	913
Karnataka	271	953	1,103	313	2,442 ^a	2,674	617	6,835	7,116	1,201	10,230	10,893
Kerala	457	2,202	2,999	—	—	—	—	—	—	457	2,202	2,999
Madhya Pradesh	764	10,317	12,077	691	7,388	8,213	190	855	922	1,645	18,560	21,212
Maharashtra	500	3,822	4,164	387	7,775	8,177	585	6,727	7,145	1,472	18,324	19,486
Manipur ^c	65	140	194 ^a	—	—	—	—	—	—	65	140	194 ^a
Meghalaya	48	164 ^d	178 ^a	—	—	—	—	—	—	48	164 ^d	178 ^a
Nagaland	33	107	107	—	—	—	—	—	—	33	107	107 ^a
Orissa	878	5,973	7,315 ^a	—	—	—	—	—	—	878	5,973	7,315 ^a
Punjab	—	—	—	274	634	972	2,702	3,479	5,044	2,976	4,133	6,016
Rajasthan	—	—	—	412	1,792	2,206	1,966	14,175	15,680	2,378	15,967	17,886
Tamil Nadu	560	1,048	1,363	2,256	5,127	6,285	—	—	—	2,816	6,175	7,648
Tripura	30	243	377	—	—	—	—	—	—	30	243	377
Uttar Pradesh	733 ^a	1,754 ^a	2,624 ^a	4,764 ^a	12,900 ^a	16,808 ^a	1,744 ^a	2,424 ^a	3,574 ^a	7,241	17,168	23,006
West Bengal	1,489	6,185 ^a	7,462	—	—	—	—	—	—	1,439 ^a	6,185 ^a	7,462
Union Territories	68	382	432	—	—	—	55	71	111	116	453	543
All India	7,980	43,531	53,138	13,324	50,807	60,683	11,199	48,369	55,682	32,603	142,707	169,503

^a Relates to the year 1953-54.

^b Total figures relate to the year 1971-72. Its break-up has been estimated in proportion to that in the year 1970-71.

^c Ad-hoc estimates.

^d Relates to the year 1972-73.

^e Relates to the year 1967-68.

*Estimates.

Note: Data are based on Land Utilisation Statistics returns for the year 1973-74.

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

2.00. AREA AND PRODUCTION

2.01. GROSS AREA UNDER SELECTED CROPS—ALL INDIA (1951-52 to 1982-83)

('000 hectares)

Year	Rice	Wheat	Jowar	Bajra	Maize	Total cereals	Gram	Total pulses (including gram)	Total food-grains	Ground-nut	Cotton (lint)	Jute	Sugar-cane
1951-52	29,830	9,471	15,944	9,519	3,310	78,186	6,830	18,775	96,961	4,017	6,556	790	1,939
1952-53	29,969	9,828	17,539	10,769	3,605	82,243	7,256	19,845	102,088	4,796	6,359	734	1,729
1953-54	31,289	10,681	17,758	12,199	3,869	87,336	7,968	21,729	109,065	4,247	6,987	494	1,410
1954-55	30,764	11,259	17,464	11,366	3,749	85,944	9,248	21,914	107,856	5,541	7,546	503	1,618
1955-56	31,521	12,367	17,362	11,338	3,696	87,344	9,779	23,216	110,560	5,133	8,086	704	1,847
1956-57	32,277	13,524	16,237	11,251	3,758	87,828	9,674	23,316	111,136	5,532	8,019	77	2,050
1957-58	32,298	11,730	17,311	11,169	4,079	86,942	9,091	22,538	109,480	6,420	8,014	705	2,073
1958-59	33,172	12,617	17,960	11,428	4,265	90,453	10,080	24,311	114,764	6,251	7,964	733	1,948
1959-60	33,820	13,380	17,707	10,695	4,344	90,990	10,326	24,833	115,823	6,442	7,295	682	2,137
1960-61	34,128	12,927	18,412	11,469	4,407	92,018	9,296	23,563	115,581	6,463	7,610	629	2,415
1961-62	34,694	13,570	18,249	11,278	4,507	92,989	9,566	24,243	117,232	6,896	7,978	917	2,455
1962-63	35,695	13,590	18,414	10,962	4,643	93,579	9,193	24,265	117,844	7,283	7,730	847	2,242
1963-64	35,809	13,490	18,376	11,103	4,582	93,235	9,354	24,186	117,421	6,886	8,221	869	2,249
1964-65	36,462	13,422	11,056	11,927	4,618	94,237	8,870	23,875	118,112	7,376	8,365	845	2,603

(Continued)

2.01. GROSS AREA UNDER SELECTED CROPS—ALL INDIA
(1951-52 to 1982-83) (Concluded)

('000 hectares)

Year	Rice	Wheat	Jowar	Bajra	Maize	Total cereals	Gram	Total pulses (including gram)	Total food-grains	Ground-nut	Cotton (lint)	Jute	Sugar-cane
1965-66	35,470	12,571	17,679	11,965	4,799	92,385	8,015	21,718	114,103	7,698	7,922	758	2,836
1966-67	35,251	12,838	18,054	12,239	5,074	93,181	8,003	22,161	115,302	7,299	7,836	727	2,301
1967-68	36,437	14,998	18,423	12,808	5,583	98,772	8,257	22,649	121,421	7,553	7,995	880	2,047
1968-69	36,967	15,958	18,731	12,052	5,716	99,166	7,105	21,264	120,430	7,088	7,596	527	2,532
1969-70	37,680	16,626	18,605	12,493	5,862	101,547	7,751	22,023	123,570	—	7,731	768	2,749
1970-71	37,592	18,241	17,374	12,913	5,852	101,782	7,839	22,534	124,316	7,326	7,605	749	2,615
1971-72	37,758	19,139	16,777	11,773	5,668	100,472	7,912	22,151	122,623	7,510	7,800	815	2,390
1972-73	36,888	19,463	15,513	11,817	5,838	91,362	6,967	20,915	119,277	6,990	7,679	700	2,452
1973-74	38,286	18,583	16,716	13,934	6,015	103,111	7,761	23,427	126,538	7,024	7,574	793	2,752
1974-75	37,889	18,010	16,189	11,285	5,863	99,051	7,041	22,024	121,075	7,063	7,562	664	2,894
1975-76	39,475	20,454	16,092	11,571	6,031	103,727	8,320	24,454	128,181	7,222	7,550	585	2,762
1976-77	38,511	20,922	15,772	10,711	6,000	101,373	7,974	22,983	124,356	7,043	6,885	737	2,866
1977-78	40,283	21,456	16,318	11,104	5,683	104,018	7,974	23,497	127,515	7,028	7,861	797	3,151
1978-79	40,482	22,641	16,146	11,393	5,760	105,352	7,708	23,657	129,009	7,483	8,119	884	3,088
1979-80*	39,414	22,172	16,674	10,579	5,720	102,947	6,985	22,259	125,206	7,165	8,078	834	2,610
1980-81*	39,773	22,104	15,610	11,630	5,983	103,157	6,720	22,634	125,790	6,905	7,870	942	2,648
1981-82*	40,708	22,144	16,599	11,784	5,935	105,293	7,868	23,843	129,136	7,429	8,057	N.A.	3,193
1982-83*	37,784	23,151	16,110	10,874	5,693	100,930	7,225	22,388	123,318	7,345	8,074	N.A.	3,365

*Provisional.

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

**2.02. PRODUCTION OF SELECTED CROPS—ALL INDIA
(1951-52 to 1982-83)**

('000 tonnes)

Year	Rice	Wheat	Jowar	Bajra	Maize	Total cereals	Gram	Total pulses (including gram)	Total food-grains	Groundnut	Cotton@ (lint)	Jute	Sugarcane (cane)
1951-52	21,300	6,183	6,077	2,346	2,076	48,576	3,387	3,420	51,996	3,192	3,276	4,715	61,634
1952-53	22,899	7,501	7,339	3,192	2,870	50,012	4,208	9,189	59,201	2,929	3,341	4,829	50,996
1953-54	28,214	8,017	8,082	4,547	3,039	59,203	4,832	14,918	69,821	3,445	4,125	3,116	44,411
1954-55	25,219	9,043	9,201	3,519	2,975	57,085	5,621	10,950	68,035	4,245	4,445	2,952	58,739
1955-56	27,557	8,760	6,726	3,428	2,602	55,805	5,418	11,045	68,850	3,862	4,181	4,232	60,543
1956-57	29,037	9,403	7,237	2,873	3,078	58,304	6,231	11,551	69,855	4,369	4,924	4,323	69,051
1957-58	25,525	7,998	8,635	3,620	3,150	54,745	4,890	9,562	64,311	4,710	4,982	4,015	71,155
1958-59	30,847	9,958	9,033	3,868	3,463	63,992	7,023	13,149	77,141	5,178	4,879	5,189	73,358
1959-60	31,676	10,324	8,579	3,493	4,073	64,872	5,618	11,799	76,672	4,562	3,676	4,534	77,817
1960-61	34,574	10,997	9,814	3,283	4,080	69,314	6,250	12,704	82,018	4,812	5,04	4,134	110,001
1961-62	35,663	12,072	8,029	3,645	4,312	70,951	5,785	11,755	82,706	4,994	4,850	6,358	103,967
1962-63	33,217	10,776	9,748	3,959	4,607	68,623	5,362	11,528	80,151	5,036	5,536	5,442	91,913
1963-64	36,998	9,853	9,198	3,878	4,561	70,569	4,502	10,073	80,642	5,298	5,747	6,079	104,225
1964-65	39,308	12,257	9,688	4,519	4,664	76,939	5,777	12,417	89,356	6,004	6,011	6,064	121,909
1965-66	30,589	10,395	7,581	3,752	4,823	62,403	4,224	9,944	72,347	4,263	4,852	4,476	123,990
1966-67	30,438	11,393	9,224	4,463	4,894	65,884	3,622	8,347	74,231	4,411	5,266	5,358	92,686
1967-68	37,612	16,540	10,048	5,185	6,270	82,950	5,971	12,102	95,052	5,731	5,777	6,320	95,500

(Continued)

2.02. PRODUCTION OF SELECTED CROPS—ALL INDIA
(1951-52 to 1982-83) (Concluded)

('000 tonnes)

Year	Rice	Wheat	Jowar	Bajra	Maize	Total cereals	Gram	Total pulses (including gram)	Total food-grains	Ground-nut	Cotton (lint)	Jute	Sugar-cane (cane)
1968-69	39,761	18,615	9,805	3,802	5,701	83,595	4,309	10,418	93,013	4,681	5,447	2,931	124,676
1969-70	40,430	20,093	9,721	5,327	5,674	87,810	5,546	11,691	99,501	5,130	5,564	5,618	135,024
1970-71	42,225	23,832	8,105	8,029	7,486	96,604	5,199	11,818	108,422	6,111	4,763	4,938	126,368
1971-72	43,068	26,410	7,722	5,319	5,101	94,074	5,081	11,094	105,168	6,181	6,950	5,684	113,570
1972-73	39,245	24,735	6,968	3,928	6,388	87,119	4,537	9,907	97,029	4,092	5,735	4,978	124,867
1973-74	44,051	21,778	9,097	7,519	5,803	94,657	4,099	10,008	104,665	5,932	6,309	6,220	140,289
1974-75	39,579	24,104	10,414	3,272	5,559	89,812	4,015	10,104	99,826	5,111	7,156	4,471	144,289
1975-76	48,740	28,846	9,504	5,736	7,256	107,995	5,879	13,039	121,034	6,754	5,950	4,440	140,604
1976-77	41,917	29,010	10,524	5,853	6,461	99,806	5,424	11,361	111,167	5,264	5,839	5,353	153,007
1977-78	52,671	31,328	12,064	4,730	5,973	114,434	5,410	11,973	126,407	6,087	7,243	5,261	176,966
1978-79	53,773	35,508	11,436	5,567	6,199	119,719	5,739	12,183	131,902	6,208	7,958	6,470	151,655
1979-80	42,330	31,830	11,648	3,948	5,603	101,129	3,356	8,572	109,701	5,768	7,698	6,072	128,833
1980-81*	53,231	36,460	10,504	5,418	6,804	118,702	4,652	11,165	129,867	5,020	7,600	6,515	150,522
1981-82*	53,248	37,457	12,062	5,537	6,897	121,787	4,642	11,507	133,294	7,223	7,884	N.A.	186,358
1982-83*	46,481	42,502	10,676	5,130	6,274	116,781	5,092	11,569	128,350	5,553	7,717	N.A.	189,129

* Provisional.

^ '000 bales of 170 kg each.

Source: Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.

2.03 AVERAGE YIELD PER HECTARE OF SELECTED CROPS--ALL INDIA
(1951-52 to 1980-81)

Year	(kilograms)												
	Rice	Wheat	Jowar	Bajra	Maize	Total cereals	Gram	Total pulses (including gram)	Total food-grains	Ground nut	Cotton (lint)	Jute	Sugar-cane (cane)
1951-52	714	653	381	246	627	557	496	448	536	649	85	1,074	31,786
1952-53	764	763	420	296	796	608	580	463	580	611	89	1,135	29,495
1953-54	902	750	455	373	785	678	606	489	640	811	100	1,129	31,497
1954-55	820	803	527	310	794	664	608	500	631	766	100	1,056	36,303
1955-56	874	708	387	302	704	639	554	476	605	752	88	1,082	32,779
1956-57	800	695	451	255	819	664	644	495	629	783	104	1,008	33,683
1957-58	790	682	499	324	772	630	538	424	587	734	105	1,025	34,325
1958-59	930	789	503	338	812	707	697	541	672	828	104	1,277	37,658
1959-60	937	772	484	327	938	713	544	475	662	708	86	1,197	36,414
1960-61	1,013	851	533	286	926	753	674	539	710	745	125	1,183	45,549
1961-62	1,028	890	440	323	957	763	609	485	705	725	103	1,248	42,349
1962-63	931	793	529	361	992	733	583	475	680	695	122	1,156	40,996
1963-64	1,033	730	501	349	995	757	481	416	687	769	119	1,260	46,353
1964-65	1,078	913	536	382	1,010	816	651	520	757	814	122	1,292	46,838
1965-66	862	827	429	314	1,005	675	527	438	629	554	104	1,062	43,717
1966-67	863	887	511	365	964	707	453	377	644	604	114	1,210	40,336
1967-68	1,032	1,103	545	405	1,123	840	721	534	783	759	123	1,293	76,665

(Continued)

**2.03. AVERAGE YIELD PER HECTARE OF SELECTED CROPS—ALL INDIA
(1951-52 to 1980-81) (Concluded)**

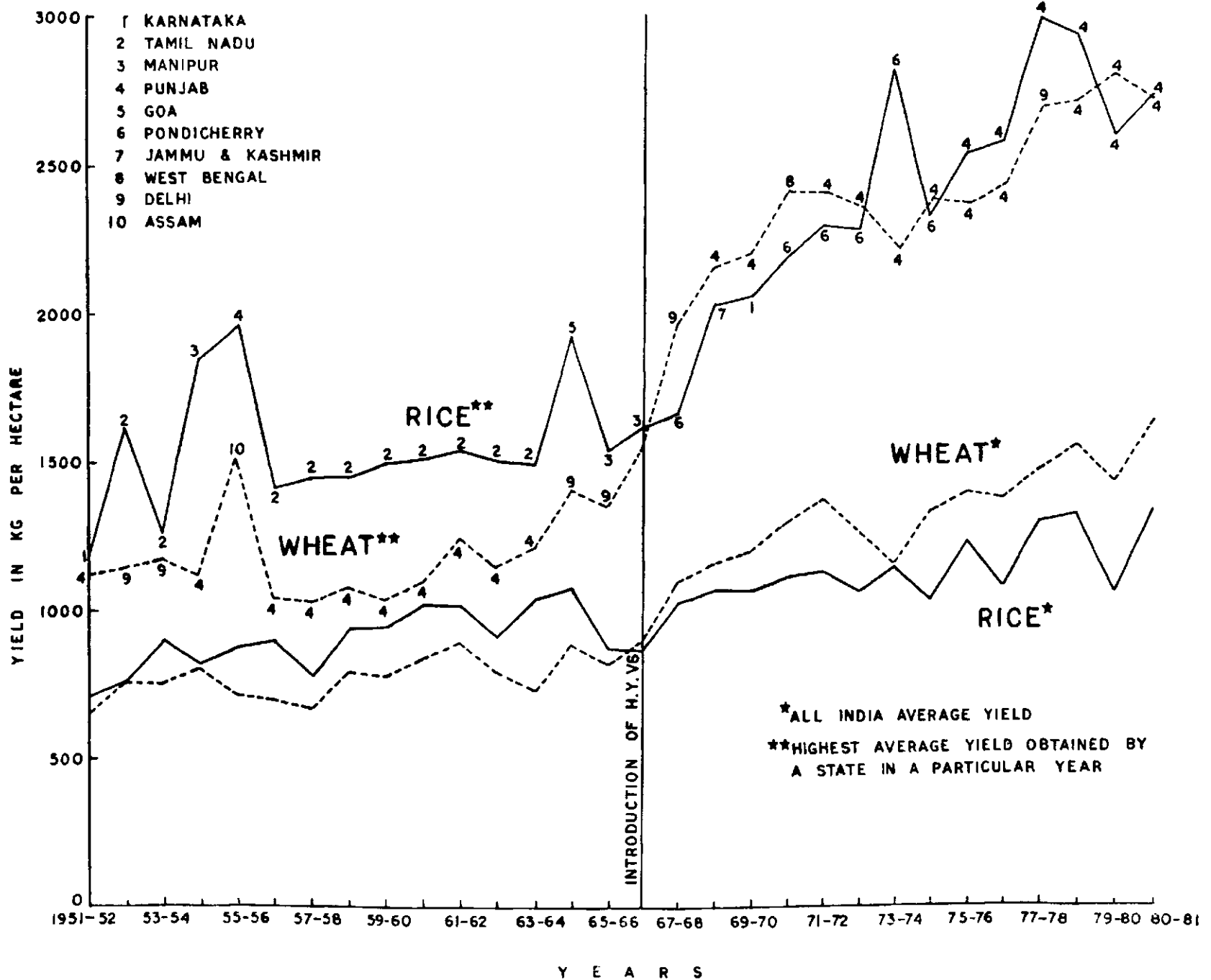
(kilograms)

Year	Rice	Wheat	Jowar	Bajra	Maize	Total cereals	Gram	Total pulses (including gram)	Total food-grains	Ground-nut	Cotton (lint)	Jute	Sugarcane (cane)
1968-69	1,076	1,169	523	315	997	843	607	490	781	653	122	1,002	49,236
1969-70	1,073	1,209	522	426	968	865	715	531	805	720	122	1,326	49,121
1970-71	1,123	1,307	466	622	1,279	949	663	524	872	834	106	1,186	48,322
1971-72	1,141	1,380	460	452	900	936	642	501	858	823	151	1,255	47,511
1972-73	1,070	1,271	449	333	1,094	886	651	474	813	585	127	1,280	50,933
1973-74	1,151	1,172	544	540	965	918	528	427	827	845	142	1,412	51,163
1974-75	1,045	1,388	643	290	948	907	570	455	824	724	161	1,211	49,855
1975-76	1,235	1,410	591	496	1,203	1,041	707	533	944	935	138	1,367	50,903
1976-77	1,088	1,387	667	544	1,060	985	680	494	894	747	144	1,307	53,383
1977-78	1,308	1,480	739	426	1,051	1,100	678	510	991	866	157	1,210	56,160
1978-79	1,328	1,568	768	489	1,076	1,136	745	515	1,022	835	167	1,317	49,114
1979-80	1,074	1,436	699	373	979	982	481	385	876	805	162	1,310	49,354
1980-81*	1,336	1,649	673	466	1,137	1,151	692	493	1,032	727	164	1,245	56,844

* Provisional.

Source: Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.

YIELD (KG) PER HECTARE OF RICE AND WHEAT



204. SEASONWISE AREA UNDER FOODGRAINS—ALL INDIA
1966-67 to 1980-81

(million hectares)

Year	Kharif foodgrains		Rabi foodgrains		Total area under foodgrains
	Area	Percentage to total	Area	Percentage to total	
1966-67	78.21	67.8	37.09	32.2	115.33
1967-68	81.49	67.1	39.93	32.9	121.42
1968-69	80.40	66.8	40.03	33.2	120.43
1969-70	82.30	66.6	41.27	33.4	123.57
1970-71	82.36	66.2	41.96	33.8	124.32
1971-72	79.22	64.6	43.40	35.4	122.62
1972-73	78.34	65.7	40.94	34.3	119.28
1973-74	84.12	66.5	42.42	33.5	126.54
1974-75	79.74	65.9	41.34	34.1	121.08
1975-76	83.15	64.9	45.03	35.1	128.18
1976-77	81.19	65.3	43.17	34.7	124.36
1977-78	82.87	65.0	44.64	35.0	127.51
1978-79	82.85	64.2	46.1	35.8	129.01
1979-80	80.79	64.5	44.41	35.5	125.21
1980-81*	82.39	65.5	43.40	34.5	125.79
1981-82*					129.14
1982-83*					123.32

*Provisional.

Source: Estimates on Area and Production of Principal crops in India—1980-81,
 Ministry of Agriculture, New Delhi.

2.05. SEASONWISE PRODUCTION OF FOODGRAINS—ALL INDIA
1966-67 to 1982-83

(million tonnes)

Year	Kharif foodgrains		Rabi foodgrains		Total production of foodgrains
	Production	Percentage to total	Production	Percentage to total	
1966-67	48.89	65.9	25.34	34.1	74.23
1967-68	60.76	63.9	34.29	36.1	95.05
1968-69	59.57	63.4	34.44	36.6	94.01
1969-70	62.35	62.7	37.15	37.3	99.50
1970-71	68.92	63.6	39.50	36.4	108.42
1971-72	62.99	59.9	42.18	40.1	105.17
1972-73	58.64	60.4	38.39	39.6	97.03
1973-74	61.83	64.8	36.83	35.2	104.66
1974-75	59.10	59.2	40.73	40.8	99.83
1975-76	73.89	61.1	47.14	38.9	121.03
1976-77	66.53	59.8	44.64	40.2	111.17
1977-78	77.72	61.5	48.69	38.5	126.41
1978-79	78.08	59.2	53.82	40.8	131.90
1979-80	63.25	57.7	46.45	42.3	109.70
1980-81*	77.43	59.6	52.44	40.4	129.87
1981-82*					133.29
1982-83*					128.35

*Provisional.

- Notes:*
1. Kharif foodgrains include rice (Autumn & Winter), jowar (Kharif), bajra, maize, ragi, small millets, tur and other Kharif pulses.
 2. Rabi foodgrains include rice (Summer), jowar (Rabi), wheat, barley, gram and other Rabi pulses.

Source: Estimates of Area and Production of Principal crops in India, Ministry of Agriculture, New Delhi.

**2.06. ALL INDIA CROP COMPETITIONS*—HIGHEST YIELD OBTAINED
(1964-65 to 1977-78)**

Year	Yield (kg/hectare)		
	Paddy	Wheat	Jowar (Rabi)
1964-65	9,095		
1965-66	9,476	6,618	
1966-67	10,633	9,286	6,805
1967-68	10,517	10,335	7,600
1968-69	9,096		
1969-70	14,260	12,388	
1970-71	15,802	16,117	
1971-72	15,325	7,600	
1972-73	16,912	12,858	
1973-74	17,772	14,000	
1974-75	14,992	13,748	
1975-76	16,796	13,736	
1976-77	11,919	16,856	
1977-78	17,544	16,784	12,820

*All India Crops Competition organised by the Ministry of Agriculture, New Delhi.

Source: "Indian Agriculture in Brief"—18th Edition, Department of Economics and Statistics, Ministry of Agriculture, New Delhi.

2.07. (a) STATEWISE AREA, PRODUCTION AND AVERAGE YIELD

State/Area/Production/ Yield		Rice	Wheat	Jowar	Bajra	Maize	Ragi	Small millets
Andhra Pradesh	A	3,607.3	16.2	2,079.1	512.9	308.8	237.8	543.8
	P	7,134.2	9.3	1,089.0	339.8	570.9	245.9	211.5
	Y	1,978	@	524	663	1,849	1,034	369
Assam	A	2,275.0	102.2	—	—	22.6	—	8.4
	P	2,522.8	118.3	—	—	13.4	—	4.1
	Y	1,109	1,158	—	—	593	—	@
Bihar	A	5,490.5	1,803.0	8.5	12.6	890.2	177.4	149.4
	P	5,476.0	2,825.0	4.9	6.5	1,036.0	114.2	52.4
	Y	997	1,567	@	@	1,164	644	351
Gujarat	A	477.5	656.1	905.9	1,380.0	307.6	50.0	135.3
	P	556.6	1,298.3	583.0	1,221.9	403.1	35.6	106.7
	Y	1,166	1,979	644	885	1,310	712	789
Haryana	A	472.0	1,476	136.0	281.0	74.0	—	—
	P	1,228.0	3,600	48.0	484.0	13.0	—	—
	Y	2,602	2,439	353	549	1,122	—	—
Himachal Pradesh	A	109.4	330.1	—	—	287.7	10.6	25.2
	P	96.9	283.1	—	—	428.6	7.8	12.8
	Y	886	858	—	—	1,490	@	508
Jammu & Kashmir	A	264.6	202.1	0.1	15.0	275.2	—	18.1
	P	546.4	206.4	0.1	9.3	493.3	—	12.0
	Y	2,065	1,021	@	@	1,793	—	663
Karnataka	A	1,084.7	301.1	1,625.3	483.9	151.0	910.1	368.3
	P	2,210.0	177.8	1,396.8	200.0	397.7	1,160.0	180.0
	Y	2,037	591	859	413	2,634	1,273	489
Kerala	A	785.0	—	1.9	—	—	1.3	1.8
	P	1,291.8	—	0.9	—	—	0.8	1.2
	Y	1,646	—	@	—	—	@	@
Madhya Pradesh	A	4,797.5	3,262.0	2,141.3	179.9	744.6	19.3	1,459.0
	P	4,001.9	3,056.2	1,647.4	106.5	677.2	6.0	312.7
	Y	834	937	769	592	909	@	214
Maharashtra	A	1,503.8	1,079.1	6,437.9	1,709.2	72.9	221.4	199.3
	P	2,360.6	931.3	4,427.5	759.9	125.4	209.6	78.7
	Y	1,570	863	688	445	1,720	947	395

PER HECTARE OF PRINCIPAL CROPS--1980-81 (Provisional)

A=Area in '000 hectares
P=Production in '000 tonnes
Y=Yield in kgs/hectares

Barley	Total cereals	Gram	Tur	Total pulses	Total food-grains	Ground-nut	Jute†	Potato	Sugar-cane	Tobacco
—	7,305.9	51.1	226.4	1,431.3	8,737.2	1,280.0	—	0.3	132.0	157.1
—	9,600.6	13.2	44.2	418.6	10,019.2	811.2	—	0.7	10,186.4	149.4
—	1,314	258	195	292	1,147	634	—	@	77,170	95.1
—	2,408.2	3.8	6.7	113.2	2,521.4	—	112.3	38.2	48.1	5.7
—	2,658.6	1.8	4.8	47.1	2,705.7	—	912.6	223.8	1,723.2	4.0
—	1,104	@	@	416	1,073	—	1,4.3	5,859	35,825	@
129.0	8,660.4	186.0	86.0	1,390.9	10,051.3	4.4	154.5	132.0	110.8	12.0
100.0	9,615.0	140.0	100.0	746.8	10,361.8	5.0	691.0	1,055.0	3,480.4	12.0
775	1,110	753	1,163	537	1,031	@	805	7,992	31,412	1,000
6.6	3,919.0	63.5	187.8	553.6	4,472.6	2,124.9	—	12.3	74.9	121.5
3.4	4,208.6	47.0	141.6	266.5	4,475.1	1,644.6	—	329.9	4,435.2	185.2
@	1,074	740	754	481	1,001	774	—	26,821	59,215	1,524
120.0	3,159.0	720.0	7.0	785.0	3,944.0	6.1	—	11.4	115.0	0.2
150.0	5,993.0	650.0	9.0	704.0	6,297.0	7.8	—	187.0	4,660.0	0.2
1,250	1,770	903	@	897	1,597	1,279	—	16,404	40,522	@
35.2	798.2	21.4	0.7	68.9	867.1	1.3	—	14.4	3.2	0.4
36.4	865.6	10.4	0.4	24.1	889.7	1.4	—	63.2	76.7	0.2
1,034	1,084	486	@	350	1,026	@	—	4,389	@	@
12.3	787.4	3.3	—	54.4	841.8	—	—	1.7	0.8	0.2
8.6	1,276.1	1.7	—	36.1	1,312.2	—	—	4.1	29.7	0.1
@	1,621	@	—	664	1,559	—	—	@	@	@
—	4,294.4	152.0	310.4	1,279.8	6,204.2	767.4	—	11.0	155.5	44.1
—	5,722.3	86.0	200.0	627.3	6,349.6	457.9	—	83.2	22,706.5	27.5
—	1,182	566	644	490	1,023	597	—	7,564	81,714	624
—	790.0	—	3.0	35.4	825.4	14.4	—	—	8.5	0.4
—	1,294.7	—	0.8	15.5	1,310.2	13.5	—	—	489.9	0.8
—	1,539	—	@	438	1,587	938	—	—	@	@
215.3	12,818.9	1,945.6	514.9	4,920.9	17,739.8	330.6	—	23.9	63.4	1.4
255.5	10,063.4	1,125.6	288.2	2,146.1	12,209.5	201.9	—	306.8	1,782.0	0.7
1,187	785	579	560	436	688	611	—	12,837	28,107	@
9.0	11,232.6	429.1	706.1	2,804.4	14,037.0	832.8	—	10.6	255.5	11.9
7.0	8,900.0	150.2	359.8	831.2	9,731.2	610.7	—	49.7	23,590.6	6.8
@	792	350	510	296	693	733	—	4,689	92,331	571

(Continued)

2.07(a). STATEWISE AREA, PRODUCTION AND AVERAGE YIELD

State/Area/Production/ Yield		Rice	Wheat	Jowar	Bajra	Maize	Regi	Small millets
Manipur	A	188.6	—	—	—	9.9	—	—
	P	273.0	—	—	—	17.8	—	—
	Y	1.448	—	—	—	1.798	—	—
Meghalaya	A	99.0	3.1	—	—	17.3	—	2.7
	P	132.6	4.1	—	—	14.0	—	2.7
	Y	1.339	@	—	—	809	—	@
Nagaland	A	101.6	—	—	—	17.3	—	—
	P	91.4	—	—	—	1.8	—	—
	Y	90.0	—	—	—	682	—	—
Orissa	A	4,199.0	67.7	35.9	9.3	141.6	277.8	199.5
	P	4,331.0	121.5	26.3	4.6	126.4	177.1	86.7
	Y	1,031	1,795	733	@	893	638	435
Punjab	A	1,178.0	2,827.0	1.0	72.0	376.0	—	—
	P	3,223.0	7,700.0	0.8	89.0	602.0	—	—
	Y	2,736	2,724	@	1,236	1,601	—	—
Rajasthan	A	170.1	1,632.1	1,005.7	5,035.0	899.5	—	46.6
	P	149.8	2,390.0	340.0	1,163.5	784.9	—	3.5
	Y	881	1,464	338	231	873	—	—
Tamil Nadu	A	2,112.0	1.1	5.1.6	341.7	21.1	240.0	338.0
	P	3,975.0	0.4	535.3	295.0	22.6	317.0	251.4
	Y	1,882	@	988	863	1,071	1,321	744
Tripura	A	287.6	5.2	—	—	—	—	—
	P	390.0	10.3	—	—	—	—	—
	Y	1,356	@	—	—	—	—	—
Uttar Pradesh	A	5,180.6	8,009.2	680.4	983.4	1,282.3	168.2	372.2
	P	5,440.0	13,133.8	400.3	717.9	909.6	164.7	240.0
	Y	1,050	1,640	588	730	709	979	645
West Bengal	A	5,175.7	283.0	0.2	1.1	52.6	16.2	10.2
	P	7,465.6	473.2	0.1	0.6	55.6	9.8	7.1
	Y	1,442	1,672	@	@	1,057	@	@
Andaman & Nicobar Islands	A	11.9	—	—	—	—	—	—
	P	18.5	—	—	—	—	—	—
	Y	1,555	—	—	—	—	—	—

PER HECTARE OF PRINCIPAL CROPS—1980-81 (Provisional) (Continued)

A=Area in '000 hectares
 P=Production in '000 tonnes
 Y=Yield in kgs/hectare

Barley	Total cereals	Gram	Tur	Total pulses	Total food-grains	Ground-nut	Jute‡	Potato	Sugar-cane	Tobacco
—	198.5	0.2	—	6.5	205.0	—	—	2.0	2.1	—
—	290.8	0.1	—	2.4	293.2	—	—	10.6	71.7	—
—	1,465	@	—	@	1,430	—	—	@	@	—
—	122.1	0.2	0.7	2.1	124.3	—	6.2	17.3	0.2	0.5
—	153.4	0.1	0.5	1.5	154.9	—	42.3	121.0	9.3	0.4
—	1,256	@	@	@	1,246	—	1,228	6,944	@	@
—	118.9	—	—	4.4	123.3	—	0.1	4.3	4.4	—
—	103.2	—	—	2.3	105.5	—	0.5	23.4	156.6	—
—	868	—	—	@	856	—	@	5,442	@	—
—	4,930.8	52.0	88.5	1,789.1	6,719.9	179.8	43.8	8.1	48.5	21.2
—	4,873.6	26.7	43.5	972.4	5,846.0	233.5	310.0	60.3	3,060.0	11.3
—	988	513	492	544	870	1299	1,274	7,444	62,963	533
65.0	4,519.0	268.0	18.0	348.9	4,867.9	86.0	—	38.9	72.0	0.1
106.0	11,720.8	200.0	13.0	245.2	11,966.0	107.0	—	750.3	3,970.0	0.1
1,631	2,594	746	722	703	2,458	1,244	—	19,288	55,139	@
409.5	9,198.5	1,227.0	35.2	3,048.5	12,247.0	212.0	—	2.1	29.4	2.8
517.4	5,349.1	854.6	12.3	1,153.5	6,502.6	85.9	—	3.1	1,161.4	2.0
1,263	582	696	349	378	531	465	—	@	39,503	@
0.3	3,595.8	6.0	71.1	570.3	4,166.1	865.5	—	11.1	135.9	11.9
0.2	5,396.9	3.6	39.8	1,440	5,580.9	702.3	—	79.4	13,549.1	16.6
@	1,501	@	560	323	1,340	811	—	7,153	99,699	1,395
—	292.8	0.4	0.4	5.5	298.3	0.9	4.3	2.4	1.7	0.9
—	400.3	0.2	0.2	2.3	402.6	0.9	28.7	35.0	65.0	0.3
—	1,367	@	@	@	1,350	@	1,201	14,583	@	@
781.9	17,459.1	1,493.4	523.4	2,880.4	20,339.5	194.4	10.5	273.3	1,364.6	15.7
1,023.5	22,029.8	1,284.0	738.5	7,491.2	24,521.0	132.2	87.4	4,234.1	64,242.8	20.2
1,309	1,262	850	1,411	865	1,206	680	1,498	15,492	47,078	1,287
35.4	5,574.4	96.2	22.6	524.3	6,098.7	1.2	610.4	115.6	14.3	18.9
31.2	8,043.2	55.6	17.1	238.7	8,281.9	0.3	4,442.7	1,971.8	867.4	17.3
881	1,443	578	157	455	1,358	@	1,310	17,057	60,657	915
—	11.9	—	—	0.8	12.7	—	—	—	0.1	—
—	18.5	—	—	0.4	18.9	—	—	—	0.5	—
—	1,555	—	—	@	1,488	—	—	—	@	—

(Continued)

2.07(a). STATEWISE AREA, PRODUCTION AND AVERAGE YIELD

State/Area	Production/ Yield	Rice	Wheat	Jowar	Bajra	Maize	Ragi	Small millets
Arunachal Pradesh	A	75.1	2.2	—	—	22.6	—	16.8
	P	88.8	3.0	—	—	25.6	—	13.9
	Y	1,182	@	—	—	1,133	—	827
Dadra & Nagar Haveli	A	10.5	0.1	0.8	—	—	3.0	0.7
	P	13.6	0.3	0.6	—	—	3.6	0.5
	Y	1,295	@	@	—	—	@	@
Delhi	A	3.1	45.1	8.0	10.8	0.8	—	—
	P	7.8	117.7	3.2	11.3	0.5	—	—
	Y	@	2,610	@	1,046	@	—	—
Goa, Daman & Diu	A	52.7	—	—	0.3	—	6.4	—
	P	116.9	—	—	0.4	—	8.2	—
	Y	2,218	—	—	@	—	@	—
Mizoram	A	29.0	—	—	—	6.5	—	—
	P	28.3	—	—	—	4.9	—	—
	Y	976	—	—	—	@	—	—
Pondicherry	A	31.2	—	—	1.9	—	1.4	0.2
	P	60.5	—	—	7.6	—	4.4	0.1
	Y	1,939	—	—	@	—	@	@
All India	A	39,773.3	22,103.7	15,609.6	11,630.0	5,982.8	2,340.9	3,895.5
	P	53,231.0	36,460.0	10,504.2	5,417.8	6,804.3	2,464.7	1,578.0
	Y	1,338	1,649	673	466	1,137	1,053	405

@ Crop being unimportant, yield per hectare has not been calculated.

‡ Production in thousand bales of 180 kgs. each and yield in kgs. per hectare.

Source: Area and production of principal crops in India 1980-81, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.

PER HECTARE OF PRINCIPAL CROPS—1980-81 (Provisional) (Concluded)

A=Area in '000 hectares
 P=Production in '000 tonnes
 Y=Yield in kgs/hectare

Barley	Total cereals	Gram	Tur	Total pulses	Total food-grains	Ground-nut	Jute†	Potato	Sugar-cane	Tobacco
—	116.7	—	—	—	116.7	—	—	—	—	—
—	131.3	—	—	—	131.3	—	—	—	—	—
—	1,125	—	—	—	1,125	—	—	—	—	—
—	15.1	—	1.8	4.5	19.6	—	—	—	—	—
—	18.6	—	1.1	2.5	21.1	—	—	—	—	—
—	1,232	—	@	@	1,077	—	—	—	—	—
1.5	59.6	1.1	—	3.3	72.9	—	—	0.2	0.2	Neg
2.6	143.1	1.1	—	1.9	145.0	—	—	1.6	3.0	Neg
@	2,056	@	—	@	1,989	—	—	@	@	@
—	59.4	—	—	—	59.4	—	—	—	1.5	—
—	125.5	—	—	—	125.5	—	—	—	75.0	—
—	2,113	—	—	—	2,113	—	—	—	@	—
—	35.5	—	—	1.0	36.5	—	—	0.9	3.5	1.3
—	33.2	—	—	0.3	33.5	—	—	4.5	7.0	0.5
—	935	—	—	@	9.8	—	—	@	@	@
—	34.7	—	—	6.1	40.8	2.9	—	—	1.8	—
—	72.6	—	—	3.3	75.9	3.5	—	—	122.2	—
—	2,192	—	—	@	1,860	@	—	—	@	—
1,821.0	103,156.8	6,720.3	2,810.7	22,633.6	125,790.4	6,904.6	942.1	732.0	2,648.0	428.2
2,241.8	118,701.8	4,651.9	2,014.8	11,165.2	129,867.0	5,019.6	6,515.2	9,598.5	150,521.6	455.6
1.231	1,151	.92	717	493	1,032	727	1,245	13,113	56.844	1,064

**2 07(b). STATEWISE AREA AND
(1981-82 &**

State	Year	Area/production	Rice	Wheat	Jowar	Bajra	Maize	Ragi	Small millets
Andhra Pradesh	1981-82	A	3823.5	17.4	2214.2	543.6	331.5	258.9	603.5
		P	7867.9	11.5	1334.0	443.5	631.7	286.9	371.0
	1982-83	A	3594.5	15.0	1940.5	488.9	328.5	232.5	475.3
		P	7583.2	7.9	1279.1	262.3	710.3	234.2	147.0
Assam	1981-82	A	2258.6	102.3	—	—	19.1	—	8.1
		P	2235.6	115.0	—	—	11.6	—	4.1
	1982-83	A	2301.8	105.3	—	—	20.2	—	8.1
		P	2579.8	117.9	—	—	12.2	—	4.0
Bihar	1981-82	A	5367.6	1640.1	10.7	12.6	850.7	168.8	136.8
		P	4256.9	2201.8	6.8	5.8	768.8	93.6	54.5
	1982-83	A	4496.3	1640.1	5.2	11.1	773.1	138.2	113.1
		P	3059.8	2201.8	3.7	5.4	700.0	74.9	37.8
Gujarat	1981-82	A	499.1	703.6	938.1	1433.3	312.3	47.9	140.5
		P	736.7	1407.3	564.3	1473.2	396.2	48.7	109.4
	1982-83	A	476.1	646.6	984.0	1394.5	306.4	47.8	127.6
		P	488.9	1352.3	487.9	1178.0	306.0	43.2	54.3
Haryana	1981-82	A	506.0	1562.0	118.0	852.0	74.0	—	—
		P	1250.0	3682.0	32.0	496.0	78.0	—	—
	1982-83	A	489.0	1720.0	116.0	781.0	56.0	—	—
		P	1275.0	4345.0	28.0	506.0	56.0	—	—
Himachal Pradesh	1981-82	A	93.5	353.6	0.6	—	9.8	9.8	22.0
		P	96.3	430.0	0.2	—	459.9	5.9	9.1
	1982-83	A	88.2	361.8	1.2	—	287.1	8.6	22.2
		P	73.0	456.6	0.2	—	398.6	6.1	9.4
Jammu & Kashmir	1981-82	A	264.5	200.1	0.3	15.8	278.6	—	15.9
		P	550.7	203.7	0.2	8.6	461.3	—	9.6
	1982-83	A	274.4	200.1	0.1	20.3	272.9	—	16.1
		P	574.5	203.7	0.1	7.1	406.9	—	8.4
Karnataka	1981-82	A	1167.5	334.4	2113.6	635.3	158.1	1148.3	377.7
		P	2384.0	211.8	1792.4	323.0	417.2	1427.8	149.2
	1982-83	A	1076.2	335.6	2074.1	514.8	157.8	987.0	305.1
		P	2062.0	202.3	1586.4	199.2	380.8	1321.1	123.7

PRODUCTION OF PRINCIPAL CROPS

1982-83)*

A=Area in '000 hectares

P=Production in '000 tonnes

Barely	Gram	Tur (Arhar)	Kharif pulses (other than Tur) (Arhar)	Rabi pulses (other than Gram)	Groundnut	Castor seed	Rapeseed & mustard	Linseed	Sugarcane ^{2/3}	Cottons
—	52.1	248.4	654.3	474.7	1451.0	273.4	1.1	14.1	179.7	473.3
—	23.6	60.4	215.1	167.5	1437.2	56.8	0.2	2.9	14961.5	663.4
—	48.7	239.7	584.3	478.9	1491.4	291.8	0.7	11.5	169.7	443.0
—	18.3	45.3	218.2	230.9	1099.6	69.6	0.2	2.2	12593.8	589.1
—	3.1	7.3	—	106.8	—	2.0	224.0	5.5	49.4	4.2
—	1.5	5.2	—	45.5	—	0.8	102.7	2.4	2152.5	2.0
—	3.5	8.1	—	114.8	—	2.1	224.0	5.5	49.4	3.9
—	1.7	5.8	—	45.3	—	0.9	102.7	2.4	2075.9	1.6
105.2	172.6	85.4	243.1	760.7	5.6	2.0	74.9	90.6	123.6	0.3
80.1	123.9	86.5	116.6	443.7	3.8	1.3	46.4	38.4	4180.4	0.6
101.0	193.0	85.4	219.3	760.7	6.8	2.1	74.9	90.6	123.6	0.3
67.0	138.0	86.5	90.6	500.0	4.4	1.6	46.4	38.4	4180.4	0.6
6.4	87.6	228.2	318.6	27.6	2207.8	175.2	179.7	—	84.3	1530.7
3.3	69.8	180.3	86.4	13.0	2198.2	196.9	78.3	—	5022.8	2095.3
6.6	159.2	261.5	286.1	25.5	2057.7	184.8	171.4	—	95.2	1496.2
12.9	120.8	194.9	100.0	19.5	1312.9	225.2	211.2	—	6695.4	1547.5
123.0	1044.0	7.8	20.9	34.4	7.9	—	202.0	0.2	147.0	327.0
158.0	309.0	3.7	14.5	17.0	7.4	—	141.0	0.2	5840.0	680.0
80.0	509.0	8.0	15.4	25.7	7.1	—	202.0	0.2	147.0	397.0
122.0	282.0	9.2	10.3	13.2	5.0	—	141.0	0.2	5500.0	840.0
35.4	9.6	0.5	34.5	10.3	1.5	—	6.5	5.5	3.0	0.4
40.6	1.5	0.3	7.0	3.2	0.9	—	1.9	0.8	43.1	0.6
35.3	7.9	0.6	30.0	10.3	1.4	—	6.6	5.5	3.1	0.5
43.4	1.6	0.3	5.3	3.4	0.1	—	2.2	0.8	28.8	0.6
10.1	1.5	—	43.0	4.3	0.1	—	43.1	2.7	0.8	0.6
6.8	0.8	—	28.4	2.5	0.1	—	64.0	2.4	22.8	1.6
10.1	1.5	—	44.6	4.3	Neg.	—	43.1	2.7	0.8	0.5
6.8	0.8	—	27.8	2.5	Neg.	—	64.0	2.4	22.1	1.3
—	137.3	374.0	862.6	193.6	871.9	25.8	3.3	63.1	175.3	1040.2
—	60.5	183.3	307.8	71.8	658.1	18.6	0.9	15.8	14286.0	620.6
—	156.6	258.4	713.4	187.6	854.6	23.5	2.5	65.4	177.2	1087.4
—	70.7	118.6	215.1	54.1	560.4	18.7	0.5	13.0	14151.0	653.9

(Continued)

**2.07(b). STATEWISE AREA AND
(1981-82 &**

State	Year	Area/production	Rice	Wheat	Jowar	Bajra	Maize	Ragi	Small millets
Kerala	1981-82	A	806.9	—	1.9	—	—	1.5	2.7
		P	1339.7	—	0.8	—	—	1.1	1.7
	1982-83	A	797.9	—	1.8	—	—	1.5	2.4
		P	1308.8	—	0.8	—	—	1.1	1.4
Madhya Pradesh	1981-82	A	4849.6	3305.8	2252.0	174.3	788.2	20.2	1453.8
		P	3830.2	3313.4	1858.9	79.4	770.2	5.2	338.4
	1982-83	A	4784.2	3369.4	2177.7	174.9	772.9	18.1	1388.7
		P	3402.1	3680.9	1513.0	102.0	760.5	4.9	279.5
Maharashtra	1981-82	A	155.2	1128.0	6577.9	1743.7	74.1	225.2	194.4
		P	2435.4	988.5	4891.1	778.6	125.5	228.0	78.5
	1982-83	A	1486.3	1022.7	6647.0	1389.5	77.0	225.8	172.4
		P	1948.8	803.3	4652.5	444.9	107.6	215.0	74.9
Manipur	1981-82	A	168.3	—	33.9	—	5.6	—	2.8
		P	253.1	—	27.5	—	9.2	—	2.7
	1982-83	A	158.5	—	37.1	—	5.3	—	2.8
		P	219.2	—	27.8	—	5.7	—	2.7
Meghalaya	1981-82	A	107.1	3.5	2.5	—	18.0	—	—
		P	125.1	4.9	1.9	—	20.4	—	—
	1982-83	A	107.9	3.3	1.4	—	17.8	—	—
		P	123.0	4.6	1.3	—	21.3	—	—
Nagaland	1981-82	A	106.0	—	968.9	—	17.7	—	—
		P	99.1	—	407.9	—	12.4	—	—
	1982-83	A	110.9	—	948.4	—	18.1	—	—
		P	108.4	—	356.4	—	13.0	—	—
Orissa	1981-82	A	4159.2	66.1	33.9	8.3	154.1	288.9	154.2
		P	3853.0	125.2	27.5	6.3	171.4	238.1	71.4
	1982-83	A	3979.2	63.5	37.1	8.4	165.8	298.5	162.3
		P	2897.0	121.0	27.8	6.4	176.6	244.0	74.0
Punjab	1981-82	A	1270.0	2917.0	2.5	60.0	339.0	—	—
		P	3755.0	8553.0	1.9	60.0	623.0	—	—
	1982-83	A	1319.0	3054.0	1.4	42.0	305.0	—	—
		P	4147.0	9183.0	1.3	50.0	542.0	—	—

PRODUCTION OF PRINCIPAL CROPS

1982-83* (Continued)

A=Area in '000 hectares

P=Production in '000 tonnes

Barely	Gram	Tur (Arhar)	Kharif pulses (other than Tur) (Arhar)	Rabi pulses (other than Gram)	Groundnut	Castor seed	Rapeseed & mustard	Linseed	Sugarcane@	Cottons
—	—	3.0	10.0	20.0	9.4	—	—	—	8.0	6.2
—	—	0.8	6.9	13.1	8.3	—	—	—	479.5	9.8
—	—	3.0	9.9	19.6	9.4	—	—	—	8.0	6.1
—	—	0.7	6.7	12.1	8.3	—	—	—	475.4	6.5
180.9	2028.9	533.5	1035.1	1259.2	300.4	5.0	291.3	571.9	42.6	613.6
165.4	1362.3	481.7	290.4	338.7	226.8	1.7	158.9	120.1	1209.6	334.2
177.6	2156.8	512.1	1016.8	1156.2	296.9	4.8	259.6	529.7	54.3	607.4
164.3	1454.6	343.1	255.2	355.8	152.5	1.7	128.9	124.5	1544.0	330.5
8.7	461.3	705.5	1356.6	228.8	823.8	4.2	4.6	251.6	297.1	2709.6
6.7	176.9	427.1	386.7	48.4	694.4	1.0	1.7	57.7	28779.6	1464.8
8.7	436.8	680.3	1275.3	181.8	767.5	5.2	5.3	245.1	325.8	2654.8
5.7	147.9	398.9	381.9	34.2	725.2	2.2	1.7	52.5	31360.3	1626.2
—	0.2	—	—	3.9	—	—	1.0	—	2.3	0.6
—	0.1	—	—	1.5	—	—	0.5	—	77.9	0.3
—	0.2	—	—	3.9	—	—	3.0	—	1.7	0.6
—	0.1	—	—	1.5	—	—	1.5	—	60.0	0.7
—	0.2	0.9	—	1.3	—	—	5.7	—	0.2	7.5
—	0.1	0.6	—	0.9	—	—	2.8	—	9.0	4.5
—	0.1	1.3	—	1.5	—	—	6.1	—	0.2	7.7
—	0.1	0.9	—	1.0	—	—	3.2	—	9.0	4.7
—	—	—	3.1	0.6	0.2	—	2.3	—	4.3	—
—	—	—	1.5	0.3	0.2	—	0.9	—	136.8	—
—	—	—	3.3	0.6	0.2	—	2.6	—	4.5	—
—	—	—	1.3	0.3	0.1	—	1.1	—	202.5	—
—	42.3	103.6	263.3	1358.1	216.1	44.8	162.1	37.0	50.0	5.7
—	27.6	75.7	136.3	704.7	292.1	25.9	72.4	15.8	3220.0	5.7
—	35.7	118.1	331.6	1157.2	252.9	33.9	123.7	24.7	51.2	3.3
—	24.3	87.3	187.9	622.1	359.2	18.8	60.3	10.4	3199.4	3.3
87.0	243.0	11.6	42.8	22.9	92.0	—	108.0	1.3	106.0	683.0
174.0	115.0	9.5	24.3	10.1	90.0	—	72.0	0.6	6120.0	1270.0
80.0	124.0	18.1	46.2	19.7	78.0	—	85.0	1.1	104.0	724.0
126.0	62.0	18.6	31.5	9.5	53.0	—	64.0	0.8	6340.0	1218.0

(Continued)

**2.07(b). STATEWISE AREA AND
(1981-82 &**

State	Year	Area: production	Rice	Wheat	Jowar	Bajra	Maize	Ragi	Small millets
Rajasthan	1981-82	A	140.1	1768.1	968.9	4944.8	918.4	—	48.6
		P	138.8	2938.2	407.9	803.9	755.4	—	7.7
	1982-83	A	119.4	2064.3	948.4	4719.1	888.5	—	44.0
		P	89.6	3777.4	356.4	1367.3	658.2	—	5.4
Sikkim	1981-82	A	15.1	9.5	—	—	30.9	5.0	—
		P	12.0	12.9	—	—	30.5	3.8	—
	1982-83	A	14.7	8.7	—	—	30.1	5.0	—
		P	11.6	11.8	—	—	30.0	3.8	—
Tamil Nadu	1981-82	A	2467.0	1.0	668.9	368.2	25.5	245.5	267.7
		P	5607.0	0.4	534.2	360.3	60.2	448.5	206.3
	1982-83	A	1775.0	0.5	582.4	282.6	19.6	212.1	278.4
		P	3300.0	0.2	439.7	244.8	46.8	288.6	201.8
Tripura	1981-82	A	295.5	3.8	—	—	—	—	—
		P	350.0	8.1	—	—	—	—	—
	1982-83	A	296.2	3.0	—	—	—	—	—
		P	423.5	6.0	—	—	—	—	—
Uttar Pradesh	1981-82	A	5389.3	7772.0	685.9	974.6	1174.4	163.4	329.5
		P	5898.3	12749.0	579.4	679.3	1003.8	145.5	201.1
	1982-83	A	4958.7	8219.3	604.6	982.9	1112.3	162.5	309.1
		P	5529.2	15285.7	293.7	742.4	849.8	151.9	198.2
West Bengal	1981-82	A	5210.0	214.0	0.5	1.1	51.5	16.8	10.1
		P	5832.6	389.3	0.3	0.8	58.3	9.7	7.3
	1982-83	A	4861.5	266.2	0.7	0.5	51.2	14.3	9.0
		P	4949.1	605.5	0.4	0.2	59.4	8.3	5.8
Andaman & Nicobar Islands	1981-82	A	12.0	—	—	—	—	—	—
		P	21.6	—	—	—	—	—	—
	1982-83	A	12.0	—	—	—	—	—	—
		P	21.6	—	—	—	—	—	—
Arunachal Pradesh	1981-82	A	90.1	2.9	—	—	23.1	—	18.0
		P	94.2	4.0	—	—	25.9	—	15.8
	1982-83	A	90.1	2.9	—	—	23.1	—	15.0
		P	94.2	4.0	—	—	25.9	—	15.8

**PRODUCTION OF PRINCIPAL CROPS
1982-83)***

A=Area in '000 hectares
P=Production in '000 tonnes

Barely	Gram	Tur (Arher)	Kharif pulses (other than Tur) (Arher)	Rabi pulses (other than Gram)	Groundnut	Castor seed	Repseed & mustard	Linseed	Sugarcane	Cotton\$
450.2	1935.2	31.8	1787.2	32.2	161.0	5.8	651.2	85.3	37.1	379.7
583.3	1257.2	11.9	238.4	25.4	107.7	0.9	458.3	28.6	1436.8	425.4
351.8	1803.2	22.5	1719.9	33.7	182.2	5.0	605.9	74.8	38.0	394.7
479.2	1321.6	7.6	217.0	27.3	103.1	0.9	442.7	27.4	1429.1	551.2
0.5	—	—	3.2	1.6	—	—	3.7	—	—	—
0.5	—	—	2.2	1.7	—	—	2.2	—	—	—
0.7	—	—	5.9	2.5	—	—	5.3	—	—	—
0.7	—	—	3.5	1.5	—	—	3.2	—	—	—
0.2	11.5	117.5	454.5	—	1013.1	19.0	0.9	—	201.3	239.6
0.2	6.9	56.5	119.9	—	1237.8	6.0	0.2	—	20208.1	277.7
—	8.2	109.9	523.8	—	1028.5	16.7	1.4	—	171.1	205.4
—	4.6	30.2	965.1	—	967.1	5.3	0.4	—	152053.3	305.2
—	0.3	0.5	1.8	2.3	1.0	—	2.9	—	1.8	1.3
—	0.1	0.2	0.8	0.8	0.9	—	1.8	—	71.3	1.4
—	0.5	0.5	2.1	2.5	1.2	—	3.0	—	1.8	1.4
—	0.2	0.2	0.9	1.1	0.9	—	2.0	—	71.3	1.5
685.7	1571.4	515.4	249.9	707.2	261.4	0.3	2258.0	636.3	1651.7	30.2
744.4	1061.3	630.2	77.2	454.2	253.8	0.1	1073.6	183.2	76440.1	22.4
608.4	1509.0	489.1	228.3	789.5	305.3	0.3	2187.5	636.3	1802.6	36.5
806.7	1391.4	544.5	53.2	521.8	187.2	0.1	1097.8	183.2	82185.1	27.6
31.7	64.7	27.2	49.4	278.6	1.6	—	163.3	55.1	23.0	0.2
26.9	42.9	21.3	31.4	128.9	1.6	—	94.7	13.6	1410.8	0.2
30.3	72.8	25.4	42.3	239.6	1.6	—	170.9	65.2	31.1	0.2
26.0	50.5	25.5	23.0	103.2	1.6	—	91.0	17.6	1599.6	0.2
—	—	—	—	0.7	—	—	—	—	0.1	—
—	—	—	—	0.3	—	—	—	—	0.3	—
—	—	—	—	0.7	—	—	—	—	0.1	—
—	—	—	—	0.3	—	—	—	—	0.3	—
—	—	—	—	—	—	—	8.7	—	—	0.2
—	—	—	—	—	—	—	6.1	—	—	0.1
—	—	—	—	—	—	—	8.7	—	—	0.2
—	—	—	—	—	—	—	6.1	—	—	0.1

(Continued)

**2 07(b). STATEWISE AREA AND
(1981-82 &**

State	Year	Area/production	Rice	Wheat	Jowar	Bajra	Maize	Ragi	Small millets
Dadra & Nagar Haveli	1981-82	A	10.5	0.1	0.7	—	—	3.0	0.5
		P	17.6	0.2	0.5	—	—	4.2	0.5
	1982-83	A	12.0	0.1	0.6	—	—	2.6	0.6
		P	18.5	0.2	0.5	—	—	3.0	0.4
Delhi	1981-82	A	1.0	39.3	10.3	14.2	0.1	—	—
		P	1.1	106.0	4.2	13.1	Neg.	—	—
	1982-83	A	2.5	48.1	12.6	11.8	0.6	—	—
		P	3.5	131.3	4.2	10.2	0.4	—	—
Goa, Daman & Diu	1981-82	A	53.2	—	—	0.3	—	6.4	—
		P	119.5	—	—	0.5	—	9.3	—
	1982-83	A	53.2	—	—	0.3	—	6.4	—
		P	118.7	—	—	0.5	—	8.2	—
Mizoram	1981-82	A	29.0	—	—	—	3.8	—	—
		P	28.3	—	—	—	6.2	—	—
	1982-83	A	29.0	—	—	—	3.8	—	—
		P	28.3	—	—	—	5.2	—	—
Pondicherry	1981-82	A	33.0	—	0.1	1.8	—	1.3	0.2
		P	78.3	—	0.1	5.0	—	4.1	0.1
	1982-83	A	29.1	—	0.1	1.7	—	1.1	0.1
		P	42.5	—	0.1	3.4	—	2.2	0.1
All India	1981-82	A	40708.4	22144.4	16599.0	11783.9	5934.7	2610.4	2786.1
		P	53248.0	37451.8	12061.9	5537.3	6897.1	2960.5	1638.4
	1982-83	A	37793.8	23150.5	16110.3	10874.3	5693.1	2362.0	3455.3
		P	46480.8	42502.4	10675.8	5130.1	6274.2	2810.6	1245.3

@ = Area in '000 hectares & production in '000 tonnes of cane.

§ = Area in '000 hectares & production in '000 bales of 170 kg each.

* = Provisional, subject to change.

Source: Directorate of Economics & Statistics, Ministry of Agriculture, Govt. of India, New Delhi.

PRODUCTION OF PRINCIPAL CROPS
1982-83)* (Concluded)

A=Area in '000 hectares
P=Production in '000 tonnes

Barely	Gram	Tur (Arhar)	Kharif pulses (other than Tur) (Arhar)	Rabi pulses (other than Gram)	Groundnut	Castor seed	Rapeseed & mustard	Linseed	Sugarcane ⁽¹⁾	Cotton ²
—	0.2	1.9	2.1	0.4	—	—	—	—	—	—
—	0.1	1.3	1.4	0.2	—	—	—	—	—	—
—	0.2	1.5	2.1	0.2	—	—	—	—	—	—
—	0.1	0.9	1.5	0.1	—	—	—	—	—	—
1.5	1.1	—	—	1.1	—	—	1.0	—	0.2	0.2
2.4	1.0	—	—	0.4	—	—	0.1	—	0.2	Neg.
0.8	0.5	—	—	1.0	—	—	1.0	—	0.2	0.2
1.4	0.5	—	—	0.4	—	—	0.2	—	0.1	0.1
—	—	—	—	—	—	—	—	—	1.2	—
—	—	—	—	—	—	—	—	—	59.8	—
—	—	—	—	—	—	—	—	—	1.2	—
—	—	—	—	—	—	—	—	—	59.8	—
—	—	—	—	0.3	—	—	—	—	1.1	2.5
—	—	—	—	0.1	—	—	—	—	5.1	2.4
—	—	—	—	0.3	—	—	—	—	1.1	2.5
—	—	—	—	0.1	—	—	—	—	5.1	2.4
—	—	—	—	3.5	2.9	—	—	—	2.2	0.6
—	—	—	—	2.0	3.6	—	—	—	183.6	1.1
—	—	—	—	2.0	2.5	—	—	—	1.9	0.6
—	—	—	—	1.2	2.1	—	—	—	165.1	1.0
1727.5	7868.1	3004.0	7436.1	5335.1	7428.7	557.5	4399.3	1820.2	3193.3	4057.4
1992.6	4642.1	2236.5	2093.2	2535.4	7223.0	310.0	2381.5	482.5	186357.6	7883.8
1491.3	7225.4	2843.5	7098.6	5220.3	7345.2	570.2	4194.2	1758.3	3364.8	8074.4
1862.1	5019.9	1919.0	1996.0	2562.4	5552.7	345.0	2472.3	475.8	189128.8	7717.0

**2.08. RUBBER—AREA, PRODUCTION AND AVERAGE YIELD PER HECTARE
1980-81 AND 1981-82**

State	Area (in '000 ha.)		Tappable area (in '000 ha.)		Production (tonnes)		Average yield (in kg./ha.)	
	1980-81	1981-82	1980-81	1981-82	1980-81	1981-82	1980-81	1981-82
Kerala	237.8	248.0	180.0	181.2	140,333	139,455	780	770
Tamil Nadu	15.5	15.7	9.7	9.9	10,446	10,510	1,077	1,060
Karnataka	8.3	8.7	4.0	4.3	2,128	2,606	531	600
Andamans & Others	6.4	7.6	0.5	0.8	193	299	—	—
All India	268.0	280.0	194.2	196.2	153,100	152,870	790	780

Source: Rubber Board, Kottayam, Kerala.

**2.09. TEA—AREA PRODUCTION AND AVERAGE YIELD PER HECTARE
1979, 1980, 1981 AND 1982**

State	Area in hectares		Production (in '000 kg.)				Average yield (kg./hectares)		
	1979*	1980**	1979	1980	1981	1982	1979	1980	1981@
Assam	195,459	200,569	276,190	300,700	305,130	302,866	1,413	1,499	4,521
West Bengal	91,003	93,497	123,978	133,185	128,259	132,205	1,362	1,424	1,372
Tripura	5,791	6,062	3,130	3,688	2,375	—	540	608	392
Bihar	459	459	21	20	1	—	46	44	2
Uttar Pradesh	1,604	1,804	518	285	1,00	—	287	158	554
Himachal Pradesh	4,183	4,183	560	551	607	6,797	134	132	145
Manipur	80	80	—	—	—	—	—	—	—
Sikkim	145	185	19	26	32	—	131	141	173
Arunachal Pradesh	—	5	—	—	—	—	—	—	—
Total North India	298,924	306,844	404,416	438,455	437,404	441,868	1,353	1,429	1,425
Tamil Nadu	36,810	37,030	77,620	74,006	71,597	71,308	2,109	1,999	1,933
Kerala	6,141	36,130	58,225	53,614	47,631	48,752	1,611	1,484	1,318
Karnataka	1,872	1,887	3,515	3,475	3,409	3,471	1,878	1,842	1,807
Total South India	74,823	75,047	139,360	131,095	122,637	123,531	1,863	1,747	1,634
All India	373,747	381,891	543,776	569,550	560,041	565,399	1,455	1,491	1,466

*As on 31.3.1979

**As on 31.12.1980

@Based on 1930 area

Source: Tea Board, Calcutta

**2.10 AREA, PRODUCTION AND YIELD PER HECTARE OF
CROPS—FRUITS AND CONDIMENTS
(1979-80 to 1981-82)**

Crop	A=Area in '000 hectares P=Production in '000 tonnes Y=Yield in kg/ha	1979-80	1980-81	1981-82
Banana	A	289	291	279
	P	4,568	4,354	4,383
	Y	15,784	14,962	15,710
Sweet Potato	A	207	208	223
	P	1,313	1,502	1,667
	Y	6,337	7,221	7,475
Tapioca	A	352	321	310
	P	5,845	5,868	5,567
	Y	16,611	18,280	17,958
Turmeric	A	105	99	
	P	235	210	
	Y	2,242	2,136	
Opium	A	35	35	
	P	1.2	1.4	
	Y	35	41	
Cardamom	A	87	87	101
	P	5	5	9
	Y	5.6	55	89
Coconut	A	1,076	1,083	1,088
	P*	5,636	5,720	5,619
	Y**	5,239	5,282	5,165
Ginger (dry)	A	41	40	41
	P	71	82	87
	Y	1,718	2,050	2,122
Black pepper	A	111	111	111
	P	28	27	29
	Y	250	248	261
Chillies (dry)	A	854	825	806
	P	508	485	515
	Y	594	588	639
Guar seed	A	1,829	2,402	2,164
	P	376	568	605
	Y	206	236	280
Arecanut	A	183	185	183
	P	190	196	195
	Y ⁺	816	1,059	1,066
Garlic	A	60	53	60
	P	206	213	220
	Y	3,444	3,644	3,667

* Million nuts. ** Nuts per hectare. + Yield per thousand bearing palms in kgs.

Source: Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.

**2.11. STATEWISE IRRIGATED AND UNIRRIGATED YIELD OF
PRINCIPAL CROPS**

(kgs per hectare)

State	Crop	Irrigated			Unirrigated		
		1977-78	1978-79	1979-80	1977-78	1978-79	1979-80
i. Rice							
Andhra Pradesh	Kharif	1,488	1,885	1,809	629	862	588
	Rabi	1,957	2,163	2,211	1,600	—	—
Assam	Autumn	1,407	1,640	1,203	820	823	667
	Winter	1,344	1,408	1,092	1,154	998	988
	Summer	1,579	1,195	1,321	1,287	1,108	1,086
Bihar	Autumn	1,101	—	1,004	639	—	537
	Winter	1,050	1,021	564	905	901	683
	Summer	1,126	1,054	806	654	681	—
Gujarat		2,052	1,708	1,559	1,773	966	618
Himachal Pradesh		1,963	1,483	—	1,366	1,267	—
Karnataka	Kharif	1,879	2,342(A) 2,109(W)	—	1,307	1,523(A)	—
	Summer	1,754	2,718	—	2,004	—	—
Kerala	Autumn	1,832	1,796	1,889	1,286	1,402	1,397
	Winter	1,566	1,555	1,552	1,384	1,307	1,331
	Summer	1,515	1,493	1,580	1,071	1,330	1,440
Madhya Pradesh	Autumn	1,379	1,039	729	880	739	337
Maharashtra	Autumn	1,305	1,575	1,343	1,644	1,429	1,187
	Summer	1,584	1,601	1,501	—	—	—
Orissa	Autumn	1,047	882	913	726	749	420
	Winter	1,121	1,262	1,197	963	1,074	713
	Summer	1,399	1,290	1,289	—	—	—
Punjab	Autumn	2,349	2,992	2,625	1,261	1,011	1,071
Tamil Nadu	I & II crop	2,062(I)	2,068(I)	2,033(I)	1,266(I)	1,093(I)	—
		2,075(II)	2,081(II)	2,071(II)	1,899(II)	2,257(II)	901(II)
Uttar Pradesh	Early	1,550(A)	1,723(A)	889(A)	934(A)	1,062(A)	—
	Late	1,489(W)	1,469(W)	781(W)	949(W)	1,030(W)	287(W)
West Bengal	Aus	1,641	1,597	1,547	876	794	782
	Early aman	1,687	1,325	1,382	1,323	1,057	535
	Aman (Winter)	1,685	1,455	1,540	1,233	1,029	1,020
	Summer	—	2,445	—	—	1,549	—
ii. Wheat							
Assam		2,040	1,860	1,110	1,153	998	1,118
Bihar		1,025	1,196	963	814	988	736
Gujarat		2,199	2,342	2,164	498	—	546
Haryana		2,109	2,421	2,298	1,166	1,248	1,061
Himachal Pradesh		1,610	1,456	—	1,388	1,306	—

(Continued)

**2.11. STATEWISE IRRIGATED AND UNIRRIGATED YIELD OF
PRINCIPAL CROPS (Continued)**

(kgs per hectare)

State	Crop	Irrigated			Unirrigated		
		1977-78	1978-79	1979-80	1977-78	1978-79	1979-80
Jammu & Kashmir		1,270	—	—	887	—	—
Karnataka		838	1,323	—	382	419	—
Madhya Pradesh		1,449	1,477	1,193	768	791	599
Maharashtra		983	1,157	1,106	480	497	622
Punjab		2,618	2,821	2,880	1,436	1,205	1,278
Rajasthan		1,547	1,544	1,433	949	880	754
Uttar Pradesh		1,587	1,681	1,469	975	1,040	643
West Bengal		1,809	1,524	1,532	1,107	988	1,132
III. Jowar							
Andhra Pradesh	Kharif	1,182	1,754	—	639	519	—
	Rabi	1,854	1,738	—	569	573	—
Gujarat	Kharif	1,120	705	1,243	433	470	467
	Rabi	1,584	1,331	1,317	725	847	809
Haryana		223	215	34	99	175	128
Karnataka	Kharif	1,078	2,334	—	646	1,073	—
	Rabi	1,114	1,611	—	556	582	—
Madhya Pradesh		—	—	—	847	—	—
Maharashtra	Kharif	*	—	*	1,086	1,035	1,134
	Rabi	815	901	970	442	460	491
Tamil Nadu		2,059	1,760	1,709	775	764	743
IV. Bajra							
Andhra Pradesh		1,546	1,576	1,655	552	506	455
Gujarat		—	840	1,806	666	936	889
Haryana		811	858	714	287	408	178
Karnataka		306	1,155	—	324	407	—
Madhya Pradesh		—	—	—	557	—	—
Maharashtra		739	780	733	377	324	420
Punjab		1,125	1,006	1,087	926	782	732
Tamil Nadu		1,878	2,194	2,047	683	832	599
V. Maize							
Andhra Pradesh	Kharif	2,047	1,383	2,057	1,369	879	981
	Rabi	1,784	2,117	1,677	—	—	—
Bihar	Autumn	—	967	—	705	891	61
	Rabi	2,104	2,202	1,851	—	—	—
Gujarat	Garma	1,317	830	—	1,101	683	—
		—	1,403	807	469	860	451

(Continued)

2.11. STATEWISE IRRIGATED AND UNIRRIGATED YIELD OF PRINCIPAL CROPS (Concluded)

(kgs per hectare)

State	Crop	Irrigated			Unirrigated		
		1977-78	1978-79	1979-80	1977-78	1978-79	1979-80
Haryana		—	—	703	—	—	422
Himachal Pradesh		1,373	1,935	—	1,963	1,709	—
Karnataka	Kharif	3,306	3,255	—	3,000	2,364	—
	Rabi	2,512	2,760	—	1,306	1,148	—
Madhya Pradesh		—	—	—	838	—	—
Maharashtra	Kharif	—	—	1,191	—	—	886
	Rabi	—	—	1,802	—	—	1,774
Punjab		1,793	1,662	1,763	1,129	1,224	1,262
Rajasthan		1,242(K)	1,348	994(K)	615(K)	860	413(K)
VI. Groundnut							
Andhra Pradesh	Kharif	1,388	1,118	1,169	827	770	726
	Rabi	1,355	1,561	1,235	895	985	1,047
Gujarat	Kharif	1,102	1,048	831	885	852	832
Karnataka	Kharif	982	1,101	—	600	703	—
	Rabi/Summer	1,688	1,528	—	1,492	1,498	—
Madhya Pradesh		—	—	—	567	344	628
Maharashtra		1,570	—	—	659	602	744
Orissa	Kharif	—	739	819	—	529	415
	Rabi	—	927	736	—	1,082	708
Punjab		873	882	1,129	959	886	728
Rajasthan		1,167	629	614	705	749	169
Tamil Nadu		1,949	1,633	1,640	1,049	981	842
VII. Sugarcane (Cane)							
Andhra Pradesh	Plant	84,980	66,123	79,317	67,580	41,167	45,920
	Ratoon	65,110	60,683	65,114	40,730	33,468	38,200
Assam		—	—	—	30,733	34,432	32,323
Bihar		28,538	24,156	29,477	38,537	28,286	33,845
Karnataka		81,252	74,493	—	56,000	—	—
Maharashtra		94,600	92,100	89,280	—	—	—
Punjab		58,993	58,770	46,061	42,750	46,160	25,184
Rajasthan		47,201	37,570	36,753	9,212	33,068	5,066
Tamil Nadu		102,000	100,000	102,380	—	—	—
West Bengal		50,866	47,842	47,311	42,885	43,427	49,194

(A)=Autumn, (W)=Winter, (K)=Kharif.

*Comparative yield rates are not presented as there are very few plots in one of the categories.

Source: Area and Production of Principal Crops in India—1980-81, Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

2.12. CONVERSION RATIOS BETWEEN AGRICULTURAL RAW MATERIALS AND PROCESSED PRODUCTS

Raw materials	Processed products
<i>Rice</i>	
Rice (cleaned) production	2/3 of paddy production
<i>Cotton</i>	
Cotton lint production	1/3 of kapas production
Cotton seed production	2/3 of kapas production 2 times of cotton lint production
<i>Jute</i>	
100 yards of hessian	54 lb. of raw jute
4,148 yards of hessian	1 ton of raw jute 5.6 bales of raw jute (of 180 kg each)
1 ton of sacking	1.11 tons of raw jute 6.17 tons of raw jute (of 180 kg each)
1 ton of hessian, sacking	1.05 tonnes of raw jute 5.9 bales of raw jute (of 180 kg each)
<i>Groundnut</i>	
Kernel to nuts in shell	70 per cent
Oil to nuts in shell	28 „ „
Oil to kernels crushed	40 „ „
Cake to kernels	60 „ „
<i>Sesamum</i>	
Oil to seeds crushed	40 „ „
Cake to kernels	60 „ „
<i>Rape and mustard</i>	
Oil to seeds crushed	33 „ „
Cake to seeds crushed	67 „ „
<i>Linseed</i>	
Oil to seeds crushed	33 „ „
Cake to seeds crushed	67 „ „
<i>Castor seed</i>	
Oil to seeds crushed	33 „ „
Cake to seeds crushed	67 „ „
<i>Cotton seed</i>	
Oil seeds crushed	14 to 18 per cent
Cake to seeds crushed	82 to 85 „ „
<i>Coconut</i>	
Copra to nuts	One tonne of copra nuts 6,773 nuts
Oil to copra crushed	62 per cent
Cake to copra crushed	38 „ „

(Continued)

2 12. CONVERSION RATIOS BETWEEN AGRICULTURAL RAW MATERIALS AND PROCESSED PRODUCTS (Concluded)

Raw materials	Processed products
<i>Niger seed</i>	
Oil to seed crushed	28 per cent
Cake to seeds crushed	72 " "
<i>Kardi seed</i>	
Oil to seeds crushed	40 " "
Cake to seeds crushed	60 " "
<i>Mahuwa seed</i>	
Oil to seeds crushed	36 " "
Cake to seeds crushed	64 " "
<i>Neem seed</i>	
Oil to kernels crushed	45 to 50 per cent
Cake to kernels crushed	50 to 55 " "
<i>Soyabean seed</i>	
Oil from soyabean crushed	18 per cent
Meal from soyabean seed crushed	73 " "
Hull from soyabean seed crushed	8 " "
Wastage from soyabean seed crushed	1 " "
<i>Sugar</i>	
Gur from cane crushed	10 per cent
Crystal sugar from gur refined (gur refineries)	62.4 " "
Crystal sugar from cane crushed (cane factories)	9.97 " "
Khandsari sugar from gur refined	37.5 " "
Molasses from cane crushed	3.5 " "
Cane trash* from cane harvested	10.0 " "
<i>Lac</i>	
Seed lac	60.0 per cent of stick lac
She lack	57.95 per cent of stick lac or 87.0 per cent of seed lac
<i>Cashew nuts</i>	
Cashew kernels	25 per cent of cashewnuts
<i>Butter and ghee</i>	
Butter from mixed milk	6.9 per cent
Ghee from mixed milk	5.5 " "

*This consists of leaves and portion of the top or the stalk which are removed from the cane stalk while harvesting and before sending cane to milling.

Source: *Indian Agriculture in Brief*, Seventeenth Edition, Directorate of Economics and Statistics, Ministry of Agriculture and Rural Reconstruction, New Delhi.

3.00. INDEX NUMBERS

3.01. ALL INDIA INDEX NUMBERS OF AREA UNDER CROPS
(1975-76 to 1980-81)

(Base: Triennium ending 1969-70=100)

Crop	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Rice	106.7	104.1	108.9	109.4	106.6	107.5
Jowar	86.5	84.8	87.7	86.8	89.6	83.9
Bajra	93.0	86.4	89.2	91.6	85.0	93.4
Maize	103.4	102.9	97.5	98.8	98.2	102.6
Ragi	109.4	103.9	108.2	112.5	108.8	97.4
Small Millets	96.9	97.0	94.8	91.1	82.9	80.7
Wheat	128.8	131.7	135.1	142.6	139.5	139.2
Barley	95.1	76.1	68.0	62.1	60.2	61.9
Cereals	104.0	101.6	104.3	105.6	103.2	103.4
Gram	108.2	103.7	103.7	100.2	90.8	87.4
Tur	100.9	96.9	99.2	99.5	103.2	106.2
Other Pulses	115.4	106.7	110.6	114.2	107.6	112.4
Total Pulses	111.2	104.6	106.8	107.5	102.2	102.9
Foodgrains	105.0	101.9	104.5	105.7	102.6	103.0
Groundnut	99.5	97.0	96.8	102.4	98.7	95.1
Sesamum	88.1	92.5	96.8	97.0	96.5	99.2
Rapeseed & Mustard	107.9	101.1	115.8	114.5	112.1	131.3
Linseed	120.5	107.4	114.3	118.9	91.8	97.3
Castorseed	90.9	120.2	92.1	108.4	106.8	121.5
Oilseeds	100.6	97.0	103.4	106.5	103.3	104.5
Cotton Lint	94.5	88.5	101.1	104.4	104.5	101.2
Jute	80.6	101.7	110.0	121.9	115.1	130.0
Mesta	107.1	114.2	118.7	123.5	124.5	116.5
Fibres	93.7	90.3	101.9	105.9	105.7	103.6
Tea	104.4	104.7	105.3	106.1	107.4	108.8
Coffee	133.0	146.1	149.0	152.1	152.1*	152.1*
Rubber	143.2	148.9	153.2	152.4	154.4	154.4*
Plantation Crops	118.2	122.3	124.2	125.1	126.3	127.1
Pepper (black)	92.6	92.6	86.8	98.9	98.8	98.7
Chilies (Dry)	103.5	109.5	110.6	115.5	119.4	115.4
Ginger (Dry)	126.8	118.4	146.0	165.3	171.6	163.4
Potatoes	131.3	130.7	140.3	170.2	144.5	154.4
Fruits & Vegetables	115.3	114.5	117.5	125.9	117.7	120.3
Sugarcane (Gur)	114.7	119.0	130.8	128.2	108.3	109.9
Tobacco	84.9	99.7	116.3	94.3	98.1	98.7
Misc. Crops	150.5	157.1	154.8	156.4	125.0	140.8
Non-Foodgrains	108.0	106.8	112.5	115.5	108.7	111.7
All Crops	105.9	103.2	106.5	108.1	104.2	105.2

*Previous year data repeated provisionally.

Source: Directorate of Economics & Statistics, Min. of Agriculture, New Delhi.

3.02. ALL-INDIA INDEX NUMBERS OF AGRICULTURAL PRODUCTION
(1975-76 to 1980-81)

(Base: Triennium ending 1969-70=100)

Crop	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Rice	124.7	107.2	134.7	137.5	108.3	136.2
Jowar	96.3	106.6	122.2	115.9	118.0	106.4
Bajra	120.2	122.6	99.1	116.6	82.7	113.5
Maize	118.8	104.9	97.7	101.4	91.6	111.3
Ragi	148.0	108.2	151.7	169.4	144.1	130.5
Small Millets	104.6	95.2	112.5	102.9	78.3	85.7
Wheat	159.9	160.8	176.0	196.8	176.4	202.1
Barley	111.0	81.5	80.4	74.5	56.5	78.0
Cereals	128.8	117.8	137.3	143.6	119.9	142.7
Gram	112.9	104.2	103.9	110.2	64.5	89.3
Tur	117.9	96.9	108.4	106.0	98.7	113.2
Other pulses	116.8	97.2	106.9	105.1	81.0	105.4
Total pulses	115.3	100.3	105.8	107.5	76.5	99.6
Foodgrains	127.2	115.7	133.6	139.3	114.8	137.6
Groundnut	130.9	102.0	118.0	120.3	111.8	97.3
Sesamum	109.1	96.0	118.4	117.0	79.1	99.5
Rapeseed & Mustard	129.6	103.8	110.4	124.7	95.6	150.4
Linseed	145.0	101.6	127.8	129.8	65.3	103.7
Castor seed	119.0	149.1	180.9	191.6	189.3	175.2
Oilseeds	123.8	103.9	116.5	122.4	108.5	114.8
Cotton Lint	106.2	104.2	129.3	142.1	136.9	133.9
Jute	89.3	107.9	108.1	130.5	122.4	131.4
Mesta	127.0	150.4	154.4	110.5	162.7	144.7
Fibres	103.4	106.3	125.2	139.5	133.9	133.0
Tea	123.7	130.0	141.3	143.2	140.2	146.1
Coffee	129.6	157.8	192.8	170.4	231.9	201.3
Rubber	190.2	206.5	202.9	186.8	205.0	211.3
Plantation Crops	129.9	139.3	151.9	149.7	155.1	157.3
Pepper (Black)	102.4	102.4	82.7	118.4	119.7	118.4
Chillies (Dry)	79.6	88.8	75.9	102.6	117.1	111.9
Ginger (Dry)	227.5	210.4	266.2	282.2	271.0	296.6
Potatoes	176.0	172.7	195.9	244.0	189.0	230.4
Fruits & Vegetables	136.6	135.8	145.8	166.8	149.4	162.9
Sugarcane (Gur)	118.2	130.0	147.3	129.0	107.4	126.3
Tobacco	98.4	117.8	138.8	127.7	123.3	128.1
Misc. Crops	116.9	131.4	148.1	131.7	109.3	116.8
Non-food crops	119.8	117.8	130.9	134.5	122.3	130.1
All crops	124.8	116.4	132.7	137.8	117.2	135.2

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

3.03. ALL-INDIA INDEX NUMBERS OF YIELD
(1975-76 to 1980-81)

(Base: Triennium ending 1969-70=100)

Crop	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Rice	116.9	103.0	123.7	125.7	101.6	126.7
Jowar	111.3	125.7	139.3	133.5	131.7	126.8
Bajra	129.2	141.9	111.1	127.4	97.3	121.5
Maize	114.9	101.1	100.2	102.6	93.3	108.5
Ragi	135.3	104.1	140.2	150.6	132.4	134.0
Small millets	107.9	98.1	118.7	113.0	94.5	107.4
Wheat	124.1	122.1	130.3	138.0	126.4	145.2
Barley	116.7	107.1	118.2	120.0	93.8	126.0
Cereals	118.9	110.7	124.9	128.5	109.8	130.4
Gram	104.3	103.5	100.2	110.0	71.0	102.2
Tur	116.9	100.0	109.3	106.5	95.6	106.6
Other pulses	101.2	91.1	95.7	92.0	75.3	93.8
Total pulses	105.0	96.7	100.2	101.9	77.1	99.3
Foodgrains	117.2	109.1	122.1	125.5	106.2	127.0
Groundnut	131.6	105.2	121.9	117.5	113.3	102.3
Sesamum	123.8	103.8	122.3	120.6	82.0	100.3
Rapeseed & mustard	120.1	102.7	95.3	108.7	85.3	114.5
Linseed	120.3	94.6	111.8	109.2	71.1	106.6
Castorseed	130.9	124.0	190.4	176.8	177.2	144.2
Oilseeds	120.8	104.3	112.7	115.2	104.9	108.3
Cotton (lint)	112.4	117.7	127.9	136.1	131.0	132.3
Jute	111.0	106.1	98.3	107.1	106.3	101.1
Mesta	118.6	131.7	130.1	130.0	130.8	124.2
Fibres	112.3	115.6	121.5	129.0	125.5	124.1
Tea	118.5	124.2	134.2	135.0	130.5	134.3
Coffee	97.4	108.0	129.4	112.0	151.6	132.3
Rubber	132.8	138.7	132.4	122.6	132.8	136.9
Plantation crops	117.4	123.6	133.3	131.1	133.7	134.2
Pepper (black)	110.6	110.6	95.3	119.7	121.2	119.8
Chilies (dry)	76.9	81.2	98.6	88.8	98.1	97.0
Ginger (dry)	178.4	177.7	182.3	169.7	157.9	181.5
Condiments & spices	86.5	89.7	85.6	99.8	101.0	103.9
Potatoes	134.0	132.1	139.6	143.4	138.3	149.2
Fruits and vegetables	118.6	117.4	120.7	127.4	120.5	127.4
Sugarcane (gur)	103.1	109.2	112.6	100.6	99.1	114.9
Tobacco	115.9	118.2	119.3	135.4	125.7	129.8
Misc. crops	102.8	109.9	113.1	104.5	100.9	114.4
Non-foodgrains	112.0	109.3	114.5	115.4	110.6	116.2
All crops	115.6	109.2	119.6	122.2	107.6	123.5

Source: Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

4.00. IMPORTS AND AVAILABILITY

4.01. IMPORTS OF PRINCIPAL COMMODITIES

(Rs/crores)

Commodity	1979-80	1980-81	1981-82
I. Food and Live animals chiefly for Food (Excl. Cashew Raw) of which:	279.9	380.2	N.A.
Cereals & Cereal Preparations	105.8	100.4	264.4
II. Raw materials and Intermediate Manufactures	6976.1	5756.5	N.A.
a) Cashew nuts (unprocessed)	11.6	8.7	19.1
b) Crude rubber (including Synthetic and reclaimed)	53.6	31.4	66.4
c) Fibres of which:	156.1	164.2	N.A.
i) Synthetic and regenerated fibres (man-made fibres)	109.0	96.5	164.5
ii) Raw Wool	31.9	43.1	30.2
iii) Raw Cotton	0.1	Neg	9.0
iv) Raw Jute	0.1	1.1	0.3
d) Petroleum oil and Lubricants	3332.9	5263.5	5189.3
e) Animal & vegetables oils & fats of which: Edible oils	446.3	682.9	378.3
f) Fertilisers and Chemicals Products of which:	1113.0	1490.1	N.A.
i) Fertiliser & fertiliser materials	515.5	817.8	548.0
ii) Chemicals elements and compounds	323.6	358.2	387.8
iii) Dyeing tanning and colouring materials	25.5	20.8	18.0
iv) Medicinal & Pharmaceutical Products	73.9	84.6	71.5
v) Plastic materials regenerated cellulose and artificial resins	97.4	121.4	106.1
g) Pulp and Waste paper	30.4	18.3	22.9
h) Paper, paper board and manufactures thereof	158.8	186.5	240.3
i) Non-metallic mineral manufactures of which: Pearls and precious and semi-precious stones, unworked or worked	442.3	555.2	460.2
j) Iron & steel	347.4	416.8	345.9
k) Non-ferrous metals	868.6	852.4	1136.4
Capital goods	1458.5	1910.3	1758
a) Manufactures & metals	75.7	89.5	91.5
b) Non-electrical machinery, apparatus and appliances	806.9	1115.3	1182.2
c) Electrical machinery, apparatus and appliances	237.3	233.5	214.0
d) Transport Equipment	338.6	472.0	258.1
Other (Unclassified)	428.1	476.9	N.A.
Total	9,142.6	1,2523.9	13,588.7

* Provisional @ Revised to Rs. 13638.19 crores for supplementary data received upto October 1982.

Source: Monthly Statistics of Foreign Trade: DGCI & S. Calcutta.

4.02. EXPORT OF PRINCIPAL COMMODITIES
(1979-80 to 1981-82)

(Value Rs. crores)

Sl. No.	Commodity	Unit of qty.	1979-80		1980-81		1981-82*	
			Qty.	Value	Qty.	Value	Qty.	Value
1.	Jute Manufactures	'000 tonnes	722	336.1	661	330.0	410	250.1
2.	Tea	Million kgs.	204	367.8	229	425.5	210	373.3
3.	Cotton fibres	Million sq. mtrs.	554	287.6	561	276.5	390	272.5
	i. Mill made	Million sq. mtrs.	470	216.3	488	188.4	—	—
	ii. Hand loom	Million sq. mtrs.	84	71.1	93	83.1	—	—
4.	Coiryarn & manufactures	'000 tonnes	47	36.6	NA	26.2	NA	25.8
5.	Iron ore	Million tonnes	25	285.2	22	303.3	23	343.4
6.	Oil cakes	'000 tonnes	1034	127.5	885	125.1	884	139.4
7.	Leather & leather manufactures (excluding footwear)	Value	—	485.6	—	337.1	—	374.1
8.	Cashew kernels	Million kgs.	38	118.1	32	140.1	31	168.8
9.	Tobacco	Million kgs.	85	113.5	91	140.7	134	227.8
10.	Engineering goods	Value	—	739.1	—	727.0	—	817.3
11.	Coffee	Million kgs.	62	163.3	87	214.2	65	132.5
12.	Mica	Million kgs.	19	20.6	16	17.7	21	27.9
13.	Sugar	'000 tonnes	568	128.9	98	40.6	105	40.3
14.	Spices	Million kgs.	110	149.4	84	111.4	86	112.5
15.	Manganese ore	'000 tonnes	627	13.2	609	12.7	384	9.0
16.	Raw cotton	'000 tonnes	66	75.1	132	164.9	30	35.0
17.	Minerals fuel, lubricants etc.,	Value	—	21.2	—	27.9	—	24.3
18.	Iron & steel (excluding ferro-manganese and ferrous alloys)	Value	—	32.7	—	69.7	—	70.1
19.	Chemicals & allied products	Value	—	197.8	—	225.6	—	347.3
20.	Fish and fish preparations	Million kgs.	77	253.4	39	212.9	70	274.4
21.	Arts silk fibres	Million mtrs.	NA	32.4	NA	21.5	NA	26.5
22.	Foot-wear	Million pairs	14	33.9	16	40.1	12	40.4
23.	Vegetables oils (essential and non-essential)	Value	—	49.5	—	22.0	—	23.3
24.	Cotton apparel	Value	—	343.7	—	378.2	—	547.9
25.	Handicrafts of which Pearls & precious & semi precious stones unworked and worked	Value	—	832.7	—	893.8	—	1033.8
26.	Silver	'000 kgs.	—	2.2	—	Nil	—	Nil
27.	Others	Value	—	1171.7	—	1426.0	—	2058.5
	Total	Value	—	6418.4	—	6710.7	—	7796.2

*Provisional

Includes ready-made garments of all categories. The corresponding figure for 1980-81 is Rs. 515.0 crores.

†Revised to Rs. 7796.96 crores for supplementary data received upto October, 1982.

Sources: Monthly Statistics of Foreign Trade DGCI & S, Calcutta.

4.03. IMPORT AND VALUE OF CEREALS
(on Govt. of India account)

Quantity: '000 tonnes
Value : Rs. crores

Year	Rice	Wheat	Total cereals*	C&F value**
1955	265	435	711	33.11
1956	325	1,095	1,443	56.34
1957	748	2,898	3,646	162.39
1958	397	2,716	3,224	120.51
1959	295	3,553	3,868	141.41
1960	699	4,386	5,137	192.84
1961	384	3,092	3,495	129.56
1962	390	3,250	3,640	141.09
1963	483	4,073	4,556	183.60
1964	645	5,621	6,266	266.25
1965	783	6,583	7,462	290.32
1966	787	7,784 + 48†	10,358	523.13
1967	453	6,348 + 52†	8,672	513.16
1968	446	4,766	5,694	361.20
1969	487	3,090	3,872	353.01
1970	206	3,425	3,631	207.55
1971	240	1,814	2,054	123.46
1972	131	314	445	24.29
1973	—	2,414	3,614	319.52
1974	—	4,203	4,874	463.04
1975	130	7,016	7,407	1,057.90
1976	146	5,832	6,950	NA
1977‡	8	547	630	NA
1978	—	—	200	NA
1979	—	—	20	NA
1980	—	—	30	NA
1981	—	—	45	NA

* Besides rice and wheat, it includes wheat flour, milo (sorghum) and maize (corn.)

** C & F value is for total cereals.

† Wheat flour.

‡ Provisional.

NA — Not available.

Source: *Bulletin on Food Statistics*— Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

4.04. IMPORT OF COTTON
(1st September to 31st August)

('000 bales of 180 kg each)

Year	Cotton staple variety				Total of all varieties
	Below 1"	1" and above but below 1-1/16"	1-1/16" to 1-3/16"	1-3/16" and above	
1963-64	—	—	407	241	648
1964-65	—	—	646	320	926
1965-66	—	—	213	320	533
1966-67	—	—	474	302	776
1967-68	—	—	516	265	781
1968-69	—	—	167	253	420
1969-70	—	—	217	304	777†
1970-71	—	—	326	429	845†
1971-72	6	35	358	345	745†
1972-73	1	2	96	172	271
1973-74	1	5	54	119	179
1974-75*	1	9	14	52	76
1975-76*	105	54	33	9	201
1976-77*	9	98	115	181	403
1977-78*	101	42	420	183	746
1978-79*	37	1	10	34	82
1979-80	7	5	7	—	19
1980-81	Neg.	—	—	—	Neg.
1981-82	14	—	—	—	14

* April—March.

† Includes cotton staple 1" and above but below 1-1/16".

Source: 1. Directorate of Cotton Development, Bombay (for data upto 1971-72)

2. Department of Commercial Intelligence & Statistics, Calcutta (from 1972-73 onwards)

4 05. EXPORT OF FOODGRAINS FROM INDIA AND THEIR VALUE

Quantity : '000 tonnes

Value : Rs. crore

Year	Rice	Wheat flour & atta	Total cereals		Total foodgrains	
			Quantity*	Value	Quantity	Value
1955	101.90	2.08	113.06	5.94	113.06	5.94
1956	42.55	0.34	44.34	2.27	44.34	2.27
1957	0.18	0.03	0.21	0.02	6.16	0.35
1958	0.65	—	0.65	0.08	8.53	0.45
1959	0.19	Neg.	0.24	0.02	6.84	0.52
1960	0.02	Neg.	0.03	Neg.	7.34	0.59
1961	0.02	Neg.	0.03	Neg.	6.85	0.51
1962	0.16	—	0.17	0.02	9.77	0.81
1963	2.85	—	2.86	0.30	18.42	1.56
1964	2.83	0.03	3.06	0.28	14.33	1.22
1965	2.77	1.11	5.34	0.67	12.89	1.49
1966	2.29	0.21	8.56	0.95	33.15	4.03
1967	4.42	0.10	6.64	1.00	13.17	2.00
1968	2.61	0.23	6.49	0.91	22.83	3.44
1969	15.44	0.28	26.03	4.11	43.45	7.44
1970	27.29	18.57	52.09	6.95	83.89	11.46
1971	15.85	3.34	27.67	2.92	44.41	6.67
1972	15.18	1.24	26.55	4.48	33.66	5.98
1973	17.59	1.43	23.68	4.27	27.31	5.12
1974	41.43	—	45.12	22.10	48.03	22.87
1975	18.68	—	20.35	10.50	24.50	11.94
1976	37.90	—	43.02	13.80	48.25	15.59
1977	17.48	—	17.59	4.91	18.04	4.91
1978	113.00	683.00	830.00	135.20	832.00	135.60
1979	—	—	350.00	—	—	—
1980	—	—	510.00	—	—	—
1981	—	—	—	—	—	—

*Besides rice and wheat flour, it includes jowar, bajra, milo, sorghum and other sorts of grain and flour.

Note: Difference between "Total foodgrains" and "Total cereals" accounts for "Pulses" in respective category of quantity and value.

Source: *Bulletin on Food Statistics*, Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

4.06. INTERNAL PROCUREMENT, ISSUES AND STOCKS OF FOODGRAINS

Year	Internal procurement	Issues			Closing stock		
		Through State Govt.	From Central Depot	Total	With State Govt.	With Central Depot	Total
1951	3,826	7,991	—	7,991	1,330	—	1,330
1956	37	570	1,512	2,082	108	211	319
1961	541	1,348	2,629	3,977	330	2,306	2,636
1966	4,009	9,580	4,505	14,085	1,332	884	2,216
1971	8,857	3,243	4,573	7,816	1,498	6,639	8,137
1972	7,665	4,693	5,794 + 909*	10,487 + 909*	968	2,475	3,443
1973	8,424	6,622	4,792	11,414	1,175	1,959	3,134
1974	5,645	6,782	4,008	10,790	1,116	1,614	2,730
1975	9,563	6,993	4,260	11,253	2,647	5,642	8,289
1976	12,853	4,840	4,334	9,174	4,334	14,698	19,032
1977	9,974	5,743	5,986	11,729	3,553	13,853	17,406
1978	11,098	4,328	5,855	10,183	3,232	13,928	17,160
1979	13,847	5,463	6,200	11,663	2,982	14,537	17,519
1980	11,178	6,639	8,354	14,993	3,119	8,620	11,739
1981 ^(P)	12,932			13,106			11,230

* Exports to Bangladesh.

^(P) Provisional.

Source: Bulletin on Food Statistics.

4.07. NET AVAILABILITY OF CEREALS AND PULSES

Year	Population (million)	Cereals				Pulses	Per Caput net availability per day (in gms)		
		Net production (million tonnes)	Net imports (million tonnes)	Change in government stocks (million tonnes)	Net availability** (million tonnes)	Net availability (million tonnes)	Cereals	Pulses	Total
1	2	3	4	5	6	7	8	9	10
1956	397.3	50.43	13.9	(-) 0.60	52.42	10.23	360.5	70.4	430.9
1961	442.4	60.89	3.49	(-) 0.17	64.55	11.14	399.7	69.0	468.7
1962	452.2	61.85	3.64	(-) 0.36	65.85	10.24	399.0	62.0	461.0
1963	462.0	60.19	4.55	(-) 0.02	64.76	10.08	384.0	59.8	443.8
1964	472.1	61.79	6.26	(-) 1.24	69.29	8.81	401.0	51.0	452.0
19 5	482.5	67.32	7.45	(+) 1.06	73.72	10.85	418.6	61.6	480.2
1966	493.2	54.60	10.34	(+) 0.14	64.80	8.68	360.0	48.2	408.2
1967	504.2	57.65	8.66	(-) 0.26	66.57	7.30	361.7	39.7	401.4
1968	515.4	72.58	5.69	(+) 2.04	76.23	10.57	404.1	56.0	460.1
1969	527.0	73.14	3.85	(+) 0.46	76.53	9.09	397.9	47.3	445.2
1970	538.9	76.83	3.58	(+) 1.12	79.29	10.20	403.1	51.9	455.0
1971	551.3	84.53	2.03	(+) 2.57	83.99	10.32	417.6	51.2	468.8
1972	563.8	82.32	(-) 0.49	(-) 4.69	86.52	9.70	419.1	47.0	466.1
1973	576.7	76.23	3.59	(-) 0.31	80.13	8.66	380.8	41.1	421.9
1974	589.8	82.82	5.16	(-) 0.40	88.38	8.76	410.7	40.5	451.2
1975	603.2	78.59	7.54	(+) 5.56	80.56	8.76	366.1	39.7	405.8

1976	616.9	94.50	6.91	(-) 10.74	90.67	11.42	401.6	50.6	452.2
1977	630.8	87.33	0.47	(-) 1.63	89.43	9.96	388.5	43.3	431.8
1978	645.0	100.13	(-)0.84	(-) 0.25	99.53	10.69	423.0	45.2	468.2
1979	659.4	104.75	(-)0.98	(+) 0.36	103.41	10.79	429.6	44.9	474.5
1980	674.1	88.49	(-)0.48	(-) 5.78	93.78	7.63	380.0	30.9	410.9
1981	689.0*	104.09	0.45	(-) 0.24	104.78	9.30	416.6	37.0	453.6
1982	704.3*	106.50	1.48	(+) 1.18	106.80	9.93	415.5	38.6	454.1

* Provisional. **Net availability=Col. (3+4-5).

- Notes:*
1. Population figures from 1971 to 1980 are based on the latest projections made by the office of the Registrar General of India; Estimates for 1981 and 1982 mid-year population are provisional.
 2. Production figures relate to agricultural year July - June: 1956 figures correspond to the production of 1955-56 and so on for subsequent years.
 3. Net production has been taken as 67.5% of the gross production, 12.5% being provided for feed seed requirements and wastage.
 4. Figures in respect of change in stocks with traders and producers are not known. The estimates of net availability above should not, therefore, be taken to be strictly equivalent to consumption.

Source: Economic Survey 1982-83.

4 08 NET AVAILABILITY, PROCUREMENT AND PUBLIC DISTRIBUTION OF FOODGRAINS

Year	Net production of food grains (million tonnes)	Net imports (million tonnes)	Net availability of food grains (million tonnes)	Procurement (million tonnes)	Public Distribution (million tonnes)	Col. 3 as % of Col. 4	Col. 5 as % of Col. 2	Col. 6 as % of Col. 4
1	2	3	4	5	6	7	8	9
1956	60.67	1.37	62.64	0.04	2.8	2.2	0.1	3.3
1961	72.04	3.49	75.69	0.54	3.98	4.6	0.7	5.3
1962	72.10	3.63	76.08	0.48	4.37	4.8	0.7	5.7
1963	70.29	4.54	74.85	0.75	5.18	6.1	1.1	6.9
1964	70.61	6.25	78.11	1.43	8.67	8.0	2.0	11.1
1965	73.20	7.44	84.57	4.03	10.8	8.8	5.2	11.9
1966	63.30	10.31	73.48	4.01	14.09	14.1	6.3	19.2
1967	64.95	8.66	73.87	4.46	13.17	11.7	6.9	17.8
1968	83.17	5.67	86.81	6.81	10.22	6.6	8.2	11.8
1969	82.26	3.82	85.62	6.38	9.39	4.5	7.8	11.0
1970	87.06	3.55	89.49	6.71	8.84	4.0	7.7	9.9
1971	94.87	2.01	94.31	8.86	7.82	2.1	9.3	8.3
1972	92.02	(-)0.50	96.22	7.67	10.49	(-)0.5	8.3	10.9
1973	84.90	3.59	88.79	8.42	11.41	4.0	9.9	12.8
1974	91.58	5.16	97.14	5.65	10.79	5.3	6.2	11.1
1975	87.35	7.54	89.33	9.56	11.25	8.4	10.9	12.6
1976	105.90	6.92	102.08	12.85	9.17	6.8	12.1	9.0
1977	97.27	0.49	99.39	9.94	11.74	0.5	10.2	11.8
1978	110.61	(-)0.63	110.22	11.09	10.18‡	(-)0.5	0.0	9.2
1979	115.41	(-)0.86	114.20	13.84	11.66‡	(-)0.8	12.0	10.2
1980	95.99	(-)0.35	101.42	11.17	14.99‡	(-)0.3	11.6	14.8
1981	113.39	0.45	114.08	12.94	13.01‡	0.4	11.4	11.4
1982*	116.43	1.48	116.73	15.35	14.78‡	1.3	13.2	12.7

*Provisional.

@ Net availability = Net production + Net imports - change in Government stocks.

‡ Includes quantities released under the Food for Works Programme.

Note: Production figures relate to agricultural year, 1956 figures correspond to 1955-66, and so on. Figures for procurement and public distribution relate to calendar years.

Source: Economic Survey 1982-83.

5.00. STORAGE CAPACITY

5.01. CENTRAL AND STATE WAREHOUSES AND THEIR CAPACITY

(as on 31.12 79)

State/Union Territory	No. of warehouses		Capacity ('000 tonnes)	
	Central	State	Central	State
Andhra Pradesh	32	48	671	209
Assam	3	22	27	80
Bihar	18	37	62	217
Gujarat	15	79	184	210
Haryana	13	65	109	412
Karnataka	10	50	84	154
Kerala	4	52	43	115
Madhya Pradesh	19	149	174	413
Maharashtra	26	99	264	303
Orissa	9	34	59	62
Punjab	17	109	271	774
Rajasthan	4	72	73	288
Tamil Nadu	19	51	436	26
Uttar Pradesh	43	119	479	1,438
West Bengal	34	36	288	160
Meghalaya	Nil	1	Nil	2
Mizoram	1	Nil	Neg.	Nil
Nagaland	1	Nil	11	Nil
Tripura	1	Nil	7	Nil
Union Territories	9	Nil	66	Nil
Total	278	1,023	3,308	5,074

Source: Central Warehousing Corporation, New Delhi.

5.02. STORAGE ACCOMMODATION WITH THE FOOD CORPORATION OF INDIA

('000 tonnes)

State	Available on 31-12-78			Available on 31-12-79			CAP storage available with FCI
	Owned	Hired	Total	Owned	Hired	Total	
Andhra Pradesh	424	807	1,231	486	778	1,264	1,152
Assam	174	219	393	181	184	365	—
Bihar	285	357	642	329	365	694	300
Delhi	166	24	190	168	20	188	31
Gujarat	193	465	661	196	395	591	—
Haryana	354	496	850	360	703	1,063	214
Himachal Pradesh	—	14	14	—	16	16	—
Jammu & Kashmir	14	28	42	24	15	39	17
Karnataka	94	194	288	96	173	269	214
Kerala	326	82	408	333	72	405	—
Madhya Pradesh	443	654	1,097	574	662	1,236	455
Maharashtra	878	340	1,218	907	355	1,262	612
N. E. F. Region	18	78	96	21	67	88	—
Orissa	131	51	182	165	57	222	—
Punjab	1,284	771	2,055	1,353	1,670	3,023	1,491
Rajasthan	334	686	1,020	377	613	1,390	567
Tamil Nadu	337	439	776	323	441	834	557
Uttar Pradesh	864	1,214	2,078	928	1,524	2,452	678
West Bengal	647	736	1,383	694	716	1,410	505
Kandla	—	15	15	—	17	17	503
Total	6,969	7,670	14,639	7,585	8,843	16,428	7,303

C. A. P.— Cover and Plinth.

Source: Food Corporation of India, New Delhi.

503. STATEWISE COOPERATIVE GODOWNS

Sl. No.	Name of the State/U. Ts.	No. of godowns sanctioned upto 31-3-1981			No. of godowns completed upto 30-6-1981		
		Rural	Mktg.	Capacity (tonnes)	Rural	Mktg.	Capacity (tonnes)
1.	Andhra Pradesh	950	518	309,150	727	368	200,000
2.	Assam	748	219	225,350	307	179	106,420
3.	Bihar	1,511	338	273,800	764	284	146,950
4.	Gujarat	1,713	399	330,500	1,517	373	278,860
5.	Himachal Pradesh	929	120	122,850	615	95	82,310
6.	Haryana	1,394	341	545,100	751	329	463,750
7.	Jammu & Kashmir	135	57	30,900	—	5	4,500
8.	Karnataka	3,941	810	707,970	2,368	695	491,000
9.	Kerala	1,500	117	18,487	1,083	85	129,800
10.	Madhya Pradesh	4,300	653	695,250	1,906	430	361,000
11.	Maharashtra	3,028	884	561,750	2,608	738	450,810
12.	Meghalaya	72	63	35,350	32	26	11,250
13.	Manipur	223	14	29,980	53	11	8,800
14.	Nagaland	10	7	5,250	10	6	3,750
15.	Orissa	1,450	385	284,070	684	297	147,900
16.	Punjab	3,404	538	1,205,990	2,258	434	850,000
17.	Rajasthan	3,061	201	332,220	1,209	136	154,000
18.	Tamil Nadu	3,712	309	589,160	3,022	274	497,000
19.	Tripura	140	16	17,300	59	15	9,650
20.	Uttar Pradesh	6,949	232	886,930	3,909	245	583,000
21.	West Bengal	1,821	392	277,050	768	256	140,800
22.	Arunachal Pradesh	—	9	4,000	—	5	2,500
23.	Lakshadweep	10	11	14,050	8	—	120
24.	N. A. F. E. D.	—	2	8,550	—	2	8,550
Total		41,001	5,685	7,678,977	24,658	5,289	5,131,610

Source: National Cooperative Development Corporation, New Delhi.

6.00. POPULATION AND AGRICULTURAL ECONOMY

6 01. POPULATION* OF INDIA, STATES AND UNION TERRITORIES
1901-1981

(in '000)

Sl. No.	India/State/ Union Territory	1901	1911	1921	1931	1941	1951	1961	1971	1981
States										
1.	Andhra Pradesh	19,066	21,447	21,420	24,204	27,289	31,115	35,983	43,503	53,404
2.	Assam	3,290	3,849	4,637	5,560	6,695	8,029	10,837	14,625	19,903
3.	Bihar	27,312	28,314	28,127	31,347	35,171	38,782	46,447	56,353	69,823
4.	Gujarat	9,095	9,804	10,175	11,490	13,702	16,263	20,653	26,498	33,961
5.	Haryana	4,623	4,175	4,256	4,560	5,273	5,674	7,591	10,037	12,851
6.	Himachal Pradesh	1,920	1,897	1,928	2,029	2,263	2,386	2,812	3,460	4,238
7.	Jammu & Kashmir	2,139	2,292	2,424	2,670	2,947	3,254	3,561	4,617	5,982
8.	Karnataka	13,055	13,525	13,378	14,633	16,255	19,402	23,587	29,299	37,043
9.	Kerala	6,396	7,148	7,802	9,507	11,031	13,549	16,904	21,347	25,403
10.	Madhya Pradesh	16,811	19,441	19,172	21,356	23,991	26,072	32,372	41,654	52,132
11.	Maharashtra	19,392	21,475	20,850	23,959	26,833	32,002	39,554	50,412	62,694
12.	Manipur	284	346	384	446	512	579	780	1,073	1,434
13.	Meghalaya	340	394	422	481	556	606	769	1,012	1,328
14.	Nagaland	152	149	159	179	190	213	369	516	773
15.	Orissa	10,303	11,379	11,159	12,491	13,768	14,646	17,549	21,945	26,272
16.	Punjab	7,545	6,732	7,153	8,012	9,600	9,160	11,135	13,551	16,670
17.	Rajasthan	10,294	10,983	10,293	11,748	13,864	15,971	20,156	25,766	34,103
18.	Sikkim	59	88	82	110	121	138	162	210	316
19.	Tamil Nadu	19,253	20,913	21,629	23,472	26,267	30,119	33,667	41,199	48,297
20.	Tripura	173	230	304	382	513	639	1,142	1,556	2,060
21.	Uttar Pradesh	48,628	48,155	46,672	49,780	56,535	63,220	73,755	88,341	110,858
22.	West Bengal	16,940	17,999	17,474	18,897	23,230	26,300	34,926	44,312	54,485
Union Territories										
1.	Andaman and Nicobar Islands	25	26	27	29	34	31	64	115	188
2.	Arunachal Pradesh	—	—	—	—	—	—	337	468	624
3.	Chandigarh	22	18	18	20	23	24	120	257	450
4.	Dadra & Nagar Haveli	24	29	31	38	40	41	58	74	104
5.	Delhi	406	414	488	636	918	1,744	2,659	4,066	6,196
6.	Goa, Daman & Diu	507	519	501	542	584	596	627	858	1,082
7.	Lakshadweep	14	14	14	16	18	21	24	32	40
8.	Mizoram	82	91	98	124	153	196	266	332	488
9.	Pondicherry	246	257	244	255	285	317	359	472	604
All India		238,396	252,093	251,321	278,977	318,661	361,082	439,235	548,160	683,810

*Provisional.

Source: Census of India, 1981 Registrar General & Census Commissioner for India.

6.02. AREA, POPULATION AND DENSITY—1971 AND 1981 CENSUS

State/Union Territory	Area ('000 sq. km.)	Population ('000)		Density of population (per sq. km.)	
		1971	1981*	1971	1981*
Andhra Pradesh	277	43,503	53,404	158	194
Assam	79	14,625	19,903	186	254
Bihar	174	56,353	69,823	324	402
Gujarat	196	26,698	33,961	136	173
Haryana	44	10,037	12,851	227	291
Himachal Pradesh	56	3,460	4,238	62	76
Jammu & Kashmir	222**	4,617	5,982	NA	NA
Karnataka	192	26,299	37,043	153	193
Kerala	39	21,347	25,403	549	654
Madhya Pradesh	443	41,654	52,132	94	118
Maharashtra	308	50,412	62,694	164	204
Manipur	22	1,073	1,434	48	64
Meghalaya	22	1,012	1,328	45	59
Nagaland	17	516	773	31	47
Orissa	156	21,945	26,272	141	169
Punjab	50	13,551	16,670	269	331
Rajasthan	342	25,766	34,103	75	100
Sikkim	7	210	316	30	44
Tamil Nadu	130	41,199	48,297	317	371
Tripura	10	1,556	2,060	148	196
Uttar Pradesh	294	88,341	110,858	300	377
West Bengal	88	44,312	54,485	499	614
Andaman & Nicobar Islands	8	115	188	14	23
Arunachal Pradesh	84	468	628	6	7
Chandigarh	0.1	257	450	2,257	3,948
Dadra & Nagar Haveli	0.5	74	104	151	211
Delhi	1.5	4,066	6,196	2,742	4,178
Goa, Daman & Diu	4	858	1,082	225	284
Lakshadweep	0.03	32	40	994	1,257
Mizoram	21	332	488	16	23
Pondicherry	0.5	472	604	959	1,228
All India	3,288	548,160	683,810	177⁺	221

NA — Not available.

** — Includes areas under illegal occupation of Pakistan and China.

+ — Density worked out after excluding population and area figures of Jammu & Kashmir as comparable figures of area and population are not available.

* — Provisional as on 1st March 1981.

Source: Census of India 1981, Registrar General and Census Commissioner for India.

6.03. RURAL AND URBAN POPULATION—STATEWISE
(as per 1961, 1971 and 1981 Census)

('000)

State/Union Territory	1961*				1971**				1981 ^{1a}			
	Rural population	Urban population	Total population	Percentage of rural to total population	Rural population	Urban population	Total population	Percentage of rural to total population	Rural population	Urban population	Total population	Percentage of rural to total population
Andhra Pradesh	29,709	6,274	35,983	82.56	35,100	8,403	43,503	80.69	41,134	12,458	53,592	76.75
Assam ¹	10,308	795	11,103	92.84	13,631	1,327	14,958	91.13	N.A.	N.A.	20,004 ^P	N.A.
Bihar	42,534	3,914	46,448	91.57	50,791	5,634	56,425	90.00	61,124	8,699	69,823	87.54
Gujarat	15,317	5,316	20,633	74.23	19,201	7,496	26,697	71.92	23,404	10,556	33,961	68.92
Haryana	6,283	1,308	7,591	82.77	8,264	1,773	10,037	82.34	10,029	2,822	12,851	78.04
Himachal Pradesh	2,634	178	2,812	93.66	3,218	242	3,460	93.01	3,910	327	4,238	92.28
Jammu & Kashmir	2,968	593	3,561	83.33	3,759	858	4,617	81.41	N.A.	N.A.	5,954	N.A.
Karnataka	18,320	5,267	23,587	77.67	22,177	7,122	29,299	75.69	26,332	10,711	37,043	71.09
Kerala	14,350	2,554	16,904	84.89	17,881	3,466	21,347	83.76	20,632	4,771	25,403	81.22
Madhya Pradesh	27,745	4,627	32,372	85.71	34,869	6,785	41,654	83.71	41,550	10,589	52,138	79.69
Maharashtra	28,391	11,163	39,554	61.78	34,701	15,711	50,412	68.83	40,748	21,067	62,715	64.97
Manipur	712	68	780	91.32	931	142	1,073	86.81	1,038	373	1,411	73.56
Meghalaya	652	117	769	84.73	855	147	1,072	85.45	1,089	239	1,328	81.97
Nagaland	350	19	369	94.81	465	51	516	90.05	653	120	773	84.46
Orissa	16,489	1,110	17,599	93.68	20,099	1,346	21,445	91.59	23,166	3,106	26,272	88.18
Punjab	8,568	2,567	11,135	76.84	10,335	3,216	13,551	76.27	12,049	4,621	16,670	72.28
Rajasthan	16,874	3,282	20,156	83.72	21,212	4,554	25,765	82.37	26,968	7,140	34,108	79.07
Sikkim	155	7	162	95.78	190	20	200	90.63	264	51	315	83.77
Tamil Nadu	24,896	8,991	33,887	73.31	38,734	12,465	41,199	69.74	32,369	15,928	48,297	67.02

Tripura	1,039	103	1,142	90.98	1,394	162	1,556	89.57	1,882	225	2,047	89.02
Uttar Pradesh	64,275	9,480	73,755	87.15	75,953	12,388	88,341	85.98	90,913	19,973	110,886	81.99
West Bengal	26,385	8,541	34,926	75.55	33,445	10,967	44,312	75.25	40,052	14,433	54,486	73.51
Andaman & Nicobar Islands	50	14	64	77.85	80	26	115	77.23	138	50	188	73.64
Arunachal Pradesh	337	—	337	100.00	450	18	468	96.30	588	40	628	93.68
Chandigarh	21	99	120	17.20	24	233	257	9.45	29	421	450	6.40
Dadra & Nagar Haveli	58	—	58	100.00	74	Nil	74	100.00	97	7	104	93.33
Delhi	299	2,360	2,659	11.25	419	3,627	4,066	10.30	444	5,752	6,196	7.16
Goa, Daman & Diu	526	101	627	83.94	631	227	858	73.56	731	351	1,082	67.54
Lakshadweep	24	—	24	100.00	32	—	32	100.00	21	19	40	53.69
Mizoram	—	—	—	—	—	—	—	—	365	123	488	74.83
Pondicherry	280	89	367	75.89	274	199	471	57.96	288	316	604	47.68 ⁺
All India	360,298	78,937	439,235	82.03	439,046	109,114	548,160	80.09	501,952⁺⁺	156,189⁺⁺	634,095[*]	76.27⁺

*Figures relate to 1st March.

@Figures relate to 1st March and includes total population of Jammu and Kashmir for which rural and urban breakup is not available.

**Figures relate to 1st April.

† Including Mizoram except for 1981.

+ Excludes Assam and J & K states.

P=projected.

Source: Census of India, 1981.

**6.04. DISTRIBUTION OF MAIN WORKERS BY CULTIVATORS,
AGRICULTURAL LABOURS AND OTHER WORKERS
(1971 and 1981 Census)**

State Union Territory	Workers in Agriculture			Other workers	Total	
	As cultivators	As agricultural labours	Total			
South						
Andhra Pradesh	1971	5,794.7	6,828.7	12,623.4	5,382.6	18,006.0
	1981	7,370.9	8,291.6	15,662.5	6,943.9	22,606.4
Karnataka	1971	4,072.9	2,717.5	6,790.4	3,388.7	10,179.1
	1981	5,245.0	3,636.2	8,881.2	4,757.7	13,638.9
Kerala	1971	1,106.7	1,908.1	3,014.8	3,201.7	6,216.5
	1981	889.0	1,900.9	2,789.9	3,953.1	6,743.0
Tamil Nadu	1971	4,607.8	4,490.1	9,097.9	5,644.1	14,742.0
	1981	5,558.8	5,947.6	11,506.4	7,402.4	18,908.8
Pondicherry	1971	16.7	46.3	63.0	78.0	141.0
	1981	16.3	53.4	69.7	103.1	172.8
Lakshadweep	1971	Neg.	Neg.	Neg.	8.3	8.3
	1981	Neg.	Neg.	Neg.	7.9	7.9
West						
Gujarat	1971	3,620.0	1,887.7	5,507.7	2,887.9	8,395.6
	1981	4,155.0	2,510.8	6,665.8	4,338.4	11,004.2
Madhya Pradesh	1971	8,084.4	4,062.3	12,147.0	3,148.6	15,295.6
	1981	10,455.9	4,850.5	15,306.4	4,764.2	20,070.6
Maharashtra	1971	6,537.4	5,393.1	11,930.5	6,459.8	18,390.3
	1981	8,458.1	6,504.7	14,962.8	9,314.7	24,277.5
Goa, Daman & Diu	1971	65.1	40.8	105.9	165.8	271.7
	1981	62.7	32.4	95.1	236.4	331.5
Dadar and Nagar Haveli	1971	25.3	5.9	31.2	3.7	34.9
	1981	26.2	4.6	30.8	11.6	42.4
North						
Haryana	1971	1,302.6	430.3	1,732.9	921.1	2,654.0
	1981	1,613.4	588.5	2,201.9	1,385.7	3,587.6

(Continued)

**6.04. DISTRIBUTION OF MAIN WORKERS BY CULTIVATORS,
AGRICULTURAL LABOURS AND OTHER WORKERS
(1971 and 1981 Census) (Continued)**

('000)

State/Union Territory	Workers in Agriculture			Other workers	Total	
	As cultivators	As agricultural labours	Total			
North (Concluded)						
Himachal Pradesh	1971	903.3	53.3	956.6	322.0	1,278.6
	1981	997.3	42.0	1,039.3	396.9	1,436.2
Punjab	1971	1,665.2	786.7	2,452.8	1,460.7	3,913.5
	1981	1,758.0	1,104.8	2,862.8	1,977.0	4,839.8
Rajasthan	1971	5,225.3	749.1	5,974.4	2,074.4	8,048.8
	1981	6,436.4	763.2	7,199.6	3,151.5	10,351.1
Uttar Pradesh	1971	15,697.9	5,453.8	21,151.7	6,182.8	27,334.5
	1981	18,740.4	5,272.7	24,013.1	8,289.6	32,302.7
Delhi	1971	32.2	15.3	47.5	1,180.9	1,228.4
	1981	36.8	16.4	53.2	1,854.7	1,907.9
Chandigarh	1971	2.5	1.3	3.8	81.9	85.7
	1981	2.1	0.8	2.9	152.2	155.1
East						
Bihar	1971	7,579.7	6,806.1	14,385.8	3,103.1	17,488.9
	1981	9,065.3	7,340.5	16,405.8	4,306.5	20,712.3
Orissa	1971	3,318.0	1,937.6	5,305.6	1,545.0	6,850.6
	1981	4,052.9	2,384.6	6,437.5	2,186.1	8,623.6
West Bengal	1971	3,954.9	3,272.2	7,227.1	5,141.8	12,368.9
	1981	4,751.6	3,848.9	8,600.5	6,909.1	15,509.6
Manipur	1971	248.5	13.5	262.0	108.9	370.9
	1981	348.4	46.3	394.7	193.5	588.2
Meghalaya	1971	309.0	44.1	353.1	93.7	446.8
	1981	373.2	58.2	431.4	155.7	587.1
Nagaland	1971	203.3	3.8	207.1	55.0	262.1
	1981	249.6	6.1	255.7	97.9	353.6

(Continued)

**6.04. DISTRIBUTION OF MAIN WORKERS BY CULTIVATORS,
AGRICULTURAL LABOURS AND OTHER WORKERS
(1971 and 1981 Census) (Concluded)**

('000)

State/Union Territory	Workers in Agriculture			Other workers	Total	
	As cultivators	As agricultural labours	Total			
East (Concluded)						
Sikkim	1971	90.4	4.2	94.6	17.0	111.6
	1981	88.7	5.2	93.9	52.4	146.3
Tripura	1971	235.3	86.3	321.6	110.8	432.4
	1981	264.1	144.9	409.0	197.1	606.1
Andaman & Nicobar Islands	1971	6.3	2.1	8.4	37.1	45.5
	1981	10.2	2.3	12.5	49.5	62.0
Arunachal Pradesh	1971	211.2	5.3	216.5	53.1	269.6
	1981	223.3	7.6	230.9	78.0	308.9
Mizoram	1971	126.7	0.6	127.3	24.4	151.7
	1981	144.9	5.1	150.0	50.9	200.9
All India	1971*	75,093.4	47,046.2	122,139.6	52,288.3	174,427.9
	1981*	91,394.4	55,371.4	146,765.8	73,316.7	220,082.5

Neg. = Negligible.

*Excludes figures for Assam and Jammu & Kashmir.

Source: Census of India, 1981.

6.05. PERCENTAGE DISTRIBUTION OF WORKERS BY INDUSTRIAL CATEGORIES

Industrial categories	Census year						
	1901	1911	1921	1931	1951	1961	1971†
Agricultural & Allied Activities	71.7	74.9	76.0	74.8	72.1	71.8	72.1
I. Cultivators	50.6	49.8	54.4	45.1	50.0	52.8	43.4
II. Agricultural labours	16.9	20.6	17.4	24.8	19.7	16.7	26.3
III. Livestock, forestry, fishing, hunting, plantations, orchards, etc.	4.2	4.5	4.2	4.9	2.3	2.3	2.4
Non-Agricultural	28.3	25.1	24.0	25.2	27.9	28.2	27.9
IV. Mining & quarrying	0.1	0.2	0.3	0.3	0.6	0.5	0.5
V. Manufacturing	11.7	9.9	9.3	8.9	9.0	10.6	9.5
(a) Household industry*	**	**	**	**	**	6.4	3.5
(b) Other than household industry	11.7	9.9	9.3	8.9	9.0	4.2	6.0
VI. Construction	0.8	1.0	0.9	1.0	1.1	1.1	1.2
VII. Trade and commerce	6.1	5.5	5.7	5.6	5.2	4.0	5.6
VIII. Transport, storage and communication	1.1	1.1	0.9	1.0	1.5	1.6	2.4
XI. Other services	8.5	7.4	6.9	8.4	10.5	10.4	8.7
Total (workers)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
(i) Total Number of Workers@	111.4	121.4	117.9	120.6	139.5	188.7	180.3
(ii) Total Number of non-Workers@	127.6	131.0	133.4	158.0	217.4	250.2	367.6
Total population@ (I+II)	239.0	252.4	251.3	278.6	356.9	438.9	547.9

@ in million.

† Due to exclusion of work performed as secondary activity from the criterion of economic activity at the 1971 census, the figures are not strictly comparable with earlier censuses.

* Includes persons engaged in household activities under categories III & IV also.

**Included under categories III, IV & V (b).

Source: *India Pocket Book of Economic Information, 1973-74.*

**6.06. DISTRIBUTION OF VILLAGES ACCORDING TO POPULATION
(1971 Census)**

State/Union Territory	Total No. of in-habited villages	No. of villages with population						10,000 and above
		Less than 200	Between 200-499	Between 500-999	Between 1000-1999	Between 2000-4999	Between 5000-9999	
Andhra Pradesh	27,221	5,352	4,383	5,438	6,411	4,833	724	80
Assam (incl. Mizoram)	22,224	5,615	6,744	5,986	3,061	788	29	1
Bihar	67,566	77,440	20,483	15,232	9,313	4,337	75	86
Gujarat	18,275	2,054	4,351	5,242	4,395	1,968	248	17
Haryana	6,731	618	1,400	1,909	1,673	975	148	8
Himachal Pradesh (a)	16,916	12,020	3,723	861	260	50	2	—
Jammu & Kashmir	6,503	1,748	2,200	1,556	764	226	9	—
Karnataka	26,826	4,939	7,974	7,082	4,556	2,014	252	9
Kerala (b)	1,268	2	2	2	16	122	816	808
Madhya Pradesh	70,883	19,754	27,276	16,516	5,952	1,292	87	6
Maharashtra	35,778	5,053	9,088	10,529	7,439	3,102	492	75
Manipur (d)	1,949	974	476	237	172	79	8	—
Meghalaya	4,593	3,192	1,093	237	54	7	—	—
Nagaland	960	334	325	169	114	17	1	—
Orissa	46,992	18,548	15,223	8,821	3,546	830	22	2
Punjab	12,188	1,887	3,311	3,577	2,392	940	79	2
Rajasthan	33,305	8,771	11,010	7,817	4,000	1,524	165	10
Sikkim	215	—	31	119	63	7	—	—
Tamil Nadu	15,735	988	1,981	3,425	4,547	3,902	752	140
Tripura	4,727	2,595	966	473	222	65	3	—
Uttar Pradesh	112,561	27,356	34,856	28,295	16,081	5,400	515	58
West Bengal	38,074	7,604	10,957	9,085	6,622	3,342	412	52
Union Territories (c)	2,445	2,828	705	8,381	312	185	35	4
All India	575,936(d)	150,072	168,561	1,2,990	81,973	36,005	4,974	1,358

(a) There are 30 villages in Himachal Pradesh which are uninhabited (there being no residential houses located in these villages but having houseless population).

(b) Includes the population of unsurveyed forest area also.

(c) Excludes Union Territory of Mizoram which was a district of Assam on 1-4-71.

(d) Includes three villages of Manipur, the details of which are not available.

Source: *Census of India 1971* (Provisional).

**6.07. NUMBER OF DISTRICTS, TOWNS, VILLAGES AND COMMUNITY
DEVELOPMENT BLOCKS
(1970-71)**

State/Union Territory	Districts (a)	Towns (b)	Villages (c)	C D Blocks (d)
Andhra Pradesh	23	224	29,428	324
Assam*	10	74*	23,331*	134
Bihar	31	202	78,027	587
Gujarat	19	216	18,697	218
Haryana	12	65	7,064	97
Himachal Pradesh	12	36	18,929	69
Jammu & Kashmir	14	45	6,742	75
Karnataka	19	245	29,533	175
Kerala	18	88	1,268	154
Madhya Pradesh	45	250	76,847	458
Maharashtra	26	289	38,661	296
Manipur	6	8	1,903	26
Meghalaya	5	6	4,932	24
Nagaland	7	3	966	21
Orissa	13	81	51,639	314
Punjab	12	108	12,288	117
Rajasthan	26	157	35,795	232
Sikkim	4	7	215	4
Tamil Nadu	16	439	1,660	377
Tripura	3	6	5,215	17
Uttar Pradesh	56	325	124,592	876
West Bengal	16	223	41,392	335
Union Territories	25	29**	4,506**	101
All India	412	3,126	629,364	5,011

*Includes Mizo district now constituted as U.T. of Mizoram.

**Excludes U.T. of Mizoram.

(a) Based on Population Census Series 3-Paper I

(b) Census of India—1971-Table A-1

(c) Includes 53,428 uninhabited villages. The data are based on Census of India, 1971.

(d) as on 31.3.1980.

Source: *Indian Agriculture in Brief*, 19th Edition Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi

**6.08(a). TOTAL NUMBER AND AREA OF OPERATIONAL HOLDINGS-SIZEWISE
1976-77**

Size	Number ('000)	Percentage	Area ('000 ha)	Percentage
Below 0.5	30,050	36.8	7,009	4.3
0.5-1.0	14,473	17.7	10,501	6.4
1.0-2.0	14,728	18.1	20,905	12.8
2.0-3.0	7,497	9.2	18,133	11.1
3.0-4.0	4,169	5.1	14,295	8.8
4.0-5.0	2,831	3.5	12,561	7.7
5.0-10.0	5,381	6.6	37,067	22.7
10.0-20.0	1,943	2.4	26,035	15.9
20.0-30.0	323	0.4	7,648	4.7
20.0-40.0	91	0.1	3,090	1.9
40.0-50.0	36	Neg	1,572	0.9
50.0 & above	47	0.1	4,528	2.8
Total	81,569	100.0	163,344	100.0

Source: *Indian Agriculture in Brief*: 19th edition, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.

**6.08(b). NUMBER AND AREA OF OPERATIONAL HOLDINGS-STATEWISE
1976-77**

State	Number ('000)	Percentage	Area ('000 ha)	Percentage	Average size of holding (hectares)
Andhra Pradesh	6,154	7.5	14,380	8.8	2.34
Assam	2,254	2.8	3,080	1.9	1.37
Bihar	9,936	12.2	11,073	6.8	1.11
Gujarat	2,713	3.4	10,075	6.2	3.71
Haryana	999	1.2	3,579	2.2	3.58
Himachal Pradesh	621	0.8	1,010	0.6	1.63
Jammu & Kashmir	971	1.2	1,042	0.6	1.07
Karnataka	3,811	4.7	11,357	7.0	2.98
Kerala	3,501	4.3	1,719	1.1	0.49
Madhya Pradesh	6,061	7.4	21,691	13.3	3.58
Maharashtra	5,764	7.1	21,105	12.9	3.66
Manipur	142	0.2	158	0.1	1.11
Meghalaya	170	0.2	296	0.2	1.74
Nagaland	103	0.1	786	0.5	7.63
Orissa	3,576	4.4	5,731	3.5	1.60
Punjab	1,504	1.8	4,125	2.5	2.74
Rajasthan	4,365	5.3	20,301	12.4	4.65
Sikkim	31	Neg	80	Neg	2.58
Tamil Nadu	6,112	7.5	7,628	4.7	1.25
Tripura	247	0.3	309	0.2	1.25
Uttar Pradesh	16,971	20.8	17,860	10.9	10.5
West Bengal	5,267	6.5	5,221	3.2	0.99
Union Territories	282	0.3	719	0.4	2.55
Total	81,555	100.00	163,325	100.00	2.00

Note: Figures for Punjab have been estimated as 1976-77 Census was not conducted in Punjab.
Source: Provisional Estimates as per 1976-77 Agricultural Census, Department of Agriculture & Cooperation, New Delhi.

6.08(c). SIZE DISTRIBUTION OF HOLDING ACCORDING TO IRRIGATION - SIZEWISE
(1976-77)

Size-group	Wholly irrigated		Partly irrigated		Wholly Unirrigated		Total	
	Number ('000)	Area ('000 ha.)	Number ('000)	Area ('000 ha.)	Number ('000)	Area ('000 ha.)	Number ('000)	Area ('000 ha.)
Less than 1.0	11,471	3,947	6,837	3,137	24,750	7,857	43,058	14,941
1.0-2.0	2,494	3,054	3,714	4,877	8,069	9,802	14,277	17,733
2.0-4.0	1,419	3,321	3,455	8,598	6,333	14,917	11,227	26,836
Sub-Total (1.0-4.0)	3,913	63,755	7,169	13,475	14,422	24,719	25,504	44,569
4.0-10.0	613	2,837	2,772	14,227	4,462	22,293	7,847	39,357
10.0 and above	97	931	830	10,594	1,417	18,152	2,344	29,677
All Groups	16,094	14,090	17,608	41,433	45,051	73,021	78,753	128,544

Note: Due to exclusion of purely current fallow holdings total number of holdings in this table do not tally with the figures given in Table 6.08 (a).

Source: Indian Agriculture in Brief—19th edition, Directorate of Economics and Statistics, Ministry of Agriculture New Delhi.

6.09 NUMBER OF PUMPSETS ENERGISED AND VILLAGES ELECTRIFIED
1971 Censuses

Sl. No.	State/Union Territory	Total number of villages	Villages electrified as on		% villages electrified as on 31-3-83	No. of pumpsets/tube-wells energised as on	
			31-3-82	31-3-83		31-3-82	31-3-83
1.	Andhra Pradesh	27,221	19,169	20,661	75.9	496,675	546,845
2.	Assam	21,995	6,673	6,892(a)	31.3	1,912	1,934
3.	Bihar	67,566	25,141	29,187	43.2	169,730	182,169
4.	Gujarat	18,275	13,429	14,030	76.8	251,616	261,761
5.	Haryana	6,731	6,731	6,731	100.0	237,229	251,989
6.	Himachal Pradesh	16,916	11,217	12,794	75.6	1,931	2,080
7.	Jammu & Kashmir	6,503	4,943	5,214	80.2	1,095	1,173
8.	Karnataka	26,826	17,626	18,229 (c)	67.9	3,32,416	3,53,754(c)
9.	Kerala	1,268	1,268	1,268	100.0	1,01,362	1,11,148
10.	Madhya Pradesh	70,883	29,020	32,838	46.3	3,54,645	3,94,753
11.	Maharashtra	35,778	28,850	30,121(b)	84.2	7,19,290	7,76,085(b)
12.	Manipur	1,949	395	425	21.8	10	12
13.	Meghalaya	4,583	86	997	21.8	53	53
14.	Nagaland	900	439	575	53.6	Nil	Nil
15.	Orissa	46,992	20,010	21,280	45.3	19,123	22,900
16.	Punjab	12,188	12,126(+)	12,126(+)	100.0	3,07,392	3,33,272
17.	Rajasthan	33,305	16,207	16,708(c)	50.2	2,33,578	2,41,975(c)
18.	Sikkim	405(£)	86	112	27.7	Nil	Nil
19.	Tamil Nadu	15,735	15,611	15,636	99.4	9,45,520	9,65,017
20.	Tripura	4,727	1,190	1,500	31.7	673	858
Total (States)		5,71,441	2,94,836	3,18,225	55.7	46,34,708	49,35,583
1.	Andaman & Nicobar Islands	390	145	183	46.9	1	1
2.	Arunachal Pradesh	2,973	430	552	18.6	Nil	Nil
3.	Chandigarh	26	26	26	100.0	536	536(£)
4.	Dadra & Nagar Haveli	72	62	63(a)	87.5	297	311(a)
5.	Delhi	243	243	243	100.0	13,262	14,108
6.	Goa Daman & Diu	409	374	380	92.9	2,234	2,535
7.	Lakshadweep	10	9	10	100.0	Nil	Nil
8.	Mizoram	229	53	68	29.7	Nil	Nil
9.	Pondicherry	333	333	333	100.0	7,995	8,145
Total (UTs.)		4,685	1,675	1,858	40.0	24,325	25,636
Total (All India)		5,76,126	2,96,511	3,20,083	55.6	46,59,033	49,61,019

(a) -- As on 30-11-83

(b) -- As on 31-1-83

(c) -- As on 28-2-83

(£) = The revenue block has been reckoned as the smallest administrative units by the census authorities.

(+) = 62 villages have been declared uninhabited

Source: Central Electricity Authority, New Delhi.

6.10. INDEX NUMBERS OF WHOLESALE PRICES
(Base: 1970-71=100)

	Primary articles						Fuel, power, light & lubricants	Manufactured products					All commodities
	Total	Food articles		Non-food articles	Minerals	Total		Food products	Textiles	Chemicals & chemical products	Basic metals, alloys & metal products	Machinery & transport equipment	
		Total	Food grains										
Weight	41.67	29.80	12.92	10.62	1.25	8.46	49.87	13.32	11.03	5.55	5.97	6.72	100.00
Last week of													
1971-72	100	101	108	95	120	110	115	129	112	103	111	108	108.2
1972-73	119	116	127	124	140	112	125	151	119	107	118	115	121.5
1973-74	160	150	160	158	414	189	151	166	153	135	174	135	158.0
1974-75	172	171	199	146	423	206	170	175	158	178	178	168	173.9
1975-76	149	142	146	133	449	229	163	154	145	168	187	172	162.6
1976-77	179	165	161	181	469	232	177	185	167	172	191	169	182.1
1977-78	179	172	172	165	481	243	176	160	176	175	198	177	182.7
1978-79	182	170	171	177	506	251	189	166	187	181	221	196	181.1
1979-80	217	189	192	203	1000	304	232	247	212	215	260	227	232.0
1980-81	249	218	226	228	1175	400	267	313	219	251	302	249	270.7
1981-82	261	235	235	233	1115	438	264	248	278	264	334	278	277.1
Average of weeks													
1971-72	101	101	103	99	115	106	110	118	110	102	105	105	105.6
1972-73	111	111	120	108	124	110	122	150	113	105	114	112	116.2
1973-74	142	137	142	147	225	131	140	171	135	116	139	123	139.7
1974-75	178	172	198	164	424	198	169	187	160	169	173	155	174.9
1975-76	166	164	174	140	440	219	171	181	147	176	185	173	173.0
1976-77	167	155	153	167	449	231	175	189	155	171	190	170	176.6
1977-78	184	174	170	178	477	234	179	184	173	173	194	173	185.8
1978-79	182	172	173	170	491	245	180	157	175	177	211	184	185.8
1979-80	207	187	185	195	780	283	216	215	203	199	252	216	217.6
1980-81	238	208	217	218	1110	354	257	309	213	241	272	239	257.3
1981-82	264	235	237	241	1169	428	271	299	224	260	317	265	281.3

(Continued)

6.10. INDEX NUMBERS OF WHOLESALE PRICES

(Base: 1970-71=100) (Concluded)

	Primary articles						Manufactured products						All commodities
	Total	Food articles		Non-food articles	Minerals	Fuel, power, light & lubricants	Total	Food products	Textiles	Chemicals & chemical products	Basic metals, alloys & metal products	Machinery & transport equipment	
		Total	Food grains										
1981-82													
April	251	219	227	231	1175	401	275	336	222	252	303	258	275.7
May	256	225	230	234	1176	401	276	333	223	254	305	260	277.9
June	259	228	233	239	1176	401	277	335	224	255	306	259	279.8
July	270	241	239	247	1176	427	276	327	225	258	306	262	286.2
August	274	244	247	250	1176	438	277	326	225	261	309	264	289.2
September	269	238	247	247	1189	438	272	308	225	262	313	264	284.8
October	268	238	243	241	1217	438	271	302	224	262	312	265	284.1
November	266	239	239	238	1169	438	268	283	224	263	323	268	281.5
December	265	237	236	238	1169	438	265	265	223	263	332	269	279.5
January	268	238	238	246	1153	438	266	268	223	264	333	271	281.1
February	265	238	236	240	1134	438	263	256	224	264	333	271	278.7
March	262	236	234	235	1115	438	263	247	226	264	334	272	277.1
1982-83													
April	259	233	235	230	1116	437	265	243	230	264	349	275	276.9
May	261	235	231	234	1111	439	266	248	229	264	349	276	278.5
June	271	246	235	242	1111	447	271	268	229	264	349	276	285.9
July	280	256	242	242	1122	457	274	275	229	266	349	276	291.7
August	284	261	254	250	1122	457	276	281	230	266	349	276	294.4
September	277	253	253	247	1122	457	274	272	231	269	351	276	290.9
October	274	247	251	249	1122	457	275	271	233	269	353	276	289.7
November	274	247	252	249	1122	457	273	265	233	270	357	276	289.1
December	273	246	249	249	1122	457	270	252	233	270	357	277	287.1

Figures from May 1982 are provisional.

8.11. INDEX NUMBERS OF WHOLESALE PRICES—SELECTED COMMODITIES/COMMODITY GROUPS
(Base: 1970-71=100)

	Rice	Wheat	Pulses	Raw cotton	Raw jute	Groundnuts	Coal	Mineral oils	Sugar, khandsari & gur	Edible oils	Cotton yarn	Cotton cloth (Mills)	Jute hemp & mesta textiles	Fertilisers	Cement	Iron steel & ferro-alloys
Weight	5.13	3.42	2.18	2.25	0.43	1.82	1.04	4.91	7.24	3.72	1.38	3.80	1.22	1.25	0.70	3.47
Last week of																
1971-72	105	103	118	83	103	83	111	112	164	86	120	114	118	104	170	112
1972-73	121	110	150	103	120	131	111	114	177	116	133	120	108	107	109	119
1973-74	162	120	199	178	184	159	122	236	172	161	176	150	159	126	117	169
1974-75	189	189	196	137	105	147	144	248	189	155	151	170	145	222	169	178
1975-76	147	153	148	144	131	95	198	267	181	103	144	158	132	190	172	190
1976-77	157	159	171	209	143	173	198	268	192	167	196	171	132	179	174	187
1977-78	149	162	244	179	151	151	212	272	154	157	197	182	158	176	185	191
1978-79	158	159	240	186	138	145	212	279	162	162	205	186	179	165	213	219
1979-80	195	163	240	167	131	204	336	335	282	204	241	202	230	170	234	262
1980-81	208	183	341	226	130	253	432	468	372	245	244	221	179	260	234	313
1981-82	232	204	302	200	145	242	432	513	248	251	258	236	184	278	366	354
Average of weeks																
1971-72	103	100	111	108	96	88	102	108	141	88	118	111	114	101	105	106
1972-73	116	107	138	92	110	104	111	112	188	99	123	115	111	106	110	118
1973-74	140	108	177	138	99	166	122	142	192	148	152	134	120	114	112	143
1974-75	183	183	216	169	104	173	144	240	200	172	178	173	158	203	148	171
1975-76	179	160	182	136	117	129	184	257	214	135	141	162	131	215	171	184
1976-77	157	152	146	198	127	142	198	268	218	143	178	166	125	187	174	187
1977-78	162	157	215	193	149	172	199	268	185	176	197	179	142	177	177	188
1978-79	161	154	247	169	147	146	212	270	147	159	200	184	161	175	197	213
1979-80	184	161	244	164	139	185	300	309	231	193	222	193	232	167	229	259
1980-81	206	176	323	183	129	225	348	414	377	228	237	209	195	243	233	272
1981-82	226	192	339	227	137	271	432	501	335	261	251	231	171	274	270	332

(Continued)

6.11. INDEX NUMBERS OF WHOLESALE PRICES—SELECTED COMMODITIES/COMMODITY GROUPS
(Base: 1970-71=100) (Concluded)

	Rice	Wheat	Pulses	Raw cotton	Raw jute	Groundnuts	Coal	Mineral oils	Sugar, khand-sari & gur	Edible oils	Cotton yarn	Cotton cloth (Mills)	Jute hemp & mesta textiles	Fertilizers	Cement	Iron steel & ferro-alloys
1981-82																
April	210	186	334	227	131	261	432	468	410	252	249	222	185	260	232	313
May	213	184	338	230	133	268	432	468	402	254	250	224	175	261	232	315
June	218	183	340	231	130	282	432	468	402	261	252	227	170	261	232	315
July	226	187	348	235	135	298	432	501	382	272	250	229	173	275	243	315
August	234	190	368	237	142	304	432	512	375	281	249	232	172	280	275	321
September	235	189	365	240	140	293	432	513	345	274	252	233	176	278	275	322
October	230	193	361	232	136	271	432	513	338	267	252	234	173	278	276	322
November	230	193	345	227	137	255	432	513	307	257	250	234	167	278	276	340
December	229	194	326	228	138	253	432	513	280	252	249	235	162	279	276	354
January	229	198	325	225	140	264	432	513	281	256	251	235	166	278	279	354
February	230	200	313	214	143	253	432	513	260	254	255	236	169	278	279	354
March	231	203	300	202	144	245	432	513	246	252	257	236	173	278	366	354
1982-83																
April	233	201	299	198	147	241	432	512	241	247	257	237	187	278	363	379
May	236	187	291	200	150	245	446	512	250	247	253	241	185	278	360	379
June	241	193	300	207	154	264	502	512	279	257	249	242	180	278	358	379
July	252	196	305	210	151	269	502	514	288	264	249	243	180	278	360	379
August	265	208	324	209	150	272	502	514	294	264	247	244	179	278	360	379
September	266	210	317	207	148	263	502	515	280	265	243	245	195	278	360	379
October	265	212	308	203	154	271	502	515	277	265	243	245	212	278	363	384
November	266	215	304	182	165	279	502	515	264	268	246	245	211	278	363	391
December	259	219	301	184	170	270	502	515	239	269	254	246	197	278	363	391

Figures from May 1982 are Provisional.

**6.12. ESTIMATES OF NET NATIONAL PRODUCT BY INDUSTRY OF ORIGIN
PERCENTAGE DISTRIBUTION
(At 1970-71 Prices)**

Industry group	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82*
1. Agriculture, forestry and logging, fishing, mining and quarrying	46.6	47.9	44.5	45.7	44.4	40.8	42.5	41.8
2. Manufacturing, construction, electricity, gas and water supply	20.6	19.8	21.6	21.3	21.6	22.2	21.1	21.2
3. Transport, communications and trade	17.3	17.2	17.9	17.6	18.1	19.0	18.4	18.5
4. Banking and insurance, real estate and ownership of dwelling and business services	5.1	5.1	5.6	5.4	5.7	6.0	5.6	5.6
5. Public administration and defence and other services	10.7	10.2	10.6	10.2	10.3	11.9	12.2	12.7
6. Net domestic product at factor cost	100.3	100.2	100.2	100.2	100.1	99.9	99.8	99.8
7. Net factor income from abroad	(-) 0.3	(-) 0.2	(-) 0.2	(-) 0.2	(-) 0.1	(+) 0.1	(+) 0.2	(+) 0.2
8. Net National Product at factor cost	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Quick estimates.

Source: 'Economic Survey—1982-83', Government of India.

7.00. PRICES

7.01. PROCUREMENT PRICES OF FOODGRAINS

(Rupees per quintal)

State/Crop	Variety	Procurement price						1977-78 to 1980-81@
		1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	
I. Paddy								
Andhra Pradesh	Akkullu	51.10	53.00	67.00	77.00	77.00	77.00	
Assam (including Meghalaya)	Winter sali	56.25	56.25	70.00	74.00	74.00	76.00	
Bihar	Coarse & medium	56.25	56.25	70.00	74.00	74.00	74.00	
Gujarat	Coarse	55.00	56.00	70.00	74.00	74.00	74.00	
Haryana	Begmi	53.00(n)	53.00	70.00	76.00	76.00	76.00	
Jammu & Kashmir	Coarse	47.00	49.00	—	—	—	—	
Kerala	Palghatmatla	56.25	56.25	—	—	—	—	
Tamil Nadu	Kattaisamba	49.00	51.00	70.00	78.00	78.00	74.00	
Karnataka	Coarse	50.00	52.00	70.00	74.00	74.00	74.00	
Maharashtra	Coarse	58.00	58.00	70.00	74.00	74.00	74.00	
Madhya Pradesh	Gurmatia	56.00	56.00	70.00	74.00	74.00	74.00	
Orissa	Common	48.00	55.00 ⁺	—	74.00	74.00	74.00	
Punjab	Begmi	53.00(n)	53.00(n)	70.00	76.00	76.00	76.00	
Uttar Pradesh	Grade III	54.00	56.00	67.00	74.00	74.00	74.00	
West Bengal	Common	56.00*	56.00*	70.00	74.00	74.00	74.00	
All India	Standard	47.00 to 58.00	49.00 to 58.00	70.00	74.00*	74.00*	74.00*	

(Rupees per quintal)

1977-78* @	1978-79* @	1979-80* @	1980-81* @	1981-82 ⁺ @	1982-83 ⁺ @	1983-84 ⁺ @
77.00	85.00	95.00	105.00	115.00	122.00	132.00

*Coarse varieties. (n)=National. + =Relates to medium variety. @All India

(Continued)

State/Crop	Variety	Procurement price												
		1970-71 and 1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84
II. Jewar		55.00**	58.00	70.00	74.00	74.00	74.00	74.00	85.00	95.00	105.00	116.00	118.00	124.00
III. Bajra		55.00**	60.00	72.00	74.00	74.00	74.00	74.00	85.00	95.00	105.00	116.00	118.00	124.00
IV. Maize		55.00**	58.00	70.00	74.00	74.00	74.00	74.00	85.00	95.00	105.00	116.00	118.00	124.00
V. Ragi		55.00**	57.00	70.00	74.00	74.00	74.00	74.00	85.00	95.00	105.00	116.00	118.00	124.00
VI. Wheat														
Bihar	Red	71.00	71.00	71.00										
	Mexican/Common													
	White	76.00	76.00	76.00										
	Superior	76.00	76.00	82.00										
Punjab & Haryana	Superior White	76.00	76.00	82.00										
	Red	74.00	74.00	74.00										
	Mexican/Common													
	White	76.00	76.00	76.00										
U.P.	Red	74.00	74.00	74.00										
	Mexican/				105.00	105.00	105.00	110.00	112.50	115.00	117.00	130.00	142.00	151.00
	Common White	76.00	76.00	76.00	(All	(All	(All	(All	(All	(All	(All	(All	(All	(All
	Superior	76.00	76.00	82.00	varie-	varie-	varie-	varie-	varie-	varie-	varie-	varie-	varie-	varie-
M.P.	Grade I, II, III, & IV	—	—	—	ties)	ties)	ties)	ties)	ties)	ties)	ties)	ties)	ties)	ties)
	Red	74.00	74.00	74.00										
	Mexican/Common													
	White	76.00	76.00	76.00										
	Superior	76.00	76.00	82.00										
Rajasthan	Red	74.00	74.00	74.00										
	Mexican/Common													
	White	76.00	76.00	76.00										
	Superior	76.00	76.00	82.00										
All India		76.00	76.00	76.00										
				82.00										
VII. Gram++						90.00	90.00	95.00	125.00	140.00	145.00	145.00	145.00	235.00
VIII. Groundnut++							140.00	160.00	175.00	190.00	206.00	270.00	295.00	
IX. Sugarcane\$							8.50	8.50	1.00	12.50	13.00	13.00	13.00	
X. Cotton (Kapas 320 F)++								255.00	255.00	275.00	304.00		380.00£	

** Uniform procurement price of Rs. 55.00 per quintal has been fixed for all States for Central Pool Purchase. For internal purchases the State Govts. may fix the procurement prices upto Rs. 57.00.

++ Minimum support price.

\$ Statutory minimum price. £ J-34/F variety

Source: Indian Agriculture in Brief, 19th edition, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.

8.00. CREDIT

8.01. MULTIPURPOSE COOPERATIVE AND PRIMARY AGRICULTURAL CREDIT SOCIETIES
(As on June 1979)

Zone/State	No. of societies	Member-ship ('000)	Loan advance (Rs. '000)	No. of societies undertaking distribution of inputs	Distribution operation					
					Value of goods distributed (Rs. '000)					
					Seeds	Fertilisers	Pesticides	Agricultural implements	Others	Total
Central										
Madhya Pradesh	5,601	3,020	896,858	2,764	12,135	298,919	4,423	152	952	318,581
Rajasthan	5,180	2,690	718,892	3,268	12,933	153,976	1,328	3	13,262	181,502
Uttar Pradesh	8,654	7,948	1,797,432	4,720	7,146	1,255,042	—	123	63,631	1,325,942
Delhi	162	28	4,382	46	—	1,247	86	—	4,646	5,979
East										
Assam	3,019	2,532	13,394	172	1,457	396	93	77	54	2,077
Bihar	6,605	4,600	248,471	173	1,166	18,467	101	472	232	20,468
Orissa	3,010	2,200	410,680	1,982	2,011	86,562	1,470	135	3,824	94,002
West Bengal	7,739	2,221	639,792	2,383	5,164	67,899	1,171	91	2,719	77,044
Manipur	715	167	4,180	82	127	960	—	37	29	1,153
Meghalaya	180	43	5,745	—	—	773	—	—	—	773
Nagaland	205	15	5,009	1	—	—	—	—	232	232
Tripura	396	114	4,980	—	1	—	—	—	—	1
Andaman & Nicobar Islands	45	4	173	—	—	—	—	—	—	—

North										
Haryana	2,406	1,056	982,411	1,119	—	248,328	—	—	—	248,328
Himachal Pradesh	2,296	568	64,959	1,656	140	27,698	8	3	98	27,947
Jammu & Kashmir	1,461	397	27,633	1,060	1,452	45,848	—	—	316	47,616
Punjab	3,183	1,629	1,221,459	2,817	—	994,148	—	—	—	994,148
Chandigarh	32	4	274	—	—	—	—	—	—	—
South										
Andhra Pradesh	7,059	4,864	957,484	656	951	33,580	2,158	505	875	380,69
Karnataka	4,994	3,326	791,115	3,425	7,985	259,635	16,431	2,564	29,364	315,979
Kerala	1,616	3,158	1,389,739	1,298	549	152,263	16,378	796	63,617	233,603
Tamil Nadu	4,789	4,907	1,224,788	2,369	558	387,074	25,235	486	2,763	416,161
Pondicherry	62	29	11,622	59	—	8,938	14	—	—	8,952
Lakshadweep	7	3	906	—	—	—	—	—	—	—
West										
Gujarat	7,756	1,839	1,517,276	4,463	68,492	709,412	152,603	6,859	76,576	1,013,942
Maharashtra	18,474	5,130	1,614,182	4,050	24,209	359,163	11,744	2,432	23,762	421,310
Goa, Daman & Diu	125	72	4,716	67	16	2,857	14	—	3	2,900
Dadra & Nagar Haveli	11	5	427	—	—	—	—	—	—	—
Total 1977-78	116,125	47,860	12,704,549	43,605	136,815	4,249,990	167,097	19,054	308,661	48,81,617
1978-79	95,782	5,2569	14,558,778	38,630	146,522	5,113,195	233,277	14,735	286,955	5,794,664

Source: Statistical statements relating to the Co-operative Movement in India 1978-79, Part-I Credit Societies, Reserve Bank of India, Bombay.

8.02. PRIMARY AGRICULTURAL CREDIT COOPERATIVES

Item	1950-51	1955-66	1960-61	1968-69	1973-74	1974-75	1975-76**	1976-77@
I. Primary Agril. Credit Societies								
(short and medium term loans)								
No. of Societies (lakhs)	1.05	1.60	2.12	1.68	1.54	1.53	1.35	1.23
Percentage villages covered	N.A.	N.A.	75	92	96	95	97	96
Membership (Nos. in lakhs)	44.08	77.91	170.41	291.73	349.56	364.42	395.21	448.42
Percentage agril. population covered (estimated)	9	15	30	42	41	41	45	51
Average membership per society (Nos.)	45	49	80	174	227	239	293	364
Paid-up share capital (Rs. crore)	7.61	16.80	57.75	167.31	271.06	296.29	327.31	377.31
Deposits (Rs. crore)	4.28	7.04	14.59	76.84	89.28	101.05	113.31	142.32
Working capital (Rs. crore)	37.25	79.10	273.92	812.22	1,580.28	1,801.48	1,989.70	2,394.29
Loans advanced during the year (Rs. crore)	22.90	49.62	202.75	503.97	700.46	900.82	1,023.45	1,121.08
Percentage loans overdue to loans outstanding	22	25	20	35	42	43	43	43
II. Land Mortgage Banks (long term loans)								
Number of banks								
(a) Central	5	9	18	19	19	19	19	19
(b) Primary	286	302	463	740	857	872	890	892
Loans advanced during the year to individuals								
(Rs. crore)	1.38	2.86	11.62	148.16	158.09	180.76	215.36	278.08
Loans outstanding with individuals (Rs. crore)	6.59	13.47	33.74	402.15	914.53*	943.46	1,057.92	1,193.36

N.A.—Not available.

**Data in respect of Assam, Jammu & Kashmir, Meghalaya and Andaman & Nicobar Islands are not available.

@Data in respect of Andaman & Nicobar Islands and Mizoram are not available.

8.63. AGRICULTURAL MARKETING AND PROCESSING COOPERATIVES

Type of societies	1973-74	1974-75	1975-76	1976-77	1977-78
I. Primary agricultural marketing societies					
1. No. of societies	3,278	3,127	3,174	3,370	3,592
2. Membership					
(a) Societies ('000)	141	141	142	145	150
(b) Individuals (lakhs)	28.36	29.96	30.71	32.04	33.60
3. Share capital (Rs. crore)	35.22	36.25	38.77	42.73	46.39
II. Value of agricultural produce marketed by cooperatives during the year (Rs. crore)					
(a) Total	1,110	1,434	1,539	4,786	3,901
(b) Of which - foodgrains	355	447	522	1,981	2,071
III. Value of agricultural products requisites distributed by coop. during the year (Rs. crore)					
(a) Total	480	715	814	334	334
(b) Of which—fertilisers	400	617	716	289	278
IV. Cooperative sugar factories					
1. No. of licensed factories	178	177	172	181	186
2. No. of factories in production	91	97	99	119	128
3. Sugar produced	15.61	20.90	24.48	23.20	N.A.
4. Share of cooperative sector in national production (%)	39.5	43.6	47.7	N.A.	N.A.
V. Cotton ginning and pressing					
1. No. of cooperatives undertaking processing of cotton					
(a) Cotton ginning & pressing societies	204	227	224	227	229
(b) Marketing societies undertaking processing	75	71	73	83	76
(c) Total	279	298	297	310	305
2. Raw cotton ginned (lakh quintal)	32.88	50.44	52.56	45.97	56.95
3. Cotton pressed (lakh bales)	8.51	9.80	8.47	6.30	5.55

Source: *Indian Agriculture in Brief*, 19th edition, Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

9.00. FIVE-YEAR PLANS

9.01. AGRICULTURAL PRODUCTION DURING PLAN PERIODS

Commodity	Units	First plan end 1955-56	Second Plan 1960-61	Third Plan 1965-66	Fourth Plan end 1973-74	Fifth Plan					79-80	Sixth Plan			
						74-75	75-76	76-77	77-78	78-79		80-81	81-82	82-83	84-85 (target)
Foodgrains	Million tonnes	66.9	82.0	72.4	104.7	99.8	121.0	111.2	126.4	131.9	1 9.7	129.6	133.3	126.4	153.6
Oil seeds of which	" "	5.7 ^a	7.0 ^a	6.6	9.2	8.9	10.3	8.2	9.3	9.7	8.4	8.9			13.0
Groundnut	" "	3.7	4.7	4.3	5.9	5.1	6.8	5.3	6.1	6.2	5.8	5.0	7.2	5.6	
Sugarcane (Gur)	" "	6.1	11.1	12.8	14.4	14.7	14.4	15.8	18.0	15.7	13.1	15.4	18.6	18.9	21.5
Cotton (lint)	Million bales (170 kg each)	4.2	5.6	4.9	6.3	7.2	6.0	5.8	7.2	8.0	7.7	7.6	7.9	7.7	9.2
Jute	Million bales (180 kg each)	4.2	4.1	4.5	6.3	4.5	4.4	5.4	5.4	6.5	6.1	6.5			9.1
Mesta	Million bales (180 kg each)	1.2	1.1	1.3	1.5	1.4	1.5	1.7	1.8	1.9	1.9	1.7			
Tobacco	Thousand tonnes	303.0	307.0	293.0	462.1	363.1	350.0	419.0	493.6	453.8	438.5	455.6			
Tea	"	285.0	321.0	366.0	472.0	489.0	487.0	512.0	556.0	564.0	552.0	575.0			
Coffee	"	34.4	43.2	63.9 ^a	85.4 ^a	92.5 ^a	84.0 ^a	102.3 ^a	125.0	110.5	150.0	130.5			
Rubber	"	25.5 ^b	25.4 ^b	50.0 ^b	125.2 ^b	130.1 ^c	137.8 ^c	149.6 ^c	147.0	135.3	148.5	153.1			
Coconut	Million nuts	4226.0	4639.0	5053.0	5850.6	6029.6	5829.0	5765.0	5413.0	5730.0	5636.0	5720.0	5619.0		
Areca nut	Thousand tonnes	N.A.	N.A.	119.0	167.4	165.0	160.0	165.0	175.0	181.9	190.0	196.0	195.0		
Cashewnut	"	82.0	124.0	159.0	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
Pepper	"	28.0	28.0	23.0	29.0	25.0	26.0	26.0	21.0	22.0	28.0	27.0	29.0		
Lac	"	44.2	52.8	23.5	19.5	24.7	21.8	23.9	20.9	9.1	15.3	20.5			

N A = Not available.

^a Groundnut, castorseed, sesamum, rapeseed, mustard and linseed (for 1955-56 and 1960-61).

^b Figures relate to calendar year.

^c Supplied by Rubber Board.

* Supplied by Coffee Board.

Source: (1) *Indian Agriculture in Brief*, 19th Edition, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.

(2) Area and Production of Principal Crops in India, D.E. & S. Ministry of Agriculture, New Delhi.

(3) Economic Survey 1982-83, Government of India, New Delhi.

**9.02(a). ACHIEVEMENTS OF AGRICULTURAL DEVELOPMENT
PROGRAMMES DURING PLAN PERIODS
(First to Fourth Plan)**

Programme	Unit	First Plan	Second Plan	Third Plan	Annual Plan (1966-69)	Fourth Plan
Major & medium irrigation (Gross)—						
Additional area benefited	M. hectares	1.3	2.1	2.1	1.54	2.55
Minor irrigation (Gross)—						
Additional area benefited	M. hectares	3.83	3.64	5.21	4.05	7.23
Soil conservation on agricultural land—						
Additional area benefited	M. hectares	0.30	1.00	3.86	4.10	5.65
Dry farming—						
Additional area benefited	M. hectares	—	—	—	—	61.00
Consumption of chemical fertilisers*						
(a) Nitrogenous (N)	Lakh tonnes	1.07	2.12	5.75	12.09	18.30
(b) Phosphatic (P ₂ O ₅)	Thousand tonnes	13	53	132	382	650
(c) Potassic (K ₂ O)	Thousand tonnes	10	29	77	170	360
Plant protection	M. hectares	2.40	6.50	17.20	79.40	60.53
Consumption of pesticides	Thousand tonnes	—	—	—	—	—

*Level reached/to be reached.

Source: *Indian Agriculture in Brief*, 18th edition, Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi.

**9.02(b). ACHIEVEMENT OF AGRICULTURAL DEVELOPMENT PROGRAMMES DURING
FIFTH AND SIXTH PLANS**

Programmes	Fifth Plan					1979-80	Sixth Plan					
	1974-75	1975-76	1976-77	1977-78	1978-79		1980-81 (a. a)	1981-82 (Target)	Anticipated achievement	1982-83 (Target)	1984-75 (Target)	
I. Irrigation (Cumulative levels) (million hectares)												
a) Major and medium	19.35	20.10	20.21	21.16	22.05	22.64	23.62	24.70	N.A.	25.27		
b) Minor	24.30	25.20	26.20	27.30	28.60	30.00	31.40	32.85		34.30		
Total (a + b)	43.65	45.30	46.91	48.46	50.65	52.64	55.02	57.55		59.57		
II. High yielding varieties (million hectares)												
(i) Paddy	11.2	12.4	13.3	16.1	16.9	16.0	18.5	20.7	19.3	22.5	25.0	
(ii) Wheat	11.2	13.5	14.5	15.8	16.1	15.0	17.4	17.8	17.7	18.0	19.0	
(iii) Jowar	1.3	2.0	2.4	3.1	3.1	3.1	4.2	4.3	4.1	4.5	5.0	
(iv) Bajra	2.5	2.9	2.3	2.6	2.9	3.0	3.8	3.7	4.1	4.0	5.0	
(v) Maize	1.1	1.1	1.1	1.2	2.1	1.4	1.4	2.0	1.5	2.0	2.0	
Total (i to v)	27.3	31.9	33.6	38.9	41.1	38.4	45.3	48.5	48.7	51.0	58.0	
III. Consumption of chemical fertilisers (Million tonnes)												
(i) Nitrogenous (N)	1.77	2.15	2.46	2.91	3.42	3.50	3.68*		4.07	4.33	6.00	
(ii) Phosphatic (P)	0.47	0.47	0.64	0.87	1.11	1.15	1.21*		1.32	1.50	2.34	
(iii) Potassic (C)	0.34	0.28	0.32	0.51	0.59	0.61	0.62*		0.68	0.76	1.31	
Total (N + P + K)	2.57	2.89	3.41	4.29	5.12	5.26	5.52*		6.07	6.59	9.65	
IV. Gross cropped area (Million hectares)	164.2	170.9	167.1	172.3	175.2	167.2	173.0	175.0				
V. Soil conservation (Million hectares)	18.0	18.9	19.8	20.3	22.6	23.4	24.2	25.0		27.0	30.5	
VI. Use of pesticides (Technical grade material) ('000 tonnes)	41.2	49.7	50.5	59.2	N.A.	N.A.	53.3	61.2 ^{a*}		72.0	80.0	

a.a. = Anticipated achievement. * Actual consumption. N.A. = Not available.

Source: Ministry of Agriculture, New Delhi.

2.03. BENEFITS FROM MAJOR AND MEDIUM IRRIGATION SCHEMES

('000 hectares gross)

Sl. No.	State	Ultimate irrigation potential	Pre plan benefits	Benefits from Plan schemes to end of							
				1979-80 (Actuals)		1980-81 (Actuals)		1981-82 (Anticipated)		1982-83 (Targets)	
				Potential	Utilisation	Potential	Utilisation	Potential	Utilisation	Potential	Utilisation
1.	Andhra Pradesh	5,000	1,676	1,220	801	1,321	902	1,462	1,038	1,543	1,130
2.	Assam	970	—	101	59	120	72	142	80	151	88
3.	Bihar	6,500	404	2,048	1,316	2,121	1,396	2,205	1,480	2,300	1,550
4.	Gujarat	3,000	33	997	529	1,014	578	1,035	614	1,082	670
5.	Haryana	2,000	436	1,333	1,194	1,349	1,222	1,364	1,243	1,395	1,252
6.	Himachal Pradesh	50	—	—	—	—	3	6	5	6	6
7.	Jammu & Kashmir	250	43	63	56	75	61	88	74	89	78
8.	Karnataka	2,500	308	766	744	797	774	848	826	935	900
9.	Kerala	1,000	158	300	280	321	295	358	337	382	360
10.	Madhya Pradesh	6,000	513	925	606	1,037	683	1,152	808	1,232	910
11.	Maharashtra	4,100	255	980	341	1,063	410	1,172	522	1,292	€30
12.	Manipur	135	—	8	8	11	11	20	20	26	26
13.	Meghalaya	20	—	—	—	—	—	—	—	—	—
14.	Nagaland	10	—	—	—	—	—	—	—	—	—
15.	Orissa	3,600	455	972	972	1,013	1,013	1,045	1,045	1,060	1,060
16.	Punjab	3,000	1,220	1,089	1,084	1,117	1,113	1,146	1,136	1,168	1,158
17.	Rajasthan	2,750	320	1,215	1,014	1,231	1,038	1,260	1,061	1,334	1,096
18.	Sikkim	20	—	—	—	—	—	—	—	—	—
19.	Tamil Nadu	1,500	891	288	274	300	274	308	290	318	307
20.	Tripura	100	—	—	—	—	—	—	—	—	—
21.	Uttar Pradesh	12,500	2,553	3,476	2,388	3,728	2,459	4,009	3,054	4,184	3,286
22.	West Bengal	2,310	440	1,082	958	1,118	970	1,142	1,020	1,161	1,051
Total States		58,315	9,705	16,863	12,623	17,740	13,274	18,762	14,653	19,657	15,558
Union Territories		180	—	10	10	10	10	10	10	10	10
Total States & U.Ts.		58,475	3,705	16,873	12,633	17,750	13,284	18,772	14,663	19,667	15,568
Per Plan Benefits				9,705	9,705	9,705	9,705	9,705	9,705	9,705	9,705
Total Including											
Per plan benefits				26,578	22,338	27,455	22,989	28,477	24,368	29,372	25,273
Additional benefits						877	651	1,022	1,379	895	905
									(say 0.90 million hectares)	(say 0.90 million hectares)	

Source: Annual Plan 1982-83, Planning Commission, New Delhi.

9.04. BENEFITS FROM MINOR IRRIGATION

('000 hectares gross)

Sl. No.	States	Ultimate potential	Potential utilisation by end of			
			1979-80 (Actual)	1980-81 (Actual)	1981-82 (Anticipated)	1982-83 (Target)
1.	Andhra Pradesh	4,200	1,985	2,037	2,091	2,176
2.	Assam	1,700	288	299	319	338
3.	Bihar	5,900	2,335	2,464	2,624	2,785
4.	Gujarat	1,750	1,431	1,454	1,488	1,529.6
5.	Haryana	1,550	1,257	1,292	1,333	1,375
6.	Himachal Pradesh	285	96.5	102	106.8	110.8
7.	Jammu & Kashmir	550	313	317.8	322.3	326.1
8.	Karnataka	2,100	1,015	1,045	1,075	1,101
9.	Kerala	1,100	310	323	339	357
10.	Madhya Pradesh	4,200	1,550	1,622	1,725	1,816
11.	Maharashtra	3,200	1,632	1,676	1,722	1,768
12.	Manipur	105	26.3	29.2	32.3	34.3
13.	Meghalaya	100	23.7	26.0	28.25	30.25
14.	Nagaland	80	42	44	46	47
15.	Orissa	2,300	665	708	792	885
16.	Punjab	3,550	2,914	2,956	3,001	3,041
17.	Rajasthan	2,400	1,812	1,848	1,881	1,909
18.	Sikkim	22	9	10	11.5	13.0
19.	Tamil Nadu	2,400	1,887	1,915.5	1,943.5	1,968.50
20.	Tripura	115	38.4	39.4	40.25	41.55
21.	Uttar Pradesh	13,200	8,840	9,595	10,270	10,913
22.	West Bengal	3,800	1,430	1,495	1,555	1,659.5
	Total States	54,607	29,900	31,298	32,746	34,193.6
	Total U.Ts.	320	100	102	104	106.4
	Total States & U.Ts.	54,927	30,000	31,400	32,850	34,300.0

Source: Annual Plan 1982-83, Planning Commission, New Delhi.

9.05. AREA UNDER SOIL CONSERVATION ON AGRICULTURAL LAND

('000 hectares)

State/Union Territory	1975-76	1976-77	1977-78
Central			
Madhya Pradesh	2,482	2,538	2,616
Rajasthan	1,010	1,010	1,014
Uttar Pradesh	2,025	2,071	2,117
East			
Assam	24	29	35
Bihar	494	519	553
Manipur	10	11	12
Meghalaya	13	14	14
Nagaland	7	10	13
Orissa	141	156	N.A.
Sikkim	—	0.27	1.23
Tripura	6	8	9
West Bengal	87	93	101
North			
Haryana	181	201	232
Himachal Pradesh	16	17	19
Jammu & Kashmir	3	4	6
Punjab	149	183	198
South			
Andhra Pradesh	427	437	447
Karnataka	1,883	2,133	2,300
Kerala	51	52	53
Tamil Nadu	571	619	673
West			
Gujarat	1,703	1,713	1,759
Maharashtra	7,568	7,759	7,895
Total States	18,851	19,493.27	20,067.23
Union Territories	41	43	N.A.
Grand Total	18,892	19,636.27	20,067.23

10.00. HIGH YIELDING VARIETIES

**10.01. ALL INDIA AREA UNDER HYVP—1966-67 to 1981-82
AND TARGETS FOR 1982-83 & 1984-85**

('000 hectares)

Year	Paddy	Wheat	Jowar	Bajra	Maize	Total
1966-67	888	541	191	59	207	1,886
1967-68	1,785	2,942	603	419	287	6,036
1968-69	2,681	4,793	690	745	388	9,297
1969-70	4,342	4,910	555	1,155	451	11,413
1970-71	5,588	6,48 ⁰	802	205	462	15,383
1971-72	7,412	7,861	688	1,775	437	18,173
1972-73	8,168	10,177	868	2,503	605	22,321
1973-74	9,981	11,027	1,155	3,003	872	26,038
1974-75	11,208	11,194	1,312	2,529	1,094	27,337
1975-76	12,443	13,458	1,958	2,897	1,132	31,888
1976-77	13,337	14,522	2,370	2,268	1,063	33,560
1977-78	16,122	15,803	3,140	2,631	1,234	38,930
1978-79	16,882	15,899	3,069	2,938	1,346	40,134
1979-80	15,991	15,027	3,052	2,961	1,352	38,383
1980-81	18,495	17,387	4,182	3,796	1,390	45,250
1981-82(a. a.)	19,329	17,661	4,107	4,074	1,508	47,769*
1982-83 (target)	21,452	18,632	5,342	4,887	1,746	53,109*
1984-85 (target)	26,093	20,409	6,844	5,940	2,001	62,472*

a. a. = anticipated achievement.

* = includes ragi.

Source: Ministry of Agriculture, New Delhi.

**10.02. STATEWISE TOTAL AREA* UNDER HYVP
1975-76 to 1980-81**

Zone/State	('000 hectares)					
	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Central	9,817	10,368	13,095	12,726	11,088	
Madhya Pradesh	2,280	2,597	2,788	2,937	2,008	13,782
Rajasthan	1,205	1,241	1,407	1,477	1,663	3,815
Uttar Pradesh	6,332	6,530	8,900	8,212	7,417	2,147
						8,030
East	5,107	5,967	6,540	7,093	6,770	
Assam	399	505	634	652	469	8,256
Bihar	2,354	2,729	3,068	3,165	2,830	690
Manipur	40	53	52	56	47	3,650
Meghalaya	13	16	21	25	25	59
Nagaland	5	7	9	10	16	—
Orissa	575	648	752	971	1,084	18
Sikkim	—	2	7	12	19	1,254
Tripura	106	117	120	130	124	25
West Bengal	1,615	1,890	1,877	2,072	2,156	160
						2,400
North	5,094	5,546	5,880	6,555	6,889	
Haryana	1,523	1,660	1,746	1,995	2,112	7,075
Himachal Pradesh	332	405	380	401	404	2,165
Jammu & Kashmir	346	376	400	425	430	430
Punjab	2,893	3,105	3,354	3,734	3,943	445
						4,035
South	6,905	6,255	7,555	7,975	7,648	
Andhra Pradesh	2,962	2,482	2,946	3,260	2,878	8,704
Karnataka	1,596	1,163	1,520	1,702	1,635	3,686
Kerala	260	260	293	279	300	1,863
Tamil Nadu	2,086	2,350	2,796	2,734	2,835	360
						2,795
West	4,828	5,277	5,860	5,785	5,916	
Gujarat	2,043	1,752	1,844	1,939	1,876	7,348
Maharashtra	2,785	3,525	4,016	3,846	4,040	2,000
						5,348
Total States	31,751	33,413	38,930	40,134	38,311	45,167
Union Territories	137	147	N.A.	N.A.	72	83
All India	31,888	33,560	38,930	40,134	38,383	45,250

*Total area constitutes area under paddy, wheat, jowar, bajra and maize crops.

10.03(a). STATEWISE AREA UNDER HYVP CROPS--PADDY
1975-76 to 1980-81

('000 hectares)

Zone/State	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Central	2,782	2,917	4,074	3,696	3,164	4,010
Madhya Pradesh	1,150	1,194	1,329	1,292	923	1,760
Rajasthan	39	44	45	40	55	50
Uttar Pradesh	1,593	1,679	2,700	2,364	2,186	2,200
East	2,781	3,438	4,075	4,558	4,263	5,090
Assam	328	481	554	576	376	577
Bihar	768	998	1,300	1,365	1,060	1,400
Manipur	35	40	45	48	40	51
Meghalaya	7	9	14	16	16	n.a.
Nagaland	3	4	6	7	7	11
Orissa	483	557	647	867	991	1,100
Sikkim	—	—	—	1	3	4
Tripura	104	109	116	127	120	147
West Bengal	1,053	1,290	1,393	1,551	1,650	1,800
North	927	1,032	1,285	1,599	1,766	1,840
Haryana	169	190	252	330	416	440
Himachal Pradesh	61	70	65	63	64	80
Jammu & Kashmir	180	193	200	205	210	220
Punjab	517	579	768	1,001	1,076	1,100
South	5,172	4,854	5,644	5,956	5,654	6,153
Andhra Pradesh	2,477	2,024	2,413	2,671	2,244	2,788
Karnataka	575	400	500	642	751	685
Kerala	260	260	294	279	300	360
Tamil Nadu	1,660	2,170	2,437	2,364	2,359	2,320
West	711	1,017	1,044	1,073	1,133	1,387
Gujarat	172	178	126	219	256	285
Maharashtra	539	839	918	854	877	1,102
Total States	12,373	13,258	16,122	16,882	15,980	18,480
Union Territories	70	79	n.a.	n.a.	11	15
All India	13,443	38,337	16,122	16,882	15,991	18,495

Source: Ministry of Agriculture, New Delhi.

10.03(b). STATEWISE AREA UNDER HYVP CROPS—WHEAT
1975-76 to 1980-81

('000 hectares)

Zone/State	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Central	6,267	6,710	7,939	7,822	6,780	8,300
Madhya Pradesh	803	1,000	1,061	1,046	600	1,300
Rajasthan	826	910	878	976	968	1,200
Uttar Pradesh	4,638	4,800	6,000	5,800	5,192	5,800
East	1,919	2,155	2,059	2,108	2,067	2,616
Assam	59	64	76	71	86	103
Bihar	1,229	1,417	1,418	1,440	1,400	1,800
Manipur	5	10	6	6	7	7
Meghalaya	2	2	2	2	3	N. A.
Nagaland	—	1	1	1	6	4
Orissa	60	53	66	60	49	80
Sikkim	—	—	2	4	6	9
Tripura	2	8	4	3	4	13
West Bengal	562	600	484	521	506	600
North	3,624	3,988	4,091	4,407	4,551	4,620
Haryana	1,087	1,200	1,224	1,340	1,350	1,300
Himachal Pradesh	212	260	250	253	247	275
Jammu & Kashmir	140	152	165	180	180	185
Punjab	2,195	2,376	2,452	2,634	2,774	2,800
South	160	112	132	170	167	217
Andhra Pradesh	31	32	32	37	30	42
Karnataka	129	80	100	133	137	175
Kerala	—	—	—	—	—	—
Tamil Nadu	—	—	—	—	—	—
West	1,428	1,507	1,582	1,392	1,433	1,580
Gujarat	452	506	582	456	460	480
Maharashtra	976	1,001	1,000	936	973	1,100
Total States	13,408	14,472	15,803	15,899	14,978	17,333
Union Territories	50	50	N. A.	N. A.	49	54
All India	13,458	14,522	15,803	15,899	15,027	17,387

Source: Ministry of Agriculture, New Delhi.

10.03(c). STATEWISE AREA UNDER HYVP CROPS—JOWAR AND BAJRA
1975-76 to 1980-81

('000 hectares)

Zone/State	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
(i) JOWAR						
Central	25	346	32	429	310	459
Madhya Pradesh	250	338	275	416	300	440
Rajasthan	6	6	10	11	9	17
Uttar Pradesh	—	2	40	2	1	2
East	2	5	3	8	8	13
Orissa	2	5	3	8	8	13
South	786	534	959	878	960	1,289
Andhra Pradesh	189	150	248	240	316	474
Karnataka	517	284	600	526	437	640
Tamil Nadu	80	N.A.	111	112	207	175
West	913	1,484	1,853	1,754	1,774	2,421
Gujarat	79	38	32	31	38	55
Maharashtra	834	1,446	1,821	1,723	1,736	2,366
Total States	1,957	2,369	3,140	3,069	3,052	4,182
Union Territories	1	1	N.A.	N.A.	—	—
All India	1,958	2,370	3,140	3,069	3,052	4,182
(ii) BAJRA						
Central	418	310	537	531	624	885
Madhya Pradesh	27	30	34	7	9	33
Rajasthan	314	255	443	521	609	350
Uttar Pradesh	77	25	60	3	6	2
East	—	—	—	—	1	6
Orissa	—	—	—	—	1	6
North	292	304	293	334	342	370
Haryana	250	250	250	300	321	335
Jammu & Kashmir	1	2	—	—	—	—
Punjab	41	52	43	34	21	35
South	471	463	529	630	529	725
Andhra Pradesh	174	203	169	213	188	310
Karnataka	191	140	150	195	111	155
Tamil Nadu	106	120	210	222	230	260
West	1,701	1,176	1,272	1,443	1,457	1,800
Gujarat	1,292	981	1,046	1,163	1,046	1,100
Maharashtra	409	195	226	280	411	700
Total States	2,828	2,253	2,631	2,938	2,953	3,786
Union Territories	15	15	N.A.	N.A.	8	10
All India	2,897	2,268	2,631	2,938	2,961	3,796

Source: Ministry of Agriculture, New Delhi.

10.03(d). STATEWISE AREA UNDER HYVP CROPS—MAIZE
1975-76 to 1980-81

('000 hectares)

Zone/State	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81
Central	94	84	220	248	230	138
Madhya Pradesh	50	35	89	176	176	82
Rajasthan	20	25	31	29	22	36
Uttar Pradesh	24	24	100	43	32	26
East	405	369	402	419	431	531
Assam	12	10	4	6	7	10
Bihar	357	314	350	360	370	450
Manipur	—	3	1	3	Neg.	1
Meghalaya	4	5	5	6	6	Neg.
Nagaland	2	2	2	2	3	3
Orissa	30	33	36	36	35	35
Sikkim	—	2	4	6	10	12
North	241	222	211	215	230	245
Haryana	17	20	20	25	25	30
Himachal Pradesh	59	75	65	85	93	75
Jammu & Kashmir	25	29	35	40	40	40
Punjab	140	98	91	65	72	100
South	316	292	292	341	338	320
Andhra Pradesh	92	73	84	99	100	72
Karnataka	184	159	170	206	199	208
Kerala	—	—	—	—	—	—
Tamil Nadu	40	60	38	36	39	40
West	75	93	109	123	119	152
Gujarat	48	49	58	70	76	30
Maharashtra	27	44	51	53	43	72
Total States	1,131	1,061	1,234	1,346	1,348	1,386
Union Territories	1	2	n.a.	n.a.	4	4
All India	1,132	1,063	1,234	1,346	1,352	1,390

Source: Ministry of Agriculture, New Delhi.

10 04. STATEWISE AREA UNDER HYVP CROPS—ANTICIPATED ACHIEVEMENT AND TARGET
1981-82 and 1982-83

('000 hectares)

Zone/State	Paddy		Wheat		Jowar		Bajra		Maize		Ragi		Total	
	1981-82 (a.a.)	1982-83 (target)	1981-82 (a.a.)	1982-83 (target)	1981-82 (a.a.)	1982-83 (target)	1981-82 (a.a.)	1982-83 (target)	1981-82 (a.a.)	1982-83 (target)	1981-82 (a.a.)	1982-83 (target)	1981-82 (a.a.)	1982-83 (target)
Central	4,050	4,715	8,600	9,180	627	845	967	1,523	125	242	—	—	14,369	16,505
Madhya Pradesh	1,500	1,800	1,500	1,650	600	750	35	38	85	87	—	—	3,720	4,325
Rajasthan	50	65	1,100	1,230	26	90	917	1,435	20	95	—	—	2,113	2,915
Uttar Pradesh	2,500	2,850	6,000	6,300	1	5	15	50	20	60	—	—	8,536	9,265
East	5,700	6,599	2,499	2,748	16	18	6	7	591	619	—	—	8,812	9,991
Assam	680	800	123	150	—	—	—	—	33	50	—	—	830	1,000
Bihar	1,600	1,850	1,850	1,900	—	—	—	—	460	465	—	—	3,910	4,215
Manipur	66	70	3	4	—	—	—	—	4	4	—	—	73	78
Meghalaya	22	24	4	5	—	—	—	—	7	8	—	—	33	37
Orissa	1,407	1,565	95	110	16	18	6	7	65	68	—	—	1,589	1,768
Nagaland	12	12	3	5	—	—	—	—	4	6	—	—	19	23
Sikkim	8	8	10	12	—	—	—	—	18	18	—	—	36	38
Tripura	155	170	11	12	—	—	—	—	—	—	—	—	166	182
West Bengal	1,750	2,100	400	550	—	—	—	—	—	—	—	—	2,150	2,650
North	1,900	1,942	4,650	4,712	—	—	425	447	279	295	—	—	7,245	7,396
Haryana	460	490	1,380	1,410	—	—	380	400	35	40	—	—	2,255	2,340
Himachal Pradesh	85	87	280	282	—	—	—	—	80	85	—	—	445	454
Jammu & Kashmir	230	235	190	195	—	—	5	5	44	45	—	—	469	480
Punjab	1,125	1,130	2,800	2,825	—	—	40	42	120	125	—	—	4,085	4,122
South	6,432	6,690	212	242	1,181	1,580	920	910	390	420	1,090	1,050	10,215	10,892
Andhra Pradesh	2,932	3,075	27	27	486	500	340	375	75	100	—	—	3,860	4,077
Karnataka	750	785	185	215	510	880	280	215	260	275	890	830	2,875	3,200
Kerala	450	480	—	—	—	—	—	—	—	—	—	—	450	480
Tamil Nadu	2,300	2,350	—	—	185	200	300	320	45	45	200	220	3,030	3,135
West	1,247	1,506	1,700	1,750	2,283	2,899	1,756	2,000	133	170	—	—	7,119	8,325
Gujarat	310	335	500	520	70	85	1,150	1,200	85	90	—	—	2,115	2,230
Maharashtra	937	1,171	1,200	1,230	2,213	2,814	606	800	48	80	—	—	5,004	6,095
All India	19,329	21,452	17,661	18,632	4,107	5,342	4,074	4,887	1,508	1,746	1,090	1,050	4,7769	5,3109

a.a = Anticipated achievement.

Source: Ministry of Agriculture, New Delhi.

10.05. STATEWISE YIELD OF HYVP CROPS
1977-78 to 1979-80

(kgs. per hectare)

Crop/State	Season	1977-78	1978-79	1979-80
I. Rice				
Andhra Pradesh	Kharif	1,640	2,098	1,962
	Rabi	1,995	2,311	2,312
Assam	Autumn	1,550	1,556	1,325
	Winter	1,651	1,129	965
	Summer	1,713	1,684	1,458
Bihar	Winter	1,305	1,297	942
	Summer	1,150	1,480	1,060
Gujarat		1,808	1,752	1,563
Haryana		2,765	2,891	1,943
Himachal Pradesh		1,497	1,636	—
Karnataka	Autumn } Winter } Summer }	2,924	2,572 2,510	— —
		2,829	2,763	—
Kerala	Autumn	2,054	2,012	2,278
	Winter	1,893	1,736	1,998
	Summer	2,026	2,243	2,142
Madhya Pradesh		1,293	1,410	1,139
Maharashtra	Autumn	1,865	1,824	1,487
	Summer	1,764	1,846	1,746
Orissa	Autumn	1,018	871	753
	Winter	1,287	1,115	1,304
	Summer	1,442	1,591	1,315
Punjab	Autumn	—	—	2,735
Tamil Nadu	I & II Crop	2,140(I)	2,188(I)	2,169(I)
		2,156(II)	2,189(II)	2,186(II)
Uttar Pradesh	Autumn	1,325	1,568	673
	Winter	1,713	1,467	654
West Bengal	Early Aman	—	1,565	1,535
	Aman (Winter)	2,023	1,620	1,712
	Summer	—	2,479	1,745
II. Jowar				
Andhra Pradesh	Kharif	1,456	908	—
	Rabi	1,678	1,524	—
Gujarat	Kharif	885	1,123	1,018
	Rabi	—	1,224	617
Karnataka	Kharif	1,832	1,723	—
	Rabi	1,403	1,478	—
Madhya Pradesh		1,104	—	—

(Continued)

10.05. STATEWISE YIELD OF HYVP CROPS (Concluded)
1977-78 to 1979-80

(kgs per hectare)

Crop/State	Season	1977-78	1978-79	1979-80
Maharashtra	Kharif	1,578	1,361	1,536
	Rabi	929	1,687	1,598
Tamil Nadu		2,239	2,159	1,582
III. Bajra				
Andhra Pradesh		1,441	1,223	1,420
Gujarat	Kharif	732	1,288	963
Haryana		581	726	525
Karnataka		1,065	943	—
Madhya Pradesh		1,186	—	—
Maharashtra		700	574	667
Tamil Nadu		1,728	1,909	3,023
Punjab		—	—	1,180
IV. Maize				
Andhra Pradesh	Kharif	2,085	1,400	2,396
	Rabi	2,139	2,788	2,174
Bihar	Bhadoi	1,240	1,132	759
	Ganma	1,619	1,244	1,486
Gujarat		482	1,298	785
Karnataka	Kharif	3,251	3,060	—
	Rabi	2,752	2,659	—
Haryana		1,323	1,936	1,377
Himachal Pradesh		1,466	1,375	—
Madhya Pradesh		1,504	—	—
Maharashtra	Kharif	—	—	1,734
	Rabi	—	—	2,039
Punjab		—	—	2,065
V. Wheat				
Assam		—	1,029	1,122
Bihar		1,376	1,516	1,219
Gujarat		1,904	2,375	2,069
Haryana		2,149	2,380	2,234
Himachal Pradesh		—	1,505	—
Karnataka		1,328	1,440	—
Madhya Pradesh		1,569	1,698	1,367
Maharashtra		847	894	930
Punjab		—	—	2,825
Rajasthan		1,745	1,760	1,635
Uttar Pradesh		1,553	1,631	1,411
West Bengal		—	1,474	1,461

Source: "Area and Production of Principal Crops in India—1980-81", Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

11.00. AGRICULTURAL DEVELOPMENT PROGRAMMES
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**11.01. DISTRICTS COVERED UNDER SFDA PROJECTS IN
THE FIFTH FIVE-YEAR PLAN**

1. Andhra Pradesh (15)

1. Srikakulam*
2. Nalgonda*†@
3. Visakhapatnam*
4. Guntur
5. Karimnagar
6. Krishna
7. East Godavari
8. Hyderabad
9. Warangal
10. Nellore
11. Medak
12. Nizamabad
13. Khammam
14. Ongole
15. Adilabad

2 Assam (4)

1. Goalpara*
2. Nowgong*
3. Mikir Hills*
4. Kamrup*

3. Bihar (22)

1. Nalanda*
2. Ranchi*
3. Katihar*
4. West Champaran*
5. Sitamarhi
6. Darbhanga
7. Madhubani
8. Monghyr
9. Begusarai
10. Bhagalpur
11. Santhal-Parganas
12. Hazaribagh
13. Dhanbad
14. Singhbhum area not covered by T.D.A
15. Saran
16. Giridih
17. Samastipur

18. Gaya

19. Rohtas@
20. East Champaran@
21. Purnea@
22. Patna@

4. Gujarat (6)

1. Junagadh*
2. Surat*
3. Sabarkantha*
4. Vadodra*
5. Valsad*
6. Broach

5. Haryana (3)

1. Ambala*
2. Gurgaon*
3. Hissar

6. Himachal Pradesh (3)

1. Sirmur*
2. Solan*
3. Simla

7. Jammu & Kashmir (4)

1. Jammu-Kathua*
2. Anantnag*
3. Baramula*
4. Poonch-Rajouri*

8. Kerala (4)

1. Cannanore*
2. Quilon*
3. Trivandrum
4. Trichur

9. Karnataka (8)

1. Bidar*
2. North Canara*
3. Tumkur*
4. Hassan
5. Gulbarga
6. Ballary

(†) Cuddapah Project merged with DPAP.

**11 01. DISTRICTS COVERED UNDER SFDA PROJECTS IN
THE FIFTH FIVE-YEAR PLAN (Continued)**

- | | |
|--------------------------------|-------------------------------|
| 7. Shimoga | 4. (a) Hoshiarpur* |
| 8. Mysore | (b) Ropar* |
| 10. Madhya Pradesh (12) | 17. Rajasthan (6) |
| 1. Ujjain* | 1. Alwar* |
| 2. Bilaspur* | 2. Bharatpur* |
| 3. Durg* | 3. Udaipur* |
| 4. Chindwara* | 4. Bhilwara* |
| 5. Satna | 5. Ajmer* |
| 6. Sarguja | 6. Chittorgarh |
| 7. Jabalpur | 18. Tripura (1) |
| 8. Mandasaur | 1. Tripura* ^b |
| 9. Sagar | 19. Tamil Nadu (12) |
| 10. Shahdol | 1. Madurai* |
| 11. Rajnandgaon | 2. South Arcot* |
| 12. Raisen-Sehore | 3. Tirunelveli* |
| 11. Maharashtra (13) | 4. Salem* |
| 1. Thana* | 5. North Arcot* |
| 2. Ratnagiri* | 6. Tiruchirapalli |
| 3. Satara* | 7. Thanjavur |
| 4. Kolaba | 8. Chingleput |
| 5. Kolhapur † | 9. Coimbatore |
| 6. Dhulia | 10. Pudukkottai |
| 7. Amravati | 11. Kanyakumari |
| 8. Chandrapuri † | 12. Nilgiris |
| 9. Buldhana | 20. Uttar Pradesh (26) |
| 10. Akola | 1. Badaun* |
| 11. Nanded | 2. Fatehpur* |
| 12. Osmanabad | 3. Rae Bareli* |
| 13. Parbhani † | 4. Pratapgarh* |
| 12. Manipur (1) | 5. Mathura* |
| 1. Manipur † | 6. Ballia* |
| 13. Meghalaya (2) | 7. Basti |
| 1. K & J Hills* | 8. Jaunpur |
| 2. Garo Hills* | 9. Gorakhpur |
| 14. Nagaland (1) | 10. Varanasi |
| 1. Nagaland* | 11. Sultanpur |
| 15. Orissa (7) | 12. Hardoi |
| 1. Bolangir* | 13. Sitapur |
| 2. Dhenkanal* | 14. Farukhabad |
| 3. Ganjam* | 15. Moradabad |
| 4. Cuttack* | 16. Shahjahanpur |
| 5. Keonjhar* | 17. Unnao |
| 6. Sambalpur | 18. Meerut |
| 7. Puri | 19. Ghazipur |
| 16. Punjab (4) | 20. Garhwal |
| 1. Amritsar-Ferozepur* | 21. Gonda |
| 2. Sangrur-Patiala* | 22. Bahraich |
| 3. Jullundur-Kapurthala* | 23. Kheri |

* North district: 3 blocks, South district: 3 blocks, West Tripura district: complete.

11.01. DISTRICTS COVERED UNDER SFDA PROJECTS IN THE FIFTH FIVE-YEAR PLAN (Continued)

24. Mainpuri	22. Goa, Daman & Diu(1)
25. Bareilly	1. Goa, Daman & Diu*
26. Allahabad	23. Pondicherry(1)
21. West Bengal(9)	1. Pondicherry*
1. Darjeeling*	24. Delhi(1)
2. Hooghly*	1. Delhi*
3. West Dinajpur*	25. Arunachal Pradesh(1)
4. Nadia	1. Arunachal Pradesh ^(e)
5. Morshidabad	26. Sikkim(1)
6. Malda	1. Whole state
7. Cooch-Behar	
8. Jalpaiguri	
9. 24-Parganas	

* Projects continuing from the Fourth Five-Year Plan.

@ Projects to merge with Command Area Development Programme when CADA is ready to take up a large programme for SF/MF/AL. The projects allowed to continue in the remaining years of the Fifth Plan by adjusting outlays for other project in the State.

^(e) Not yet set up.

Figures in parenthesis indicate to number of projects.

A. *During the IV Plan*, SFDA and MFAL programmes were launched. Though, most of the projects were sanctioned during 1970-71, they started functioning effectively only in 1971-72. The project continued upto the end of 1975-76, covering last three years of the Fourth Plan and the first two years of the Fifth Plan. The salient features of the project were:

(1) The programme of Small Farmers Development Agency (SFDA) is particularly production and institutional credit oriented. This scheme is proposed to be taken up in 46 selected areas; 50,000 potentially viable small farmers (with holdings generally between 2.5 and 7.5 acres) are to be assisted in each project area with subsidised irrigation support, land levelling, soil conservation, improved agricultural implements, custom service facilities, storage and marketing and in development of subsidiary occupations like dairy, poultry, fishery, piggery, etc. The average outlay on each project will be Rs. 1.50 crore during the Fourth Plan. The programme includes giving of assistance to rural artisans also. Farmer participants will be given a subsidy of 25 per cent from the agency and the balance as loans mainly from cooperative credit institutions. This scheme will benefit about 20 lakh families.

(2) Marginal Farmers and Agricultural Labourers (MFAL) Programme is oriented towards development of subsidiary occupation with the help of institutional credit. This scheme is proposed to be taken up in 41 selected areas; 15,000 marginal farmers (with holdings generally up to 2.5 acres) and about 5,000 agricultural labourers are to be assisted in each project area with subsidised credit support (up to 33½ per cent for inputs subject to a maximum of Rs. 100 for one season and Rs. 200 for two seasons in one year and two years) for agricultural and subsidiary occupations. Provision has also been made for giving direct wage employment in the off-season to agricultural labourers in rural works of a productive nature. The average outlay on each project will be Rs. one crore during the Fourth Plan. This scheme will benefit 8 to 9 lakh families.

(Continued)

**11.01. DISTRICTS COVERED UNDER SFDA PROJECTS IN
THE FIFTH FIVE-YEAR PLAN (Concluded)**

(3) Rural Works Programme (RWP) is designed to generate employment opportunities for agricultural labourers in the chronically drought affected areas. This programme covers 54 districts in 13 States. Fourth Plan outlay in the Central non-Plan sector is Rs. 100 crore and each selected district is expected to get an allocation of nearly Rs. 2 crore. These schemes include irrigation, soil conservation and road building, etc.

B. In the Fifth Five-Year Plan, that is from 1974-75, based on the recommendations of the National Commission on Agriculture, the number of SFDA projects has been increased to 160 including the existing ones and investment of Rs. 200 crore, the SFDA/MFAL agencies have been made composite to cover both small and marginal farmers and agricultural labourers and the Programme content has undergone the following readjustments:

The definitions of small farmers and marginal farmers have been revised to include farmers having land-holdings between 2.5 and 5 acres of dry land, and upto 2.5 acres of dry land, respectively.

The components of rural artisans and rural works programme will continue upto the end of 1975-76 only and therefore, be renamed as *Drought Prone Areas Programme* (investment of Rs. 161.4 crore) with the following feature:

The Government have identified 74 districts (Table 11.02) wholly or partly in 13 States as chronically drought prone. In terms of population, the Programme covers about 600 lakh or 12 per cent of the population and in terms of area it covers 585,000 sq. km or nearly 19 per cent of the area.

The Programme lays special emphasis on the small and marginal farmers and other weaker sections of the community. Programme expects to cover 10,000 beneficiaries in a main DPAP district for this purpose. As a general principle, for every investment a small marginal farmer makes on his farm, be it a construction of well, land development, soil conservation treatment, purchase of milch cattle, sheep, poultry, purchase of inputs like seeds, phosphatic fertiliser, pesticides, improved agricultural implements, composite crop demonstration, custom services, pumping sets both diesel and electric etc., subsidy of 25 per cent and 33.3 per cent respectively is given. For community works a subsidy of 50 per cent is given.

Source: Ministry of Agriculture, New Delhi.

**11.02. DISTRICTS COVERED UNDER DROUGHT PRONE AREAS PROGRAMME
(FORMER RURAL WORKS PROGRAMME) IN THE FIFTH FIVE-YEAR PLAN**

Andhra Pradesh

1. Anantpur
2. Chittoor
3. Cuddapah
4. Kurnool
5. Mehboobnagar
6. Nalgonda
7. Prakasam

Bihar

8. Palamau
9. Monghyr
10. Nawadah
11. Rohtas

Gujarat

12. Kutch
13. Banaskantha
14. Surendranagar
15. Rajkot
16. Jamnagar
17. Amreli
18. Panchmahals
19. Bhavnagar
20. Mehsana
21. Ahmedabad

Haryana

22. Mohindergarh
23. Bhiwani
24. Rohtak

Jammu & Kashmir

25. Doda
26. Udhampur

Karnataka

27. Bijapur
28. Belgaum
29. Dharwar
30. Chitradurga

31. Kolar

32. Gulbarga

33. Raichur

34. Bellary

35. Tumkur

36. Chikmagalur

Madhya Pradesh

37. Jhabua

38. Dhar

39. Sidhi

40. Betul

41. Khargaon

42. Shahdol

Maharashtra

43. Nasik

44. Ahmednagar

45. Pune

46. Satara

47. Sangli

48. Sholapur

Orissa

49. Phulbani

50. Kalahandi

Rajasthan

51. Jaisalmer

52. Barmer

53. Jalore

54. Dungarpur

55. Banswara

56. Pali

57. Jodhpur

58. Nagaur

59. Bikaner

60. Churu

61. Udaipur

62. Ajmer

63. Jhunjhunu

**11 02. DISTRICTS COVERED UNDER DROUGHT PRONE AREAS PROGRAMME
(FORMER RURAL WORKS PROGRAMME) IN THE FIFTH FIVE-YEAR PLAN (Concluded)**

Tamil Nadu	69. Banda
64. Ramanathapuram	70. Jalaun
65. Dharmapuri	71. Hamirpur
Uttar Pradesh	West Bengal
66. Mirzapur	72. Purulia
67. Allahabad	73. Bankura
68. Varanasi	74. Midnapur

Note: Central allocation has been distributed to the various districts according to the following formulae:

Six districts covered by the World Bank Project—Rs. 4 crore per district.

Districts where the Programme covers more than 75 per cent of the area—Rs. 3 crore per district of the area.

Districts where the programme covers 50 per cent to 75 per cent of the area—Rs. 2.50 crore per district.

District where the coverage is less than 50 per cent of the area—Rs. 2.00 crore per district.

For the talukas in the contiguous districts—Rs. 0.30 crore per taluka.

During the sixth plan the DPAP will continue to be financed at the rate of Rs. 15 lakh per block per year with a total plan outlay of Rs. 175 crore in the Central sector which will be matched on an equal basis by the states.

Source: Ministry of Agriculture, New Delhi.

11.03. CUMULATIVE PROGRESS OF IMPLEMENTATION OF SFDA-MFAL PROJECTS

(in lakhs)

Programme	1973-74	1974-75	1975-76‡	1976-77	1977-78	1978-79
← At the end of →						
1. No. of participants identified	39.27	46.03	84.59	122.36	146.55	163.23
2. No. enrolled as members of cooperatives	19.56	23.28	34.78	50.77	62.18	70.32
3. No. of beneficiaries under:						
(i) Minor irrigation	1.72	2.20	3.37	4.76	6.59	7.96
(ii) Milch cattle programme	0.76	1.16	1.73	2.70	3.81	5.12
(iii) Poultry	0.08	0.09	0.12	0.15	0.17	0.19
(iv) Other A. H. programme	0.25	0.48	0.96	1.41	1.77	2.28
(v) Rural works artisans scheme	0.08	0.12	0.12	0.12	0.12	
(vi) Rural works programme	2.25	2.83	2.83	2.83	2.83	
(vii) Improve agriculture	11.27	15.42	24.44	34.35	44.89	
4. Loans disbursed (Rs. lakh)						
(A) Through Cooperatives						
(i) Short term (year wise)	2,711.81*	2,684.44*	4,231.89	6,264.76	6,974.78	4,941.85
(ii) Medium term	1,617.51	2,362.45	3,469.08	5,381.22	7,501.96	9,809.25
(iii) Long term	3,517.56	4,703.67	6,112.31	8,031.67	10,524.75	12,489.25
(B) Through Commercial Banks						
(i) Short term (year-wise)	252.28	316.62	409.57	839.80	726.75	559.07
(ii) Medium and long term loan	1,064.52	1,678.21	2,875.06	5,045.93	7,692.93	11,298.36
5. Amount released (Rs. lakh)	4,683.88	6,478.89**	8,628.89	11,278.89	15,774.19	19,839.13
6. Amount utilised	4,153.56	5,741.56	8,410.73	11,287.82	15,206.37	19,633.08

*Relates to Cooperative Year.

**Relates to 133 projects including 46 set up during the year for the Fifth Plan period.

‡Relates to 160 projects (ongoing as well as newly set up for the Fifth Plan Period).

Source: Ministry of Agriculture, New Delhi.

11.04. DISTRICTS SELECTED FOR INTENSIVE FERTILISER PROMOTION CAMPAIGN
(Jointly Selected by the Govt. of India and the Fertiliser Industry)

A. South Zone**I. Karnataka**

1. Dharwar
2. Tumkur
3. Raichur

II. Tamil Nadu

4. Dharmapuri
5. Ramnad
6. Pudukottai
7. Tirunelveli

III. Kerala

8. Mallapuram
9. Cannanore
10. Quilon

IV. Andhra Pradesh

11. Srikakulam
12. Vishakapatnam
13. Vijayanagram
14. Nalgonda
15. Medak

B. West Zone**I. Gujarat**

1. Mehsana
IFFCO
2. Ahmedabad
IFFCO
3. Broach
GSFC
4. Bulsar
GSFC

II. Rajasthan

5. Bhilwara
IFFCO
6. Jaipur
Sri Ram
7. Udaipur
GSFC
8. Bharatpur
NFL
9. Alwar
NFL
10. Dungarpur
GSFC
11. Ajmer
Sri Ram
12. Jhalawar
IFFCO

III. Maharashtra

13. Aurangabad
IFFCO
14. Pune
RCF
15. Nanded
Zuari
16. Parbhani
RCF
17. Osmanabad
Zuari

IV. Madhya Pradesh

18. Hoshangabad
IFFCO
19. Sagar
SPIC
20. Shejapur
Sri Ram
21. Vidisha
IFFCO
22. Rajnandgaon
HFC
23. Damoh
FCI

C. East Zone**I. Bihar**

1. Purnea
HFC
2. Saharsa
HFC
3. West Champaran
HFC
4. Aurangabad
FCI
5. Samastipur
IFFCO

II. West Bengal

6. West Dinajpur
HFC
7. 24 Parganas
IFFCO

III. Assam

8. Nowgaon
HFC

IV. Orissa

9. Ganjam
IFFCO
10. Dhenkanal
FCI
11. Sundergarh
FCI
12. Phulbani
HFC

D. North Zone**I. Haryana**

1. Gurgaon
NFL
2. Rohtak
NFL
3. Mahendergarh
NFL

II. Punjab

4. Ropar
NFL

III. Uttar Pradesh

5. Etah
Sri Ram
6. Unnao
FCI
7. Hardol
IEL
8. Banda
FCI
9. Bahraich
IFFCO
10. Mirzapur
IFFCO
11. Almora
IEL
12. Pauri Garhwal
FCI

IV. Jammu & Kashmir

13. Anantnag
IFFCO
14. Kathua
NFL

V. Himachal Pradesh

15. Sirmur
NFL

Note: For abbreviations, See Foot Note to Table 1.01 (Part I).

11.05. PROGRESS OF DROUGHT PRONE AREA PROGRAMMES
(As on 31-3-1980)

(Rs. in crores)

Item	During 5th Plan (1974-78)	1978-79	1979-80	Total since inception
1. Central share of allocation	235.09*	54.18	41.78	N.A.
2. Amount released by Govt. of India	108.41	51.29	29.41	189.11
3. Total expenditure incurred	177.50	78.79	70.75	327.04
4. Credit disbursed	66.70£	25.20	17.86	109.81

* Outlay sanctioned.

£ Relates to the period 1975-76 to 1977-78.

Note: During the Fourth Plan, this scheme was in Central Sector Scheme with 100% finance by the Centre from Fifth Plan onwards this scheme has been under operation (i.e., Central Sector Scheme) with 50:50 sharing of funds between Centre and States.

Source: 'Indian Agriculture in Brief', 19th Edition, Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

11.06. LIST OF DESERT DEVELOPMENT PROJECTS
(As on 31-3-81)

State	No. of projects	Name of district
1. Gujarat	3	Banskantha, Mehsana, Kutch
2. Haryana	4	Hissar, Bhiwani, Rohtak, Sirsa
3. Himachal Pradesh	1	Lahaul & Spiti
4. Jammu & Kashmir	2	Leh, Kangll
5. Rajasthan	11	Ganganagar, Bikaner, Churu, Jhunjhunu, Sikar, Nagaur, Jodhpur, Jaisalmer, Barmer, Jalore, Pali

Source: Indian Agriculture in Brief, 19th Edition, Ministry of Agriculture, New Delhi.

11.07. PROGRESS OF DESERT DEVELOPMENT PROGRAMMES
(As on 31-3-1981)

(Rs. in crores)

Item	1977-78	1978-79	1979-80	Total since inception
1. Central share of allocation	6.10	20.00	9.77	35.87
2. Amount released by Govt. of India	6.10	9.07	7.31	22.48
3. Total expenditure incurred	0.56	10.19	12.94	23.69

Note: This scheme was started as a Central Sector Programme with effect from 1977-78 with 100% financing by the Centre. with effect from 1979-80, it is being run as Central Sector Scheme with equal sharing by the Central and State Government.

Source: Indian Agricultural in Brief, 19th edition, Ministry of Agriculture, New Delhi.

11.08. PROGRESS OF INTEGRATED RURAL DEVELOPMENT PROGRAMME

Items	1978-79	1979-80	Total since inception
1. Central share of allocation (Rs. in lakhs)	10,368.00	8,430.00	18,798.00
2. Amount released by Govt. of India (Rs. in lakhs)	7,045.00	5,329.98	12,374.98
3. Total expenditure incurred (Rs. in lakhs)	3,266.73	6,885.62	10,152.35
4. (a) Cooperatives			
(i) Short term	N.A.	1,226.69	N.A.
(ii) Medium term	N.A.	1,882.92	N.A.
(iii) Long term	N.A.	1,365.80	N.A.
(b) Commercial banks			
(i) Short term	N.A.	447.72	N.A.
(ii) Term loan	N.A.	5,201.25	N.A.
(c) Total loans disbursed by Cooperatives & Commercial banks	5,460.11	10,124.38	15,584.49
5. No. of families assisted (no. of beneficiaries)	624,288	1,475,448	20,99,736

Note: This was a Central Sector Scheme in the year 1978-79 with 100% assistance. Since 1979-80, it is being operated as Central Sector Scheme on the basis of 50:50, sharing of funds between Centre and States.

Source: *Indian Agricultural in Brief*, 19th edition, Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

11.09. PROGRESS OF NATIONAL RURAL EMPLOYMENT PROGRAMME
(As on 31-3-1980)

Items	1977-78	1978-79	1979-80	Total since inception
1. Foodgrains allocated (tonnes)	204,580	13,99,200.00	28,04,500.00	44,08,280.00
2. Foodgrains released (tonnes)	204,580	14,73,944.63	30,33,191.27	47,11,715.90
3. Foodgrains utilised (tonnes)	129,835.37	12,44,878.36	23,73,900.00	37,48,613.73
4. Employment generated (lakh man days)	444.34	3,566.97	5,336.68	9,337.99

Note: This scheme was known as Food for Work Programme till October 1980 and started as a non-plan scheme during 1977-78. From 1978-79, it is being operated as the Central Sector Plan Scheme with 100% assistance in the form of foodgrains by the Central Govt. for wage component only from 1980-81, cash assistance for material and wage to states is also being provided as 100% assistance.

Source: *Indian Agriculture in Brief*, 19th edition, Directorate of Economics & Statistics, Ministry of Agriculture, New Delhi.

PART III

**SELECTED WORLD
FERTILISER AND AGRICULTURAL
STATISTICS**

1.00. WORLD STATISTICS—FERTILISERS

1.01. CAPACITY AND PRODUCTION OF N, P₂O₅ AND K₂O IN SELECTED COUNTRIES 1981-82

('000 tonnes of nutrient)

Continent/Country	N			P ₂ O ₅			K ₂ O
	Capacity ¹		Production 1981-82	Capacity ²		Production 1981-82	Production 1981-82
	Existing*	Planned		Existing*	Planned		
Africa							
Egypt	868	—	482.0	—	65(1)	116.6@, ^s	—
Morocco	—	—	26.2@	990	1155(2)	199.0@, ^s	—
South Africa	666	140(1)	447.0@	1000	—	510.0@, ^s	—
Tunisia	272	—	68.7@	812	310(2)	473.8@, ^s	—
North & Central America							
Canada	2109	1397(5)	1750.0@	1005	74(1)	676.0@	6049.0@
Mexico	3008	730(2)	877.2@	628	396(2)	236.4@	—
U.S.A.	19065	74(1)	10513.0	9514	1597(7)	7085.0	1662.0
South America							
Brazil	739	583(2)	349.4@	655	188(1)	1181.0@, ^s	—
Chile	—	—	108.5	50	—	—	23.4
Venezuela	651	—	165.3@	183	—	13.8@	—
Asia							
Afghanistan	58	—	48.6@	—	—	—	—
Bangladesh	233	544(2)	192.3	56	—	30.0	—
Burma	66	49(1)	60.0	—	—	—	—
China	9289	518(2)	10106.6	24	—	2593.9	24.4
India	4732 [5174]	5171(19)	3143.3 [3429.7]	1469 [1482]	1508(19)	949.7 [983.7]	—
Indonesia	1104	950(3)	966.4@	—	—	261.3@	—
Iran	581	326(1)	21.4@	158	—	2.6@	—
Iraq	543	272(1)	N.A.	—	400(1)	—	—

			70.0	107	120(1)	38.4	890.6
Japan	2801	—	1032.0	802	—	580.0	—
Korea, Republic of	1035	—	666.0@	450	—	323.7@	—
Korea, DPR	907	—	600.0@	—	—	130.0@	—
Kuwait	543	272(1)	183.0@	—	—	—	—
Pakistan	806	272(1)	715.0	—	—	66.9	—
Philippines	109	—	40.2	81	360(1)	38.2	—
Qatar	488	—	264.5	—	—	—	—
Saudi Arabia	163	272(1)	157.5@	—	—	—	—
Sri Lanka	147	—	29.9	—	—	5.1@, ³	—
Turkey	669	272(1)	695.4@	696	—	544.7@	—
Europe							
Austria	501	—	239.0@	74	—	95.5@	—
Belgium-Lux	645	—	739.0@	534	—	530.0@	—
Bulgaria	857	82(1)	752.8	710	30	258.0	—
Czechoslovakia	998	—	674.0@	12	—	340.5	—
France	2826	—	1588.0@	1225	—	1300.0@	1726.0@
German Dem. Rep.	1318	262(1)	966.6	—	—	359.7	3460.0
German Fed. Rep.	2809	370(1)	1108.3	202	—	559.4	2286.3
Italy	1825	—	1195.5	302	—	511.6	82.7
Netherlands	2232	295(1)	1463.4	413	—	324.6	—
Norway	647	—	424.0@	—	—	147.5@	—
Poland	2056	406(1)	1273.5	616	—	866.1	—
Romania	3200	272(1)	1822.0	392	—	717.0	—
Spain	1113	272(1)	889.6	583	—	371.6	720.9
United Kingdom	1605	272(1)	1270.0	667	—	346.0 ⁴	201.0
Oceania							
Australia	435	—	206.0 ⁴	295	32(1)	745.0@	—
U.S.S.R.	21771	5180(14)	10581.0	5384	1925(10)	6343.0⁴	8449.0

@ = Unofficial figure.

() = No. of plants under implementation/planned.

[] = For 1982-83.

¹ = Capacity of ammonia referred as N.

² = Capacity of wet process phosphoric acid expressed as P₂O₅.

³ = Production of P₂O₅ includes ground rock phosphate.

⁴ = Compiled in the FAI, New Delhi.

N.A. = Not available.

Source: 1982, *Fertiliser Year Book*, Vol. 32, FAO, Rome.

1.02. RANKING OF MAJOR PRODUCING COUNTRIES—NITROGEN
1967-68 to 1981-82

('000 tonnes N)

Year	World production	Ranking								
		Other countries								India
		I	II	III	IV	V	VI	VII	VIII	
1967-68		USA	USSR	Japan	Germany Fed. Rep.	France	Italy	China	UK	XIV
	25,567.7	6,607.0	3,753.0	2,034.7	1,559.1	1,239.5	1,095.8	1,013.0	855.0	402.6 (1.6)
1968-69		USA	USSR	Japan	Germany Fed. Rep.	France	China	Italy	Netherlands	XI
	28,388.8	7,139.0	4,177.0	2,098.5	1,597.7	1,367.8	1,132.0	1,088.5	954.1	563.0 (2.0)
1969-70		USA	USSR	Japan	Germany Fed. Rep.	France	China	Italy	Poland	X
	30,181.2	7,562.0	4,509.0	2,130.9	1,574.1	1,318.1	1,235.0	960.3	937.8	730.6 (2.4)
1970-71		USA	USSR	Japan	Germany Fed. Rep.	China	France	Poland	Netherlands	X
	32,971.8	8,161.0	5,423.0	2,105.1	1,504.6	1,426.0	1,351.1	1,029.9	956.9	832.5 (2.5)
1971-72		USA	USSR	Japan	China	France	Germany Fed. Rep.	Poland	Netherlands	X
	34,951.7	8,091.0	6,055.0	1,915.0	1,853.0	1,416.8	1,320.8	1,080.8	1,038.0	942 (2.7)
1972-73		USA	USSR	China	Japan	France	Germany Fed. Rep.	Netherlands	Poland	IX
	37,824.9	8,433.0	6,533.0	2,245.0	2,199.0	1,476.5	1,470.6	1,216.6	1,147.3	1,054.5 (2.8)

1973-74	USA	USSR	China	Japan	France	Germany Fed. Rep.	Poland	Netherlands	X
40,437.3	9,158.0	7,209.0	2,791.0	2,138.3	1,642.3	1,473.0	1,365.6	1,211.8	1,049.9 (2.6)
1974-75	USA	USSR	China	Japan	France	Germany Fed. Rep.	Poland	Netherlands	IX
42,513.7	8,474.0	7,806.0	3,090.0	2,340.9	1,694.1	1,574.5	1,457.5	1,334.5	1,186.6 (2.8)
1975-76	USA	USSR	China	Japan	Poland				VI
43,896.0	9,591.0	8,467.0	3,172.1	1,557.0	1,532.6				1,508.0 (3.4)
1976-77	USA	USSR	China						IV
47,628.4	9,787.9	8,531.0	3,842.0						1,862.4 (4.0)
1977-78	USA	USSR	China						IV
51,332.5	9,495.0	9,025.0	6,602.0						1,999.8 (3.9)
1978-79	USA	USSR	China						IV
55,889.6	10,076.0	9,220.0	7,903.1						2,173.0 (3.9)
1979-80	USA	China	USSR						IV
59,725.4	11,180.0	9,095.9	9,074.0						2,224.3 (3.7)
1980-81	USA	China	USSR						IV
62,602.1	11,825.0	10,237.4	10,155.0						2,163.9 (3.5)
1981-82	USSR	USA	China						IV
62,035.2	10,581.0	10,513.0	10,106.6						3,143.3 (5.1)

() India's share in the world production of N (percentage).

1.03 RANKING OF MAJOR PRODUCING COUNTRIES—PHOSPHATE
1967-68 to 1981-82

('000 tonnes P₂O₅)

Year	World production	Ranking								
		Other countries								India
		I	II	III	IV	V	VI	VII	VIII	
1967-68	18,011.1	USA 4,892.0	USSR 1,867.0	France 1,309.5	Australia 960.1	GFR 925.6	Japan 710.2	China 579.0	Italy 552.8	XVIII 207.1 (1.1)
1968-69	18,493.8	USA 4,624.0	USSR 1,934.0	France 1,374.0	GFR 904.7	Australia 866.4	Japan 768.0	Belgium 644.1	China 627.0	XVIII 213.2 (1.2)
1969-70	19,196.5	USA 5,001.0	USSR 2,072.0	France 1,324.3	GFR 919.4	Australia 804.1	Japan 729.5	China 694.0	Belgium 615.5	XVIII 223.7 (1.2)
1970-71	20,698.8	USA 5,368.0	USSR 2,500.0	France 1,450.8	GFR 945.8	China 781.2	Australia 694.7	Japan 665.3	Belgium 619.8	XX 228.1 (1.1)
1971-72	22,365.6	USA 5,601.0	USSR 2,772.0	France 1,577.1	GFR 975.9	China 916.0	Australia 762.0	Poland 705.6	Japan 685.3	XVIII 290.0 (1.3)
1972-73	23,811.7	USA 5,795.0	USSR 2,929.0	France 1,611.5	China 1,031.0	GFR 986.0	Australia 900.0	Poland 763.0	Japan 728.0	XVIII 330.3 (1.4)
1973-74	24,878.7	USA 6,232.0	USSR 2,982.0	France 1,693.0	Australia 1,168.9	China 1,139.0	GFR 962.0	Poland 813.6	Belgium 768.9	XIX 324.5 (1.3)

1974-75	27,059.7	USA 6,568.0	USSR 4,538.0	France 1,708.6	China 1,295.8	GFR 911.3	Poland 823.2	Japan 669.4	Belgium 757.4	XIX 331.2 (1.2)
1975-76	26,125.9	USA 6,531.0	USSR 5,165.0	France 1,258.8	China 1,246.2	Poland 929.4	GFR 649.0	Belgium 625.0	Canada 610.0	XXII 319.7 (1.2)
1976-77	27,673.0	USA 7,070.4	USSR 5,226.0	France 1,490.4	Poland 928.3	Brazil 926.1	China 847.0	GFR 733.4	Australia 721.6	XIV 478.3 (1.7)
1977-78	30,422.4	USA 7,480.9	USSR 5,586.0	China 1,741.0	France 1,560.0	Brazil 1,122.4	Poland 966.2	Australia 754.6	GFR 722.5	X 679.8 (2.2)
1978-79	32,227.2	USA 8,556.0	USSR 5,811.0	China 1,816.4	France 1,357.0	Brazil 1,185.8	Poland 1,026.4	Australia 809.6		VIII 792.0 (2.4)
1979-80	33,471.9	USA 9,063.0	USSR 5,930.0	China 1,869.9	France 1,364.0	Brazil 1,306.0	Poland 931.0	Australia 919.4		VIII 780.6 (2.3)
1980-81	34,479.4	USA 9,500.0	USSR 6,023.0	China 2,382.4	Brazil 1,623.3	France 1,351.0				VI 858.5 (2.5)
1981-82	39,810.4	USA 7,085.0	USSR 6,343.0	China 2,593.9	France 1,300.0	Brazil 1,181.0				(VI) 967.1 (2.4)

() = India's share in world production of P₂O₅ (Percentage).

1.04. RANKING OF MAJOR CONSUMING COUNTRIES—NITROGEN
1967-68 to 1981-82

('000 tonnes N)

Year	World consumption	Ranking				India
		Other countries				
		I	II	III	IV	
1967-68	23,941.7	USA 6,157.5	USSR 3,089.0	China 1,793.0	France 1,133.1	V 1,034.6 (4.3)
1968-69	26,624.6	USA 8,311.8	USSR 3,454.0	China 2,402.0	France 1,243.1	V 1,208.6 (4.5)
1969-70	28,691.0	USA 6,766.8	USSR 3,798.0	China 2,663.0		IV 1,356.0 (4.7)
1970-71	31,766.7	USA 7,378.6	USSR 4,605.0	China 3,115.0		IV 1,479.0 (4.7)
1971-72	33,677.2	USA 7,272.0	USSR 5,182.0	China 3,141.0		IV 1,798.0 (5.4)
1972-73	35,677.2	USA 7,511.7	USSR 5,606.0	China 3,459.0		IV 1,839.0 (5.2)
1973-74	38,696.9	USA 8,296.9	USSR 6,224.0	China 4,015.0	France 1,833.1	V 1,829.0 (4.7)
1974-75	38,595.6	USA 7,808.8	USSR 6,696.0	China 4,000.0		IV 1,765.7 (4.6)
1975-76	42,908.3	USA 9,445.2	USSR 7,339.0	China 4,360.6		IV 2,148.6 (5.0)
1976-77	46,383.9	USA 9,659.1	USSR 7,252.0	China 5,940.0		IV 2,457.1 (5.3)
1977-78	49,783.9	USA 9,039.7	China 7,924.0	USSR 7,522.0		IV 2,813.4 (5.7)
1978-79	53,748.8	USA 9,720.2	China 9,280.4	USSR 7,658.0		IV 2,986.3 (5.6)
1979-80	57,256.6	China 10,641.0	USA 10,347.9	USSR 7,467.0		IV 3,444.2 (6.0)
1980-81	60,003.3	China 12,112.1	USA 10,817.0	USSR 8,262.0		IV 3,522.0 (5.8)
1981-82	60,442.6	China 11,528.3	USA 10,050.6	USSR 8,383.0		IV 3,881.7 (6.4)

()=India's share in the world consumption of N (percentage.)

1.05. RANKING OF MAJOR CONSUMING COUNTRIES- PHOSPHATE
(1967-68 to 1981-82)

('000 tonnes P₂O₅)

Year	World consumption	Ranking								
		Other countries								India
		I	II	III	IV	V	VI	VII	VIII	
1967-68	16,956.6	USA 4,040.0	USSR 1,697.0	France 1,505.2	Australia 880.0	GFR 787.9	Japan 670.0	China 543.0	Italy 465.5	XIII 334.8 (2.0)
1968-69	18,174.5	USA 4,227.0	USSR 1,748.0	France 1,567.4	Australia 900.0	GFR 801.7	Japan 405.0	China 631.0	Poland 525.5	XXII 382.1 (2.1)
1969-70	18,817.9	USA 4,144.7	USSR 1,916.0	France 1,683.7	Australia 862.3	GFR 856.6	China 730.0	Japan 702.1	Poland 595.5	XIII 416.0 (2.2)
1970-71	19,843.4	USA 4,357.6	USSR 2,211.0	France 1,809.4	GFR 913.1	China 780.0	Australia 743.2	Japan 655.9	Poland 635.1	XI 541.0 (2.7)
1971-72	21,098.3	USA 4,420.7	USSR 2,442.7	France 1,932.1	GFR 934.0	China 917.0	Australia 775.3	Poland 718.5	Japan 661.4	X 558.2 (2.7)
1972-73	22,440.3	USA 4,601.8	USSR 2,612.0	France 2,067.4	China 1,043.5	GFR 902.6	Australia 880.0	Poland 781.7	Japan 728.7	XI 581.2 (2.6)
1973-74	24,159.1	USA 4,617.2	USSR 2,731.0	France 2,168.0	China 1,260.1	Australia 1,170.6	GFR 916.7	Poland 850.2	Japan 793.0	X 649.7 (2.7)

(Continued)

1.05. RANKING OF MAJOR CONSUMING COUNTRIES—PHOSPHATE (Concluded)
(1967-68 to 1981-82)

('000 tonnes of P₂O₅)

Year	World consumption	Ranking								
		Other countries								India
		I	II	III	IV	V	VI	VII	VIII	
1974-75	23,922.3	USSR 4,160.0	USA 4,092.8	France 1,710.8	China 1,324.2	Brazil 912.5	Poland 868.7	GFR 876.9	Japan 692.4	XII 471.5 (2.0)
1975-76	25,181.8	USA 4,742.3	USSR 4,728.0	France 1,664.3	China 1,253.4	Brazil 1,013.8	Poland 947.2	GFR 779.7	Japan 623.3	XII 468.8 (1.9)
1976-77	26,839.2	USA 5,107.2	USSR 4,903.0	France 1,796.2	Brazil 1,308.3	Poland 933.1	GFR 887.4	China 853.0	Australia 739.3	X 635.3 (2.4)
1977-78	28,528.9	USSR 5,104.0	USA 4,623.1	France 1,839.7	China 1,832.7	Brazil 1,545.5	Poland 947.6	GFR 873.2		VIII 783.0 (2.7)
1978-79	30,626.3	USSR 5,360.0	USA 5,085.5	China 2,055.2	France 1,949.9	Brazil 1,519.6				VI 964.6 (3.1)
1979-80	31,153.4	USSR 5,480.0	USA 4,927.4	China 2,049.0	France 1,983.8	Brazil 1,676.2				VI 1,015.4 (3.3)
1980-81	31,458.3	USSR 5,590.0	USA 4,930.0	China 2,743.0	Brazil 1,985.8	France 1,773.0				VI 1,091.1 (3.5)
1981-82	30,918.8	USSR 5,879.0	USA 4,370.9	China 2,931.9	France 1,877.1	Brazil 1,312.7				VI 1,172.1 (3.8)

() - India's share in world consumption of P₂O₅ (percentage).

1.06. RANKING OF MAJOR CONSUMING COUNTRIES—POTASH
(1967-68 to 1981-82)

('000 tonnes K₂O)

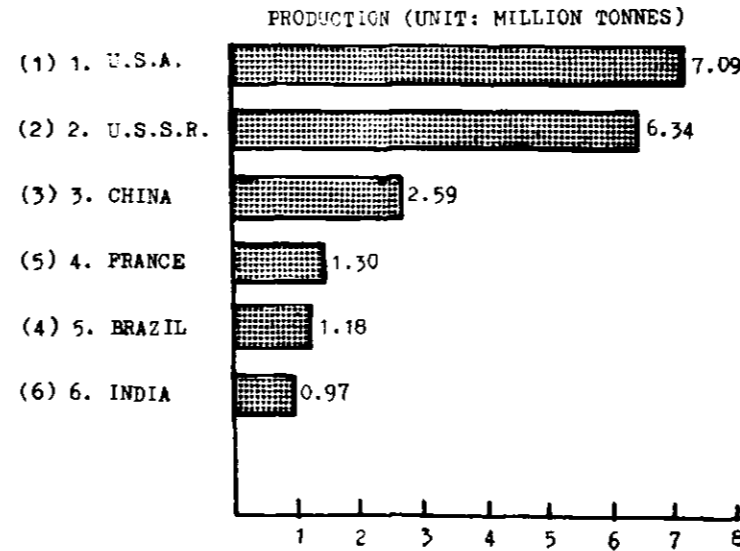
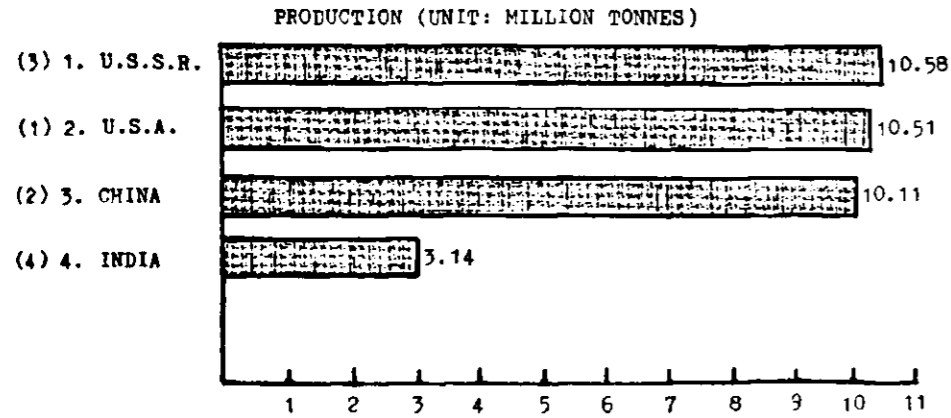
Year	World consumption	Ranking								
		Other countries								India
		I	II	III	IV	V	VI	VII	VIII	
1967-68	14,074.5	USA 3,440.5	USSR 2,136.0	France 1,158.3	GFR 1,119.3	Poland 773.4	Japan 658.8	GDR 615.9	UK 500.4	XV 169.9 (1.2)
1968-69	14,695.5	USA 3,530.3	USSR 2,176.0	France 1,213.4	GFR 1,045.9	Poland 914.6	Japan 670.2	GDR 596.2	UK 484.5	XIV 170.0 (1.2)
1969-70	15,469.2	USA 3,661.1	USSR 2,319.0	France 1,279.5	GFR 1,120.1	Poland 1,035.9	Japan 668.3	GDR 623.6	Czecho- slovakia 475.9	XIII 210.0 (1.4)
1970-71	16,669.8	USA 3,838.6	USSR 2,574.0	France 1,388.6	Poland ^d 1,184.6	GFR 1,114.2	GDR 613.9	Japan 610.5	UK 535.1	XII 236.3 (1.4)
1971-72	17,625.1	USA 3,929.9	USSR 2,788.0	France 1,503.0	Poland ^d 1,262.6	GFR 1,233.5	GDR 638.8	Japan 577.6	Czecho- slovakia 571.5	XIII 300.0 (1.7)
1972-73	18,794.0	USA 4,207.4	USSR 3,238.0	France 1,646.0	Poland 1,285.8	GFR 1,147.5	Japan 599.6	Czecho- slovakia 585.2	GDR 529.3	XII 347.5 (1.8)
1973-74	20,733.2	USA 4,601.1	USSR 3,605.0	France 1,825.9	Poland 1,419.1	GFR 1,163.3	Japan 684.9	GDR 658.3	Czecho- vakia 572.0	XIII 359.8 (1.7)

(Continued)

Year	World consumption	Ranking								India
		Other countries								
		I	II	III	IV	V	VI	VII	VIII	
1974-75		USA	USSR	Poland	France	GFR	Japan	GDR	Czechoslovakia	XIII
	19,856.0	4,039.3	3,884.0	1,430.0	1,390.3	1,170.5	721.8	715.9	627.8	336.1 (1.7)
1975-76		USSR	USA	Poland	France	GFR	GDR	Czechoslovakia	Brazil	XIII
	21,440.3	5,176.0	4,726.2	1,496.3	1,314.2	1,099.0	706.5	695.6	557.6	278.3 (1.3)
1976-77		USSR	USA	France	Poland	GFR	Brazil	Japan	Czechoslovakia	XIII
	22,950.6	5,577.0	5,292.3	1,494.2	1,440.2	1,195.1	721.5	647.0	634.0	318.6 (1.4)
1977-78		USSR	USA	France	Poland	GFR	Brazil	Japan	Czechoslovakia	X
	22,904.3	5,400.0	5,013.2	1,558.4	1,407.6	1,183.2	982.9	661.0	597.0	482.7 (2.1)
1978-79		USA	USSR	France	Poland	GFR	Brazil	Japan	Czechoslovakia	IX
	24,457.0	5,664.9	5,394.0	1,689.6	1,331.6	1,178.3	990.9	723.0	656.0	560.1 (2.3)
1979-80		USA	USSR	France	Poland	GFR	Brazil	Japan	Czechoslovakia	IX
	23,949.2	5,665.4	4,411.0	1,785.9	1,354.3	1,206.4	1,103.4	736.0	624.0	545.5 (2.3)
1980-81		USA	USSR	France	Brazil	Poland	GFR			VII
	24,266.9	5,733.0	4,904.0	1,689.2	1,306.6	1,270.5	1,144.1			617.6 (2.5)
1981-82		USA	USSR	France	Poland	GFR	Brazil	China		VIII
	23,930.0	5,098.0	4,905.0	1,699.5	1,515.0	1,054.9	766.6	661.1		670.4 (2.8)

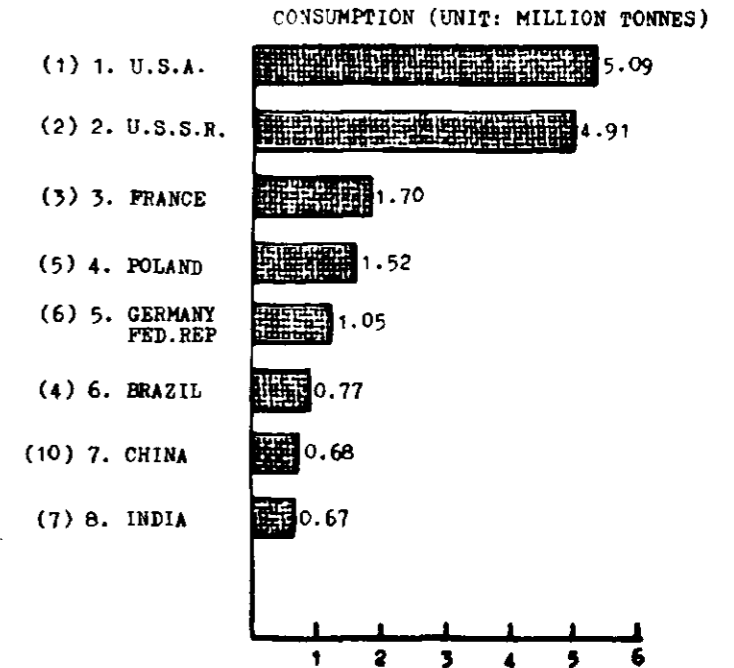
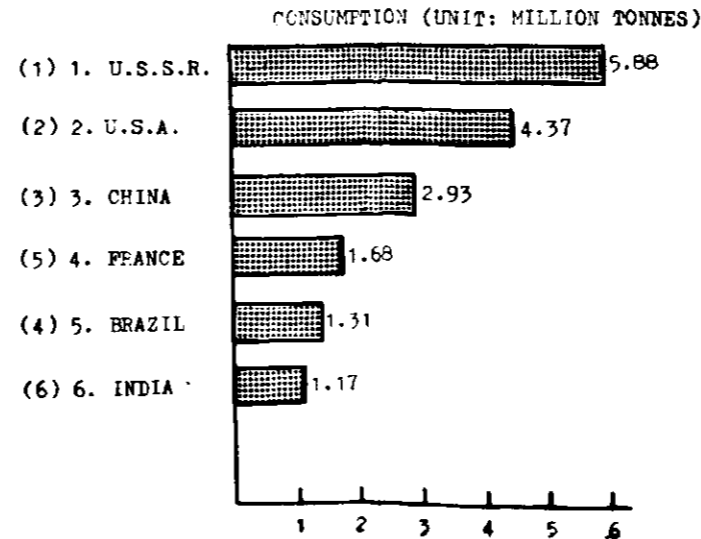
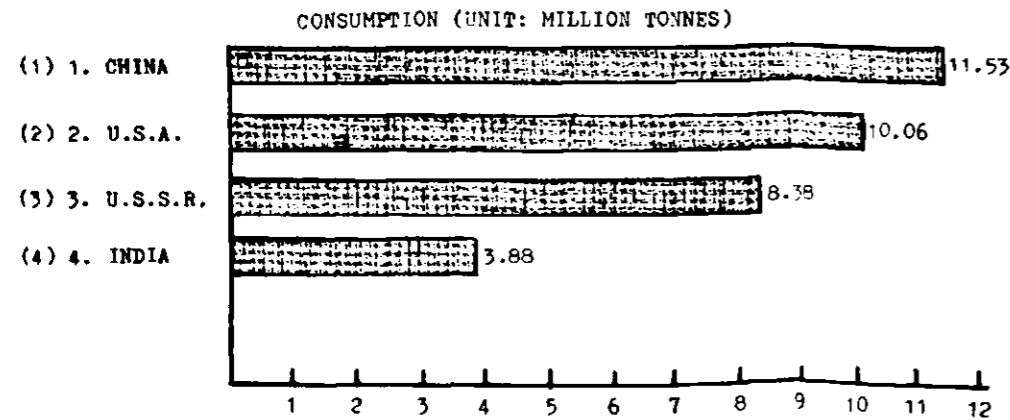
() = India's share in world consumption of K₂O (percentage).

RANKING OF INDIA IN PRODUCTION AND CONSUMPTION OF FERTILISER NUTRIENTS—1981-82



INDIA'S RANKING IN

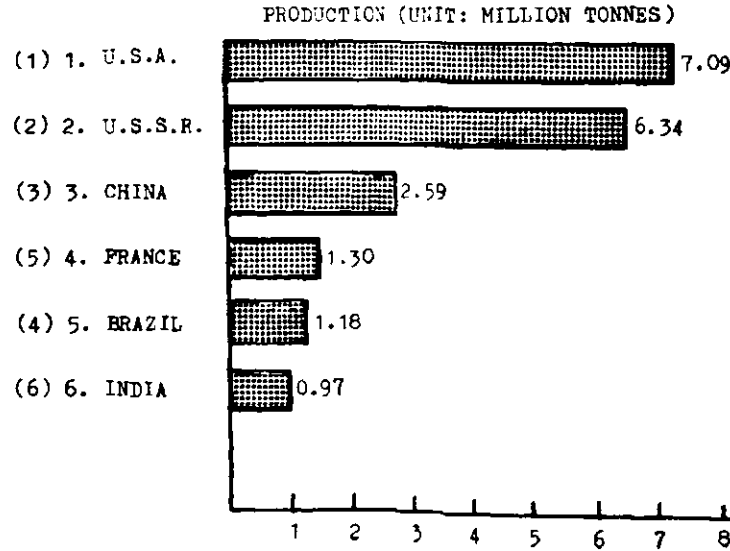
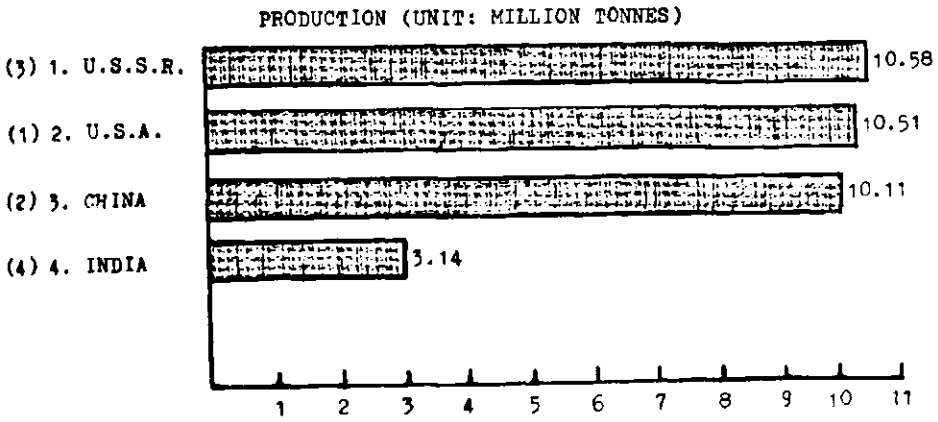
	PRODUCTION			CONSUMPTION	
	1981-82	1980-81	1979-80	1981-82	1980-81
N	IV	IV	IV	IV	IV
P ₂ O ₅	VI	VI	VIII	VI	VI
K ₂ O	-	-	-	VIII	VII



() = RANKING IN 1980-81

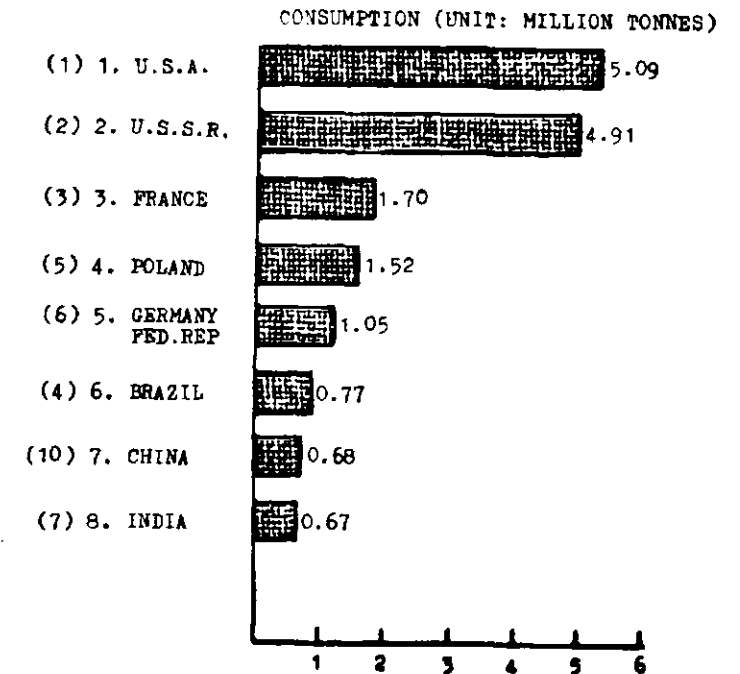
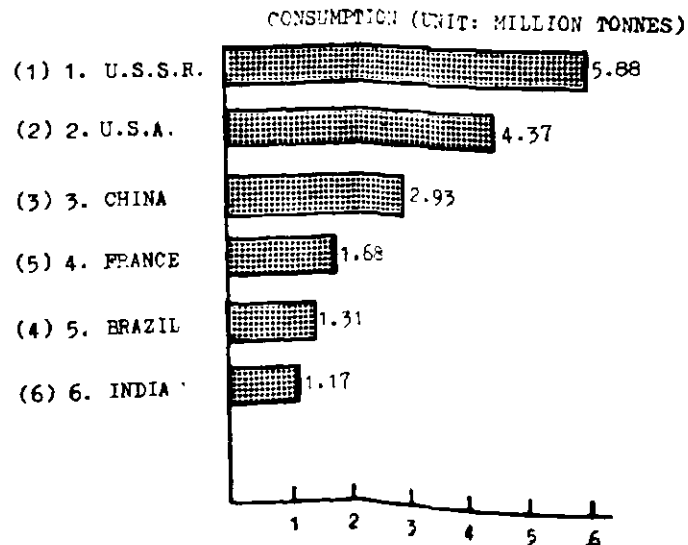
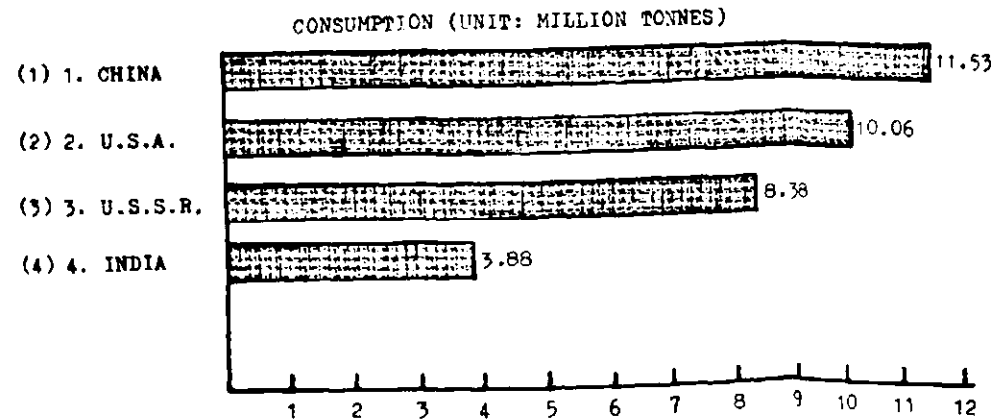
SOURCE: BASED ON TABLES 1.02 TO 1.06

RANKING OF INDIA IN PRODUCTION AND CONSUMPTION OF FERTILISER NUTRIENTS—1981-82



INDIA'S RANKING IN

	PRODUCTION			CONSUMPTION		
	1981-82	1980-81	1979-80	1981-82	1980-81	1979-80
N	IV	IV	IV	IV	IV	IV
P ₂ O ₅	VI	VI	VIII	VI	VI	VI
K ₂ O	-	-	-	VIII	VII	IX



() - RANKING IN 1980-81

SOURCE: BASED ON TABLES 1.02 TO 1.04

1.07. PRODUCTION AND CONSUMPTION OF N, P₂O₅ & K₂O
(1980-81 and 1981-82)

('000 tonnes)

Continent/country	Production						Consumption					
	1980-81			1981-82			1980-81			1981-82		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
Africa	1066.2	1286.5	—	1161.1	1412.3	—	1811.5	1102.1	397.3	1875.3	1251.5	436.6
Algeria	29.8	30.8	—	23.7	22.7	—	84.0	115.9	35.8	71.0	92.3	33.4
Egypt	400.5	106.0	—	482.0	116.6	—	554.0	102.0	7.5	585.0	110.0	12.9
Morocco	36.3	177.0	—	26.2	199.0	—	122.6	95.5	40.8	81.1	78.8	40.3
Senegal	6.2	25.0	—	5.2	25.0	—	6.8	7.6	5.0	6.3	8.0	10.0
South Africa	444.0	480.0	—	447.0	510.0	—	466.4	451.4	139.7	527.2	546.3	157.5
Tunisia	47.0	408.2	—	68.7	473.8	—	80.4	33.8	4.6	74.5	49.1	4.3
North & Central America	14523.8	10435.9	9389.0	13356.7	8010.5	7705.0	13180.3	5986.3	6469.8	12731.8	5574.7	5819.5
Canada	1755.0	724.0	7337.0	1750.0	676.0	6043.0	937.0	635.2	368.9	965.0	635.4	382.7
Cuba	111.9	5.2	—	142.2	5.6	—	267.4	72.2	189.9	307.1	80.1	213.6
Mexico	739.5	201.0	—	877.2	236.4	—	904.3	255.3	78.3	1111.7	384.2	65.1
U.S.A.	11825.0	9500.0	2052.0	10513.0	7085.0	1662.0	10817.0	4930.0	5733.0	10050.6	4371.0	5093.0
South America	778.5	1733.6	23.4	779.1	1276.1	26.6	1460.1	2347.3	1492.0	1147.7	1613.4	929.0
Brazil	384.5	1623.3	—	349.4	1181.0	—	926.1	1985.8	1306.6	667.7	1312.7	766.6
Chile	100.7	—	23.4	108.5	—	23.4	51.4	67.7	1.3	48.2	52.6	1.1
Colombia	41.9	45.7	—	42.2	49.5	—	152.0	76.0	75.5	135.3	75.9	73.3
Peru	73.8	3.9	—	86.1	4.0	—	84.8	19.7	13.6	100.6	18.3	12.8
Venezuela	144.7	23.4	—	165.3	13.8	—	113.0	77.6	50.5	69.6	45.8	30.3

(Continued)

1.07. PRODUCTION AND CONSUMPTION OF N, P₂O₅ & K₂O
(1980-81 and 1981-82) (Concluded)

('000 tonnes)

Continent/country	Production						Consumption					
	1980-81			1981-82			1980-81			1981-82		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
Asia	18380.6	5454.3	831.6	19089.0	5722.1	915.0	21275.6	6688.4	2441.6	21531.8	7050.7	2785.4
Afghanistan	48.9	—	—	48.6	—	—	37.8	13.0	0.3	25.6	11.1	0.1
Bangladesh	160.5	32.9	—	192.3	30.0	—	267.9	120.1	28.7	250.9	119.4	28.1
Burma	59.8	—	—	60.0	—	—	66.8	30.3	3.1	110.0	45.0	11.0
China	10237.4	2382.4	19.8	10103.6	2593.9	24.4	12112.1	2743.0	478.2	11528.3	2931.3	681.1
India	2163.9	858.5	—	3143.3	967.1	—	3522.0	1091.1	617.6	3881.7	1172.1	670.4
Indonesia	958.4	219.8	—	966.4	261.3	—	850.9	231.0	91.1	997.1	320.4	136.2
Iran	71.0	30.4	—	21.4	2.6	—	274.8	27.2	—	386.6	289.4	—
Israel	62.3	41.4	811.8	70.0	38.4	890.6	39.5	17.0	22.7	40.2	18.0	25.2
Japan	1202.0	648.0	—	1032.0	580.0	—	614.0	690.0	512.0	643.0	701.0	535.0
Jordan	—	13.3	—	—	14.7	—	6.0	7.0	1.4	2.9	3.3	1.0
Korea Dem. Rep.	553.0	127.0	—	600.0	130.0	—	550.0	127.0	52.2	564.1	130.0	92.0
Korea Rep.	688.4	494.0	—	666.0	323.7	—	447.2	172.5	183.3	431.8	137.8	199.1
Malaysia	35.2	26.9	—	20.0	20.0	—	139.3	118.8	194.9	127.9	98.6	173.6
Pakistan	580.0	57.7	—	715.0	66.9	—	843.6	226.5	9.6	832.6	225.5	21.8
Philippines	34.0	37.0	—	40.2	38.2	—	224.8	53.4	55.8	209.9	51.2	60.7
Qatar	286.1	—	—	264.5	—	—	0.8	—	—	0.8	—	—
Saudi Arabia	152.0	—	—	157.5	—	—	25.2	10.3	3.4	41.3	23.6	2.3
Sri Lanka	—	4.4	—	29.9	5.1	—	91.6	27.7	46.0	88.9	29.9	47.0
Turkey	462.5	354.7	—	695.4	544.7	—	631.5	492.2	49.0	776.4	495.3	22.0

Europe	17484.0	8365.0	9149.5	16862.2	8017.3	8557.0	14327.9	8548.0	8324.1	14480.1	8393.9	8797.2
Austria	300.0	105.0	—	239.0	95.5	—	159.7	99.3	148.3	162.0	92.5	139.9
Belgium-Lux	743.0	590.0	—	739.0	539.0	—	194.3	102.4	150.7	197.0	92.7	140.2
Bulgaria	730.4	216.6	—	752.8	258.0	—	450.0	291.0	88.7	518.0	409.0	118.0
Czechoslovakia	705.0	360.9	—	674.0	340.5	—	675.0	495.0	560.0	615.0	494.0	611.0
Denmark	146.7	134.9	—	130.7	107.8	—	374.1	111.0	142.2	376.0	105.3	136.4
Finland	266.2	159.2	—	235.7	186.6	—	196.9	150.2	141.9	182.4	145.7	133.0
France	1640.2	1351.0	1932.8	1588.0	1300.0	1726.0	2146.5	1773.0	1689.2	2193.0	1677.1	1699.5
German Dem. Rep	943.2	369.7	3422.0	966.6	359.7	3460.0	751.8	368.7	496.5	750.0	374.0	602.0
German Fed. Rep.	1436.2	686.7	2701.4	1108.3	559.4	2286.3	1550.8	837.5	1144.1	1323.0	752.7	1054.9
Hungary	651.0	216.0	—	690.7	233.6	—	536.8	390.2	472.2	562.9	398.3	523.6
Italy	1387.9	581.0	95.1	1195.5	511.6	82.7	1012.1	735.8	372.3	981.4	694.7	352.4
Netherlands	1623.7	327.6	—	1463.4	324.6	—	482.8	82.8	113.5	477.3	80.6	105.9
Norway	427.7	142.7	—	424.0	147.5	—	110.1	62.5	86.7	106.7	62.8	82.7
Poland	1290.0	842.5	—	1273.5	866.1	—	1343.8	884.5	1270.5	1320.0	851.0	1515.0
Portugal	171.5	102.2	—	181.0	93.9	—	136.6	81.2	41.1	142.8	84.5	45.1
Romania	1707.0	687.0	—	1822.0	717.0	—	646.3	476.0	101.0	882.0	551.0	185.0
Spain	959.8	497.3	691.2	889.6	371.6	720.9	901.9	476.0	284.1	818.3	340.3	218.7
Sweden	180.1	132.2	—	170.9	119.3	—	243.9	123.0	116.9	248.1	121.7	115.5
United Kingdom	1167.0	326.0	307.0	1270.0	346.0	201.0	1240.0	404.0	410.0	1386.0	445.0	470.0
Yugoslavia	391.2	302.0	—	419.0	343.0	—	417.0	209.0	198.0	477.0	268.0	265.0
USSR	10155.0	6023.0	8064.0	10581.0	6343.0	8449.0	8262.0	5590.0	4904.0	8383.0	5879.0	4905.0
Oceania	214.0	1181.1	—	206.0	1109.1	—	282.9	1196.2	238.1	292.8	1155.6	257.3
Australia	214.0	8000.0	—	206.0	745.0	—	248.0	853.0	128.0	250.0	823.0	137.0
Fiji	—	—	—	—	—	—	10.8	3.5	2.1	12.8	3.3	2.7
Newzealand	—	345.6	—	—	336.4	—	20.3	338.4	105.5	21.7	326.5	114.7
World Total	62602.1	34479.4	27457.5	62035.2	31890.4	25652.6	60600.3	31458.3	24266.9	60442.6	30918.8	23930.0

Source: 1982 FAO Fertiliser Year Book Volume 32 FAO, Rome.

**1.08. PRODUCTION OF
1980-81 and**

Continent/Country	Year	Ammonium sulphate (N)	Calcium nitrate (N)	Ammonium nitrate (N)	Urea (N)	Ammonium phosphate	
						N	P ₂ O ₅
Africa							
Egypt	1980-81			404.5			
	1981-82			482.0			
South Africa	1980-81						
	1981-82						
North & Central America							
Mexico	1980-81	224.5		39.2	184.5	22.5	57.4
	1981-82	332.1		34.9	236.3	22.0	56.1
USA	1980-81	503.0		1111.0	1546.0	886.0	5457.0
	1981-82	392.0		1002.0	1382.0	220.0	4015.0
South America							
Peru	1980-81	1.0		16.8	56.0		
	1981-82	1.2		15.9	69.0		
Venezuela	1980-81	10.5			134.2		
	1981-82	6.8			158.2	0.3	
Asia							
China	1980-81	97.0		645.3	3125.4		
	1981-82	100.0		685.4	3319.7		
Bangladesh	1980-81	1.9			158.6		
	1981-82	2.4			189.9		
India	1980-81	89.6		86.9	1556.7	184.4	260.5
	1981-82	91.3		100.9	2476.8	211.7	293.7
Indonesia	1980-81	37.9			920.5		
	1981-82	41.0			925.4		
Israel	1980-81	6.1		10.8	15.4		
	1981-82	13.8		11.4	15.2		
Japan	1980-81	332.0		11.0	458.0		
	1981-82	322.0		10.0	333.0		
Korea Rep. of	1980-81			336.0	N.A.		
	1981-82						

FERTILISERS—MATERIALWISE

1981-82

('000 tonnes of nutrient)

Other complexes			Single super-phosphate P ₂ O ₅	Concentrated superphosphate P ₂ O ₅	Muriate of potash K ₂ O	Total		
N	P ₂ O ₅	K ₂ O				N	P ₂ O ₅	K ₂ O
			84.5			404.5	106.0	
			93.0			482.0	116.6	
						444.0	480.0	
						447.0	510.0	
42.9	27.7		54.7	53.2		739.5	201.0	
40.4	30.7		73.3	68.5		877.2	236.4	
			324.0	1554.0	1590.0	11825.0	9500.0	2052.0
			139.0	1044.0	1255.0	10513.0	7085.0	1662.0
			1.3	2.7		73.8	3.9	
			1.6	2.3		86.1	4.0	
						144.7	234.0	
						163.3	138.0	
12.2	61.7		1705.5			10237.4	2384.4	19.8
11.5	53.1		1849.0			10106.6	2593.9	24.4
				32.9		160.5	32.9	
				36.0		152.3	30.0	
241.4	384.7		176.7	19.6		2163.9	858.5	
257.8	441.1		193.3	21.6		3143.3	967.1	
				213.9		958.4	220.0	
				257.2		966.4	261.3	
21.7	2.4		39.0		811.8	62.3	41.4	811.8
20.7	2.4		36.0		890.5	70.0	38.4	890.6
262.0	391.0		81.0	28.0		1202.0	648.0	602.4
244.0	369.0		83.0	17.0		1032.0	580.0	511.0
	114.0		24.0			688.4	494.0	170.0
						666.0	323.7	197.5

(Continued)

1.06. PRODUCTION OF
1980-81 and

Continent/Country	Year	Ammonium sulphate (N)	Calcium nitrate (N)	Ammonium nitrate (N)	Urea (N)	Ammonium phosphate	
						N	P ₂ O ₅
Pakistan	1980-81	20.3		70.9	449.4		
	1981-82	19.9		83.6	563.2		
Philippines	1980-81						
	1981-82						
Turkey	1980-81						
	1981-82						
Europe							
Austria	1980-81						
	1981-82						
Belgium	1980-81	113.7		285.6		15.7	
	1981-82						
Denmark	1980-81					26.0	
	1981-82						
France	1980-81						
	1981-82						
Germany, Fed. Rep.	1980-81	286.3	5.5	627.1			
	1981-82	198.9	5.6	468.4			
Italy	1980-81	199.5	14.4	206.2	642.0		
	1981-82	154.1	15.8	194.3	523.4		
Netherlands	1980-81	102.6		669.1	589.0	9.7	33.8
	1981-82	92.9		644.9	413.7	12.7	47.9
Spain	1980-81	77.9		410.8	175.0		
	1981-82	86.6		399.1	155.7		
Poland	1980-81	113.6		784.3	283.9	284.7	
	1981-82	102.5		809.2	257.0	278.7	
UK	1980-81						
	1981-82						
Oceania							
Australia	1980-81						
	1981-82						
New Zealand	1980-81						
	1981-82						
USSR	1980-81						
	1981-82						

Source: 1982 FAO Fertiliser Year Book, Vol. 32, FAO Rome.

FERTILISERS—MATERIALWISE
1981-82 (Concluded)

('000 tonnes of nutrient)

Other complexes			Single superphosphate (P ₂ O ₅)	Concentrated superphosphate (P ₂ O ₅)	Muriate of potash (K ₂ O)	Total		
N	P ₂ O ₅	K ₂ O				N	P ₂ O ₅	K ₂ O
39.4	39.4		18.3			580.0	57.7	
48.4	48.4		39.4			715.0	66.9	
						34.0	57.0	
						40.2	38.2	
						695.4	544.7	
						360.0	105.0	180.9
						239.0	95.5	190.0
199.7						743.0	590.0	313.1
						739.0	530.0	320.0
116.5	59.0		23.7	6.5		146.7	134.9	184.0
100.7	52.1		2.6	7.4		130.7	107.8	171.9
						1640.2	1351.0	1932.8
						1588.0	1300.0	1726.0
346.4	328.3		41.2			1436.2	686.7	342.2
288.0	272.6		35.4			1108.3	559.4	346.0
316.4	411.4	43.7	124.9	44.7		1387.9	581.0	95.1
296.9	369.8	54.0	104.9	36.9		1195.5	511.6	82.7
190.9	140.8		18.2	134.8		1623.7	327.6	221.1
176.8	146.1		8.1	122.5		1463.4	324.6	232.6
208.4			118.2	4.0	691.2	959.8	497.3	691.2
156.6			96.9	3.1	720.9	889.6	371.6	720.9
			501.2			1290.0	842.5	1276.0
			536.0			1273.5	866.1	1536.0
			28.8	81.4		1167.0	326.0	307.0
			32.6	41.4		1270.0	346.0	281.0
						214.0	800.0	
						206.0	745.0	
							345.6	
							336.4	
						10155.0	6023.0	8064.0
						10581.0	6343.0	8449.0

1.00. PRODUCTION OF ROCKPHOSPHATE
1980, 1981 & 1982

('000 tonnes)

Continent/Country	1980	1981	1982
World Total	139,732	139,416	121,929
Western Europe	246	368	358
Finland	125	201	232
France	14	12	15
Sweden	82	113	88
Turkey	50	41	23
USSR	24,700	25,720	26,020
United States	54,415	53,624	37,414
Latin America	3,270	3,052	3,194
Mexico	330	262	415
Brazil	2,921	2,764	2,732
Colombia	5	15	18
Peru	14	12	29
Africa	33,384	33,486	30,285
Algeria	1,036	916	947
Egypt	658	720	708
Morocco	18,824	19,696	17,860
Senegal	1,752	2,153	1,247
South Africa	3,282	3,034	3,173
Togo	2,933	2,244	2,035
Tunisia	4,768	4,596	4,196
Zimbabwe	130	126	120
Asia	21,623	21,662	23,090
China	10,726	10,862	11,228
Christmas Islands	1,638	1,336	1,355
India	523	549	552
Indonesia	5	5	5
Iraq	—	—	363
Israel	2,621	2,372	2,717
Jordan	3,927	4,244	4,431
Kampuchea	5	5	5
North Korea	450	450	450
Philippines	5	5	5
Sri Lanka	14	14	14
Syria	1,219	1,320	1,455
Vietnam	500	500	500
Oceania	2,094	1,504	1,568
Australia	7	24	235
Nauru	2,087	1,480	1,333

Source: Number 126 July-August 1983, "Phosphorus & Potassium."

The British Sulphur Corporation Ltd., London.

1.10. PRODUCTION OF SULPHUR—IN ALL FORMS
1980, 1981 and 1982

('000 tonnes)

Continent/Country	1980		1981		1982	
	All-forms	Brimstone	All-forms	Brimstone	All-forms	Brimstone
World Total	54,547	34,580	53,595	33,536	50,235	31,318
Western World	35,714	25,449	35,169	24,730	31,846	22,455
Western Europe	7,802	3,690	7,687	3,610	7,490	3,544
Finland	410	40	458	45	523	45
France	2,221	2,058	2,127	1,970	1,959	1,819
West Germany	1,768	1,089	1,813	1,109	1,805	1,129
Italy	581	71	516	78	474	83
Norway	248	8	266	8	308	8
Spain	1,223	18	1,199	20	1,028	20
Sweden	315	48	336	37	289	22
Others	1,036	359	972	343	1,104	428
Africa	926	39	955	41	805	40
Asia	4,385	2,480	3,947	2,043	4,331	2,435
Iran	226	226	6	6	20	20
Iraq	491	491	145	145	200	200
Japan	2,820	1,151	2,706	1,041	2,709	1,062
Others	848	612	1,090	851	1,402	1,153
Oceania	181	14	185	14	177	17
North America	19,734	16,783	19,680	16,595	16,557	14,224
Canada	7,215	6,320	6,890	5,968	6,318	5,628
United States	12,519	10,463	12,790	10,607	10,239	8,596
Latin America*	2,687	2,444	2,713	2,427	2,486	2,185
Mexico	2,212	2,102	2,167	2,052	1,896	1,791
Others	475	342	546	375	590	394
Communist World⁺	18,833	9,131	18,426	8,806	18,389	8,863
Poland	5,185	4,985	4,922	4,773	5,040	4,920
USSR	9,704	3,810	9,501	3,710	9,155	3,555
Others	3,944	336	4,003	323	4,194	388

* Latin America excluding Cuba.

⁺ Totals include China, North Korea, Vietnam, Cuba and other Eastern Europe.

Totals may not add due to rounding.

Source: 'Sulphur' Journal No. 167, July-August 1983, The British Sulphur Corporation Ltd., London.

3.11. PRODUCTION OF SULPHURIC ACID
(100% H₂SO₄)
1980, 1981 and 1982

('000 tonnes)

Continent/Country	1980	1981	1982
World Total	143,008	139,316	129,504
Western World	101,724	968,42	87,246
Western Europe	27,122	260,36	24,476
Belgium	2,152	2,035	1,798
France	4,840	4,365	4,015
West Germany	4,208	4,220	4,100
Italy	2,800	2,500	2,480
Netherlands	1,798	1,815	1,710
Spain	3,090	2,993	2,689
United Kingdom	3,381	2,889	2,574
Others	4,853	5,219	5,110
Africa	9,039	9,434	9,934
Morocco	1,929	2,354	3,072
South Africa	4,039	3,677	3,195
Others	3,071	3,403	3,667
Asia	12,829	12,187	12,428
India	2,163	2,200	2,277
Japan	6,777	6,572	6,531
South Korea	1,683	1,294	1,588
Others	2,206	2,121	2,031

(Continued)

1.11. PRODUCTION OF SULPHURIC ACID
(100% H₂SO₄)
1980, 1981 and 1982 (Concluded)

('000 tonnes)

Continent/Country	1980	1981	1982
Oceania	2,853	2,647	2,486
Australia	2,179	2,077	1,916
New Zealand	674	570	570
North America	43,991	40,798	31,578
Canada	4,295	4,117	3,285
United States	39,696	36,681	28,293
Latin America*	5,890	5,739	6,344
Mexico	2,391	2,587	2,920
Argentina	243	228	240
Brazil	2,408	2,136	2,356
Others	848	768	828
Communist World	41,284	42,474	42,258
China	7,640	7,730	8,174
Poland	3,019	2,776	2,682
USSR	23,033	24,122	23,800
Others	7,592	7,846	7,602

* Latin America excluding Cuba.

Totals may not add due to rounding.

Source: 'Sulphur' Journal No. 167, July-August 1983. The British Sulphur Corporation Ltd., London.

1.12. CONSUMPTION OF
(1980-81 &

Continent/Country	Year	Ammonium sulphate (N)	Calcium ammonium nitrate (N)	Ammonium nitrate (N)	Urea (N)	Ammonium phosphate	
						N	P ₂ O ₅
Africa							
Egypt	1980-81						
	1981-82						
South Africa	1980-81						
	1981-82						
North & Central America							
Mexico	1980-81	224.5		56.3	295.3	42.3	108.0
	1981-82	332.1		46.8	402.9	70.0	179.0
U. S. A.	1980-81	179.6		897.4	889.1	101.0	
	1981-82	138.1		772.9	911.2	61.4	
South America							
Brazil	1980-81						
	1981-82						
Asia							
Bangladesh	1980-81	1.1			257.8	7.3	18.7
	1981-82	2.4			238.6	8.7	22.3
India	1980-81	103.7	127.1		2780.6	282.9	513.5
	1981-82	103.3	119.2		3082.6	292.0	498.6
Indonesia	1980-81	69.2		Neg.	772.8		
	1981-82	59.2		Neg.	929.0		
Iran	1980-81						
	1981-82						
Japan	1980-81	172.0		11.0	96.0		
	1981-82	189.0		11.0	104.0		
Korea Rep. of	1980-81	4.1			261.1		
	1981-82	3.1			235.3		

FERTILISERS--MATERIALWISE
1981-82)

('000 tonnes of nutrient)

Other Complex			Single super-phosphate (P ₂ O ₅)	Concentrated superphosphate (P ₂ O ₅)	Muriate of Potash (K ₂ O)	Total		
N	P ₂ O ₅	K ₂ O				N	P ₂ O ₅	K ₂ O
			102.0			554.0	102.0	7.5
		0.5	110.0			585.0	110.0	12.9
						466.4	451.4	139.7
						527.2	546.3	157.5
60.0	38.7	2.2	54.7	50.9	65.4	901.3	255.3	78.3
48.3	37.0	8.1	73.3	87.0	56.4	1111.7	384.2	65.1
			19.8	428.7		10817.0	4930.0	5733.0
			12.9	340.7		10050.6	4371.0	5083.0
		11.3			2825.0	926.1	1985.8	1306.6
		12.1			2647.1	667.7	1312.7	766.6
1.7		1.7		98.9	27.0	267.9	120.1	28.7
1.2		1.2		95.9	26.9	250.9	119.4	28.1
223.2	374.7		170.9	15.0	610.2	3522.0	1091.1	617.6
280.0	448.2		187.0	20.9	665.0	3881.7	1172.1	670.4
8.4	7.6			202.1		850.9	231.0	91.1
7.7	7.2			296.2		997.1	320.4	136.2
						274.8	297.2	N.A.
						386.6	289.4	N.A.
279.0	453.0		79.0	24.0	394.0	614.0	690.0	512.0
278.0	459.0		84.0	25.0	408.0	643.0	701.0	535.0
182.1	138.5	155.9	8.8		27.4	447.2	172.5	183.3
193.5	125.3	172.4	2.2		26.7	431.8	137.8	199.1

(Continued)

1.12. CONSUMPTION OF
(1980-81 &

Continent/Country	Year	Ammonium sulphate (N)	Calcium ammonium nitrate (N)	Ammonium nitrate (N)	Urea (N)	Ammonium phosphate	
						N	P ₂ O ₅
Pakistan	1980-81	19.1		62.7	618.2	41.4	105.9
	1981-82	18.0		72.4	606.9	45.2	115.4
Philippines	1980-81						
	1981-82						
Turkey	1980-81						
	1981-82						
Europe							
Austria	1980-81	0.6		93.4	0.6		
	1981-82	0.5		94.6	0.1		
Belgium-Lux	1980-81	5.0		124.5	0.7		
	1981-82						
Denmark	1980-81	0.5		27.8	6.1	172.6	
	1981-82	0.4		32.2	6.0	178.8	
France	1980-81						
	1981-82						
Germany Fed. Rep. of	1980-81	59.5		933.4		375.0	
	1981-82	61.3		757.2		345.0	
Italy	1980-81	100.4		187.0	351.9		
	1981-82	78.7		191.9	346.6		
Netherlands	1980-81	0.9		407.9	3.4	0.2	0.5
	1981-82	0.7		405.4	2.8	0.2	0.6
Poland	1980-81	116.7		785.1	342.7	69.1	182.4
	1981-82						
Spain	1980-81	79.6		378.5	169.9		
	1981-82	88.0		353.2	155.7		
U.K.	1980-81			665.0			
	1981-82			778.0			
Oceania							
Australia	1980-81						
	1981-82						
U. S. S. R.	1980-81						
	1981-82						

Source: 1982 FAO Fertiliser Year Book, Volume 32, FAO, Rome.

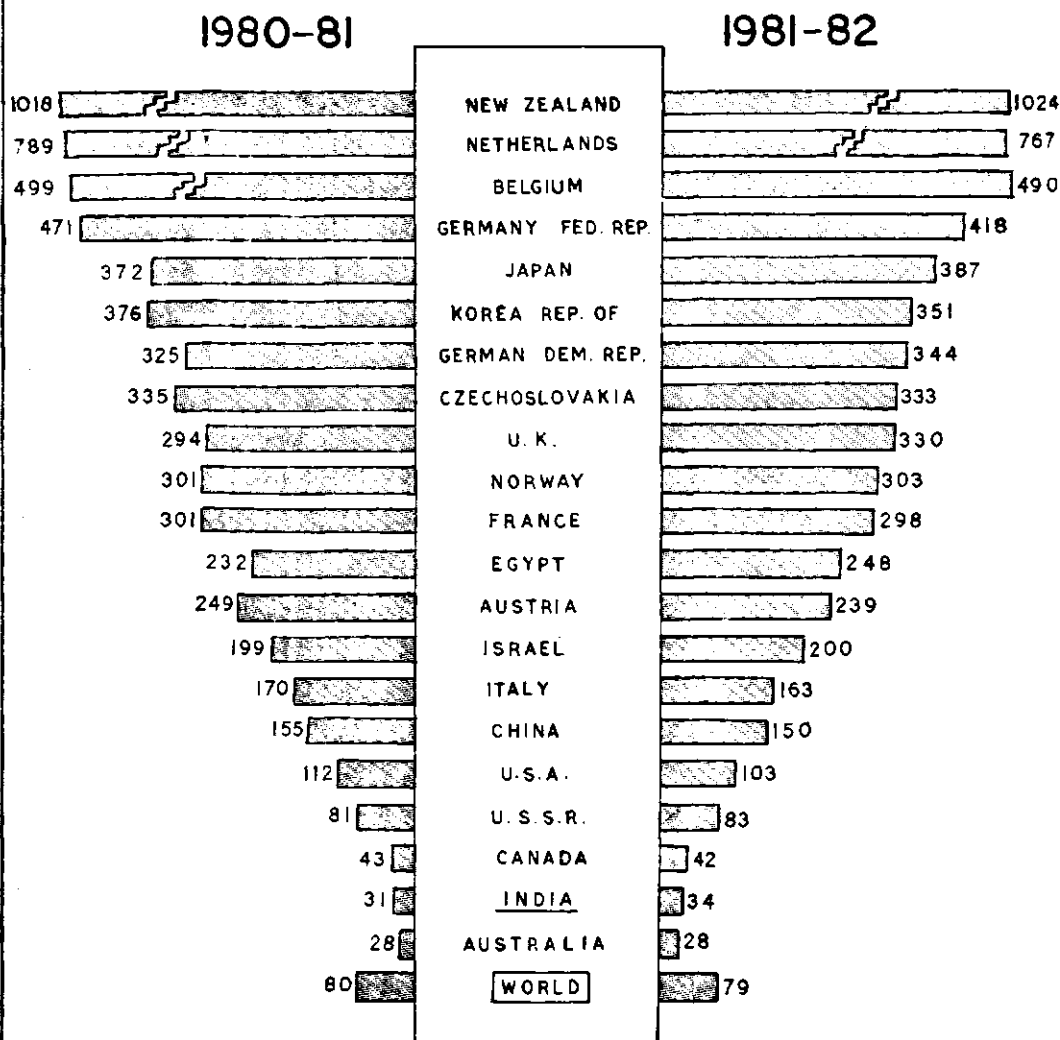
FERTILISERS - MATERIALWISE
1981-82 (Concluded)

('000 tonnes of nutrient)

Other Complex			Single superphosphate (P ₂ O ₅)	Concentrated superphosphate (P ₂ O ₅)	Muriate of Potash (K ₂ O)	Total		
N	P ₂ O ₅	K ₂ O				N	P ₂ O ₅	K ₂ O
101.7	101.8	0.4	18.9			843.6	226.5	9.8
90.2	90.7	6.9	19.4			832.6	225.5	21.7
		55.8				224.8	53.4	55.8
		60.7				209.9	51.2	60.7
						631.5	492.2	49.0
						776.4	495.3	22.0
64.8	80.2	124.7	5.4	2.7	15.2	159.7	99.3	148.3
66.6	75.3	117.0	5.2	2.0	14.9	162.0	92.5	139.9
58.4	79.4	102.0	2.0	1.0	16.8	194.2	102.4	150.7
	81.5		2.9	1.8		197.0	92.7	140.2
	61.4	74.3	1.1	4.0	67.0	374.1	111.0	142.2
	61.5	72.1	1.0	4.0	63.7	376.0	105.3	136.4
	1314.6	1266.0		184.5	393.5	2146.5	1773.0	1689.2
	1282.1	1270.6		168.6	398.3	2193.0	1677.1	1699.5
	400.0	410.4	34.2		348.9	1550.8	837.5	1144.1
	357.6	389.5	21.8		325.7	1323.0	752.7	1054.0
339.7	545.6	279.2	126.0	52.4	55.0	1012.1	735.8	372.3
330.3	528.9	259.5	109.0	48.9	50.0	981.4	694.7	352.4
58.7	55.4	50.8	2.0	21.7	32.1	482.8	82.8	113.5
57.5	55.9	46.5	1.6	19.3	31.9	477.3	80.6	105.9
28.9	87.2	86.6	445.0	112.4	1125.7	1343.8	884.5	1270.5
						1320.0	151.0	1515.0
192.9	1.4	244.9	118.2	4.0	18.7	901.9	476.1	284.1
135.7	0.8	179.7	96.9	3.1	23.7	818.3	340.3	218.7
516.0	353.0		3.0	9.0		1240.0	404.0	410.0
540.0	392.0		4.0	12.0		1386.0	445.0	470.0
						248.0	853.0	128.0
						250.0	823.0	137.0
						8262.0	5590.0	4904.0
						8383.0	5879.0	4905.0

CONSUMPTION OF PLANT NUTRIENTS (KG.★)

(N + P₂O₅ + K₂O)



★ PER HECTARE OF ARABLE LAND

SOURCE : BASED ON TABLE I-13

1.13. FERTILISER CONSUMPTION PER HECTARE OF ARABLE LAND*
(1980-81 and 1981-82)

(kg/hectare)

Continent/Country	1980-81				1981-82			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
Africa	10.1	6.2	2.2	18.4	10.3	6.8	2.4	19.5
Egypt	194.0	35.7	2.6	232.4	204.5	38.5	4.5	247.5
Morocco	15.9	12.4	5.3	33.5	9.7	9.4	4.8	23.9
South Africa	34.4	33.3	10.3	77.9	38.7	40.1	11.6	90.4
North & Central America	47.9	22.0	23.6	93.5	46.6	20.4	21.3	88.4
Canada	20.6	14.3	8.3	43.2	20.9	13.8	7.2	41.9
Mexico	37.7	10.8	3.2	51.2	47.4	16.4	2.8	66.6
USA	56.1	25.8	29.7	111.6	52.7	22.9	26.7	102.7
South America	11.4	18.6	11.8	41.9	8.4	11.7	6.8	26.9
Chile	8.4	10.2	2.4	21.0	8.7	9.5	2.0	20.2
Peru	24.2	5.0	3.3	32.5	28.6	5.2	3.7	37.5
Asia	46.7	11.8	5.4	66.9	47.0	15.4	4.1	68.5
Bangladesh	29.8	13.3	3.2	46.3	27.5	13.1	3.1	43.6
China	122.1	27.7	4.8	154.5	114.3	29.1	6.8	150.1
India	20.8	6.5	3.7	30.9	22.9	6.9	4.0	33.8
Israel	98.8	46.0	54.0	198.7	96.1	43.2	60.3	199.6
Japan	125.8	141.4	104.9	372.1	132.5	144.4	110.2	387.2
Korea Rep. of	203.6	88.8	83.3	375.7	197.4	63.0	91.0	351.3
Pakistan	39.7	9.4	0.5	49.5	41.0	11.1	1.1	53.1
Philippines	2.7	5.4	5.6	33.7	21.1	5.2	6.1	32.4
Europe	101.3	60.5	59.6	221.3	102.9	59.6	62.5	225.0
Austria	97.7	60.7	90.7	249.1	98.3	56.1	84.9	239.3
Belgium-Lux	220.6	116.6	161.7	499.5	224.6	105.7	159.9	490.2
Czechoslovakia	130.6	95.8	108.3	334.7	119.0	95.6	118.2	332.7
Denmark	141.0	41.8	53.6	236.4	141.8	39.7	51.5	233.0
Finland	82.1	62.6	59.1	200.8	76.7	61.2	55.9	193.8
France	115.1	95.1	90.6	300.8	117.0	89.9	91.1	298.4
German Dem. Rep.	149.3	77.2	98.6	325.2	149.6	74.6	120.0	344.2
Germany Fed. Rep.	206.9	111.8	152.7	471.4	176.8	100.6	141.0	418.4
Italy	81.2	59.0	29.9	170.1	79.0	55.9	28.4	163.3
Netherlands	560.7	96.2	131.8	788.8	551.8	93.1	122.5	767.4
Norway	126.2	76.1	98.6	301.0	128.6	75.1	99.6	303.3
Poland	87.2	57.0	91.3	235.6	88.8	57.3	102.0	248.1
Spain	44.0	23.2	13.8	81.0	39.9	16.6	10.7	67.2
Sweden	81.9	41.3	39.2	162.4	83.8	41.1	39.0	163.9
United Kingdom	177.2	57.7	58.6	293.6	198.5	63.7	67.3	329.6
Yugoslavia	52.9	26.5	25.1	104.5	60.6	34.1	33.7	128.4
USSR	35.6	24.1	21.1	80.9	36.1	25.3	21.1	82.6
Oceania	6.1	26.2	4.9	37.2	6.5	25.7	5.7	38.0
Australia	5.6	19.2	2.9	27.7	5.8	19.0	3.2	27.9
Fiji	36.9	14.8	8.9	60.6	54.2	14.0	11.4	79.7
New Zealand	46.4	761.6	209.7	1017.7	48.0	722.3	253.8	1024.1
World Total	41.5	21.7	16.7	79.9	41.2	21.1	16.3	78.5

* Arable land and land under permanent crops:—This definition is used in calculating per hectare consumption and includes land under temporary crops (double cropped areas are counted once) temporary meadows for mowing or pastures land under market and kitchen garden land, temporary fallow or lying idle and also land under permanent crops.

Source: 1982: FAO Fertiliser Year Book Vol. 32 FAO, Rome.

I.14. FERTILISER CONSUMPTION PER HECTARE OF AGRICULTURAL LAND*
1980-81 and 1981-82

(kg/hectare)

Continent/Country	1980-81				1981-82			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
Africa	1.9	1.2	0.4	3.5	1.9	1.3	0.5	3.7
Egypt	194.0	35.7	2.6	232.4	204.5	38.5	4.5	247.5
Morocco	6.1	4.7	2.0	12.8	3.9	3.8	1.9	9.6
South Africa	5.0	4.8	1.5	11.2	5.6	5.8	1.7	13.1
North and Central America	20.8	9.6	10.3	40.7	20.3	8.9	9.3	38.4
Canada	13.4	9.3	5.4	28.1	13.8	9.1	4.7	27.6
Mexico	9.0	2.6	0.8	12.1	11.3	3.0	0.7	15.9
USA	25.0	11.5	13.2	49.7	23.5	10.2	11.9	45.6
South America	2.5	4.1	2.6	9.1	1.9	2.7	1.6	6.2
Chile	2.7	3.3	0.8	6.7	2.8	3.0	0.6	6.4
Peru	2.7	0.6	0.4	3.6	3.3	0.6	0.4	4.3
Asia	20.1	5.4	2.3	28.8	19.5	6.4	2.3	28.3
Bangladesh	27.9	12.5	3.0	43.4	25.8	12.3	2.9	40.9
China	37.9	8.6	1.5	48.0	29.1	7.6	1.8	39.2
India	19.4	6.0	3.4	28.9	21.4	6.5	3.7	31.6
Israel	33.1	15.4	18.1	66.7	32.5	14.6	20.4	67.5
Japan	112.4	126.4	93.8	332.5	118.2	128.8	98.3	345.3
Korea Rep.	199.2	86.9	81.6	367.6	244.7	56.4	39.9	341.0
Pakistan	31.9	7.5	0.4	39.8	32.9	8.9	0.9	42.6
Philippines	20.6	4.9	5.1	30.6	19.1	4.7	5.5	29.3
Europe	62.7	37.4	36.9	137.0	63.8	37.0	38.8	139.6
Austria	43.5	27.0	40.4	110.8	43.9	25.1	37.9	106.9
Belgium-Lux	122.2	64.6	89.6	276.4	124.9	58.8	88.9	272.6
Czechoslovakia	98.0	72.3	81.7	252.5	89.9	72.2	89.3	251.4
Denmark	128.8	88.2	49.0	215.9	129.8	36.3	47.1	213.2
Finland	76.8	58.6	55.4	190.8	71.8	57.4	52.4	181.5
France	68.1	56.2	53.6	177.9	69.6	53.3	54.0	176.8
German Dem. Rep.	119.0	62.0	79.2	261.1	119.7	59.7	96.1	275.5
Germany Fed. Rep.	126.6	68.4	93.4	288.4	108.5	61.7	86.5	256.7
Italy	57.5	41.8	21.2	120.5	55.9	39.6	20.1	115.6
Netherlands	238.9	41.0	56.2	336.0	236.9	40.0	52.6	329.4
Norway	109.3	65.9	85.4	260.6	113.9	66.4	88.2	268.3
Poland	68.6	44.9	71.8	185.3	69.8	45.0	80.1	194.9
Spain	28.6	15.1	9.0	52.7	26.2	10.9	7.0	44.1
United Kingdom	67.1	21.9	22.2	111.2	75.7	24.3	25.7	125.6
Sweden	65.6	33.2	31.6	130.6	67.5	33.1	31.4	132.0
Yugoslavia	29.2	14.6	13.9	57.7	33.5	18.8	18.6	70.9
USSR	13.6	9.2	8.1	31.0	13.8	9.7	8.1	31.6
Oceania	0.5	2.3	0.4	3.3	0.6	2.2	0.5	3.3
Australia	0.5	1.7	0.3	2.3	0.5	1.6	0.3	2.4
Fiji	29.4	11.8	7.1	48.3	43.2	11.1	9.1	63.5
New Zealand	1.4	23.6	6.5	31.6	1.5	22.3	7.8	31.6
World Total	13.2	6.9	5.3	25.4	13.0	6.7	5.2	24.8

* Agricultural land includes in addition to arable land and permanent crops, land under permanent meadows and pastures.

Source: 1982 FAO Fertiliser Year Book Vol. 32, FAO Rome.

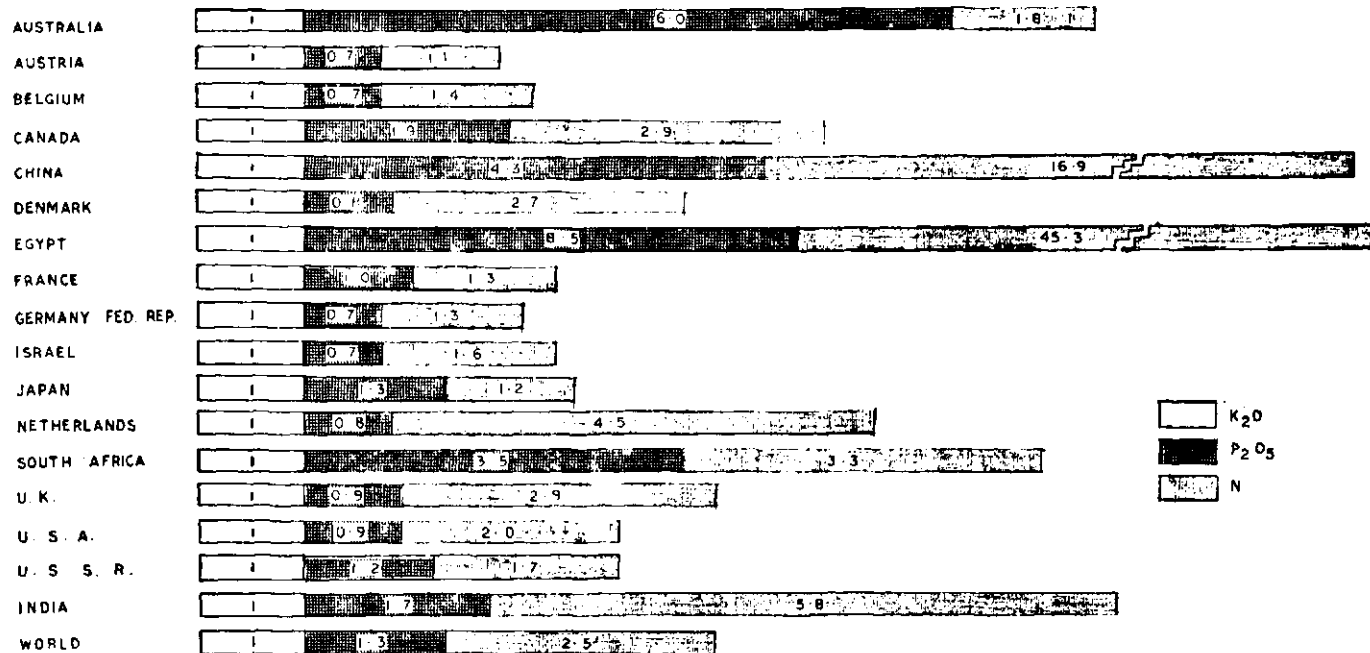
**1.15. CONSUMPTION RATIO OF N & P₂O₅ IN RELATION TO
K₂O AND N IN RELATION TO P₂O₅
(1980-81 and 1981-82)**

Continent/Country	1980-81			1981-82		
	N/K ₂ O	P ₂ O ₅ /K ₂ O	N/P ₂ O ₅	N/K ₂ O	P ₂ O ₅ /K ₂ O	N/P ₂ O ₅
Africa	4.6	2.8	1.6	4.3	2.9	1.5
Algeria	2.3	3.2	0.7	2.1	2.8	0.8
Egypt	73.9	13.6	5.4	45.3	8.5	5.8
Morocco	3.0	2.3	1.3	2.0	2.0	1.0
Senegal	1.4	1.5	0.9	0.6	0.8	1.3
South Africa	3.3	3.2	1.0	3.3	3.5	1.0
North & Central America	2.0	0.9	2.2	2.2	1.0	2.3
Canada	2.5	1.7	1.5	2.9	1.9	1.5
Mexico	11.5	3.2	3.5	17.1	5.9	2.9
USA	1.9	0.8	2.1	2.0	0.9	2.3
South America	1.0	1.6	0.6	1.2	1.7	0.7
Brazil	0.7	1.5	0.5	0.9	1.7	0.5
Chile	39.5	52.1	0.8	43.8	47.8	0.9
Peru	6.2	1.0	4.3	7.9	1.0	5.6
Asia	3.7	2.7	3.3	7.7	2.5	3.1
Bangladesh	9.3	4.1	2.2	8.9	4.2	2.1
China	25.3	5.7	4.4	16.9	4.3	3.9
India	5.7	1.7	3.2	5.8	1.7	3.3
Israel	1.7	0.7	2.3	1.6	0.7	2.2
Japan	1.1	1.3	0.9	1.2	1.3	0.9
Korea Rep. of	2.4	0.9	2.6	2.2	0.7	3.1
Pakistan	87.8	23.6	3.7	38.2	10.3	3.7
Philippines	4.0	1.0	4.2	3.4	0.8	4.1
Europe	1.7	1.0	1.7	1.6	0.9	1.7
Austria	1.1	0.7	1.6	1.1	0.7	1.8
Belgium	1.3	0.7	1.9	1.4	0.7	2.1
Czechoslovakia	1.2	0.9	1.4	1.0	0.8	1.2
Denmark	2.6	0.8	3.4	2.7	0.8	3.6
Finland	1.3	1.0	1.3	1.4	1.1	1.3
France	1.3	1.0	1.2	1.3	1.0	1.3
German Democratic Rep.	1.5	0.8	1.9	1.2	0.6	2.0
Germany F. R. of	1.3	0.7	1.9	1.3	0.7	1.8
Italy	2.7	2.0	1.4	2.8	2.0	1.4
Netherlands	4.3	0.7	5.8	4.5	0.8	5.9
Poland	1.1	0.7	1.5	0.9	0.6	1.6
Spain	3.2	1.6	1.9	3.7	2.5	1.5
Sweden	2.1	1.0	2.0	2.1	1.1	2.0
United Kingdom	3.0	1.0	3.1	2.9	0.9	3.1
Yugoslavia	2.0	1.0	2.9	1.8	1.0	1.8
USSR	1.7	1.1	1.5	1.7	1.2	1.4
Oceania	1.2	5.0	0.2	1.1	4.5	0.3
Australia	1.9	6.6	2.9	1.8	6.0	0.3
New Zealand	0.2	3.2	0.1	0.2	2.8	0.1
World	2.4	1.2	1.8	2.5	1.3	2.0

Source: Calculated from Table 1.07—Part III.

RATIO OF N , P₂O₅ & K₂O CONSUMPTION

1981-82



K₂O
 P₂O₅
 N

1.16. PATTERN OF LAND UTILISATION AND FERTILISER CONSUMPTION IN SELECTED COUNTRIES
1980

Country	Total geographical area	Total	Agricultural area		Area under		Irrigated area	Share of agricultural land to					Fertiliser consumption (N + P + K) per hectare of agricultural area 1981-82	No. of agricultural holdings	Agricultural population	No. of persons per holding (rounded)
			Out of which		Rice	Wheat		Arable land	Land under pasture	Rice	Wheat	Irrigation				
			Arable land	Land under permanent pastures & meadows												
			← million ha. →				← per cent →					(Kg.)	← million →			
1. U.S.S.R.	2,240.2	605.7	227.1	373.7	0.6	59.23	17.5	37.5	61.7	0.1	9.8	2.9	31.6		42.21	
2. Canada	997.6	68.2	44.3	23.8	Nil	12.23	0.5	64.9	35.0	—	17.9	0.7	27.6	0.37	1.16	3
3. China	959.7	319.2	98.42	220.0	34.48	29.20	46.0	30.8	68.9	10.8	9.1	14.4	39.2		593.55	
4. U.S.A.	936.3	428.2	188.8	237.5	1.54	32.76	20.5	44.1	55.5	0.4	7.7	4.8	45.6	2.73	4.73	2
5. Brazil	851.2	221.0	53.5	159.0	60.7	1.92	1.8	24.2	71.9	2.7	0.9	0.8	11.7	4.93	46.82	9
6. Australia	768.7	496.3	44.2	451.9	0.11	12.04	1.5	8.9	91.0	00.2	2.4	0.3	3.3	0.25	0.82	3
7. India	128.7	181.1	165.2	12.0	40.00	22.10	39.4	91.2	6.6	22.1	12.2	21.8	31.6	0.49	436.00	6
8. Argentina	276.7	178.4	25.2	143.2	0.08	5.76	1.6	14.1	77.8	00.4	3.2	0.9	0.5		3.46	
9. Sudan	250.6	68.4	12.4	56.0	0.005	0.24	1.8	18.1	91.9	0.007	0.3	2.6	1.1		14.42	
10. Algeria	238.2	43.7	6.9	36.3	Nil	2.00	0.3	15.7	83.1	Nil	4.6	0.7	4.5		9.44	
World	13,392.1	4,568.9	1,358.4	3,116.7	144.92	239.38	211.7	29.7	68.2	3.2	5.2	4.6	24.8		2,055.63	

Note: 1. Agricultural area is defined as to include arable land, land under permanent crops and permanent meadows & pastures.

2. Agricultural population is defined as all persons depending for their livelihood on agriculture. This comprises all persons actively engaged in agriculture and their non-working dependents.

¹ For fertiliser consumption, See table 1.07.

Source: Vide tables 1.14, 2.01, 2.03 and 2.04.

1.17. FERTILISER CONSUMPTION PER CAPITA AND PER HECTARE AND YIELD OF PRINCIPAL CROPS

Continent/Country	Fertiliser consumption (N+P ₂ O ₅ +K ₂ O) 1981-82		Yield per hectare ('000 kg)—1980-81					
	Per capita (kg)	Per hectare of arable land (kg)	Paddy	Maize	Wheat	Pulses	Sugarcane	Potato
Africa	7.4	19.5	1,752	1,455	1,160	438	69,562	8,764
Egypt	16.5	247.5	5,411	3,782	3,162	2,259	83,575	17,888
North & Central America	63.4	88.4	4,829	5,599	2,260	970	56,535	26,851
Canada	79.3	41.9	—	5,874	2,005	1,699	—	23,621
U.S.A.	84.9	102.4	5,462	6,898	2,321	1,634	88,802	30,368
South America	15.0	26.9	1,782	2,212	1,337	575	57,230	11,116
Brazil	21.9	37.5	1,362	1,836	1,148	461	54,888	11,175
Asia	11.9	68.5	2,813	2,308	1,708	633	51,548	11,755
China	15.0	150.1	4,237	2,999	1,952	1,232	47,143	9,996
India	8.2	33.8	2,050	1,207	1,649	491	56,844	13,113
Israel	21.1	199.6	—	5,000	2,760	1,105	—	—
Japan	16.0	387.2	5,629	3,000	3,050	1,128	66,216	25,896
Korea, Rep. of	19.7	351.3	5,745	4,383	2,850	980	—	—
Pakistan	12.1	53.1	2,560	1,381	1,640	306	39,238	10,353
Philippines	6.4	32.4	2,206	957	—	746	48,690	—
Europe	65.1	225.0	5,007	4,655	3,607	936	64,000	20,232
Belgium-Lux.	42.0	2,90.2	—	6,250	5,268	2,768	—	—
France	103.2	298.4	4,000	5,796	4,793	3,021	—	30,140
German, Dem. Rep.	103.1	344.2	—	2,000	4,110	1,457	—	20,464
Germany, Fed. Rep. of	50.8	418.4	—	6,455	5,095	3,494	—	29,000
Italy	35.5	189.2	5,372	7,318	2,736	1,352	—	19,728
Netherlands	46.6	767.4	—	4,500	6,701	2,799	—	39,071
Poland	102.7	248.1	—	3,965	2,983	1,091	—	18,869
U.K.	40.9	329.6	—	1,000	5,677	2,815	—	31,862
U.S.S.R.	71.6	82.6	3,785	2,257	1,486	890	—	10,505
Oceania	74.3	38.0	6,810	3,724	1,383	1,143	75,437	27,319
Australia	82.5	27.9	7,179	2,122	1,362	943	81,161	25,842
World Total	25.5	78.5	2,855	3,370	1,914	645	56,102	14,387

Source: 1. 1982 FAO Fertiliser Year Book, Volume 32, FAO, Rome.
2. 1981 FAO Production Year Book, Volume 35, FAO, Rome.

1.18. WORLD TRADE IN FERTILISERS
(1981-82)

('000 tonnes)

Continent/Country	Imports			Exports		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
Africa	895.5	425.5	464.4	90.6	624.8	—
Algeria	42.1	71.4	49.4	3.4	—	—
Egypt	162.6	32.0	12.9	1.6	23.2	—
Morocco	46.4	—	40.3	2.6	120.2	—
South Africa	126.0	37.1	167.4	7.0	25.0	—
Tunisia	38.9	—	2.8	70.6	445.6	—
North & Central America	3,081.4	637.8	4,784.5	3,270.2	3,478.4	5,744.4
Canada	126.0	139.0	18.8	965.0	162.0	5,163.4
Cuba	164.9	74.5	213.6	—	—	—
Mexico	237.4	153.8	69.8	2.9	6.1	—
U.S.A.	2,296.0	175.0	4,352.0	2,267.0	3,304.0	581.0
South America	609.5	352.2	984.3	184.7	9.5	14.6
Brazil	390.5	135.6	766.6	0.8	3.9	—
Chile	36.0	44.0	5.6	68.5	—	—
Colombia	90.0	31.0	78.3	1.5	1.5	14.8
Peru	14.1	15.2	16.4	—	—	—
Asia	4,507.7	1,801.2	2,729.7	1,325.2	268.1	797.2
Bangladesh	123.6	84.8	15.6	—	—	—
China	1,430.6	361.5	698.6	—	—	—
India	1,055.1	343.1	643.8	—	—	—
Indonesia	183.6	79.2	136.2	17.9	—	—
Iran	393.4	303.6	—	—	—	—
Israel	6.3	—	—	20.2	22.3	—
Japan	48.0	119.0	511.0	470.0	42.0	797.2
Pakistan	95.0	34.4	15.6	—	—	—
Philippines	187.0	17.3	44.4	—	—	—
Sri Lanka	58.4	26.3	50.0	—	—	—
Turkey	211.0	87.5	23.9	—	—	—
Europe	3,239.5	2,225.6	6,280.3	5,425.7	1,654.2	5,296.0
Austria	42.0	29.0	190.0	119.0	32.0	—
Belgium	212.0	45.3	320.0	764.0	470.0	—
Czechoslovakia	122.0	137.6	639.1	91.8	1.0	—
Denmark	253.5	37.9	171.9	33.7	50.9	—
France	828.0	607.0	382.9	187.0	108.0	—
German Dem. Rep.	15.0	25.8	190.3	183.0	—	576.6
German Fed. Rep.	540.0	277.3	—	362.1	94.7	2,860.0
Hungary	160.0	198.9	558.6	230.0	21.0	1,287.6
Italy	164.5	318.9	329.3	305.7	65.5	—
Netherlands	130.8	55.9	232.6	1,092.0	311.8	67.6
Poland	71.9	—	153.6	5.4	—	—
Spain	14.0	0.8	0.1	46.8	9.2	—
Sweden	100.9	15.9	118.2	21.9	13.4	444.3
United Kingdom	222.0	111.0	309.0	122.0	29.0	—
Yugoslavia	124.0	52.0	268.0	55.0	128.0	60.8
U.S.S.R.	32.7	86.4	—	1,285.0	254.1	3,004.7
Oceania	94.8	66.8	255.6	8.0	28.8	—
Australia	52.0	36.9	142.7	8.0	0.2	—
Fiji	12.8	3.3	2.7	—	—	—
New Zealand	21.7	23.8	107.3	—	0.9	—
World Total	12,461.1	5,595.5	15,498.7	11,589.6	6,317.8	14,856.3

Source: 1982, FAO Production Year Book, Volume 32, FAO, Rome.

1.10. FERTILISER PRICES PAID BY FARMERS AND SUBSIDY

1980-81 and 1981-82

I. Fertiliser Prices

(a). Straight fertilisers

(US \$/tonne of nutrient)

Country	Year	Ammonium sulphate	Calcium nitrate	Ammonia	Calcium ammonium nitrate	Urea	Ammonium nitrate	Single superphosphate	Current rated superphosphate	Muriate of potash
Africa										
Egypt ^{1 2 5 6}	1980-81	300	342			284	282		262	
	1981-82	389				341	372		295	
Niger ²	1980-81					360				
Nigeria ^{2 11}	1980-81	300			256	176				
	1981-82	330			264	180				
South Africa ²	1980-81	480		462		462		357	359	201
North & Central America										
U.S.A.@	1980-81							772	697	285
	1981-82								546	285
South America										
Chile ^{1 @}	1980-81					670			635	
	1981-82					788			644	
Peru ²	1980-81	820				510	647	669	490	287
	1981-82	832				505	665	674	594	350
Asia										
Afghanistan ^{1 2 6}	1980-81					400		380		524
Bangladesh ^{1 2}	1980-81					371			286	179
	1981-82					357			279	177
India ⁶	1980-81	855			756	526		635	606	232
	1981-82	815			717	551		625	608	234

Indonesia	1980-81	531			242		242	187	
	1981-82	519			237		237		
Iran ²	1980-81	357			277	408			
	1981-82	315			266	361		272	
Israel ¹⁰	1980-81	902			788 ⁹		805	137 ²	
	1981-82	903			800 ⁹		618	148 ²	
Japan@	1980-81	934			892		1240	451	
	1981-82	898			858		1223	447	
Korea Rep. of ²	1980-81	602			488			127	
	1981-82	685			664			180	
Pakistan ²	1980-81	404		388	408		281	189	
	1981-82	421		396	419		281		
Philippines ^{2 5 11}	1980-81	1116			689		832	469	
	1981-82	975			601		773	419	
Singapore@	1980-81	979		1042	619			319	
	1981-82	654		1056	488			237	
Turkey ²	1980-81	314		317	346	321	319	323	
	1981-82	351		340	344	359	343	325	
Europe									
Austria ^{2 4}	1980-81	1023	1816		921	902	923	867	338
	1981-82	996			899	877	957	899	310
Belgium-Lux ¹⁰ @	1980-81	630			621	714	774		272
	1981-82	563			498	634	714		241
Denmark ² @	1980-81	602	834	520	746	510 ⁹	650 ¹²	520	276 ¹²
	1981-82	570	839	516	721		696 ¹²		255 ¹²
Finland ^{2 9} @	1980-81	1540	1592		769	608	891	428	388
	1981-82	1411	1562		838	654	867		
France ¹	1980-81	638	1127				761	715	280
	1981-82	553	1000				632	670	248

(Continued)

1.19. FERTILISER PRICES PAID BY FARMERS AND SUBSIDY

1980-81 and 1981-82

I. Fertiliser Prices

(a). Straight fertilisers (Concluded)

(US \$/tonne of nutrient)

Country	Y r	Ammonium sulphate	Calcium nitrate	Ammonia	Calcium ammonium nitrate	Urea	Ammonium nitrate	Single superphosphate	Current rate of superphosphate	Muriate of potash
Germany Fed. Rep. ³ @	1980-81	915	1226		929	876		930		317
	1981-82	881	1179		893	846		883		288
Italy	1980-81	588	861			454	702	709		374
	1981-82	534	795			412	639	635		336
Netherlands ¹⁰	1980-81	786	945		734	648		907	596	295
	1981-82	790	907		708	668		811	554	273
Poland ^{1 2} @	1980-81	156 ¹²			303	302	303	166 ¹²	248	76 ¹²
	1981-82	256 ¹²			482	482	483	266 ¹²	392	122 ¹²
Spain ²	1980-81	831	933		771	629	725	618	565	255
	1981-82	850	863		800	668	752	609	518	240
U.K. ¹² @	1980-81				684			598		
Yugoslavia ^{3 5}	1980-81					386		398	401	
	1981-82				441	435		378	407	
Oceania										
Australia	1980-81	600 ¹²			470 ¹²	661	720	455 ¹²	503 ¹²	398
	1981-82	697 ¹²			482 ¹²	666	770	501 ¹²	541 ¹²	393

(Continued)

**1.19. FERTILISER PRICES PAID BY FARMERS & SUBSIDY
(1980-81 & 1981-82) (Continued)**
**I. Fertiliser prices (Concluded)
(b) Mixed & complex fertilisers**

(US\$/tonne of Product)

Continent/Country	Year	481-8-0	20-20-0	15-15-15	17-17-17
Africa					
Niger ²	1980-81			142	
Nigeria ^{1,21}	1980-81		78	77	
	1981-82		88	84	
Sierra Leon ²	1980-81		166	221	
	1981-82		150	200	
South Africa ²	1980-81	238			
Togo ²	1980-81	71		71	
	1981-82	166		129	
North Central America					
El. Salvador ^{1@}	1980-81		300	288	
	1981-82		332	328	
Mexico ^{1@}	1980-81	222			
	1980-81	238			
USA@	1980-81	312			
	1981-82	289			
South America					
Chile ^{1@}	1980-81	359			
	1981-82	426			
Peru ²	1980-81	314			
	1981-82	372			
Uruguay ^{10, @}	1980-81	456			
	1981-82	419			
Asia					
Bangladesh ²	1980-81	172			
	1981-82	162			
Indonesia@	1980-81	319		247	
	1981-82	451		311	
Nepal	1980-81			233	
	1981-82			216	
Pakistan ²	1980-81	188	85	89	
	1981-82	205			
Philippines ^{2, 2, 21}	1980-81	298			
Turkey ²	1980-81	220	154		
	1981-82	214	147		
Europe					
Austria ^{2, 4}	1981-82			323	
France ¹	1980-81				300
	1981-82				244
Germany Fed. Rep. ^{2@}	1980-18			305	
	1931-92			289	
Netherlands@	1980-81		255		
	1981-82		252		
U.K. ^{12@}	1980-81			290	333

(Continued)

119. FERTILISERS PRICES PAID BY FARMERS AND SUBSIDY

1980-81 and 1981-82 (Continued)

II. Subsidy

Continent/Country	Year	Straight fertilisers							Complex fertilisers		
		Ammonium sulphate	Ammonium nitrate	Ammonium sulphate nitrate	Urea	Calcium ammonium nitrate	Single super phosphate	Concentrated super phosphate	Muriate of potash	18-46-0	15-15-15

← US \$/tonne of nutrient → ← US \$/tonne of product →

Africa												
Nigeria ^{4,5}	1980-81	900			728	768	915		326		232	229
	1981-82	989			541	790	1123		365		253	264
Ghana ⁴	1980-81	1039				839			303		218	218
Sudan ⁴	1980-81				560			366				
Togo ⁴	1980-81	1100			759		1837	954	443	385		
	1981-82	564			447		669	628	269	310		
South America												
Venezuela ^{4,5}	1980-81	679			366			386	157			
Asia												
Bangladesh ⁴	1980-81				50			442	178	161		
	1981-82				55			320	188	114		

<i>Iran</i> ^{4 a}	1980-81	357	408		277					142		
	1981-82											
<i>Pakistan</i> ^{5 7 8}	1980-81	170			169		282			140	—	—
	1981-82									140	—	—
<i>Saudi Arabia</i> ⁴	1980-81				228			398				172
	1981-82											
Europe												
<i>Czechoslovakia</i> ⁹	1980-81	—	—	—	—		166	206	30			
	1981-82						155	192	28			
<i>Hungary</i> ^{4 6}	1980-81	186	168		187	216	296	449	61		90	
	1981-82	182	140		158	184	219	347	10		68	
<i>Spain</i> ⁶	1980-81	134	130	130	124	132	19	15	—			
	1981-82	105	103	104	99	103	12	10	—			
<i>Portugal</i> ⁵	1980-81	263	136	238	170	189	309	361	89		101	
	1981-82	260	187	260	168	186	306	357	88		100	
Oceania												
<i>Australia</i> ⁴	1980-81	23			23	66	62					
	1981-82	22			22	53	59					

**1.19. FERTILISER PRICES PAID BY FARMERS AND SUBSIDY
1980-81 and 1981-82 (Concluded)**

*For details, see Price Chapter in Part-I
@No subsidy

For \$ Re conversion rate: \$ 1=Rs. 7.893
for 1980-81 and \$ 1=Rs. 8.929
for 1981-82 has been adopted.

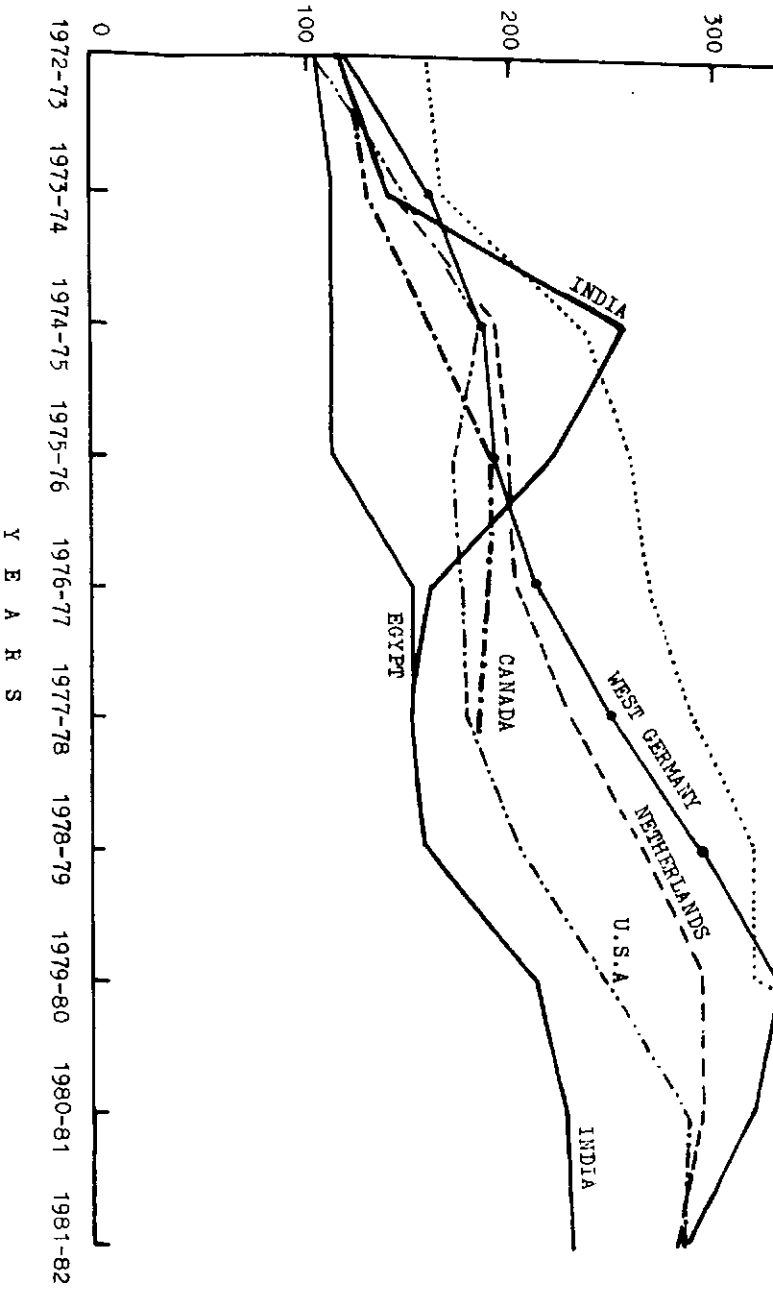
1. Retail price
2. Prices fixed by the Government
3. Prices at nearest railway station
4. Subsidies paid to transport agencies
5. Subsidies paid to manufacturers
6. Subsidies paid to cooperatives, farmer organisations or special agricultural suppliers
7. Subsidies paid directly to farmers
8. Subsidies paid to importers
9. Price at port
10. Ex-factory price
11. Ex-warehouse price
12. Prices in bulk
13. Wholesale price

Note: Prices those are paid by farmers at the farm-gate and relate to twelve-month period. They are shown with subsidies deducted wherever possible.

- Afghanistan** : Subsidies paid to fertiliser distribution company. Subsidy programme started in **March, 1975.**
- Australia** : Prices F.O.B. factory. Subsidy programme started in **1977.**
- Brazil** : Subsidies cover 60 to 100% of interest depending on the region.
- Finland** : Prices include an excise tax of 11 p/kg.
- Germany Fed. Rep. of** : Prices include value added tax.
- India** : Prices do not include sales-tax and other local taxes.
- Indonesia** : Urea, triple superphosphate and muriate of potash for food crops subsidised by Government at 58% for urea and 75% for T.S.P.
- Netherlands** : Prices include value added tax.
- New Zealand** : Subsidies include that on transport.
- Sierra Leone** : Amount of subsidy varies according to C.I.F. value of fertiliser and transport distance of selling store from port.
- United Kingdom** : Calendar year.

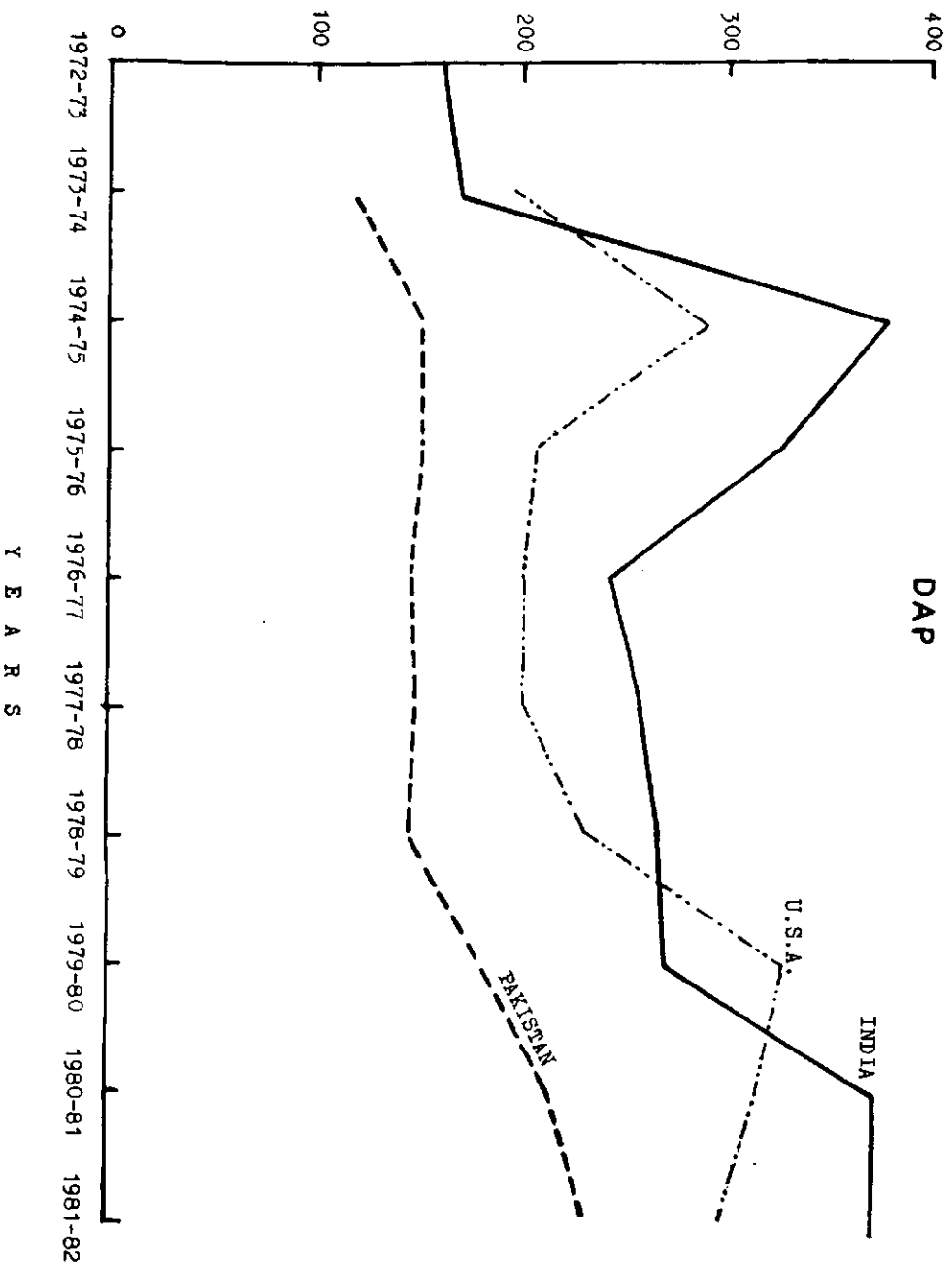
Source: 1982, *FAO Fertiliser Year Book*, Vol. 32, FAO, Rome.

PRICE OF MOP (U.S. \$ PER TONNE OF K₂O)



III-45

(PRICE OF DAP (U.S. \$ PER TONNE OF MATERIAL



SOURCE : BASED ON "FERTILISER PRICES" IN
FERTILIZER YEAR BOOK, FAO, ROME

Y E A R S

1.20. INDEX NUMBERS OF PRICES RECEIVED BY FARMERS FOR CROPS AND PRICES PAID BY FARMERS FOR FERTILISERS

Continent/Country	Base period at : 100	Prices received for crops				Prices paid for fertilisers			
		1979	1980	1981	1982	1979	1980	1981	1982
Africa									
Kenya	1976	120	124	125	125	129	129	131	131
Mali	1974-75	162	195	239		218	225		
Mozambique	1975, 78	114	186	190		100	100	105	
Mauritius	1969-70, 1972	482	527			430	623	808	
North & Central America									
Canada	1971	265	312	327		253	305	339	332
Mexico	1968	405	451	540		214	278	318	
U.S.A.	1977	116	125	134	121	108	134	144	144
South America									
Argentina	1976	1,303	2,283	4,814	16,947	639	1,334	2,859	12,680
Peru	1968	1,421	2,286			1,308	1,874		
Uruguay	1975	487	730	832	935	356	526	633	695
Asia									
Iran	1974	385	326	539		100	100	100	
Israel	1975-76	722	1,606			709	1,783		
Japan	1975-76	119	123			105	128		
Jordan	1975	173	175	185		74	109	86	
Korea, Rep. of	1980	84	100	121		81	100	144	
Europe									
Austria	1976	99	101	110		104	111	130	
Czechoslovakia	1967	119	122	124		129	150	151	
Denmark	1970-71 to 1972-73	217	236	253		233	289	362	
Finland	Jan. 1974 to 1980	170	100	119	145	246	100	123	131
France	1975	144	152	166		122	152	168	
Germany, Fed. Rep.	1976	94	100	105	102	100	109	121	128
Netherlands	1975	108	118	127	124	110	122	137	147
Poland	(Previous year=100)	101	126	150		100	101	120	
Spain	1976	155	160	180	212	150	183	239	269
Sweden	1966-67	164	180	201	223	207	252	294	343
U. K.	1975	141	141	159		147	174	192	
Oceania									
Australia	1980-81	71	86	100	96	67	79	100	111

Source: 1982, FAO Fertiliser Year Book, Vol. 32, FAO, Rome.

1.20. INDEX NUMBERS OF PRICES RECEIVED BY FARMERS FOR CROPS AND PRICES PAID BY FARMERS FOR FERTILISERS

Continent/Country	Base period at : 100	Prices received for crops				Prices paid for fertilisers			
		1979	1980	1981	1982	1979	1980	1981	1982
Africa									
Kenya	1976	120	124	125	125	129	129	131	131
Mali	1974-75	162	195	239		218	225		
Mozambique	1975, 78	114	186	190		100	100	105	
Mauritius	1969-70, 1972	482	527			430	623	808	
North & Central America									
Canada	1971	265	312	327		253	305	339	332
Mexico	1968	405	451	540		214	278	318	
U.S.A.	1977	116	125	134	121	108	134	144	144
South America									
Argentina	1976	1,303	2,283	4,814	16,947	639	1,334	2,859	12,680
Peru	1968	1,421	2,286			1,308	1,874		
Uruguay	1975	487	730	832	935	356	526	633	695
Asia									
Iran	1974	385	326	539		100	100	100	
Israel	1975-76	722	1,606			709	1,783		
Japan	1975-76	119	123			105	128		
Jordan	1975	173	175	185		74	109	86	
Korea, Rep. of	1980	84	100	121		81	100	144	
Europe									
Austria	1976	99	101	110		104	111	130	
Czechoslovakia	1967	119	122	124		129	150	151	
Denmark	1970-71 to 1972-73	217	236	253		233	289	362	
Finland	Jan. 1974 to 1980	170	100	119	145	246	100	123	131
France	1975	144	152	166		122	152	168	
Germany, Fed. Rep.	1976	94	100	105	102	100	109	121	128
Netherlands	1975	108	118	127	124	110	122	137	147
Poland	(Previous year=100)	101	126	150		100	101	120	
Spain	1976	155	160	180	212	150	183	239	269
Sweden	1966-67	164	180	201	223	207	252	294	343
U. K.	1975	141	141	159		147	174	192	
Oceania									
Australia	1980-81	71	86	100	96	67	79	100	111

Source: 1982, *FAO Fertiliser Year Book*, Vol. 32, FAO, Rome.

2.00. WORLD STATISTICS—AGRICULTURE

2.01. LAND USE AND IRRIGATION

1980

('000 hectares)

Continent/Country	Total area	Land area	Agricultural area			Forest and wood land	Other land	Irrigated area
			Arable land	Land under permanent crops	Permanent meadows and pastures			
Africa	3,033,103	2,966,447	163,159	18,005	784,265	696,027	1,304,991	8,437
Algeria	238,174	238,174	6,875	634	36,321	4,384	189,960	341
Egypt	100,145	99,545	2,700	155	—	2	98,688	2,855
Kenya	58,265	56,925	1,790	485	3,760	2,530	48,360	46
Morocco	44,655	44,630	7,269	450	12,500	5,195	19,216	510
South Africa	122,104	122,104	12,770	602	80,510	4,600	23,422	1,020
Sudan	250,581	237,600	12,360	57	56,000	48,940	120,243	1,750
Tanzania	94,509	88,604	4,110	1,050	35,000	42,138	6,306	64
Tunisia	16,361	15,536	3,190	1,510	2,550	490	7,796	145
Uganda	23,604	19,971	4,080	1,600	5,000	6,060	3,231	5
North & Central America	2,241,492	2,135,581	264,999	6,389	352,132	683,204	828,877	27,801
Canada	997,614	922,107	44,270	80	23,850	326,129	527,778	510
Cuba	11,452	11,452	283	207	1,558	1,830	1,188	962
Mexico	197,255	192,304	21,800	1,530	74,499	48,500	45,975	5,100
U.S.A.	936,312	912,680	188,755	1,869	237,539	284,464	200,053	20,517
South America	1,781,851	1,753,454	103,095	22,646	449,644	942,630	235,439	7,409
Argentina	276,689	273,669	25,150	10,050	143,200	69,050	35,219	1,580
Brazil	851,197	845,651	13,500	8,450	159,000	575,000	49,701	1,800
Chile	75,695	74,880	5,332	198	11,880	15,460	42,010	1,255
Peru	128,522	128,000	3,100	300	27,120	70,800	26,580	1,190
Venezuela	91,205	88,205	3,080	675	17,200	34,990	32,260	315

Asia	2,757,442	2,676,872	428,405	26,617	603,781	545,579	1,072,490	134,316
Afghanistan	64,750	64,750	7,910	140	50,000	1,900	4,800	2,680
Bangladesh	14,400	13,391	8,928	217	600	2,196	1,450	1,620
Bhutan	4,700	4,700	87	6	217	3,260	1,130	N.A.
Burma	67,655	65,774	9,573	450	361	32,167	23,223	999
China	959,696	930,496	98,430	770	220,000	116,400	494,896	46,000
India	328,759	297,319	165,200	3,930	12,000	67,480	48,709	39,350
Indonesia	190,435	181,135	14,200	5,300	12,000	121,800	27,835	5,418
Iran	164,800	163,600	15,330	620	44,000	18,000	85,650	5,900
Iraq	43,492	43,397	5,250	200	4,000	1,500	32,447	1,750
Israel	2,077	2,033	325	88	818	116	686	203
Japan	37,231	37,103	4,294	587	580	25,011	6,631	3,250
Jordan	9,774	9,718	1,190	190	100	125	8,113	85
Korea Dem. Rep.	12,054	12,041	2,150	90	50	8,970	781	1,050
Korea Rep.	9,848	9,819	2,060	136	48	6,565	1,010	1,150
Laos	23,680	23,080	860	20	800	13,000	8,400	115
Malaysia	32,975	32,855	1,000	3,310	27	22,390	6,128	370
Nepal	14,080	13,680	2,316	14	1,786	4,450	5,114	230
Pakistan	80,394	77,872	20,030	290	5,000	2,800	49,752	14,300
Philippines	30,000	29,817	7,050	2,870	1,000	12,300	6,597	1,300
Syria	18,518	18,405	5,230	454	8,378	466	3,877	539
Sri Lanka	6,561	6,744	1,025	1,122	439	2,383	1,505	525
Thailand	51,400	51,177	16,250	1,720	308	15,790	17,109	2,650
Turkey	78,058	77,076	25,354	3,125	9,700	20,199	18,698	2,070
Vietnam	32,956	32,536	5,595	470	4,870	10,330	11,281	1,700
Europe	487,084	472,788	126,647	14,302	86,673	154,769	90,397	14,539
Austria	8,385	8,273	1,536	99	2,040	3,282	1,316	9
Belgium-Lux.	3,310	3,282	851	27	707	702	995	1
Bulgaria	11,091	11,055	3,827	354	2,004	3,845	1,025	1,197
Czechoslovakia	12,787	12,549	5,035	134	1,682	4,578	1,120	123
Denmark	4,307	4,237	2,639	14	252	493	839	391
France	54,703	54,563	17,219	1,424	12,883	14,582	8,455	1,088
Finland	33,703	30,547	2,399	164	164	23,321	4,663	60
German Dem. Rep.	10,833	10,610	4,760	274	1,235	2,955	1,386	165
Germany, Fed. Rep.	24,858	24,434	7,270	224	4,754	7,320	4,866	315
Italy	30,123	29,402	9,485	2,980	5,136	6,346	5,455	2,870

2.01. LAND USE AND IRRIGATION
1980 (Concluded)

('000 hectares)

Continent/Country	Total area	Land area	Agricultural area			Forest and wood land	Other land	Irrigated area
			Arable land	Land under permanent crops	Permanent meadows and pastures			
Netherlands	3,731	3,396	829	32	1,160	291	1,084	275
Norway	32,422	30,787	812	—	126	8,330	21,519	8
Poland	31,268	30,454	14,821	280	4,046	8,684	2,823	100
Spain	50,478	49,954	15,550	4,960	11,020	15,270	3,154	3,067
Sweden	44,996	41,162	2,979	—	725	26,424	11,034	53
Switzerland	4,129	3,977	376	20	1,625	1,052	904	25
United Kingdom	24,482	24,160	6,136	60	11,473	2,102	3,589	145
Yugoslavia	25,580	25,540	7,153	731	6,401	9,290	1,965	145
U.S.S.R.	2,240,220	2,227,200	227,100	4,868	373,700	920,000	701,534	17,500
Oceania	850,956	842,906	45,026	979	466,490	151,358	179,073	1,667
Australia	768,685	761,793	44,232	168	451,900	107,000	158,493	1,500
Fiji	1,827	1,827	148	88	60	1,185	346	1
New Zealand	26,868	26,867	435	18	14,156	7,092	5,166	166
Papua N. Guinea	46,169	45,171	20	346	106	32,200	12,499	N.A.
Soloman Islands	2,845	2,754	40	12	39	2,560	103	N.A.
World Total	13,392,148	13,075,248	1,358,431	93,784	3,116,685	4,093,547	44,112,801	211,669

N.A.—Not available

Source: 1981 F.A.O. *Production Year Book*, Vol. 35, FAO, Rome.

2.02. NUMBER AND AREA OF AGRICULTURAL HOLDINGS

Continent/Country	Year	Number ('000)	Area ('000 hectares)
Africa			
Egypt	1960-61	1,642.2	2,614.1
Morocco	1961	1,106.8	5,117.0
Sierra-Leone	1970-71	286.1	520.6
South Africa	1960	110.4	105,944.9
North & Central America			
Canada	1971	366.1	68,663.2
Mexico	1970	1,016.1	144,637.1
U.S.A.	1969	2,730.3	430,321.4
South America			
Brazil	1970	4,632.2	293,012.2
Chile	1965	258.6	30,644.1
Peru	1971-72	1,390.9	23,545.1
Asia			
India*	1970-71	70,493.0	162,124.0
Indonesia	1963	12,236.5	12,883.9
Japan	1970	5,354.6	5,388.6
Korea, Rep.	1970	2,421.4	2,132.2
Pakistan	1960	12,154.9	21,592.8
Philippines	1960	2,166.2	7,772.5
Sri Lanka	1962	1,169.8	1,838.5
Europe			
Austria	1960	396.5	7,683.9
Belgium	1970	184.6	1,542.3
Denmark	1970	140.2	2,941.3
France	1970	1,587.6	35,039.2
Germany, Fed. Rep.	1960	1,761.1	21,360.7
Italy	1970	3,620.8	25,091.3
Netherlands	1970	184.6	2,142.6
Norway	1969	482.1	8,504.6
Poland	1970	3,398.1	16,427.5
Spain	1972	2,558.8	45,633.5
U.K.	1970	326.7	17,992.3
Oceania			
Australia	1970	279.5	497,118.2
New Zealand	1971-72	62.8	19,030.4

* Agricultural Census—1970-71, Ministry of Agriculture and Irrigation, New Delhi.

Source: 1975, *Production Year Book*, Vol 29, FAO, Rome.

**2.03. TOTAL AGRICULTURAL AND
1979, 1980**

Continent/country	Population					
	Total			Agricultural		
	1979	1980	1981	1979	1980	1981
Africa	456,482	470,162	484,355	292,318	298,091	303,832
Algeria	18,280	18,919	19,590	9,203	9,335	9,441
Egypt	40,918	41,963	43,010	20,784	21,145	21,498
Kenya	15,815	16,466	17,148	12,346	12,773	13,213
Morocco	19,642	20,296	20,971	10,156	10,361	10,603
South Africa	28,469	29,285	30,131	8,172	8,332	8,475
Sudan	17,862	18,371	18,901	13,826	14,120	14,415
Tanzania	18,383	17,934	18,510	14,179	14,532	14,889
Uganda	12,797	13,201	13,620	10,422	10,678	10,933
North & Central America	368,832	374,923	380,818	53,091	53,211	53,440
Canada	23,701	23,960	24,213	1,260	1,208	1,161
Cuba	9,670	9,732	9,791	2,317	2,267	2,215
Mexico	67,741	69,752	71,814	24,992	25,125	25,243
USA	225,055	227,658	230,049	6,066	4,895	4,730
South America	235,050	240,517	246,087	77,443	77,682	77,836
Argentina	26,704	27,036	27,369	3,543	3,504	3,464
Brazil	119,460	122,320	125,220	46,516	46,714	46,824
Chile	10,917	11,104	11,294	2,118	2,099	2,679
Peru	17,149	17,625	18,119	6,918	6,976	7,035
Venezuela	15,093	15,620	16,156	2,818	2,809	2,798
Asia	2,533,390	2,578,770	2,624,960	1,490,190	1,497,850	1,504,760
Afghanistan	15,542	15,940	16,347	12,558	12,403	12,649
Bangladesh	85,668	88,164	90,693	72,047	73,881	75,690
Bhutan	1,267	1,296	1,325	1,185	1,211	1,236
Burma	34,434	35,289	36,166	18,084	18,276	18,469
China	982,227	994,913	1,007,750	595,258	594,659	593,553
India	671,167	684,460	697,974	429,510	432,891	436,002
Indonesia	145,579	148,033	150,520	86,899	87,125	87,388
Iran	36,971	38,126	39,320	14,158	14,319	14,479
Iraq	12,631	13,072	13,527	5,162	5,260	5,357
Israel	3,786	3,873	3,951	270	265	261
Japan	115,870	116,782	117,660	13,379	12,631	11,964

ECONOMICALLY ACTIVE POPULATION

and 1981

(thousand)

Economically active population								
Total			In agriculture			Per cent in agriculture		
1979	1980	1981	1979	1980	1981	1979	1980	1981
170,379	174,625	178,973	112,571	114,245	115,875	66.1	65.4	64.7
4,066	4,196	4,347	2,068	2,092	2,117	50.9	49.9	48.7
11,510	11,113	12,124	5,847	5,952	6,060	50.8	54.4	50.0
6,011	6,226	6,442	4,692	4,829	4,964	78.1	77.6	77.1
5,170	5,354	5,543	2,673	2,739	2,802	51.7	51.2	50.6
10,421	10,698	10,935	2,991	3,044	3,076	28.7	28.5	28.1
5,555	5,695	5,844	4,300	4,377	4,457	77.4	76.9	76.3
7,132	7,315	7,506	5,818	5,928	6,037	81.6	81.0	80.4
5,277	5,415	5,558	4,298	4,380	4,461	81.4	80.9	80.3
149,017	151,709	154,149	17,375	17,373	17,396	11.7	11.5	11.3
10,128	10,274	10,387	538	518	498	5.3	5.0	4.8
2,936	2,971	3,008	703	692	680	24.0	23.3	22.6
19,551	20,103	20,708	7,213	7,241	7,279	36.9	36.0	35.2
102,087	103,652	104,910	2,298	2,229	2,157	2.3	2.2	2.1
75,334	77,058	78,978	24,307	24,373	24,464	32.3	31.6	31.0
10,229	10,333	10,453	1,357	1,339	1,323	13.3	13.0	12.7
37,614	38,482	39,442	14,646	14,696	14,749	38.9	38.2	37.4
3,591	3,673	3,760	680	678	676	18.9	18.5	18.0
5,050	5,189	5,354	1,923	1,937	1,960	38.1	37.3	36.6
4,593	4,766	4,961	858	857	859	18.7	18.0	17.3
1,048,090	1,063,210	1,080,280	613,468	614,263	615,738	58.5	57.8	57.0
5,217	5,334	5,488	4,081	4,150	4,223	78.2	77.8	77.4
29,246	30,020	30,795	24,596	25,157	25,701	84.1	83.8	83.5
614	626	638	1,574	585	596	93.5	93.4	93.3
13,828	14,084	14,363	7,262	7,294	7,335	52.5	51.8	51.1
457,552	462,535	468,441	277,308	276,457	275,906	60.6	59.8	58.9
258,258	262,338	266,924	165,299	165,859	166,629	64.0	63.2	62.4
49,700	50,568	51,360	29,667	29,762	29,818	59.7	58.9	58.1
10,306	10,588	10,903	4,047	4,078	4,119	39.3	38.5	37.8
3,119	3,213	3,316	1,275	1,275	1,313	40.9	40.2	39.6
1,359	1,384	1,413	97	95	94	7.1	6.9	6.6
59,601	60,038	60,585	7,006	6,612	6,273	11.8	11.0	10.4

(Continued)

**2.03. TOTAL AGRICULTURAL AND
1979, 1980 and**

Continent/Country	Population					
	Total			Agricultural		
	1979	1980	1981	1979	1980	1981
Jordan	3,126	3,244	3,364	831	836	842
Korea, Rep.	37,814	38,455	39,110	15,086	14,835	14,606
Korea, Dem. Rep.	17,475	17,892	18,317	8,162	8,205	8,234
Malaysia	13,725	14,068	14,415	6,540	6,589	6,638
Nepal	13,963	14,288	14,617	12,944	13,227	13,510
Pakistan	84,464	86,899	89,416	45,558	46,498	47,350
Philippines	42,927	49,211	50,525	22,298	22,526	22,758
Syria	8,639	8,977	9,331	4,133	4,264	4,398
Sri Lanka	14,542	14,815	15,109	7,774	7,883	7,999
Thailand	46,016	47,063	48,123	34,901	35,467	36,024
Turkey	44,159	45,254	46,375	24,662	24,641	24,563
Vietnam	52,591	53,740	54,968	37,412	38,946	38,453
Europe	481,912	484,714	486,469	73,083	70,859	68,897
Austria	7,503	7,505	7,559	722	685	656
Belgium-Lux.	10,211	10,223	10,230	322	316	301
Bulgaria	8,826	8,862	8,900	3,035	2,947	2,846
Czechoslovakia	15,232	15,281	15,330	1,649	1,571	1,496
Denmark	5,117	5,126	5,135	379	360	344
Finland	4,765	4,778	4,798	697	657	626
France	53,453	53,686	53,931	4,875	4,639	4,442
German Dem. Rep.	16,745	16,737	16,750	1,654	1,600	1,552
German Fed. Rep.	61,337	61,561	61,666	2,656	2,474	2,326
Italy	56,914	57,042	57,197	6,739	6,363	6,038
Netherlands	14,030	14,144	14,246	780	759	733
Norway	4,074	4,086	4,100	330	313	301
Poland	35,257	35,578	35,902	10,994	10,801	10,604
Sweden	8,294	8,316	8,324	497	471	448
Spain	36,856	37,199	37,535	6,480	6,185	5,968
U. K.	56,144	56,210	56,273	1,174	1,134	1,097
Yugoslavia	22,159	22,340	22,520	8,562	8,348	8,140
U. S. S. R.	263,425	265,540	267,735	45,558	43,602	42,211
Oceania	17,427	17,588	17,775	1,152	1,125	1,101
Australia	14,321	14,488	14,658	857	837	819
Fiji	619	630	641	252	253	252
Papua N. Guinea	3,070	3,154	3,241	2,538	2,595	2,650
New Zealand	3,106	3,100	3,117	195	288	282
World Total	4,361,460	4,436,746	4,513,440	2,036,350	2,046,000	2,055,630

Source: 1981, *Production Year Book*, Vol 35, FAO, Rome.

ECONOMICALLY ACTIVE POPULATION

1981 (Concluded)

(thousand)

Economically active population

Total			In agriculture			Per cent in agriculture		
1979	1980	1981	1979	1980	1981	1979	1980	1981
746	742	800	198	199	200	26.6	35.8	25.0
14,351	14,701	15,038	5,275	5,672	5,616	39.9	38.6	37.3
7,787	7,992	8,222	3,637	3,665	36,961	46.7	45.9	45.0
4,657	4,783	4,913	2,262	2,285	2,308	48.6	47.8	47.0
6,659	6,781	6,911	6,173	6,278	6,393	92.7	92.6	92.4
22,990	23,515	24,120	12,400	12,582	12,773	53.9	53.5	53.0
16,595	16,983	17,419	7,762	7,816	7,890	46.9	46.0	45.3
2,217	2,293	2,381	1,060	1,091	1,122	47.8	17.5	47.1
5,031	5,157	5,294	2,690	2,744	2,803	53.5	53.2	52.9
20,691	21,073	21,499	15,693	15,882	16,093	75.8	75.4	74.9
18,438	18,744	19,137	10,297	10,206	10,136	55.8	54.4	53.0
24,157	24,515	24,940	17,207	17,311	17,447	71.2	70.6	70.0
216,185	217,050	218,777	34,050	32,963	32,148	15.8	15.2	14.7
3,327	3,335	3,384	320	305	294	9.6	9.1	8.7
3,955	3,962	3,979	129	122	117	3.3	2.1	2.9
4,666	4,650	4,665	1,604	1,546	1,492	4.4	33.3	32.0
7,938	7,610	7,644	827	782	746	10.8	10.3	9.8
2,446	2,460	2,474	181	173	166	7.4	7.0	6.7
2,332	2,341	2,363	322	304	291	13.8	13.0	12.3
24,882	22,940	2,365	2,087	1,982	1,908	9.1	8.6	8.2
8,698	8,760	8,829	859	837	818	9.9	9.6	9.3
28,707	28,964	22,225	1,243	1,164	1,102	4.3	4.0	3.8
21,321	21,294	21,422	2,525	2,375	2,262	11.8	11.2	10.6
5,395	5,461	5,522	300	293	284	5.6	5.4	5.1
1,544	1,543	1,553	125	119	114	8.1	7.7	7.3
19,527	19,721	19,941	6,089	5,987	5,890	31.2	30.4	29.5
3,644	3,849	3,655	194	184	175	5.3	5.0	4.8
3,129	3,159	3,178	169	163	158	5.4	5.2	5.0
25,950	26,021	26,103	542	525	509	2.1	2.0	2.0
10,203	10,326	10,326	3,942	3,825	3,732	38.6	37.4	36.1
133,322	133,991	134,684	23,057	22,001	21,234	17.3	16.4	15.8
7,353	7,421	7,495	484	473	462	6.6	6.4	6.2
6,105	6,175	6,241	365	357	349	6.0	5.8	5.6
204	210	216	83	84	85	40.9	40.1	39.4
1,523	1,565	1,520	1,267	1,288	1,309	82.7	82.3	81.9
1,248	1,247	1,254	119	116	114	9.5	9.3	9.1
1,801,870	1,827,310	1,855,610	826,923	827,325	828,977	45.9	45.3	44.7

**2.04. AREA, PRODUCTION AND YIELD PER HECTARE OF PADDY IN MAJOR
PRODUCING COUNTRIES OF THE WORLD
(1965 to 1981)**

Area : '000 hectares
Production : '000 tonnes
Yield : kg/hectare

Country		1965	1970	1975	1976	1977	1978	1979	1980	1981
Bangladesh	A			13,330	9,882	10,028	10,102	10,160	10,309	10,100
	P			19,143	17,628	19,441	19,582	19,599	20,822	20,000
	Y			1,853	1,784	1,939	1,938	1,929	2,020	1,980
Brazil	A	4,619	4,630	5,279	6,583	5,992	5,624	5,452	6,208	6,066
	P	7,580	7,600	7,538	9,560	8,994	7,296	7,595	9,748	8,261
	Y	1,640	1,640	1,428	1,452	1,501	1,297	1,393	1,570	1,362
Burma	A	4,848	4,800	5,069	5,180	4,864	5,011	4,442	5,040	5,500
	P	8,055	8,128	9,208	9,320	9,462	1,050	10,448	13,107	14,636
	Y	1,660	1,890	1,816	1,789	1,945	2,095	2,352	2,601	2,661
China	A	N.A.	N.A.	36,690	36,686	37,078	33,752	34,594	33,887	34,480
	P	89,000	N.A.	128,667	129,054	129,470	138,202	146,959	142,338	146,087
	Y	N.A.	N.A.	3,507	3,518	3,492	4,095	4,248	4,200	4,237
India	A	35,273	37,700	39,475	38,511	40,283	38,980	39,414	39,773	40,000
	P	45,983	62,500	73,392	63,052	79,006	80,660	63,476	79,930	82,000
	Y	1,300	1,660	1,859	1,637	1,961	2,069	1,610	2,010	2,050
Indonesia	A	7,348	8,237	39,475	8,369	8,360	8,929	8,804	9,018	900
	P	13,600	16,639	73,352	2,784	23,356	25,781	26,213	29,774	33,000
	Y	1,850	2,040	1,858	23,301	2,794	2,887	2,985	3,301	3,665
Japan	A	3,255	2,923	2,764	2,779	2,757	2,548	2,497	2,377	2,278
	P	16,116	16,479	17,101	15,292	17,000	16,349	14,948	12,189	12,824
	Y	4,950	5,640	6,187	5,503	6,166	6,416	5,986	5,128	5,629
Pakistan	A	10,754	12,000	1,710	1,749	1,899	2,026	2,035	1,935	1,989
	P	17,726	22,000	3,926	4,106	4,424	2,423	4,824	4,679	5,093
	Y	1,650	1,830	2,296	2,347	2,330	4,908	2,371	2,418	2,560

Philippines	A	3,109	3,175	3,579	3,548	3,509	3,469	3,500	3,503	3,500
	P	4,073	5,659	6,160	6,461	6,895	2,075	7,504	7,840	7,720
	Y	1,310	1,780	1,721	1,821	1,965	7,198	2,144	2,238	2,206
Thailand	A	5,960	7,300	8,383	8,463	7,947	8,288	8,651	9,145	9,140
	P	9,199	13,660	15,300	15,068	13,921	2,115	1,822	1,899	2,079
	Y	1,540	1,870	1,825	1,780	1,752	17,530	15,758	17,366	19,000
Egypt	A	356	480	442	453	437	435	439	408	462
	P	1,789	2,605	2,423	2,300	2,275	5,422	2,517	2,350	2,500
	Y	5,030	5,430	5,480	5,057	5,208	2,358	5,735	5,755	5,411
USA	A	726	734	1,140	1,004	910	1,202	1,161	1,340	1,539
	P	3,460	3,758	5,109	5,246	4,501	6,040	5,985	6,629	2,408
	Y	4,770	5,100	5,826	5,227	4,945	5,026	5,155	4,946	5,462
USSR	A	217	330	500	524	546	580	610	666	634
	P	583	1,200	2,009	2,001	2,217	2,096	2,394	2,791	2,400
	Y	2,690	3,640	4,019	3,819	4,060	3,614	3,925	4,191	3,785
Vietnam	A	2,429	2,520	5,310	5,350	5,409	5,486	5,483	5,544	5,615
	P	4,822	5,651	12,000	12,076	10,885	10,040	10,758	11,679	12,570
	Y	1,890	2,240	2,260	2,257	2,013	1,830	1,962	2,106	2,239
World	A	125,867	135,499	142,668	143,108	144,481	140,527	141,052	143,534	144,915
	P	2,254,226	306,617	359,623	350,365	369,729	585,885	377,394	397,597	413,785
	Y	2,020	2,280	2,521	2,448	2,559	2,746	2,676	2,770	2,855

N.A. = Not Available.

Source: *FAO Production Year Book*, FAO, Rome.

**2.05. AREA, PRODUCTION AND YIELD PER HECTARE OF WHEAT IN MAJOR
PRODUCING COUNTRIES OF THE WORLD
(1965 to 1981)**

Area : '000 hectares
Production : '000 tonnes
Yield : kg/hectare

Country		1965	1970	1975	1976	1977	1978	1979	1980	1981
Argentina	A	4,601	3,384	5,271	6,428	3,910	4,685	4,787	5,023	5,757
	P	6,079	4,230	8,570	11,000	5,300	8,100	8,100	7,780	8,100
	Y	1,320	1,250	1,626	1,711	1,355	1,729	1,692	1,549	1,407
Australia	A	7,088	7,001	8,555	8,956	9,955	13,249	11,153	11,292	12,041
	P	7,067	8,028	11,982	11,667	9,370	18,086	16,188	10,870	16,400
	Y	1,000	1,150	1,401	1,303	941	1,765	1,451	963	1,362
Bangladesh	A			126	150	160	189	262	433	591
	P			177	218	259	348	494	823	1,093
	Y			926	1,454	1,621	1,842	1,866	1,899	1,848
India	A	13,460	16,626	18,010	20,454	20,922	21,456	22,641	22,172	22,104
	P	12,290	20,093	24,104	28,846	29,010	31,749	35,508	31,830	36,460
	Y	910	1,210	1,338	1,410	1,387	1,480	1,568	1,436	1,649
Italy	A	4,288	4,188	3,545	3,544	2,796	3,472	3,452	3,405	3,260
	P	9,766	9,630	9,610	9,516	6,347	9,332	8,980	9,159	8,921
	Y	2,280	2,330	2,711	2,685	2,270	2,688	2,601	2,687	2,736
Romania	A	2,983	2,300	2,351	2,389	2,269	2,284	2,105	2,244	2,111
	P	5,937	4,117	4,862	6,724	6,463	6,243	4,676	6,427	5,800
	Y	1,990	1,790	2,068	2,815	2,848	2,733	2,221	2,863	2,748
Spain	A	3,991	3,695	2,661	2,772	2,715	2,752	2,551	2,694	2,623
	P	4,465	3,985	4,303	4,436	4,064	4,806	4,101	5,849	3,356
	Y	1,120	1,080	1,617	1,600	1,497	1,746	1,607	2,172	2,279
Syria	A	1,214	1,341	1,692	1,590	1,528	1,555	1,445	1,449	1,253
	P	1,042	625	1,550	1,790	1,217	1,651	1,319	2,226	2,086
	Y	860	470	916	1,126	797	1,061	913	1,536	1,665

Turkey	A	8,029	8,500	9,309	9,308	9,375	9,346	9,380	9,061	9,400
	P	8,630	10,105	14,830	16,578	16,720	16,764	17,569	16,556	17,040
	Y	1,070	1,190	1,593	1,781	1,783	1,794	1,873	1,829	1,813
Canada	A	11,453	5,052	9,487	11,252	10,114	10,579	10,489	11,098	12,230
	P	17,674	9,023	17,078	23,587	19,862	21,146	17,185	19,157	24,519
	Y	1,540	1,790	1,800	2,096	1,964	1,999	1,638	1,725	2,005
China	A	N.A.	N.A.	30,001	31,001	35,001	26,501	29,358	28,841	29,201
	P	26,000	30,000	41,003	45,001	45,001	52,002	62,733	54,158	57,003
	Y	N.A.	N.A.	1,367	1,452	1,286	1,962	2,137	1,878	1,952
France	A	4,520	3,760	3,876	4,275	4,109	4,167	4,987	4,582	4,753
	P	14,760	12,922	15,013	16,126	17,350	20,970	19,522	23,683	22,782
	Y	3,270	3,440	3,873	3,772	4,222	5,033	4,777	5,169	4,793
Iraq	A	1,705	2,033	1,408	1,499	858	1,496	1,750	1,500	1,200
	P	1,005	1,059	845	1,312	696	910	1,492	1,300	1,100
	Y	590	520	601	875	811	608	853	867	917
Pakistan	A	5,371	6,219	5,812	6,111	6,390	6,360	6,687	6,912	6,914
	P	4,625	7,329	7,673	8,691	9,144	8,367	9,950	10,805	11,340
	Y	160	1,180	1,320	1,422	1,431	1,316	1,488	1,563	1,640
Egypt	A	481	548	586	590	509	585	584	557	585
	P	1,272	1,516	2,003	1,962	1,699	1,943	1,856	1,796	1,850
	Y	2,640	2,770	3,472	3,327	3,335	3,323	3,177	3,225	3,162
U.K.	A	1,026	1,010	1,035	1,231	1,076	1,257	1,371	1,441	1,491
	P	4,171	4,172	4,488	4,740	5,274	6,613	7,168	8,470	8,465
	Y	4,170	4,130	4,334	3,851	4,900	5,260	5,229	5,878	5,677
U.S.A.	A	20,056	17,930	28,081	28,640	26,895	22,863	25,275	26,727	32,759
	P	35,805	37,517	57,765	58,307	55,420	48,322	58,081	64,619	76,026
	Y	1,790	2,090	2,057	2,036	2,061	2,114	2,298	2,249	2,321
U.S.S.R.	A	70,205	65,000	61,985	59,467	62,140	62,898	57,682	61,475	59,232
	P	59,686	94,000	66,224	96,832	92,166	120,924	90,207	98,185	88,060
	Y	850	1,440	1,068	1,629	1,483	1,921	1,564	1,597	1,486
World	A	218,737	210,291	228,903	236,571	235,650	226,957	228,972	236,883	239,381
	P	266,539	311,615	354,748	419,661	390,697	449,372	428,777	444,103	458,195
	Y	1,220	1,480	1,550	1,774	1,665	1,980	1,873	1,877	1,914

Source: FAO Production Year Book, FAO Rome.

**2.06. AREA, PRODUCTION AND YIELD PER HECTARE OF MAIZE IN MAJOR
PRODUCING COUNTRIES OF THE WORLD**

(1965 to 1981)

Area : '000 hectares
Production : '000 tonnes
Yield : kg/hectare

Country		1965	1970	1975	1976	1977	1978	1979	1980	1981
Argentina	A	3,062	4,017	3,070	2,766	2,532	2,630	2,800	2,490	3,500
	P	5,140	9,360	7,700	5,855	8,300	9,500	8,700	6,400	13,500
	Y	1,680	2,330	2,508	2,117	3,278	3,612	3,107	2,570	3,857
France	A	871	1,492	1,960	1,396	1,624	1,803	1,995	1,757	1,570
	P	3,468	7,475	8,209	5,625	8,505	5,286	10,413	9,358	9,100
	Y	3,980	5,010	4,188	4,031	5,237	9,531	5,220	5,326	5,796
Hungary	A	1,233	1,225	1,429	1,351	1,295	1,296	1,367	1,253	1,350
	P	3,608	4,743	7,172	5,141	6,007	6,655	7,396	6,673	6,500
	Y	2,926	3,872	5,018	3,806	4,640	5,133	5,411	5,324	4,851
India	A	4,765	5,583	6,031	6,000	5,683	5,760	5,721	5,983	5,800
	P	4,760	6,269	7,256	6,361	5,973	6,199	5,603	6,804	7,000
	Y	1,000	1,120	1,203	1,060	1,051	1,076	979	1,137	1,207
Italy	A	1,028	1,100	897	889	983	988	937	937	991
	P	3,317	4,780	5,326	5,321	6,455	6,221	6,197	6,403	7,250
	Y	3,230	4,350	5,938	5,985	6,567	6,704	6,617	6,836	7,318
Indonesia	A	2,537	2,547	2,445	2,095	2,567	3,025	2,594	2,771	2,735
	P	2,283	2,369	2,903	2,572	3,143	4,029	1,390	1,448	1,459
	Y	900	930	1,187	1,228	1,224	1,332	3,606	4,012	3,991
Mexico	A	7,718	8,350	8,694	6,783	7,470	7,191	5,502	6,955	8,150
	P	8,678	10,000	8,459	8,017	10,138	10,930	8,124	12,383	14,766
	Y	1,120	1,200	1,264	1,182	1,357	1,520	1,477	1,780	1,812
Pakistan	A	546	675	620	624	656	650	701	745	727
	P	543	476	802	764	821	799	875	947	1,004
	Y	990	1,000	1,294	1,224	1,251	1,228	1,248	1,271	1,381

Philippines	A	2,106	2,437	3,126	3,257	3,445	3,222	3,327	3,281	3,319
	P	1,380	2,400	2,697	2,767	3,037	2,855	3,167	2,117	3,176
	Y	660	980	863	850	881	886	952	950	957
Romania	A	3,306	3,200	3,305	3,378	3,318	3,179	3,311	3,288	3,150
	P	5,877	7,100	9,241	11,583	10,114	10,208	12,425	11,153	11,200
	Y	1,780	2,220	2,796	3,429	3,048	3,211	3,752	3,392	3,556
Turkey	A	650	660	597	597	560	580	585	583	580
	P	945	1,010	1,200	1,810	1,265	1,300	1,350	1,240	1,100
	Y	1,450	1,530	2,010	2,194	2,181	2,241	2,308	2,127	1,897
Egypt	A	526	632	769	795	742	797	791	800	714
	P	2,141	2,359	2,781	3,048	2,725	3,117	2,938	3,231	2,700
	Y	4,070	3,730	3,617	3,836	3,674	3,910	3,714	4,088	3,782
U.S.A.	A	22,392	23,212	27,318	28,854	28,680	29,109	29,300	29,555	30,200
	P	103,746	104,393	148,061	159,172	163,213	184,614	201,655	168,787	208,314
	Y	4,630	4,500	5,420	5,517	5,691	6,342	6,883	5,711	6,898
U.S.S.R.	A	3,177	4,600	2,652	3,303	3,362	2,535	2,667	2,977	3,545
	P	8,030	1,300	7,328	10,138	10,979	8,951	8,373	9,454	8,000
	Y	2,530	2,830	2,763	3,069	3,266	3,531	3,139	3,176	2,257
Yugoslavia	A	2,550	2,353	2,353	2,374	2,321	2,129	2,251	2,161	2,275
	P	5,920	6,961	9,389	9,106	9,870	7,585	10,084	9,317	9,800
	Y	2,320	2,960	3,973	3,836	4,252	3,563	4,480	4,312	4,308
Canada	A	302	481	635	709	724	783	893	958	1,058
	P	1,511	2,549	3,645	3,771	4,197	4,032	4,983	5,434	6,214
	Y	5,010	5,290	5,740	5,319	5,795	5,150	5,583	5,671	5,874
Brazil	A	8,711	10,900	10,473	11,176	11,797	11,125	11,319	11,438	11,491
	P	12,112	16,000	16,354	17,845	19,256	13,569	16,309	20,374	21,098
	Y	1,380	1,470	1,562	1,597	1,632	1,220	1,441	1,781	1,936
World	A	99,281	110,799	113,797	116,903	118,796	127,142	125,796	128,764	134,024
	P	226,664	266,790	324,257	334,626	346,227	390,104	418,357	394,056	451,704
	Y	2,280	2,410	2,849	2,862	2,914	3,068	3,326	3,060	3,370

Source: *FAO Production Year Book*, FAO, Rome.

**2.07. AREA, PRODUCTION AND YIELD PER HECTARE OF RICE (PADDY)
1981**

Continent/Country	Area ('000 hectares)	Production ('000 tonnes)	Yield (kg/hectare)
Africa	4,887	8,562	1,752
Egypt	462	2,400	5,411
Madagascar	1,175	1,999	1,701
Sierra Leone	400	400	1,000
Tanzania	150	2,000	1,333
Zaire	290	250	862
North & Central America	2,319	10,736	4,629
Cuba	163	518	3,186
Mexico	180	644	3,583
U.S.A.	1,539	8,408	5,462
South America	7,440	13,258	1,782
Brazil	6,066	8,261	1,362
Columbia	413	1,799	4,354
Peru	146	684	4,680
Asia	129,154	376,232	2,913
Afghanistan	230	475	2,065
Bangladesh	10,100	20,000	1,980
Bhutan	48	1,106	53
Burma	5,500	14,636	2,661
China	34,480	146,067	4,637
India	40,000	82,000	2,010
Indonesia	9,065	33,000	3,665
Iran	320	1,400	4,040
Japan	2,278	12,624	5,629
Korea, Dem. Republic	800	4,900	6,125
Korea, Rep.	1,274	7,032	5,745
Laos	739	1,155	1,562
Malaysia	762	2,147	2,818
Nepal	1,270	2,407	1,895
Pakistan	1,989	5,093	2,560
Philippines	3,500	7,720	2,206
Sri Lanka	800	2,020	2,525
Thailand	9,140	19,000	2,079
Vietnam	5,615	12,570	2,239
Europe	361	1,808	5,007
France	5	21	4,000
Italy	173	931	5,372
Portugal	30	112	3,733
Spain	69	441	6,391
U.S.S.R.	634	2,400	3,785
Oceania	119	789	6,610
Australia	106	761	7,179
Fiji	10	18	1,800
World Total	114,915	413,785	2,855

Source: 1981, FAO Production Year Book, Vol. 35, FAO, Rome.

2.08. AREA, PRODUCTION AND YIELD PER HECTARE OF WHEAT

1981

Continent/Country	Area (*000 hectares)	Production (*000 tonnes)	Yield (kg/hectare)
Africa	7,402	8,584	1,160
Algeria	2,000	1,400	700
Egypt	585	1,850	3,162
Morocco	900	892	991
South Africa	1,790	2,090	1,168
Tunisia	783	963	1,230
North & Central America	45,914	103,781	2,260
Canada	12,234	24,519	2,005
Mexico	861	3,189	3,704
U.S.A.	32,759	76,026	2,321
South America	8,784	11,743	1,337
Argentina	5,757	8,100	1,407
Brazil	1,921	2,207	1,148
Chile	432	1,537	686
Uruguay	350	400	1,143
Asia	80,430	137,371	1,708
Afghanistan	2,600	3,000	1,154
China	29,201	57,003	1,952
India	22,104	36,460	1,649
Iran	5,500	5,800	1,055
Iraq	1,200	1,100	917
Israel	78	215	2,760
Japan	200	612	3,060
Mongolia	400	240	600
Nepal	380	477	1,256
Pakistan	6,914	11,340	1,640
Syria	1,253	2,086	1,665
Turkey	9,400	17,040	1,813
Europe	25,489	91,942	3,607
Austria	274	1,025	3,737
Belgium-Lux	179	943	5,268
Bulgaria	1,032	4,290	4,429
Czechoslovakia	1,125	4,400	3,911
France	4,753	22,782	4,793
German, Dem. Republic	730	3,000	4,110
Germany, Fed. Republic	1,632	8,314	5,095
Italy	3,260	8,921	2,736
Romania	2,111	5,800	2,748
Spain	2,623	3,356	1,279
United Kingdom	1,491	8,465	5,677
Yugoslavia	1,386	4,270	3,081
U.S.S.R.	59,232	88,000	1,486
Oceania	12,129	16,773	1,383
Australia	12,041	16,400	1,362
New Zealand			
World Total	239,381	458,195	1,914

Source: 1981, FAO Production Year Book, Vol. 35, FAO, Rome.

2.09. AREA, PRODUCTION AND YIELD PER HECTARE OF MAIZE

1981

Continent/Country	Area (^{'000} hectares)	Production (^{'000} tonnes)	Yield (kg/hectare)
Africa	22,583	32,860	1,455
Angola	600	250	417
Egypt	714	2,700	3,782
Ethiopia	1,100	1,100	1,000
Kenya	1,200	2,250	1,875
Malawi	1,100	1,600	1,455
Nigeria	1,746	1,580	905
South Africa	7,000	14,650	2,093
North & Central America	4,062	231,937	5,599
Canada	1,058	6,214	5,874
Guatemala	660	1,052	1,547
Mexico	8,150	14,766	1,812
U.S.A.	30,200	208,314	6,898
South America	17,361	38,496	2,212
Argentina	3,500	13,500	3,857
Brazil	11,491	21,098	1,836
Colombia	629	1,399	880
Venezuela	335	486	1,451
Asia	37,510	86,570	2,308
China	20,537	61,601	2,999
India	5,800	7,000	1,207
Indonesia	2,735	3,991	1,459
Pakistan	727	1,004	1,381
Thailand	1,716	3,700	2,156
Turkey	580	1,100	1,897
Europe	11,520	53,627	4,655
Bulgaria	571	2,477	4,377
France	1,570	9,100	5,796
Hungary	1,350	6,500	4,815
Italy	991	7,251	7,318
Romania	3,150	11,200	3,556
Yugoslavia	2,275	9,800	4,308
U.S.S.R.	3,545	8,000	2,257
Oceania	82	3,724	304
Australia	56	118	2,122
New Zealand	21	177	8,429
World Total	134,024	3,370	41,704

Source: 1981, FAO Production Year Book, Vol. 35, FAO, Rome.

2.10. AREA, PRODUCTION AND YIELD PER HECTARE OF TOTAL PULSES
1981

Continent/Country	Area (^{'000} hectare)	Production (^{'000} tonnes)	Yield (kg/hectare)
Africa	11,600	5,076	438
Egypt	145	329	2,259
Ethiopia	861	632	735
Morocco	338	150	442
Nigeria	4,115	903	218
Niger	1,141	280	245
Tanzania	498	216	434
Uganda	464	325	700
Zaire	256	142	554
North & Central America	4,237	4,109	976
Canada	90	153	1,699
Dominican Rep :	76	75	990
Mexico	2,421	1,820	752
U.S.A.	1,024	1,673	1,634
South America	6,279	3,294	525
Argentina	256	260	1,016
Brazil	5,203	2,401	461
Chile	208	183	902
Peru	97	91	935
Asia	35,141	22,241	633
Afghanistan	37	61	1,664
Bangladesh	332	221	666
Burma	598	341	570
China	5,563	6,856	1,232
India	22,831	11,207	491
Iran	207	212	1,025
Japan	84	95	1,128
Korea Dem. Rep.	333	290	871
Pakistan	2,390	731	306
Syria	255	214	838
Thailand	459	3.4	707
Turkey	736	858	1,165
Europe	2,564	2,401	936
France	78	234	3,021
German Dem. Rep	49	72	1,457
Germany Fed. Rep.	11	37	3,494
Italy	241	326	1,352
Netherlands	8	21	2,799
Poland	192	244	1,271
Spain	499	293	593
United Kingdom	81	228	2,815
U.S.S.R.	5,649	5,027	890
Oceania	223	255	1,143
Australia	190	179	943
New Zealand	25	70	2,800
World Total	65,693	42,403	645

Source: 1981, *FAO Production Year Book*, Vol. 35, FAO, Rome.

2.11. AREA, PRODUCTION AND YIELD PER HECTARE OF POTATOES
1981

Continent/Country	Area ('000 hectares)	Production ('000 tonnes)	Yield (kg/hectare)
Africa	585	5,127	8,764
Algeria	80	618	7,771
Egypt	63	1,120	17,886
Kenya	48	365	7,604
South Africa	50	700	14,000
Tanzania	25	140	5,600
Tunisia	11	124	11,367
North & Central America	705	18,938	26,851
Canada	108	2,555	23,624
Mexico	67	888	12,945
U.S.A.	498	15,135	30,368
South America	947	10,531	11,116
Argentina	117	2,247	19,255
Bolivia	150	950	6,333
Brazil	171	1,911	11,175
Colombia	160	2,100	13,169
Peru	189	1,627	8,596
Asia	3,227	37,929	11,755
Bangladesh	102	999	9,781
China	1,505	15,039	9,996
India	732	9,599	13,113
Japan	126	3,250	25,896
Korea, Dem. Republic	130	1,600	12,308
Nepal	49	5,616	275
Pakistan	38	396	10,353
Turkey	180	2,900	16,111
Europe	5,500	111,270	20,232
Austria	50	1,310	26,386
Czechoslovakia	195	3,500	17,930
France	215	6,480	30,140
German, Dem. Republic	513	10,500	20,464
German, Fed. Republic	217	8,045	29,000
Hungary	100	1,600	16,000
Italy	145	2,863	19,728
Netherlands	165	6,445	39,071
Poland	2,258	42,600	18,869
Spain	337	5,571	16,531
United Kingdom	192	6,108	31,862
U.S.S.R.	6,854	72,000	10,505
Oceania	43	1,182	27,319
Australia	35	896	25,842
World Total	17,861	256,978	14,387

Source: 1981, FAO Production Year Book, Volume 35, FAO Rome.

**2.12. AREA, PRODUCTION AND PER HECTARE OF SUGARCANE
1981**

Continent/Country	Area (^{'000} hectares)	Production (^{'000} tonnes)	Yield (kg/hectare)
Africa	930	64,687	69,592
Egypt	109	1,380	83,585
Mauritius	80	5,500	68,750
South Africa	217	16,720	77,086
North & Central America	3,036	171,625	56,535
Costa Rica	51	2,522	49,448
Cuba	1,400	67,000	47,857
Mexico	545	35,461	48,686
U.S.A.	305	37,075	88,802
South America	3,831	219,249	57,230
Argentina	323	15,260	47,201
Brazil	2,803	153,858	54,888
Colombia	300	25,900	86,333
Guyana	58	4,000	68,966
Peru	40	4,160	104,680
Venezuela	80	4,000	50,000
Asia	5,833	290,357	51,548
China	700	47,143	33,000
India	2,648	56,844	150,522
Pakistan	825	32,359	39,238
Philippines	420	20,450	48,690
Sri Lanka	5	276	52,132
Europe	6	384	64,000
Spain	5	350	74,468
Oceania	384	28,983	75,437
Australia	310	25,160	81,161
Fiji	74	3,810	51,486
World Total	13,819	56,102	775,285

Source: 1981, *FAO Production Year Book*, Vol. 35, FAO, Rome.

**2.13. AREA, PRODUCTION AND YIELD PER HECTARE OF TEA
1981**

Continent/Country	Area (^{'000} hectares)	Production (^{'000} tonnes)	Yield (kg/hectare)
Africa	148	196	1,320
Kenya	68	91	1,455
Malawi	18	32	1,827
Mauritius	6	5	750
Mozambique	11	18	1,636
Tanzania	18	16	914
Zair	11	7	620
Zimbabwe	4	10	2,439
South America	42	38	909
Argentina	31	22	709
Brazil	5	10	2,000
Peru	3	3	909
Asia	2,152	1,468	682
Bangladesh	44	40	902
China	1,219	354	354
India	375	565	1,507
Indonesia	87	95	1,096
Japan	62	103	1,675
Sri Lanka	245	210	857
Turkey	35	52	1,493
Europe			1,000
Portugal			1,000
U.S.S.R.	79	1,709	135
Oceania			
Fiji	1	1	833
Papua N. Guine	4	8	2,079
World Total	2,425	1,845	761

Source: 1981, FAO, *Production Year Book*, Vol. 35, FAO, Rome.

**2.14. AREA, PRODUCTION AND YIELD PER HECTARE OF COFFEE GREEN
1981**

Continent/Country	Area (^{'000} hectares)	Production (^{'000} tonnes)	Yield (kg/hectare)
Africa	3,587	1,288	359
Angola	200	40	200
Cameroon	359	105	293
Ethiopia	730	198	271
Ivory Coast	1,125	350	311
Madagascar	231	95	411
Uganda	180	130	722
Zaire	230	75	326
North & Central America	1,613	945	586
Costa Rica	85	120	1,407
El. Salvador	170	150	882
Mexico	508	217	427
South America	4,112	1,965	721
Brazil	2,337	1,878	803
Colombia	1,075	808	752
Peru	140	95	679
Venezuela	253	62	245
Asia	829	595	829
India	200	131	653
Indonesia	419	265	632
Philippines	110	140	1,273
World Total	10,185	5,846	574

Source: 1981, FAO, Production Year Book, Vol. 35, FAO, Rome.

**2.15. AREA, PRODUCTION AND YIELD PER HECTARE OF TOBACCO LEAVES
1981**

Continent/Country	Area ('000 hectare)	Production ('000 tonnes)	Yield (kg/hectare)
Africa	311	256	821
Malawi	78	52	667
South Africa	38	34	907
Tanzania	32	21	647
Zimbabwe	40	70	1,761
North & Central America	587	1,220	2,078
Canada	47	116	2,440
Cuba	58	34	586
Mexico	43	66	1,519
U.S.A.	391	929	2,377
South America	396	506	1,277
Argentina	47	52	1,120
Brazil	287	362	1,264
Colombia	30	49	1,653
Paraguay	9	9	1,047
Asia	2,084	2,324	1,115
Bangladesh	51	47	922
Burma	62	55	886
China	629	872	1,387
India	428	456	1,064
Indonesia	168	85	505
Japan	59	143	2,419
Korea Rep.	41	87	2,147
Pakistan	43	67	1,566
Philippines	60	50	833
Thailand	152	87	572
Turkey	205	200	976
Europe	510	711	1,396
Bulgaria	106	133	1,247
Greece	90	122	1,362
Italy	59	123	2,065
Poland	49	81	1,667
Romania	46	39	845
Yugoslavia	64	70	1,094
U.S.S.R.	167	300	1,796
Oceania	9	18	2,007
Australia	7	15	2,201
World Total	4,063	5,334	1,313

Source: 1981, *FAO Production Year Book*, Vol. 35, FAO, Rome.

CONVERSION FACTORS AND TABLES

1. CONVERSION FACTORS Handy Equivalents

	AREA		WEIGHT
1 hectare	=2.47100 acres	1 metric ton	=2,204.7 pounds
1 acre	=0.40468 hectare =4,840 sq. yd. =43,660 sq. ft. =.00156 sq. miles =4.048 sq. metres	1 long ton	=0.98421 long tons =1.10231 short tons =1,000 kilograms =2,240 pounds =1.01605 metric tons
1 sq. mile	=640 acres =259 hectares =2.59 sq. kilometres	1 short ton	=2,000 pounds =0.90781 metric tons
1 sq. kilometre	=0.3861 sq. miles =100 hectares	1 kilogram	=2.20462 pounds
		1 pound	=0.45359 kilogram
		1 maund	=81.2857 pounds =37.324210 kg.
	YIELD		DISTANCE
100 kg. per hectare	=1.4869 bushels (60 lb.) per acre	1 mile	=8 furlongs or 1,760 yards =1.609 kilometres
1 bushel (60 lb) per acre	=67.253 kg. per hectare	1 kilometre	=5/8 mile (3,280.89 ft.)
1 kg. per hectare	=0.892169 lb. per acre	1 metre	=1.0936 yards
1 lb. per acre	=1.129864 kg. per hectare	1 inch	=25.4 millimetres
		1 foot	=30.48 centimetres
		1 yard	=91.44 centimetres

2. CONVERSION TABLES

1. WEIGHT

Tons to metric tons

Tons	1	2	3	4	5	6	7	8	9	10
Metric tons	10.2	20.3	3.05	4.06	5.8	6.10	7.11	8.13	9.14	10.16

Pounds (av) to kilogrammes

Pounds	1	2	3	4	5	6	6	8	9	10
Kilogrammes	0.45	9.91	1.36	1.81	2.27	2.72	3.18	3.63	4.18	4.54

2. LENGTH

Miles to kilometres

Miles	1	2	3	4	5	6	7	8	9	10
Kilometres	1.61	3.22	4.83	6.44	8.05	9.66	11.29	12.87	14.43	16.09

Yards to metres

Yard	1	2	3	4	5	6	7	8	9	10
Metres	0.61	1.83	2.74	3.36	4.57	5.49	6.40	7.32	8.23	9.14

Inches to millimetres

Inches	1	2	3	4	5	6	7	8	9	10	11	12
Millimetres	25.40	50.80	76.20	101.60	127.00	152.40	177.80	203.60	228.60	254.00	279.40	304.80

3. AREA

Acres to hectares

Acres	1	2	3	4	5	6	7	8	9	10
Hectares	0.40	0.81	1.21	1.62	2.02	2.43	2.83	3.24	3.64	4.05

Square yards to square metres

Square yards	1	2	3	4	5	6	7	8	9	10
Square metres	0.48	1.67	2.51	2.34	4.18	5.02	5.85	6.69	7.53	8.36

4. CAPACITY

Gallon (Imp) to litres

Gallons	1	2	3	4	5	6	7	8	9	10
Litres	4.55	9.19	13.64	18.18	22.23	27.28	31.82	36.37	40.22	45.46

1 kg. per hectare = 0.892169 lb per acre

Kg. per hectare	0	1	2	3	4	5	6	7	8	9
	<i>Pounds per acre</i>									
0	0	0.822	1.784	2.667	3.569	4.461	5.353	6.245	7.137	8.003
10	8.922	9.814	10.706	11.599	12.491	13.383	14.275	15.167	16.059	16.952
20	17.843	18.735	19.627	20.520	21.412	22.304	23.196	24.089	24.980	25.873
30	26.765	27.657	28.549	29.442	30.334	31.226	32.118	33.010	33.902	33.795
40	35.687	36.579	37.471	38.364	39.256	40.148	41.040	41.932	42.824	34.717
50	44.608	45.500	46.392	47.285	48.177	49.069	49.961	50.853	51.745	52.638
60	52.530	54.422	55.314	56.207	57.099	57.991	58.883	59.775	60.667	61.560
70	62.452	63.344	64.236	65.129	66.021	66.913	67.805	68.697	69.590	70.482
80	71.374	72.266	73.158	74.050	74.943	75.835	76.727	77.619	78.511	79.403
90	80.296	81.188	82.080	82.972	83.864	84.756	85.649	86.541	87.433	88.325

**PART IV
APPENDICES**

MEMBERS OF FAI

(As on October 1, 1983)

Active Members	...	56
Associate Members	...	126
Overseas Associate Members	...	36
(As on October 1, 1983)		

ACTIVE MEMBERS

1. ADARSH CHEMICALS & FERTILIZERS LTD.**Registered Office: Udhna 394 210, Dist. Surat, Gujarat****Grams: "ADARSHCHEM"****Telex: 0176 221 ACF****Tele: 88531-34
88951****BOARD OF DIRECTORS**

Shri Dahyabhai J. Patel
Chairman & Executive Director

" Ishwarbhai P. Patel
Executive Director

" Shantilal N. Patel
Executive Director

" Mohanbhai K. Patel
Executive Director

" D. C. Gami
Director

Shri G. G. Dave
Director

Dr. Ramanlal C. Patel
Director

Shri Maganbhai M. Amin
Director

" Jerambhai L. Patel
Director

" Dahyabhai K. Patel
Director

Secretary & Financial Controller: Shri K. J. Patel**Production and Marketing**

The company was incorporated on 19th June 1957, set up the plants to manufacture single superphosphate and sulphuric acid in 1962. The present capacities after expansions are as under:

Single Superphosphate	--
1,36,000 tonnes per annum	
Sulphuric acid	--
56,100 tonnes per annum	

The company has converted its sulphuric acid plant to DCDA system in 1978 and put up another sulphuric acid plant with DCDA system in 1983.

The company had under its diversification programme put up the first ever plant in India to manufacture maleic anhydride, a vital basic chemical, mainly used for malathion (insecticides), polyster and alkyd,

resins, paints, lubricants, etc., with a licensed capacity of 3,000 tonnes per annum. The plant put up with technical collaboration with Halcon International Inc., U.S.A. went into production in 1977. The maleic anhydride produced by the company has been unanimously accepted by indigenous users, thus resulting in saving of substantial foreign exchange.

The authorised share capital of the company is Rs. 1,35,00,000/-. The paid-up capital of the company is Rs. 111 lakh including the issue of bonus shares in the ratio of the two shares for every five shares in 1971. rights equity shares to an extent of Rs. 52.48 lakh in 1974 and public issue of preference shares to an extent of Rs. 25 lakh in 1974

Shri D. J. Patel, Chairman & Executive Director, is a Director on the Board of The Fertiliser Association of India.

2. THE ANDHRA SUGARS LIMITED

**Regd. Office: Venkatarayapuram (TANUKU) 534 215,
West Godavari District, Andhra Pradesh**

Grams: "SUGARS"

Telex: RY 0492-242

Tele: 333 '5 lines)

RY 0492-203

HD 0155-570

BOARD OF DIRECTORS

Shri M. Harischandra Prasad
Chairman & Managing Director

" B. B. Ramaiah, M.Sc. (Wis.)
AMP (Harvard)
Managing Director (Tech.)

" P. Narendranath Chowdary, B.Sc.,
Joint Managing Director
(Chemical Complex, Kovvur)

" M. Thimmaraja, B. Tech.,
M.B.A. (Florida)
Joint Managing Director

" P. Atchutaramayya, B.Com.,
M.B.A. (U.S.A.)
Executive Director

Directors

Shri M. Venkatarayudu, B.Com.

" V. K. D. V. Satyanarayana Raju

" M. A. Krishnamacharya, B.A., B.L.

" H. R. Sayoji Rao, B.Sc. (London)

" C. S. Vidyasankar, B.A., B.L.

" K. Jagannathan (I.C.I.C.I. Nominee)

" K. G. Appusamy

" M. Narendranath, B.Sc. (Ag.)

CAPITAL STRUCTURE (As on 30-9-1982)

	No. of Shares	Value (Rs.)
(a) Authorised Capital		
1. 9.5% first cumulative redeemable preference shares of Rs. 100/- each	30,000	30,00,000
2. 9.5% second cumulative redeemable preference shares of Rs. 100/- each	95,000	95,00,000
3. Equity shares of Rs. 10/- each	87,50,000	8,75,00,000
		10,00,00,000
(b) Issued capital		
1. 9.5% first cumulative redeemable preference shares of Rs. 100/- each	30,000	30,00,000
2. 9.5% second cumulative redeemable preference shares of Rs. 100/- each	30,000	30,00,000
3. Equity shares of Rs. 10/- each	55,22,275	5,52,22,750
		6,12,22,750
(c) subscribed and paid-up capital		6,12,22,750
(d) Reserves		10,48,62,000

The company was established at Tanuku, West Godavari district, Andhra Pradesh in 1947 and a sugar factory with crushing capacity of 600 tonnes cane per day went

into production in 1951-52 season. During the past 30 years, there was a continuous progress to 1,000 tonnes in 1957 and to 1,250 tonnes in 1962. During 1968-69 season, the

crushing capacity was increased to 2,500 tonnes of cane per day with the installation of sugarcane diffusion plant. The capacity of the sugar plant was doubled further from 2,500 to 5,000 tonnes per day and commissioned during the crushing season 1978-79. Manufacture of sugar is done by double sulphitation process.

At Tanuku

An industrial alcohol distillery was set up in 1961 with a licensed capacity of 8 lakh gallons per annum. Later in 1976 permission to enhance the licenced capacity to 6,000 gallons per day (from 3,000 gallons per day) capacity is obtained and work is in progress.

A plant to manufacture 1080/720 tonnes of acetic acid/anhydride per annum was set up in the year 1962. Later the process was developed to give better anhydride/acetic acid ratio and transferred to two parties in different capacities.

A plant to manufacture 1,268 tonnes/annum of ethyl acetate was also set up in 1964.

A unit to manufacture 4 sugarcane diffusers per annum was set up pursuant to industrial licence dated 17-6-1971.

Industrial licence to manufacture 500 tonnes of aspirin per annum was also obtained on 30-6-1976 and the unit has gone into production by the end of September, 1980.

Industrial licence to manufacture 1,000 tonnes of sugar factory boiling house equip-

ment per annum was obtained on 21-2-1977.

COB Licence to manufacture 120 tonnes/annum equipments for chemical plants was obtained on 12-3-1983.

Also registered with DGTD on 7-4-1981 for manufacture of 2,000 tonnes/annum carbon dioxide gas.

At Kovur

Sulphuric acid plant with a licenced capacity of 50 tonnes per day (continuous process) was set up in 1961. The capacity was later increased to 75 tonnes per day in 1977.

Superphosphate (fertiliser) factory with a licenced capacity of 100 tonnes per day on 2-shift basis was set up in 1961.

Caustic soda, chlorine and hydrochloric acid plant with annual licenced capacities of 9,900 tonnes, 6,330 tonnes and 2,600 tonnes respectively were set up in 1965, which were later increased to 33,000 tonnes, 20,830 tonnes and 5,100 tonnes, respectively in 1974. These capacities have been increased to 46,200, 29,730 and 7,100 tonnes respectively in 1980.

Chlorosulphuric acid plant with licenced capacity of 5,000 tonnes per annum was set up in July, 1972 which was increased to 10,000 tonnes per annum in 1980.

Industrial licence to manufacture 3,000 tonnes/annum of alum was obtained on 4-3-1966.

3. THE ANIL STARCH PRODUCTS LTD.

Regd. Office: Anil Road, P.B. No. 10009, Ahmedabad-380025

Grams: 'NILA'

Telephone: 373122, 373222
Telex: 0121-544

BOARD OF DIRECTORS

Shri Arvind Narottam
Chairman
Shrenik Kasturbhai
Managing Director
Shripal Chinubhai
Managing Director

Shri Navnitlal Sakarlal
" Jaykrishan Harivallabhadas
" Nusli N. Wadia
" Ajay Chimanbhai
" H. T. Parekh
" G. V. Kapadia

Secretary: Shri V. R. Shah

The company was promoted in 1939 as a limited company by M/s. Kasturbhai Lalbhai & Co., and commenced production in 1941. Capital of the company as on 31-12-82 was as follows:

Authorised capital	(Lakhs) Rs. 250.00
Equity	Rs. 125.00
Preference	Rs. 5.00
Reserves	Rs. 406.51

The registered office of the company and its main starch, liquid glucose, dextrose, tnyzmes, sulphuric acid, activated carbon and alumina ferric, etc. plants are located at Anil Road, Ahmedabad with a Forgings Division at Odhav Road, Ahmedabad. The company's Fertilisers and Chemicals Division is functioning since 1964 at Nava Bunder Road, Bhavnagar.

The company started production of single superphosphate in the year 1949 at Ahmedabad. In view of the great demand for superphosphate in Saurashtra, a large unit for its production was started in 1964 at Bhavnagar with a licenced capacity of 34,000 tonnes per annum.

The company has two contact process sulphuric acid plants at Bhavnagar and Ahmedabad. The company also produces NPK mixed fertilisers at Bhavnagar and Ahmedabad. The company's starch, starch derivatives and chemical plants are among the biggest units in our country and are engaged in the production of maize starch, chemical starches, dextrans and by-products like maize, germ oil, maize oil cake, maize gluten, corn steep, etc., and liquid glucose, dextrose monohydrate, anhydrous dextrose, calcium gluconate, sorbitol, mannitol and

activated carbon. The company has pioneered in India in the production of enzymes required for various industrial applications. At its Bhavnagar Plant, the company also produces sodium silico-fluoride.

In its activities detailed in the preceding paragraphs, the company employs 100 officers and technical personnel and 150 office staff. There are more than 1,200 workers in the company's employment.

The company has a comprehensive network of sales representatives throughout the country for marketing its products.

The company's laboratories at the plants are constantly engaged in research work for developing improved products and processes and maintaining strict quality control on finished products. The company's research and development laboratory is recognised by the Government of India.

4. ANISH CHEMICALS PRIVATE LIMITED

**Regd Office: Next to Kinariwala Industries, Behind Anil Starch,
Lal Bahadur Shastri Marg, Ahmedabad-380 025**

Grams: ANISHCHEM

Tele: 374053

NAMES OF DIRECTORS

- | | |
|-------------------------------|--------------------------------|
| 1. Shri M. Dutt | 4. Shri Arun Pratapsingh Sheth |
| 2. " Chinubhai Manibhai Sheth | 5. " P. J. Shah |
| 3. " Shreyas Chinubhai Sheth | Manager-in-charge |

In 1972, the company installed completely indigenous semiautomatic plant at GIDC Estate at Vapi for manufacture of single superphosphate under SSI unit. Considering the proximity of raw materials and the market for the product, in 1977 the plant was

shifted to Ahmedabad. The plant has a capacity to manufacture 9,000 m. tons of SSP per annum. The directors are technical persons with long experience of manufacturing and marketing of superphosphate.

5. AVENUE MANURES LTD.

26, Chittaranjan Avenue, Calcutta-700 012

Gram: KHAITANSON

Telex: KLOK 3541

Tele: 27-3434/37

BOARD OF DIRECTORS

Shri Binod Kumar Khaitan
" K. C. Chatterjee

Shri G. C. Jha
" M. R. Pasari

The fertiliser department of M/s. Khaitan Sons & Co., was set up in 1926 when the firm handled the distribution of Japanese sulphate of ammonia imports on behalf of M/s. Mitsui Kaisha Ltd.

In 1942, a small quota of 250 tons was allotted to the firm by the Central Government for distribution to the North-East India tea industry. The quota was gradually increased until the firm became the third largest quota holder for the North-East tea industry. In 1953, the entire preparation and distribution of agricultural fertilisers in Assam

was entrusted to it, the company then operating under the name and style of Compound Fertiliser Limited. Seventy-five depots and distribution centres were organised throughout the State at that time.

The firm manufactures and distributes all types of fertilisers for tea and field crops and has depots throughout Assam.

Khaitan Sons & Co. also have plywood factory, where both commercial and tea chest plywood are manufactured. Other interests include chemicals, jute and fibre, tea gardens, stores and machines.

6. CHEMICAL UNIT OF ASSOCIATED INDUSTRIES (ASSAM) LTD.

P.O. Chandrapur, Dist. Kamrup, Assam

(Under the management of: Assam Industrial Development Corporation Ltd.)

The Associated Industries (Assam) Ltd. was incorporated on 7th November, 1955 as a public limited company, promoted by private industrial group from Calcutta. The company obtained two industrial licences, one for setting up a textile mill in 1959-60 and another for a chemical unit in 1960-61 at Chandrapur near Gauhati, in the district of Kamrup, Assam.

The chemical unit is having 3 plants, viz

1. Sulphuric acid ... 50 TPD
2. Single superphosphate ... 100 "
3. Liquid sulphur dioxide ... 12 "

Besides, it is having a mixing & bagging plant for superphosphate with a capacity of 200 tonnes/day. The chemical unit of the company was commissioned in July, 1962 but the management had to declare closure of this unit on 2-8-1971 mainly due to financial constraints and difficulties in marketing of the products.

Immediately after closure of the chemical unit, the State Government made a request to the Central Government for taking over the management of the company. Subsequently, in July 1974, the Government of India had taken over the chemical unit under Industries (Development & Regulation) Act, 1951 and entrusted its management to Assam Industrial Development Corporation Ltd. (A Government of Assam undertaking) as its authorised person for a period of 5 years with effect from 8-7-74. The period of take

over of the unit was subsequently extended from time to time and the present extended term of management of the undertaking under AIDC is upto and inclusive of 7th July, 1984.

The affairs of the unit are being managed by a Board of Management constituted by Assam Industrial Development Corporation Ltd. The present members of the Board of Management are:

1. Shri R. N. Bora, IAS,
Managing Director,
Assam Industrial Development Corporation Ltd.
R. G. Baruah Road,
Guwahati-24 **Chairman**
2. Shri A. K. Choudhury,
Managing Director,
Assam Agro Industries Development Corp. Ltd.,
Ulubari, Guwahati-7. **Member**
3. Shri B. Huria,
Manager,
Industrial Finance Corporation of India,
Rajgarh Road,
Guwahati Branch,
Guwahati-781 003. **Member**

The present Chief Executive of the Company is Dr. R. N. Das.

This industrial undertaking manufacturing sulphuric acid, single superphosphate fertiliser and liquid sulphur di-oxide is the first of its kind in the North-Eastern region.

7. BHARAT FERTILISER INDUSTRIES LTD.

Regd. Office: Bharat Fertiliser House, 12, Nanabhai Lane,
Fort, Bombay-400 023

Gram: "GRAFERTS"

Phone: Office: 299105
317932
Factory: 592230
592239
Factory: Majiwada
Thana

Established in 1956 and incorporated as a Public Limited Company in 1962. The company crossed its Silver Jubilee year in 1981. Pioneer industry in the manufacture of organic and inorganic compound granu-

lated fertilisers and granulated single superphosphate.

The company is engaged in expansion projects for the manufacture of sulphuric

acid and single superphosphate and various by-products.

The company continues to represent Southern Petrochemical Industries Corporation Limited, Tamil Nadu, as its principal bulk marketers in Maharashtra. Turnover of

sales during 1980-81 was around Rs. 10 crore.

The company's by-products such as sodium silico fluoride are well received.

Paid-up capital of the company is Rs. 50 lakh. The company is managed by a Board of Directors.

8. COIMBATORE PIONEER FERTILIZERS LIMITED
Regd. Office & Factory: Muthugoundanpudur Post,
Via Sulur-641 402, Coimbatore District

Grams: CHEMFERTS, Coimbatore

Telex: 0855/329 (CBE)

Tele: 88-213
88-214

BOARD OF DIRECTORS

Shri G. R. Damodaran
 " A. L. Govindarajalu
 " V. Ramaswamy Naidu
 " V. Vidyasagar

Shri K. V. Balasubramaniam
 " C. R. Lingiah
 " D. Vaidyaprakash
Managing Director

This is the only inland factory in the State of Tamil Nadu. The company started production in 1966 with a plant capacity of 150 tonnes of superphosphate per day and 50 tonnes of sulphuric acid per day. The authorised capital is Rs. 50 lakh, issued and paid-up is Rs. 34 lakh.

The plant and equipment are of latest design supplied by M/s. Chemiebau, Koln, West Germany, now M/s. Davy Powergas and is performing with maximum efficiency.

Apart from superphosphate and sulphuric acid the company is also manufacturing oleum 20/25 per cent.

9. COROMANDEL FERTILISERS LIMITED
Regd. Office: 126, Sarojini Devi Road, Secunderabad-500 003
Andhra Pradesh

Grams: GROMOR

Telex: 0155-216

Telephones: 72034/70116

BOARD OF DIRECTORS

Dr. Bharat Ram
Chairman
 Shri G. C. Bhattacharjya
 " G. W. Brian Rickerby
 " R. W. Davis
 " J. H. Eckart
 " J. T. Gibson, Jr.

Shri A. Krishnaswami
 " S. H. Paxton
 " Philip Thomas
 " R. N. Ratnam
 " D. C. Smith
 " D. E. Udwadia

Coromandel Fertilisers Limited was promoted by two major U.S. Corporations, Chevron Chemical Company and International Minerals and Chemical Corporation and an Indian firm, E.I.D. Parry (India) Limited.

The company was incorporated as a private limited company in October, 1961 and became a public limited company in April 1964. The plant was formally commissioned on December 10, 1967. The authorised capital of the company is Rs. 25 crore and

the gross fixed assets as at December 31, 1981 were valued at Rs. 60.40 crore. Majority ownership is with Indian investors as the share capital of U.S. companies is 47 per cent and the rest 53 per cent is held by Indian shareholders.

The plant is located on a 500-acre site adjacent to Hindustan Petroleum Corporation Limited, Visakhapatnam in Andhra Pradesh.

The principal products are high analysis complex fertilisers, GROMOR urea, ammonium phosphate 28-28-0 and NPK 14-35-14.

The annual rated capacity in terms of nutrients is 83,800 tonnes of nitrogen (N) and 84,500 tonnes of phosphate (P).

The factory has five process plants, the daily rated capacities of which are 357 tonnes of ammonia, 400 tonnes of urea, 900 tonnes of sulphuric acid, 325 tonnes of phosphoric acid and 1,160 tonnes of complex fertiliser.

Shri R. V. K. M. Suryarau, President, Coromandel Fertilisers Limited, is a Director on the Board of FAI.

COROMANDEL EXECUTIVES

Shri R. V. K. M. Suryarau
President

" N. Balasubrahmanyam
General Manager—
Finance & Secretary

" T. N. Gidwani
Adviser

Shri M. R. Krishnaiah
General Manager—
Engineering & Technical

Shri J. C. Lakshman
General Manager—
Administration

" T. Krishna Murty
General Manager—Marketing

Ch. S. Prasad
General Manager—Fertiliser Plant

Shri A. Ramanathan
General Manager—Cement Plant

" B. V. Reddy
Manager—Delhi Office

Factory: Malkapuram, Post Box No. 125,
Visakhapatnam (A.P.)

Phone: 7211, 7455 & 7511

Cement Factory: Chilamkud Post,
Kamalapuram Tq. Cuddapah Dist.,
Pin: 516 310 (AP)

Phone: 39, 43 and 45

Delhi Office: Jeevandeep Building,
Parliament Street,
New Delhi-110001.

Phone: 351338, 311364

Bombay Office: Room No. 56F, 5th Floor,
Tower-F, Makers' Towers,
Cuffe Parade, Colaba,
Bombay-400 005

Phone: 213997

10. DECCAN SALES CORPORATION LTD. 226, S.V. Road, Bandra, Bombay-50

Grams: NOFAMINE, Bandra, Bombay

Tel: 538481/2

BOARD OF DIRECTORS

Dr. R. T. Doshi, M.Com., LL.B., Ph.D
Chairman

Shri S. M. Shah
(Special Executive Magistrate)
Vice-Chairman

" A. S. Bhise
Managing Director

Shri J. M. Shah
Director

" M. S. Doshi
Director

" J. D. Rawal
Director

Deccan Sales Corporation owes its origin to the vision and pioneering work of two dynamic men, viz., Dr. R. T. Doshi and Shri S. M. Shah who have been in the fertiliser field for over two decades. It was originally

incorporated as a private limited company in 1954 and initially dealt in organic and inorganic straight fertilisers. From 1955-56, the company undertook the manufacture of NPK mixtures and was recognised as an

established approved manufacturer by the Government of Maharashtra. The company was converted into a public limited company in 1962 with an authorised share capital of Rs. 50,00,000 and the project for setting up a most modern granulation plant at Bhandup, Bombay, started taking shape.

Finally, in 1965, Deccan Sales Corporation Ltd. established a most modern fertiliser granulation plant with an annual capacity of 44,000 tonnes at Bhandup, Bombay. This plant is on T. V. A. process evolved by a famous American fertiliser company.

The company manufactures different formulae of granulated compound fertilisers as approved by the State Government of Maharashtra, under the trade name of 'YASHO DHAN'. Its 18:18:10 grade was produced at Government level for distribution in the hybrid cereal and high yielding varieties projects. Its product has gained wide popularity as ensuring high quality control and is considered as a hall-mark of reliability. Its turnover during the last five years amounted to an average of Rs. 2.00 crore.

The company has a wide network of distribution arrangements and has representatives and agents at taluka and district levels.

The company has a group of agro-based industries under the same management. One of the group, viz. SWATI INDUSTRIES PVT. LTD., after sustained research carried out by two of its eminent technical personnel, developed a product called 'SPARTIN' which provides secondary and micronutrient elements in the soils and crops. This product has found great favour with consumers. Swati recently started manufacturing and marketing another micronutrient product, viz., 'NU-SPARTIN', a micronutrient spray for foliar application. This product has proved highly efficacious and is very popular among the farming community. NU-SPARTIN can best be described as a low cost micronutrient compound fertiliser.

A separate company, FERTIPLANT ENGINEERING CO. PVT. LTD., was incorporated in 1966 in collaboration with M/s Feeco International Inc. of Wisconsin, USA. This company undertakes the manufacture of complete mixing and fertiliser granulation plants with capacities ranging from 5 to 7.5 tonnes per hour. Fertiplant has so far supplied, erected and commissioned on turn-key basis, 47 fertiliser granulation plants all over India. The collaboration agreement with the American company having expired, the company has entered into a fresh collaboration agreement, duly approved by the Government of India, for manufacturing equip-

ments and machinery for granulation of complex fertilisers using liquid inputs like ammonia, phosphoric acid, etc. at raw materials.

The company has also built up a couple of cattlefeed plants with completely indigenous components and equipments. It has also designed, fabricated, supplied and commissioned one alfa alfa green grass dehydration plant for M/s Karnataka State Forest Industries Corpn. Ltd. at Balekoppa having a capacity of 5 tph.

The company has set up a research and development centre at Mahad in Raighad district at a cost of Rs. 1 million where it is proposed to take up the manufacture of plants, chemical vessels, heat exchangers, etc. required for the chemical industry.

The company has obtained recognition from the Government of India for a second research and development centre at Bhandup, Bombay at which it has developed a completely indigenous aerobic process for conversion of the city garbage into a high rate mechanical compost. So far, the company has erected and commissioned 7 such compost plants in the major cities of the country.

In addition to the above, the company has facilities for manufacture of vegetables, dehydration plants, spur gears of large sizes, material conveying chains of different specifications.

The company has also been registered with the D.G.T.D., New Delhi for manufacture of cement machinery and has procured sizable orders from a couple of mini cement units for manufacture of critical machinery and equipment worth more than Rs. 2.50 crore.

RESCON MANUFACTURING CO. PVT. LTD. is another company belonging to the group, under the same management. Rescon is a pioneer in the manufacture of sophisticated electronic components like resistors, potentiometers and condensers. Its average turnover is about Rs. 65.00 lakh per annum. The factory is situated at Pune. The company has taken steps to expand its capacity, renovate its machinery and develop new products.

The management has promoted one other company by the name of KARNATAKA CEMENT LTD. to undertake the manufacture to portland cement, with a capacity of 200 tpd. at Chittapur in Gulbarga district of Karnataka State. Considerable progress has been made and several effective steps taken to implement this project.

11. THE DHARAMSI MORARJI CHEMICAL CO. LTD.

**Regd. Office: Prospect Chambers, 317/21, Dr. Dadabhoy Naoroji Road,
Fort, Bombay-400 001**

Grams: "DHARMAJAYA"

Telex: DMC-0112646

Tel: 258881-2,3

BOARD OF DIRECTORS

Shri Ranchoaddas M. Goculdas
Chairman

Smt. Urvashi D. Morarji

" **Virendrakumar K. Nanavaty**

Shri Jaysinh L. Thakkar

" **Madhukant M. Thakore**

" **Bhalchandra K. Kamat**

" **Indravadan M. Desai**

" **Haridas T. Kapadia**

" **Mansingh L. Bhakta**

" **Sushil Kumar Seth**

" **Shantanu N. Desai**

Secretary: Shri D. G. Mehta

A public company incorporated in Bombay in 1919. The company was promoted by M/s Dharamsi Morarji & Co., who were the Managing Agents of the company since its inception till 2nd April, 1970. The company has two factories in Maharashtra, one at Ambernath, Dist. Thane, and the other at Roha, Dist. Raigad. The company's third factory is at Kumhari, Dist. Durg, Madhya Pradesh.

Its range of products covers superphosphate, sulphuric acid, alumina sulphate, chlorosulphonic acid, sulfamic acid, etc.

The authorised capital of the company is Rs. 7,00,00,000 consisting of 14,00,000 ordinary shares of Rs. 50/- each.

It has promoted jointly with M/s Albright & Wilson Ltd. of United Kingdom and Pandit interests, a company called M/s Al

bright, Morarji and Pandit Ltd., which is the first company of the kind in India for the manufacture of industrial phosphates and phosphoric acid by the wet process.

In collaboration with the Madhya Pradesh State Agro Industries Development Corporation Ltd., the company has floated a new company in the joint sector called M.P. Agro Morarii Fertilisers Ltd. for manufacture of 60,000 tonnes of granulated fertilisers in the Hoshangabad District of Madhya Pradesh.

The company has jointly with Kerala State Industrial Development Corporation and Premier Enterprises of Kerala, set up a plant for the manufacture of 16,550 tonnes of alumina sulphate (ferric) in Kerala.

The licenced capacities of some of the products for which the company holds industrial licences are:—

Tonnes Per Year

Product	Ambernath	Kumhari	Roha
Sulphuric acid	2,20,000	66,000	—
Single superphosphate	2,00,000	1,61,000	—
Triple superphosphate	27,000	—	—
Alumina sulphate	46,200	33,528	6,600
Chlorosulphonic acid	19,800	3,600	—
Sulfamic acid	—	—	1,500
Sodium silico fluoride	1,750	850	—
Aluminium fluoride	1,550	—	—
Sodium fluoride	700	—	—
Activated silica	550	250	—
Stabilised sulphur trioxide	16,500	—	—
Di-ethyl sulphate	—	—	750
Ammonium sulphamate	—	—	500
Alpha naphthol/beta naphthol	—	—	1,650
Benzene sulphonyl chloride	—	—	750
Thiophenol	—	—	300
Cryolite	1,500	—	—
Methyl ester of benzene sulphonic acid	—	—	1,500

The know-how for the manufacture of the above products as well as the plant designs have been entirely developed by the company's own research, development and engineering staff. The company was the first to produce triple superphosphate in India.

The company's products are marketed through its own marketing organisation. The company has an up-to-date soil testing laboratory at its Kumhari factory and the company conducts demonstration trial based on soil tests to promote balanced fertilisation techniques incorporating the effective use of single superphosphate.

Agronomic research experiments for trace elements—micro-nutrients are also under-

taken for selected crop areas and micro-nutrients with a view to producing increased yields.

The company's project division offers know-how and engineering services for the manufacture of sulphuric acid, phosphatic fertilisers, alumina sulphate and other chemicals.

The company's environmental engineering division offers technical services to numerous industries for treatment of effluents and control of pollution.

Shri J. L. Thakkar, Managing Director, is a Director on the Board of The Fertiliser Association of India.

12. E.I.D.-PARRY (INDIA) LTD. "Dare House", Post Box No. 12, Madras-600 001.

Grams: DISTIMULO

Telex: 315 PARRY Madras. **Tele:** Directors 21101
(4 lines)
General 29251
(20 lines)

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Thomas Parry who arrived in India in 1788 to seek his fortune was granted a licence to trade within limits as a free merchant by East India Company, which held monopoly of trade between India and the United Kingdom. So began Parry & Co. which remained a private partnership until 1928, when it was converted into a private limited company.

In 1948, Parry & Co. Ltd. was converted into a public limited company and in 1956 the whole of its ordinary share capital was acquired by the East India Distilleries and Sugar Factories Ltd. to form the E.I.D.-Parry Group which now consists of the holding company and its subsidiaries: Parry & Co. Ltd., Mofussil Warehouse & Trading Co. Limited, Andhra Fertilisers Ltd. and the Parry Murray & Co. Ltd.

E.I.D.-Parry Ltd. was a company incorporated in U.K. carrying on business in India. To facilitate the company's increasing participation in the national growth, and with the approval obtained of the High Courts of Madras and England, the scheme involving the transfer of the undertaking of E.I.D. Parry Ltd. to E.I.D.-Parry (India) Ltd. without further act or deed has become effective from the 18th June, 1976.

The group has on its pay-roll nearly 6,200 employees and its interests are wide and varied, including the manufacture and sale of insecticides, fungicides, fertiliser mixtures for field crops and plantations, superphosphate, ammonium phosphate sulphate, seeds, sprays, animal feeds, sugar, carbonic acid gas, denatured and rectified spirit, molasses and European liquors, acids (hydraulic nitric and sulphuric), chemicals and ceramic ware. The group also sells a variety of products manufactured by reputable Indian and foreign concerns including electric motors, starters, transformers, generating sets in the electrical line, machine tools, pumps, diesel engines, concrete mixture and other engineering stores such as aluminium sheets, etc. and a wide range of consumer and pharmaceutical goods.

The E.I.D.-Parry Group are pioneers in the fertiliser field having established a bone-meal factory at Ranipet in the early twentieth century. They were the first in India to start a superphosphate factory in 1906 at Ranipet where the preparation of various standard fertiliser mixtures, insecticides and fungicides was subsequently undertaken. A second factory at Tadepalli commenced production in 1960 bringing the total production capacity of the group to 100,000 of superphosphate per annum. Formulation of plant protection chemicals is also carried out at Tadepalli. The group has fertiliser mixing factories at Ethakota, Guntur Warangal Kurnool, Cuddalore, Katpadi, Mettupalayam, Tirumangalam, Trichy, Mysore

Hospet, Kottayam and Calicut and over the last 70 years has built up an extensive marketing organisation providing unrivalled distribution facilities.

The fertiliser factory of E.I.D.-Parry (India) Ltd. at Ennore, near Madras, was the first in the private sector to produce compound fertilisers. The factory was installed to manufacture about 52,000 tonnes per year of ammonium phosphate 16:20 now marketed by the company under the trade name of 'PARAMFOS'.

E.I.D.-Parry (India) Ltd. have the distinction of being the first to manufacture NPK complex fertiliser in India at their factory at Ennore from November 1968.

E.I.D.-Parry (India) Ltd. were the promoters along with Chevron Chemical Corporation and International Minerals and Chemicals Corporation, both at the USA of Coromandel Fertilisers Ltd., at Visakhapatnam which manufacture 14:35:14 and 28:28:0 complex fertilisers and continue to market these products on a principal-to-principal basis.

The company is one of the marketers of complex fertilisers and urea manufactured by Madras Fertilisers Ltd., Manali, Southern Petro Chemicals Industries Corporation Ltd., Guindy, Mangalore Chemicals & Fertilisers Ltd., Mangalore.

The company's marketing activity in hybrid seeds has been extended to the high-yielding varieties of paddy and three seed processing units have been set up at Pappampatti and Trichy in Tamil Nadu and Chikballapur in Karnataka

The company has three animal feeds factories at Ennore and Mettupalayam in Tamil Nadu and at Tadepalli in Andhra Pradesh.

The E.I.D.-Parry groups are founder members of the Fertiliser Association of India.

Shri N. S. Parthasarathy, Vice-President, is a Director on the Board of The Fertiliser Association of India.

13. THE FERTILISERS AND CHEMICALS TRAVANCORE LTD.

Regd. Office: Eloor, Udyogamandal-683501, Kerala

Gram: FACT UDYOGAMANDAL

Telex: 0885-264 FACT IN
0885-271 FACT IN

Tel: Cochin 6101
to
6104

Shri N. B. Chandran
Chairman and Managing Director

The beginning

The Fertilisers and Chemicals Travancore Ltd. (FACT) was conceived at a time of great food shortage in the former State of Travancore. Dr. C. P. Ramaswamy Aiyer, the then Dewan of Travancore, had the vision to recognise that only chemical fertilisers could solve the food problem of the State. He, therefore, sponsored the establishment of FACT. M/s. Seshasayee Brothers Limited, an industrial management house of South India, was invited by him to organise the venture.

Work started at what is now known as Udyogamandal in 1944, and the factory went into commercial production in 1947. The company began with a capacity of 50,000 tonnes of ammonium sulphate (10,000 tonnes of N). The process adopted was unique. As there was no coal or natural gas in the area, ammonia production was based on gas generated out of firewood. Until then, firewood gasification was just a laboratory process. To FACT belongs the distinction of converting it into a commercial process and exploiting it for the first and perhaps the last time in the history of chemical industry. Ammonium sulphate was manufactured from ammonia produced out of firewood and gypsum mined from Tiruchirappalli in Tamil Nadu.

Next to be set up was a superphosphate plant with a capacity of 44,000 tonnes. It became, therefore, necessary for the company to install a sulphuric acid plant of 75 tonnes capacity a day. FACT was then the largest producer of fertilisers in India.

Expansion and diversification

With the advent of the First Five Year Plan and the setting up of a much larger fertiliser plant at Sindri, the whole concept of fertiliser production underwent a change. FACT just had to expand to survive. In the meantime the company had taken up on itself the responsibility of setting up a caustic soda unit. Later thinking was that caustic soda production could be profitably organised as a separate unit; so a new company called The Travancore-Cochin Chemicals Limited was formed jointly by the then

Government of Travancore-Cochin, FACT and the Mettur Chemical Industrial Corporation Limited.

The hydrogen chloride arising out of the production of caustic soda was utilised by FACT for producing a new product, ammonium chloride — technical grade. Till then, the country's requirements of ammonium chloride were met by imports. After FACT's ammonium chloride came into the market, there was no need for importing it at all.

First stage expansion

In the late fifties, the company took up further expansion programmes. The first stage expansion programme involved an outlay of Rs. 30 million aimed at doubling the nitrogen capacity and introducing for the first time a new complex fertiliser-ammonium phosphate. It was then anticipated that adequate hydro-electric power would be available in the State for sustaining an electrolysis plant. The additional capacity for the synthesis gas required was found by setting up an electrolytic hydrogen plant. A phosphoric acid plant and a plant capable of producing ammonium phosphate (16:20) grade were established.

Second stage expansion

The first stage expansion programme was soon followed by the second stage, involving an investment of Rs. 20 million. As the firewood gasification plant was becoming uneconomic and as there was no scope for expanding it any further due to the limited availability of firewood, it was necessary to replace it with a modern process. New processes by then had been found since the installation of the firewood gasification plant. The latest available was the TEXACO oil gasification process using raw naphtha as feedstock. As a result of the installation of a plant based on this process the capacity increased to 30,000 tonnes, of nitrogen and 15,000 tonnes of P_2O_5 .

Third stage expansion

Even before the second stage expansion programme was completed, a third stage expansion programme involving an outlay of Rs. 120 million was taken up. This program-

me was intended to raise the nitrogen capacity to 70,000 tonnes and P_2O_5 capacity to 33,000 tonnes, the end-product capacities being 200,000 tonnes of ammonium sulphate, 125,000 tonnes of ammonium phosphate, 44,000 tonnes of superphosphate and 20,000 tonnes of ammonium chloride.

One of the most interesting features of the third stage expansion programme was the installation of a 300-tonne a day ammonium sulphate plant based on the process know-how developed by FACT for the conversion of by-product gypsum.

Fourth stage expansion

While all these expansion programmes were in progress, the expectation of availability of power based on the original forecast given by the State Electricity Department (later the Electricity Board) were belied time and again. The electrolysis plant could seldom work to full capacity as enough power was not available. Power cuts had become much a 'hardy annual' and as a result production in several plants had to be curtailed drastically, even closed down for substantial periods. Dependence on such large quantities of power was causing huge losses to the company. And a way had to be found to reduce this dependence. Only by the elimination of the electrolytic hydrogen plant was this possible but it meant making other suitable modifications to the plant.

A fourth stage expansion programme was therefore, conceived on the basis of replacing the electrolytic cells and providing other ancillary facilities required to raise nitrogen capacity from 70,000 tonnes to 90,000 tonnes and P_2O_5 from 33,000 tonnes to 45,000 tonnes. Work on this programme involving an outlay of Rs. 50 million was completed. A substantial portion of the electrolytic hydrogen plant was dismantled and sold to the Fertiliser Corporation of India for its unit at Nangal which is exclusively based on electrolytic hydrogen. The new ammonia plant was commissioned. An ammonium phosphate plant with a capacity of 150 tonnes per day of 20:20 grade completely designed and engineered by FEDC (about which organisation, more later) also went on stream. With the completion of the fourth stage expansion programme, the total investment in Udyogamandal had gone upto Rs. 270 million. The power requirement was reduced to 36,000 KWH from 50,000 KWH required at the end of third stage expansion programme.

Caprolactam Project

Consequent on the problems arising from the oldage of the plants in Udyogamandal Division, proposals were made for diversifi-

cation of production establishing a caprolactam plant. The Government of India had approved in 1982 the setting up of a 50,000 tonnes per annum caprolactam plant along with revamping and rehabilitation of the existing plants. The project involving an outlay of Rs. 1480 million also envisages production of 2,25,000 tonnes per annum ammonium sulphate as a by-product. The work of execution of the project which is scheduled to go on stream by 1987 is entrusted to FEDO, the design engineering consultancy division of FACT.

Preliminary work of developing the site of the project is in progress. Selection of progress licensors and front-end engineering know-how has been completed and proposals have been submitted to Government for approval of the collaboration.

FACT Cochin Division

While these developments were taking place at Udyogamandal, the company was also able to set up in 1969 a new fertiliser manufacturing division at Ambalamedu, close to the Cochin Refineries FACT Cochin Division, as the new factory has come to be known, was set up in two stages—Phase I and Phase II.

Cochin Division—Phase I

Designed to produce 3,30,000 tonnes of urea a year, the plant utilises the latest technology. For the manufacture of synthesis gas, the ICI-Steam-Naphtha Reforming Process under pressure, followed by the high and low temperature CO Conversion, CO₂ removal by the Vetrocoke Process and final removal of carbon oxides by methanation have been adopted. The section was designed by FACT in collaboration with the Davy Power Gas International of England. The 500-tonne per day ammonia plant, based on the Fauser Montecatini Process is in single stream. The 1,000-tonne/day urea plant based on the Fauser Montecatini Total Liquid Recycle Process was designed by the Planning and Development Division of Fertilizer Corporation of India in collaboration with Montecatini Edison of Italy. The urea synthesis section is in two streams and the rest in single stream.

The process water requirements of the project are met from a water reservoir of five months storage capacity formed by building an earthen dam. The power requirement is about 22 MW. Fourteen MW will be generated in the project in a back pressure turbine connected to the process steam unit.

A modern township with amenities like a shopping centre, hostels, recreation facilities, etc., has also been set up.

An important feature of the Cochin Project Phase I is that it is one of the first large sized fertiliser plants in India to be completely designed, engineered and erected by indigenous technical know-how developed and acquired by FACT Engineering & Designing Organisation and P&D Division of the Fertilizer Corporation of India, now Projects & Development India Ltd.

Cochin Division—Phase II

Cochin Division Phase II is designed to produce 485,000 tonnes of NPK granulated fertilisers in a year. This project includes a 1,000 tpd sulphuric acid plant, which incidentally is the biggest in the country, a 360-tpd phosphoric acid plant and a 1,600-tpd NPK granulation plant. The project was entirely designed and engineered by FEDO

Marketing

In India, the task of a fertiliser manufacturer does not stop merely with production. It goes beyond that. The magical transformation that fertiliser use brings about in food production is not fully realised by a vast majority of farmers. The task of educating the farming community that increased use of fertiliser means higher profit is a responsibility of the producer. It is also the producer's responsibility to deliver the right type of fertiliser at the farmer's doorstep at the right time and at the right price.

In translating this marketing philosophy into action, the company has launched various programmes of fertiliser promotion work.

One of the significant contributions that FACT has made in the field of fertiliser promotion is the concept of the fertiliser festivals have assumed a role that no other instrument has been capable of in the past in attempting to reach the heart of the farmer. The fertiliser festivals introduced by FACT have become well known in many parts of India and even the United Nations have been caught up by this new concept and have made a special study of it so that it could be introduced in other developing countries.

Another contribution made by FACT in the field of fertiliser promotion is the Village Adoption Scheme. The theme of the scheme is that any strategy of agricultural development should focus on village as basic growth points. The scheme has been recommended for adoption throughout the country.

Organisation of Agro-Service Centres in key places is another innovation introduced by FACT recently. FACT offers all kind of agricultural services to farmers free of cost, through a team of well qualified and trained

agronomists. Facilities have been provided again free of cost, for testing samples of soil.

A new dimension to the concept of agricultural extension in the country has now been set up by FACT by developing the idea of starting Agricultural Study Centres—FACT Krishi Vigyan Kendras—an effective and sustainable new medium for educating farmers.

Every year, a large number of demonstration plots are being organised by FACT in the fields of prove the profitability of fertiliser application.

Marketing network of FACT is fairly widespread all over South, comprising the States of Andhra Pradesh, Karnatak, Tamil Nadu, Kerala and part of Maharashtra.

FEDO

Perhaps, FACT's most significant contribution to the fertiliser and chemical industry in India is its development of a separate organisation for the design and engineering of chemical and fertiliser plants and for evolving new processes for producing various chemicals, vital to industry. During the last 36 years of the growth, FACT has continuously been facing new challenges—challenges arising out of problems of technology, raw materials, processes, marketing and personnel. These challenges have been met by invention, innovation, improvisation and management action.

A new autonomous division under the name FACT Engineering & Design Organisation (FEDO) was, therefore, formed to meet the challenges of the future.

Scope and capability of FEDO

FEDO is equipped to take up (1) techno-economic feasibility studies (2) market surveys (3) process selection and evaluation (4) process engineering (5) detailed engineering (6) architectural design and town planning (7) equipment procurement, inspection and shipping (8) construction (9) site management and supervision (10) off site design (11) start-up and commissioning (12) turn-key contracts (13) after sales service (14) refinancing on deferred-payment schemes, and (15) operation and maintenance personnel training.

FEDO has its own process for the production of sulphuric acid from sulphur or SO₂ bearing gases by single or double contact processes: Ammonium Chloride by Direct Neutralisation Process, ammonium sulphate from by-product gypsum, sodium silico fluoride, calcium silicate cryolite, etc. Other processes are under various stages of development in the research laboratory and pilot

plants of FEDO. It also has access to many processes developed by other organizations of international repute.

From the traditional field of fertilisers and acids, FEDO diversified to new fields like pesticides, pharmaceuticals & drugs, etc., and had completed many prestigious projects. Among others, the major projects undertaken by FEDO includes, the ammonia synthesis-gas plants in Cochin and Durgapur fertiliser projects; hydrogen plant for Hindustan Organic Chemicals, Rasayani and Hindustan Lever, Bombay, 360 tpd phosphoric acid plants at Sindri for Fertilizer Corporation of India and for FACT Ltd. at Ambalamedu; 85 tpd phosphoric acid plant for Hindustan Lever at Haldia; 300 tpd sulphuric acid plant at Trivandrum for Travancore Titanium Products; 200,000 tpa triple superphosphate plant along with sulphuric acid and phosphoric acid plants at Khetri for Hindustan Cooper Limited, formic acid plants for Periyar Chemicals and Kerala Acids and Chemicals at Edayar; catalysts plant for Catalysts and Chemicals at Edayar; 500,000 tpa complex fertiliser plant at Ambalamedu for Cochin Division of FACT; process sulphuric acid plant of Rashtriya Chemicals and Fertilisers at Trombay to DCDA system and increasing the capacity of the plant from 200 to 300 tpd and incorporating atmospheric pollution control measures; Ossein and dicalcium phosphate plants for Kerala Chemicals and Proteins Ltd. at Chalakudy; 65 tpd ammonium chloride plant for Kothari (Madras) Ltd. at Manali; atmospheric pollution control projects and conversion of sulphuric acid plant to DCDA system for Hindustan Organic Chemicals Ltd. at Rasayani; penicillin, streptomycin and ampicillin plants for Hindustan Antibiotics Ltd., Pimpri, revamping of 100 tpd sulphuric acid plant for Hindustan Zinc Ltd. at Udaipur; 1800 tpa malathion and 500 tpa DDT plants for Hindustan Insecticides at Rasayani; 1600 tpa endosulphan plant for Hindustan Insecticides at Udyogamandal; water gas purification plant for Hindustan Lever Ltd., at Sewri; soda ash and ammonium chloride plants (200 tpd each) for Tuticorin Alkali Chemicals and Fertilisers Ltd., Tuticorin, etc.

Other projects now under execution by FEDO include a high-gamma BHC plant for Southern Pesticides at Kovvur; zinc recovery and silver extraction plants for Hindustan Zinc Ltd. Udaipur; sulphuric acid and nitric acid plants for Ordinance Factory, Itarsi; eight mini cement projects in various parts of India; conversion of conventional sulphuric acid plant to DCDA system for Travancore Titanium Products Ltd., Trivandrum; 40,000 tpa cumene/phenol plant for Hindustan Organic Chemicals at Ambalamedu; 50,000 tpa Caprolactam plant for

FACT at Udyogamandal; effluent treatment for Carbon and Chemicals India at Cochin, etc.

FEDO's capabilities in the field of fertiliser plant design and engineering received yet another recognition 1981 with its selection as the Indian Engineering contractor to M. W. Kellogg of U.S.A. for the engineering and construction of the twin gigantic 1,350 tonnes per day ammonia plants being set up by KRIBHCO at Hazira in Gujarat.

The technology for the design and construction of ammonia plants of such large capacity has also been transferred to FEDO. With the completion of this technology-transfer, FEDO is in a position to take on major assignments for new ammonia plants to be set up in India in future. FEDO's association with Kellogg signifies International recognition of its expertise in Ammonia technology and will result in a great leap forward in its experience in designing and constructing ammonia plants.

Research and Development

FACT has the strong backing of not only experienced engineers and designers, but also of a full-fledged Research and Development Division. The Research Division is engaged in evolving new processes for the utilisation of by-product wastes, effluents, etc. arising in fertiliser manufacture. Some of the noteworthy achievements of FACT's industrial research programme are: by-product gypsum utilisation; manufacture of sodium silico fluoride, manufacture of calcium silicate; manufacture of synthetic cryolite and manufacture of urea phosphate.

Work is also done by the Research Division towards developing new processes for other companies.

FACT Engineering Works

FACT Engineering Works (FEW), another division of FACT, caters to the specialised needs of chemical and fertiliser industry in the field of fabrication of plant and equipment as well as structural and erection works.

FEW is capable of fabricating specialised items like gas holders and tanks, primary and secondary cells, heat exchangers, kettel plates and pressure vessels, mixers, impellers and agitators. It also undertakes structural work and erection at site including that of columns, beams, casings, platforms, gratings, etc. and fabricated and laying of pipes for various requirements. Recently FEW diversified its activities to take up design, fabrication and erection of hydraulic gates underground cross country pipelines, hatch covers, etc.

Well-equipped with modern facilities for fabrication, machining, material handling, transportation and quality control, FEW is also well-manned by experienced engineers and shopmen.

Personnel

Healthy industrial relations and a happy work force are the surest foundations for the efficient operation of the company. As a major industry in the State, FACT has the additional responsibility of setting standards for others in the field. An enlightened personnel policy is, therefore, pursued. The company has an employee strength of more than 7,000 inclusive of FEDO, FEW, Cochin Division and Marketing Division. The company has accepted in principle the linking of dearness allowances to the cost of living index and the worker automatically gets an increase in the wages with every increase in the cost of living index.

Following the principle that all disputes between workers and management should be settled through negotiation, long term agreements have been signed by the company with the employees.

Amenities provided to workers include a liberally subsidised canteen, a subsidised sports association and a medical benefit scheme for employees and their families.

The company is attempting to provide maximum accommodation to the employees based on a phased programme. Family quarters as well as a bachelor accommodation are provided with all modern amenities, free water and power. High schools and primary schools are also run by the company for the benefit of the children there is also a fine arts wing. Subsidised transport facilities are provided to employees coming from far away places, in a limited way. The company has organised a welfare fund to provide financial assistance to employees in deserving cases.

Outlook for future

Fertiliser technology is developing very fast. Before a plant based on the most modern process is set up and commissioned, the process becomes obsolescent sometimes even obsolete. Fertiliser producers, therefore, have to be on the alert all the time to keep themselves abreast of the most modern development in the technology. With a growing research and development department and a competent design and engineering organisation, it should be possible for FACT to meet this challenge and help the country towards self-reliance in this field of activity.

Shri N. B. Chandran, Chairman and Managing Director, is a Director on the Board of The Fertiliser Association of India.

14. THE FERTILIZER CORPORATION OF INDIA LIMITED

Central Office: 'Madhuban', 55, Nehru Place, New Delhi-110019

GRAM: FERTILIZER

TELEX: FCIND 031-2859
031-5197

Phone: 649694
649771
649717

BOARD OF DIRECTORS

Shri P. L. Kukreja
Chairman & Managing Director

" D. K. Jain
Director (Finance)

Part-Time Directors

Shri C. G. Somiah
" Vishnu Bhagwan
" N. Srinivasan
" Duleep Singh

Introduction

The Fertilizer Corporation of India Limited a Government of India undertaking, was formed on January 1, 1961.

The Fertilizer Corporation of India Limited, now has four operating units at Sindri, Gora-khpur, Talcher and Ramagundam. It has two of the world's largest coal based projects at Talcher (Orissa), and Ramagundam (Andhra Pradesh) which have gone into commercial production from November, 1980.

Capital employed

The Corporation is a public sector undertaking wholly owned by the Government of India. It has an authorised capital of Rs. 800 crores. The total issued and subscribed capital as on 31st March, 1983 is Rs. 541.69 crores consisting of share capital of Rs. 418.28 crores and share money pending allotment Rs. 123.41 crores.

Capacity and growth

The rated capacity of FCI plants is 8,05,000 tonnes in terms of nitrogen and 1,50,000 tonnes in terms of P_2O_5 .

Sindri is re-born

The old Sindri Plant which was commissioned in 1951 continued to work profitably upto 1967, after which due to ageing, the plant started suffering losses due to gradual reduction in production capacities and additional expenditure on maintenance. This resulted in the drawing up of a scheme for having a Rationalisation Project and a second Modernisation Project at Sindri which together has led to the emergence of a new and bigger complex in place of the old Sindri plants, which had been gradually scrapped except for the ammonium sulphate plant. The two projects were commissioned in October, 1979.

(i) Sindri rationalisation

The Rs. 61 crore Rationalisation Project involves the creation of a capacity of 3,26,000 tonnes of Triple Super Phosphate (TSP) equivalent to 1,50,000 tonnes of P_2O_5 . A novel feature of this project is the availability locally of the by-product gypsum to replace the natural gypsum hitherto hauled all the way from Rajasthan, made possible by reacting sulphuric acid with rock phosphate to give phosphoric acid and by-product gypsum. While this by-product gypsum is used in the existing ammonium sulphate plant, the phosphoric acid is treated with rock phosphate to produce TSP.

The Rationalisation Project comprises 880 tonnes/day sulphuric acid plant and a 1,087 tonnes/day TSP plant.

The Rationalisation Project is designed to consume annually 2,50,000 tonnes of pyrites; 30,000 tonnes of sulphur and 5,00,000 tonnes of rock phosphate to produce 3,26,000 tonnes of TSP; 5,00,000 tonnes of by-product gypsum and 2,70,000 tonnes of pyrites cinder, a waste product.

(ii) Sindri modernisation

Construction work on Modernisation Project began in 1975. This World Bank-aided project has been built at a cost of Rs. 183 crores; \$91 million (Rs. 82 crores) had been provided in the form of an IDA credit. It has a L.S.H.S. fuel-oil based ammonia plant of 900 tonnes per day and a 1000 tonnes per day urea plant. Three hundred tonnes of ammonia is converted into ammonium sulphate for which the existing plant in the old Sindri complex has been renovated. About 66 per cent of the equipment used is indigenous. The project went into commercial production in October, 1979.

Coal based plants

A new era dawned for the Indian fertiliser industry with the Government of India decision in 1969 to establish 3 coal-based plants in the country—Talcher, Ramagundam and Korba. While the Ramagundam and Talcher plants commenced commercial production from 1.11.80, the Korba project is in abeyance.

The annual installed capacity of each of the two plants is 2.28 lakh tonnes of nitrogen with the end-product-4.95 lakh tonnes of urea per annum. In addition one million cubic metres of argon gas would also be produced in each plant.

(i) Talcher project

The Rs. 216.5 crores Talcher Project is designed to produce 2,27,700 tonnes of nitrogen annually by using 1 million tonnes of coal to be obtained from the nearby South Balanda and Nandira collieries. The requirement of 55 MW of power is met by Orissa power grid while the water requirement is met from the river Brahmani.

BARC has also set up a heavy water plant within Talcher complex for the production of 62 tonnes of heavy water per year.

The Talcher plant at its designed capacity of 4,95,000 tonnes of urea per annum, would help boost production of foodgrains in the country by nearly two and a half million tonnes per year. The plant went into commercial production from November, 1980.

(ii) Ramagundam project

Ramagundam Project in the Telengana region of the Andhra Pradesh is identical to the plant at Talcher. Its annual requirement of about one million tonnes of coal is met from Singarani Colliery. The Project's power requirement of 55 MW is met by the Andhra Pradesh State Electricity Board, water is drawn from the river Godavari. The plant went into commercial production from November, 1980.

Marketing, promotion and extension services

The Corporation has developed a multi-channel distribution system for timely and efficient distribution of fertilisers produced by its units and imported fertilisers.

At present, the Corporation's intensive marketing activities are spread over the States of Uttar Pradesh, Bihar, Madhya Pradesh, Andhra Pradesh, Orissa and West Bengal. The marketing division of the Corporation has six Regional Offices to look after the marketing/promotional activities in these states.

Dealership structure of the Corporation consists of dealers belonging to various categories like private trade engaged in small

business, unemployed graduates to generate self-employment, ex-servicemen to rehabilitate, provide essential agricultural inputs through public sector oil company outlets, scheduled castes/scheduled tribes to help them for their economic betterment, in addition to cooperative societies/service centres of cooperatives and agro-industries.

The Marketing Division of Fertiliser Corporation of India is not only making the fertilisers available to the remote corners through dealership network consisting of 1940 dealers spread over in six States but it is also helping the farming community in augmenting the agricultural production by organising large number of demonstrations in cultivator's fields. During the course of demonstrations, farmers are educated to use balanced doses of fertilisers on the basis of soil testing value, by organising field days, group discussions, Kisan Melas, Farmers' Training Programmes, crop seminars and distribution of literature on crops and vegetables, etc. Besides well-equipped soil testing laboratory, FCI is maintaining mobile soil testing vans for spot analysis of soil samples in remote villages. It is also fully equipped with mobile publicity units for intensive farm publicity campaign during the crop season. The media-mix includes screening of films, organising exhibition on State/District, village level, posters, wall painting, hoardings, press release, radio and T.V. advertisements.

Under IFPC (Intensive Fertilizer Promotion Campaign), 11 backward districts have been allotted to Fertilizer Corporation as a lead manufacturer for increasing the fertiliser consumption as well as for overall development. These districts are Banda, Unnao-Rae-Bareilly and Pauri Gharwal in U.P., Patna, Darbhanga, Aurangabad and East Champaran in Bihar; Dhenkanel, Sundargarh in Orissa and Damoh in M.P. For these districts FCI has adopted villages, installed 19 bio-gas plants, paid Rs. 500/- as incentive per bio-gas plant, distributed 22 seed-cum-fertiliser drills for increasing fertiliser efficiency, opened more number of retail points for easy availability of fertilisers, apart from advising and educating the farmers for rational use of fertilisers and efficient farm management in order to uplift socio-economic conditions of rural masses under the new 20 point programme of Prime Minister.

Industrial chemicals

Apart from various fertilisers, FCI produces several vital chemicals and gases which find wide use in industrial/engineering sector of the national economy. The products currently being produced and available for sales are Ammonia, Nitric Acid, explosive grade ammonium nitrate both in the form of prills and flakes, technical grades Urea/Ammonium Sulphate, Argon, Liquid Nitrogen and Oxygen.

Gypsum organisation

FCI is operating 21 gypsum mines located in five districts of Western Rajasthan viz. Barmer, Jaisalmer, Nagaur, Bikaner and Sri Ganganagar. The Corporation has a capacity to mine about six lakh tonnes of gypsum per year.

With the implementation of Sindri Rationalisation Scheme, the use of natural gypsum at Sindri is completely eliminated. As a result of this, markets in other areas for gypsum have been explored.

The use of gypsum in reclamation of alkaline soil has been made on a large scale in the States of Haryana, Punjab, Uttar Pradesh and Bihar. The Corporation has been able to procure a sizeable amount of orders of gypsum for agricultural uses in Haryana, Punjab, Uttar Pradesh and Bihar. FCI has been able to make a significant headway in exporting gypsum to Bangladesh, Bhutan and also exploring the possibility of exporting to Middle-East Countries.

Training organisation

FCI has been an ardent believer in the development of human resources right from its very inception. Beginning from its first unit at Sindri back in 1949, the Corporation has been meeting its trained manpower requirement through recruiting young engineers, diploma holders and craftsmen and giving them systematic institutional and on-the-job training before placing them in suitable job. The Corporation has also provided training facilities for trainees and employees of other Indian organisations as a part of its social obligation.

The Corporation could take legitimate pride of contributing substantially to the rapid growth of fertiliser industry in the country by providing trained manpower to other organisations. Quite a large number of operating staff and managerial personnel now working in many fertiliser and heavy chemical industries in India were initially trained and employed by FCI.

As a matter of corporate policy of promotion from within, FCI has been providing financial incentives to its employees to improve their qualifications both through passing recognised external examinations and also company-run courses.

The Corporation has set up full-fledged training institutes at its operating Units and a Management Development Institute at its corporate office in New Delhi. The Corporation has also been admitting a limited number of participants from other organisations in its development programmes for supervisory and managerial personnel. It has also been loaning out its auditorium facilities and

audio visual aids to other public and private sector companies on nominal charges.

The Corporation has also been extending facilities for trainees from abroad under Colombo Plan and ITEC Programme of the Ministry of External Affairs, Government of India.

Employees' welfare

FCI subscribes to the view that a happy and satisfied employee is an asset for any organisation. FCI has provided liberal welfare measures to its employees and their families.

In FCI factories the workers are provided first aid, canteen and creche facilities. Their safety is ensured and seminars, film-shows, demonstrations etc. are held to inculcate the feeling of security amongst them. A Group Personnel Accident Insurance Scheme is also in operation for such employees, who suffer from total/permanent/partial disablement or death on account of injury caused by accident on duty or otherwise. Workers are also given free uniforms.

Free medical aid is provided to all employees and their families. In the Units there are full fledged hospitals in which facilities

for indoor and outdoor have been established. The number of beds in the hospitals ranged from 35 to 205.

FCI has established modern township in the areas where factories are located. These townships have well established schools, play grounds, markets, consumer co-operative stores and fair price shops. Sports Clubs, open-air theatre etc. Recreational & Cultural programmes also form an integral part of the life in the township. All possible help is extended to employees in arranging social functions. Perfect communal harmony exists amongst employees belonging to different religions.

The FCI management has also made efforts to develop the areas around the township by undertaking the work of construction of roads in the rural areas adjoining to some of the factories and provisions of drinking water by installing hand pumps, digging tube wells etc. Programmes have also been chalked out to develop greenery in and around the township and a large number of trees have already been planted in some areas.

Shri P. L. Kukreja, Chairman & Managing Director is a Director on the Board of The Fertiliser Association of India.

15. M/S. GAMMON INDIA LTD.

'Gammon House', Veer Savarkar Marg, Bombay-400 025

Joined as an Active Member of the Association in April 1978.

16. GUJARAT NARMADA VALLEY FERTILIZERS COMPANY LIMITED

Regd. Office: P.O. Narmadanagar-392 015, Dist. Bharuch, Gujarat

Gram: GNFC

Telex: 0175-399/390

Phone: 1142-1149

Launched by the Government of Gujarat and the GSFC, a leading fertilizer company on 10th May, 1976, the Gujarat Narmada Valley Fertilizers Company Limited has an annual production of 445,000 tonnes of Ammonia and 594,000 tonnes of Urea.

In May, 1981, GNFC has created history by issuing a share capital of Rs. 436.1 million to about 489,000 shareholders—the largest public shareholding in India. Among them about 130,000 are farmers and cooperative societies. After consolidation, the present number of shareholders is about 4.60 lakhs.

BOARD OF DIRECTORS (AS IN JULY, 1983)

Shri Rohit C. Mehta
Chairman
" H. K. L. Capoor
Dr. S. K. Mukherjee
Shri M. G. Shah
" H. K. Khan
" Moosa Raza
" N. Vittal
Managing Director

Shri Jaykrishna Harivallabhdas
" M. Sivagnanam
Dr. B. K. Madan
Shri Chhitubhai D. Gamit
" Harisinh B. Mahida
" Dhirsinh C. Parmar

The plant is located about 5 kms. north of Bharuch town very close to the command

areas of Tapi and Narmada rivers from which plenty of water is available. The raw ma-

terial, viz., fuel oil is available from the Gujarat Refinery only 80 kms. away. The plant is located right on national rail/road trunk routes to market the product in Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Rajasthan, Gujarat and Maharashtra.

The company has established its ammonia and urea plants alongwith off-site facilities including boilers, water treatment plant, coal handling plant, bagging plants, electric power supply, railway siding water supply, etc. at its site.

GNFC has in its command the most sophisticated fertiliser technology in the world, availing internationally acknowledged technical expertise.

Fuel Oil Gasification: Texaco, USA

Carbon monoxide conversion: BASF, West Germany

Ammonia synthesis: Halder Topsoe, Denmark

Urea plant: Snamprogetti, Italy

Air separator, rectisol and nitrogen wash units have been provided by Linde of West Germany who have also packaged and integrated the plant.

The plant design is based on a total energy concept and thereby ensures minimum energy consumption. This has been rendered feasible by introducing new systems and process which provides energy saving advantages.

One of the distinct features of GNFC's ammonia process is that it has minimum air/liquid pollutants to be released in atmosphere or sea after adequate treatment. The production process is based on a zero pollution concept. Electrostatic precipitators eliminate discharge of fly ash. The flue gas is discharged through a high stack of 125 meters. Air pollution is controlled by the recovery of 94 per cent sulphur from flue gases. This also enables GNFC to supply 25 tonnes of 99.95 per cent pure sulphur to industrial users everyday.

GNFC has an inbuilt large capacity to produce liquid nitrogen in its air separation unit as a by-product. Liquid nitrogen has its application in large scale refrigeration, semen preservation in animal husbandry, food preservation and oil and gas expulsion from deep wells. ONGC has extensively used GNFC liquid nitrogen also in combating a serious fire incident which was raging for days together. GNFC will produce 60 lakh litres of liquid nitrogen every year for the user industries and Government Departments in various States. In the same air separation unit, GNFC is also producing 10 lakh liters

of liquid oxygen for engineering industry and hospital applications.

The progress made by GNFC is a matter of many records and unique achievements. The construction and mechanical completion of the giant plant was over in 3½ years. The plant was commissioned and went into trial production in December, 1981 within a span of mere six months. Trial production of urea was achieved within 57 days from the feed in or fuel oil in the gassifiers—a record in the commissioning of fuel oil based fertiliser plants. The 6 months of trial production during January to June, 1982 saw the operations of various sections in the plant at their peaks and the commercial production started on 1st July, 1982. In the very second month of its commercial production, GNFC reached the capacity of 96 per cent in August, 1982 and in the fifth month it performed at more than 103 per cent in November, 1982. In this, highest daily production of urea at over 115 per cent of installed capacity has been achieved and monthly record production of urea equivalent to over 103 per cent of installed capacity has been accomplished.

Marketing

GNFC's marketing activities started from the last quarter of 1981 when seeding programme was taken up by obtaining pool fertilisers. The commercial production of the company started only from 1st July, 1982 and full fledged organisation to market urea in the States of Gujarat, M.P., U.P., Rajasthan and Punjab & Haryana was built up in stages. The marketing in Maharashtra started only during the Kharif, 1983. Regional Offices and Area Offices were opened in Gujarat, M.P., U.P., Rajasthan, Punjab, Haryana and Maharashtra.

Since GNFC's marketing activities started in a very serious glut situation in the market when very large stocks both of imported and indigenous fertilisers including urea were lying in the field, it was felt that, unless, availability of urea was ensured right upto the consuming centres, it was not possible to penetrate the additional market areas.

GNFC, therefore, went in for a massive progress of opening warehouses and buffer godowns numbering about 250, out of which about 195 are located in the interior. The fertiliser was reached by company's own arrangement to all the Cooperative Societies and dealers including retailers even upto the village level from these buffers. In order to further penetrate the market, it was decided that GNFC should go in a big way to areas covered under dry land farming. It is very heartening to note that more than 68 per cent of our urea sales during the year 82-83 covered the rainfed areas. In spite of the serious glut situation, the strategy of place-

ment of fertiliser at the consuming centres in the interior and covering fresh dry land farming areas paid rich dividends. GNFC could market more than 4,90,000 tonnes of Narmada Urea in the two seasons of 82-83

Under the IFPC programme, GNFC was allotted Bharuch and Bulsar in Gujarat, Sagar in M.P. and later on Agra in U.P. During the very first year, targets were achieved both in Sagar and Bulsar districts by only correct placement of fertilisers in as many outlets as possible before the season. Massive extension programme has been taken in the IFPC districts as well as other dry land farming areas.

Field Training Programmes for the farmers, dealers and cooperative personnel were taken up. Micro level regional news paper advertisements, radio programmes, films, A.V. programmes and telecasts promoting dry land farming techniques have also been taken up in an intensive manner. A soil testing laboratory has also been established for testing about 20,000 soil and water samples in a year.

Five villages of Bharuch district have been adopted and activities like road building programme, providing drinking water facilities, bio-gas plants, improvement in schools and other such activities have been started. The defunct village level cooperative societies have been energised and wherever there was no retail outlet, the GNFC made arrangements to reach the fertiliser by its own arrangements to ensure that the farmers get urea in time at their door steps.

GNFC has a 600 acre more demonstration farm, out of which about 150 acres have been taken up in phases for agronomic re-

search, testing of seed-cum-fertiliser drills and other agricultural implements and experiments to establish agriculture on fly ash, the massive quantity of about 350 tonnes a day of which is coming out of the boilers and creating disposal problems. On remaining 500 acres, more than half a million trees are being planted.

GNFC took up a social forestry programme in the backward villages of Bharuch in collaboration with the Forest Department of Government of Gujarat by which each participating farmer earned an extra income of about Rs. 3,000 during a short period of six months. All these selected farmers were Adivasts and were very poor having land holdings of less than two acres.

To provide technical assistance to the farmers, GNFC has already opened 30 Narmada Farmers Assistance Centres in Gujarat and another 20 will be added by the end of 1983, making a total of 50. These centres not only provide technical knowledge on agriculture practices but also assist farmers in obtaining urea/SSP/potash/high quality seeds/agricultural implements and pesticides under one roof.

The spin off effects of large investments would be available to GNFC for expansion and diversification programme through generation of internal resources. Future projects are already on the anvil. Expansion plans include the use of surplus ammonia and waste gases to produce 20,000 tonnes of methanol, 10,000 tonnes of formic acid, establishing a second train of urea which are under active implementation. For a few other projects, technical preparations are under way, whereas construction work has started in the Rs. 13.65 crore Methanol Project.

Senior management level officers of the
 Shri N. Vittal
Managing Director
 " B. Bandyopadhyay
Executive Director (Operation)
 " U. P. Vijayaraghavan
General Manager (Technical Services)
 " K. S. Shah
General Manager (Engineering Services)

company:

Shri Sarvesh Chandra
General Manager (Marketing)
 " A. N. Aggarwal
General Manager (Production)
 " R. G. Kadakia
General Manager (Finance)
 " H. S. Patel
General Manager (Logistics & Admn.)

Shri N. Vittal, Managing Director, is a Director on the Board of The Fertiliser Association of India.

**17. GUJARAT STATE FERTILIZERS CO. LTD.
P.O.: Fertilizernagar Pin: 391750, Dist: Baroda**

Gram: FERTILIZER

Telex: 0175-211/324

Phone: 7451

BOARD OF DIRECTORS

Shri Jaykrishna Harivallabhdas
Chairman

" H. K. L. Capoor

" M. C. Bhatt

" Ashok B. Patel

" M. Sivagnanam

" Satyam Kishorebhai Patel

" Jivabhai J. Keshwala

Shri Basker (Bana) Paranjape

" Moosa Raza, IAS

" **Managing Director**

" B. K. Sridhar

" **Special Director**

" H. B. Parikh

" **Executive Director (Finance)**

" M. N. Buch, IAS

" **Executive Director (Marketing)**

" K. J. Trivedi

" **Company Secretary****Brief history**

Gujarat State Fertilizers Company Limited (GSFC), was incorporated on February 15, 1982 as a public limited company under the Companies Act, 1956 (Act 1 of 1956) for manufacturing fertilizers and chemicals. The factory is situated at Fertilizernagar, District Baroda, in Gujarat State. Its Board of Directors constitutes the above well-known industrialists and administrators.

Capital structure

GSFC's authorised share capital is Rs. 2,500 lacs divided into 22,00,000 equity shares of Rs. 100 each and 3,00,000 Redeemable Cumulative Preference Shares of Rs. 100 each. The paid-up share capital of the Company as on date is Rs. 1,599.67 lacs. The State Government is the largest shareholders holding 49 per cent of the share capital; of the remaining 39,986 shareholders about 13,801 are farmers. The financial institutions such as the Industrial Development Bank of India, the Unit Trust of India, the Life Insurance Corporation of India, the nationalised banks and other insurance companies hold between them about 24.32 per cent of the capital.

The capital investment for the first phase to produce 1,75,000 tonnes of nutrients and the second expansion for producing 1,35,000 tonnes of nitrogen has been approximately Rs. 6,300 lacs. Alongwith the investment for caprolactam and other facilities for the third phase, the total investment amount to about Rs. 9,000 lacs including working capital, interest, township and other facility. The complex has sales potential of about 10,000 lacs per annum at the present prices.

Organisation

GSFC is a joint sector venture wherein the State Government, public financial institutions, the bankers and the public have invested their money in mutual trust. In its organisation, a new experiment in management has also been attempted. On its Board there are nominees of State Government and the Industrial Development Bank of India besides non-officials drawn from amongst the most well-known industrialists and businessmen and experts from the field of technology, finance, administration and cooperation.

In composition of its Board, an attention has been made to ensure that the Company's affairs are guided with initiative, imagination and enterprise combined with prudence, caution and fullest regard to public interest and the financial canons of propriety that are expected to govern the conduct of those in charge of public enterprise and investment.

Products

The Company commenced its production of fertilizers on May 29, 1967 as trial production and the first 100 MT of fertilizers were despatched to all parts of Gujarat on June 5, 1967.

The second phase of the project started production in the third quarter of 1969. The 200 MT per day urea plant and the ammonia plant with capacity of 500 MT per day were completed in August, 1969 and are running well since then.

The third phase expansion of the project concerns the production of 20,000 MT per

annual of caprolactam with about 80,000 MT per annum of ammonium sulphate as co-product. The range of product with the completion of the third phase in August, 1974, of the complex covers urea 3,67,200 tonnes (fertilizer grade), aggregate production of ammonium sulphate and diammonium phosphate 1,48,000 tonnes and 1,08,000 tonnes respectively of 256,000 tonnes of ammonium sulphate phosphate. In addition the caprolactam facility would also contribute 80,000 tonnes of ammonium sulphate. Among the industrial products, liquid ammonia, technical grade urea, sulphuric acid, oleum, cyclohexene, cyclohexanone and caprolactam are produced and sold to industries. GSFC is the first Company to produce an enriched diammonium phosphate (18:46:0) in India. GSFC is the first and only manufacturer of caprolactam in India.

Marketing

The challenge of changing marketing conditions has been effectively met by adopting appropriate marketing strategies. Our marketing activities are extended from our traditional area of Gujarat, Maharashtra, MP, Rajasthan, Punjab, HP and Haryana to Uttar Pradesh and Andhra Pradesh. While the bulk of fertilizers are distributed through co-operatives, the company has also been marketing fertilizers through other institutional and private agencies in different States, besides the Company's own retail outlets called Farm Information Centres/Fertilizers Depots numbering 200 in Gujarat, State and a few in other States. The Company is also maintaining about 90 warehouses in field for timely distribution of fertilizers. The company has always considered services to farmers as the most important aspect of its marketing strategy and accordingly it has framed consumer oriented marketing policies and undertaken various promotional activities with the objectives of promoting scientific agriculture to raise agricultural production and thereby farmer's prosperity. It has been possible to effectively undertake various promotional activities like demonstration, soil and water testing, participation in fairs and festivals distribution of literature, arranging farmers meetings, seminars, etc. Through GSFC's Farm Information Centres/Fertilizer Depots manned by agricultural graduates, various media of mass communication are also judiciously used to reach the farmers.

A monthly farmers' magazine "KRISHI JIVAN" published by GSFC provides useful agricultural information to subscribers exceeding 41,000 in Gujarat State. The Company also provides soil and water testing facilities to farmers free of cost. Agronomic research is undertaken at Company's own farm and the farms of agricultural universities to recommend and promote correct use of fertilizers.

Besides routine production activities, the Company has also undertaken special agricultural development projects as per the needs of the local agro-climatic conditions. GSFC was the first fertiliser manufacturer to make the introduction of crop insurance possible through General Insurance Corpn. to cover the risk due to natural hazards. Another project titled "LEAP FORWARD PROJECT FOR AGRICULTURAL DEVELOPMENT OF RATHWA ADIVASI FARMERS" undertaken in backward areas, has shown outstanding results. Under the village adoption scheme, two villages one in paddy growing area and the other in bajra growing area have been adopted during the year 1975-76. The scheme is continuing for the present year also. The Company is also carrying out massive extension programmes in the IFPC districts of North Gujarat to guide farmers regarding effective use of fertilisers in sandy loam and sandy soils. The Company has also prepared a comprehensive action programme for development of districts of North Gujarat which are having high irrigation potential but less fertiliser consumption. The plan is being implemented with efforts put in various directions to educate farmers regarding qualitative aspects of fertilisers use to reap optimum yields. The company has also launched a programme to encourage excellence in college campus with a view to promoting studies and research workers who made significant contribution to agriculture. Under this programme, the company has planned an expenditure of Rs. 5,57,400 over a period of six years to students and research workers by way of awarding prizes, scholarship and raising chairs for research in agricultural universities and agricultural management institutions.

Purge gas recovery

The Company has set up facilities to recover 2.8 million NM³ of argon, 5,200 MT methods and 66 MT/day of synthesis gas mixture of H₂ and N₂ from the purge gas of synthesis loop. The plant was commissioned in the middle of 1980.

Nylon-6 project

As a logical development to the setting up of caprolactam manufacturing facilities, GSFC is setting up a nylon-6 chips plant for manufacturing nylon moulding powder to feed the plastic industry with a better and versatile grade of engineering plastic raw material which can be a substitute mostly for non-ferrous metals which are already in short supply in the country. The total capacity of Nylon-6 plant is 4,000 tonnes per annum. The project has already been completed and the regular production has also started since August 1981.

Melamine project

The basic and detail engineering work on 5,000 MTPY melamine project is progressing satisfactorily and the plant is expected to be commissioned in late 1982.

Sulphuric acid project

A new Sulphuric Acid plant with a capacity of 1,32,000 MTPY has already been commissioned and the regular production has also started since 1982.

Research and development

Research activities of GSFC were initiated concurrently with implementation of the fertiliser project, putting up agricultural research stations. Agronomical research on development of better farm practices through optimum use of water management, improved seeds, fertilisers, pesticides, etc. has been

carried on over the year. A full-fledged research centre equipped with necessary facilities and manned by well qualified technologists and chemical engineers has been established and has been accorded recognition by the Department of Science and Technology, Government of India.

The main areas of research cover process and product development on bench scale as well as pilot plant scale in fertilizers, petrochemicals, high polymers, corrosion studies, effluent disposal and pollution abatement. A number of pilot plants have been designed and installed on the basis of laboratory investigations carried out at our research centre.

Shri Moosa Raza, Managing Director, is a Director on the Board of The Fertiliser Association of India.

18. HARI FERTILIZERS

**(Works: Sahupuri, Varanasi-221009, Phone: 64935/62036
Gram: HARIKHAD, Varanasi)**

**(Prop. Orissa Cement Limited, Rajgangpur-770 017 (Orissa)
Administrative Office: Shlv Mahal (3rd Floor),
B-45/47, Connaught Place, New Delhi-110 001)**

Gram: HARIKHAD

Telex: 2363 OCLD IN

Phones: 321177/321212

BOARD OF DIRECTORS

Shri Pradip Kumar Khaitan
" Jagdish N. Saxena
" R. S. Lodha

Shri V. D. Jhunjunwala
" S. B. Mohapatra, I.A.S.
" A. Rath, I.A.S.

Orissa Cement Limited was promoted in 1949 by Shri J. Dalmia with assistance of Orissa Government, who still hold the entire Preference Share Capital of Rs. 40 lakhs. Its Cement Factory, Refractories Plant and Cement Products Plants are situated at Rajgangpur in the State of Orissa (about 30 kilometers from Rourkela on Bombay-Howrah main railway line via Nagpur).

The company commenced production of Cement with its first kiln having capacity of 500 tonnes per day in 1950 and added another kiln of 600 tonnes capacity per day in 1957. The annual installed capacity of the cement plant is 4,01,000 tonnes.

The company established its Refractory plant in 1957 with a capacity of 80,000 tonnes of different type of refractories and 8,000 tonnes of all types of mortars. It added chemically bonded section in its Basic Re-

fractory Plant in 1962 with an annual capacity of 10,000 tonnes. This plant was expanded further for additional production of 19,000 tonnes of burnt basic refractories and 2,000 tonnes of mortars. The last phase of expansion of refractory plant by 20,000 tonnes was completed in 1979. It is the largest Refractory plant in the country with annual licensed and installed capacity of 1,41,000 tonnes.

The Cement Products Division, established in 1953 and expanded in 1958, is mainly engaged in manufacture of R.C.C. Spun Pipes, P.P.C. Poles, Prefabricated and Precast housing elements, etc., which are used by State Electricity Boards, P.W.D. and others for electrification, road making and rural uplift.

The Company has neither incurred loss nor skipped payment of dividend since

inception. Presently, it is paying 25 per cent dividend on Ordinary Shares. Given below is its share capital etc. as on 31.12.1982.

In Million Rupees

Paid Share Capital	32.00
Reserve & Surplus	162.43
Fixed Assets (Gross)	326.89
Fixed Assets (written down)	149.25

**Fertilizers and Chemicals Division—
Hari Fertilizers**

The Unit, Hari Fertilizers (previously known as Sahu Chemicals and Fertilizers), Sahu-puri, Varanasi was taken over by this Company on 13th September, 1980. This Unit which was installed in 1958, has annual licensed and installed capacity of 40,000 tonnes and 33,000 tonnes, respectively each

of Ammonium Chloride and Soda Ash and 13,200 tonnes of Ammonia. It is the only unit producing Soda Ash/Ammonium Chloride in Northern India and employs over 1,000 workers and staff.

The Ammonium Chloride—(25% N) produced by the Unit is extensively used for cultivation of paddy, sugarcane, maize, potato, tobacco and cotton, etc.

In order to improve the performance of this Unit the Company has replaced the worn out equipment and machinery under its modernisation programme. The power plant which meets almost the total operational requirement of the plant has been totally renovated. However, this Unit is still facing difficulties on various accounts including, inadequate and poor quality of coal and coke, recession in the field of fertilisers etc.

19. HINDUSTHAN COPPER LTD.

Admitted as an Active Member from 1st January, 1982.

20. HINDUSTAN FERTILIZER CORPORATION LIMITED

Regd. Office: 'Madhuban' 55, Nehru Place, New Delhi-110 019

Grams: URVARAK

Telex: 031-3447

Telephone: 649717
649694

Units: Namrup (Assam), Durgapur (West Bengal), Barauni (Bihar)
Division: Marketing Division (Calcutta)

BOARD OF DIRECTORS

Shri H. C. Grover

Managing Director

Hindustan Fertilizer Corporation Ltd.
'Madhuban', 55, Nehru Place
New Delhi-110 019

" S. K. Sadasivam

Director (Finance)

Hindustan Fertilizer Corporation Ltd.
'Madhuban', 55, Nehru Place
New Delhi-110 019

" C. G. Somiah

Addl. Secretary

Ministry of Finance
Department of Expenditure
North Block
New Delhi

Shri C. R. Jagannathan

Chairman & Managing Director

Oil India Limited
Parliament Street
New Delhi

" Harbans Singh
Commissioner (Agricultural)

Ministry of Agriculture
Krishi Bhavan
New Delhi

" Joseph Kurian
Chairman & Managing Director

Madras Fertilizers Ltd.
Manali, Madras

" Vinay Malik
Joint Secretary
Ministry of Chemicals & Fertilizers
Shastri Bhavan
New Delhi

Hindustan Fertilizer Corporation Limited came into existence in 1st April, 1978 following the reorganisation of Fertilizer Cor-

poration of India Limited and National Fertilizers Limited. The corporation has three operating units namely, Namrup, including

Expansion (Assam), Durgapur (West Bengal) and Barauni (Bihar) and a project under construction at Haldia in West Bengal.

Capital employed

The corporation is a public sector undertaking fully owned by the Government of India. It has an authorised capital of Rs. 500 crores. The total annual capacity of the units under production is 500.9 thousand metric tonnes of nitrogen per annum. Haldia Project is in advance stage of completion. Namrup III project has been approved by Government and its implementation has started. The project will have 600 t. ammonia, 1,167 t urea a day capacity with natural gas as raw material. The production capacity is increased by 167 tonnes of Namrup I Plant which will be retired when Namrup III comes into production. The project is designed and being constructed by PDIL.

Details of the Units/Projects

1. NAMRUP UNIT (ASSAM)

Hindustan Fertilizer Corporation Ltd.
Namrup Unit

P.O. Parbatpur, Distt. Dibrugarh, Assam.

Nitrogen — 45,000 mt. per annum

Ammonium Sulphate — 1,00,000 mt. per annum

Urea — 55,000 mt. per annum

Raw material — Sulphur, Natural gas

2. NAMRUP EXPANSION

Urea — 3,30,000 mt. per annum

Nitrogen — 1,51,800 mt. per annum

Raw Material — Natural gas

3. DURGAPUR

Hindustan Fertilizer Corporation Ltd.

Durgapur Unit

P.O. Muchipara

Dist. Burdwan (W.B.)

Nitrogen — 1,51,800 mt. per annum

Urea — 3,30,000 mt. per annum

Raw material — Naphtha

4. BARAUNI

Hindustan Fertilizer Corporation Ltd.

Barauni Unit, P.O. Urvarak Nagar
Dist. Begusarai, Bihar

Nitrogen — 1,51,800 mt. per annum

Urea — 3,30,000 mt. per annum

Raw material — Naphtha

Projects under construction

1. Hindustan Fertilizer Corporation Ltd., Haldia Division

P.O. Indian Oil Refinery

Dist. Midnapore (West Bengal)

Urea — 1,65,000 mt. per annum
NPK

(15 : 15 : 15) — 5,00,000 mt. per annum

Methanol — 41,000 mt. per annum

Soda Ash — 60,000 mt. per annum

Nitrogen — 1,50,900 mt. per annum

P₂O₅ — 75,000 mt. per annum

K₂O — 75,000 mt. per annum

Raw materials — 1. Fuel oil
2. Sulphur
3. Rock Phosphate
4. M.O.P.
5. Common Salt

2. Namrup III Expn.

*Urea — 3,30,000 mt. per annum

*Nitrogen — 1,51,800 mt. per annum

Raw material — Natural Gas

* With total nitrogen capacity remaining same, on start of commercial production of Namrup III Expansion, the urea production from Namrup I will be shifted to Namrup III.

Shri H. C. Grover, Managing Director, is a Director on the Board of The Fertiliser Association of India.

21 HINDUSTAN ZINC LIMITED
(A Government of India Enterprise)

Registered Office: 6, New Fatehpura, Udaipur-313 001, Rajasthan

Gram: HINDZINC

Telex: 033-213

Phone: 3271-74

Shri R. P. Kapur

Chairman-cum-Managing Director

Hindustan Zinc Limited was incorporated on January 10, 1966. It is a wholly Government of India owned enterprise with corporate office at Udaipur (Rajasthan). It is the only company in the country covering the whole

field from exploration, mining and concentrating to refined metals and chemicals and their marketing. Hindustan Zinc Limited has an authorised capital of Rs. 200 crore. Its constituent units are:

Mines

1. Zavar Group of Mines, about 45 km. from Udaipur, Rajasthan, with deposits of lead, zinc, cadmium and silver. The individual mines are:

(a) Mochia Mines	600,000 tonnes of ore production per annum
(b) Balaria Mine	600,000 tonnes of ore production per annum
(c) Baroi Mine	Mine under exploration
(d) Zawarmala Mine	Under limited development to produce 100 tonnes of ore per day.
(e) Capacity of the installed beneficiation plant at mines	4,975 tonnes per day

2. Rajpura-Dariba Mines, near Fatehnagar, about 85 km. from Udaipur, Rajasthan, with deposits of lead, zinc, cadmium, silver and copper. 900,000 tonnes of mining and milling per annum.

3. Maton Rockphosphate Mine, about 12 km. from Udaipur, Rajasthan. 180,000 tonnes of mining and milling per annum.

4. Sargipali lead mine, about 22 km. from Sundargarh, Orissa, with deposits of lead, silver and copper. 150,000 tonnes of mining and milling per annum.

5. Agnigundala Lead Mine, near Bandalamottu, Distt. Guntur, Andhra Pradesh. 72,000 tonnes mining and milling per annum.

6. Rampura-Agucha Lead-Zinc Mine at a distance of 20 km. from Gulabpura, Distt. Bhilwara, Rajasthan. This deposit has total reserves of about 61 million tonnes containing 15% zinc-lead metal and is amenable to open cast mining. It provides a reliable base for establishment of a smelter of 70,000 tonnes zinc and 35,000 tonnes of lead capacity per annum. The feasibility report for the development of this deposit is now before the Government for investment decision.

Smelters

1. Zinc Smelter at Debari, about 13 km. from Udaipur, Rajasthan. It has following capacity:

(i) Single superphosphate 14 per cent P ₂ O ₅ and 16 per cent WSP P ₂ O ₅	72,600 tonnes per annum
(ii) Sulphuric acid	87,000 tonnes per annum
(iii) Phosphoric acid (P ₂ O ₅)	26,000 tonnes per annum
(iv) Zinc ingots	45,000 tonnes per annum
(v) Cadmium	190 tonnes per annum

The single superphosphate plant, which is part of the zinc smelter, is based on Kuhlmann process and utilises by-product sulphuric acid and maton rockphosphate. It has the distinction of being the first plant in the country manufacturing superphosphate en-

tirely from the indigenous raw-materials. The annual production of single superphosphate during 1982-83 was 23,250 tonnes. 2,870 tonnes of phosphoric acid was also produced during the year 1982-83.

2. Lead Smelter, Tundoo, near Katrasgarh, Distt. Dhanbad (Bihar) has an installed capacity of 8,000 tonnes per annum of lead and 12 tonnes of silver.

3. Zinc-Lead Smelter at Visakhapatnam (AP) has the following designed capacity:

1. Sulphuric acid	66,000 tonnes per annum (under expansion to 75,000 tonnes per annum)
2. Zinc ingots	30,000 tonnes per annum
3. Lead ingots	22,000 tonnes per annum capacity nearly complete
4. Cadmium	115 tonnes per annum
5. Silver	30 tonnes per annum

Shri R. P. Kapur, Chairman & Managing Director, is a Director on the Board of the Fertilizer Association of India.

22. INDIAN EXPLOSIVES LIMITED (Fertiliser Division)

Regd. Office: 34, Chowringhee, Calcutta

Factory: P.O. Box No. 267, Panki, Kanpur, U.P.

Commercial Office: Himalaya House, 23, Kasturba Gandhi Marg,
P.O. Box 698. New Delhi-110 001

Gram: INDEXFERT, N. Delhi

Telex: 031-4209 IELD

Phone: 45984

BOARD OF DIRECTORS

Mr. A. L. Mudaliar
Chairman

Dr. S. S. Baijal
Dy. Chairman & Managing Director

Mr. P. E. G. Daubeney
Jt. Managing Director

Mr. O. P. Agarwal

IFCI Nominee

" P. R. Neelkanthan

ICICI Nominee

" A. P. Sarwan

Government Nominee

Dr. K. K. Ray

1. Background

IEL was formed in 1955 to manufacture commercial blasting explosives and the plant at Gomia (Bihar) was commissioned in 1958.

IEL decided to enter the fertiliser field in 1965 and conducted detailed surveys culminating in the Kanpur fertiliser project. The

4,50,000 tonnes per annum urea plant (2,03,000 tonnes N) was inaugurated by the then Prime Minister of India on 6th December, 1969. The total capacity of the urea plant has been increased to 675,000 tonnes per annum with the commencement of production by our third stream from 17th September, 1981.

2. Financial and technical collaboration

The Fertilizer Project at Kanpur has been set up with the technical collaboration of Imperial Chemical Industries PLC, UK, who now holds 50.42 per cent of the shares in IEL. The International Finance Corporation and other overseas shareholders hold 5.81 per cent shares in IEL, the President of India 11.77 per cent and the Indian Public/Financial Institution Companies 32 per cent.

3. Raw materials/facilities

The factory is located on a 270-acre site about 6 km from Kanpur close to the Panki railway station. The feedstock naphtha is pumped by pipeline from the Barauni refinery. Kanpur is at the focus of the U.P. State Electricity Board net-work ensuring adequate power supply. Ample supplies of water are available from the lower Ganges Canal. Moreover, Kanpur is strategically located on the main railway system, is well served by road transport and commands a market area with well developed irrigation facilities and high potential for fertiliser consumption.

4. Marketing organisation

The main market area for the Kanpur plant consists of the States of Uttar Pradesh, Haryana and Punjab. The headquarters of the marketing department is at New Delhi. To closely supervise and guide the field representatives (all qualified agricultural graduates) located in each district of the market area, IEL have established four area sales office at Varanasi, Lucknow, Meerut and Chandigarh, manned by Senior staff.

A significant proportion of IEL's production is sold through the cooperatives and other State level Apex Institutions in the main market area. To supplement the Sales, IEL have set up a widespread dealer network in the market area consisting of about 3,700 selling points including wholesales at tehsil

level and retailers at block/village level. A chain of buffer storage points near consumption centres has also been established all over the market area for storing urea during the offseason and to meet the urgent requirement of cooperatives and distributors during peak seasons.

5. Marketing development & publicity activities

To demonstrate results of improved agricultural technology crop demonstrations are conducted every season on farmers fields throughout the market area. These demonstrations incorporate the latest recommended package of practices for the crops and the emphasis is on the optimum use of NPK and micronutrients for obtaining the best results. To improve fertiliser use efficiency, special emphasis is given to correct method and time of fertiliser application by demonstrating these aspects in farmers meetings/group discussions organised at each demonstration plot.

A soil testing laboratory is in operation at Panki. Soil samples from the demonstration plot as also from the farmer's fields are analysed in this laboratory and fertiliser recommendations issued. The technical service to the farmers is guided by specialists in the field of agriculture. The development activities in the market area are coordinated by Assistant Managers and Sales Officers attached to the four area offices.

Intensive field publicity campaigns are organised during the seasons in the form of 'mini kisan melas' on the field demonstration plots in order to popularise balanced use of fertilisers. Cropwise folders giving the latest recommendations on the correct use of fertilisers and other package of practices are distributed widely amongst farmers every season. The media-mix includes regular puppet shows every season, particularly in centre and state level exhibitions, village fairs, posters, wall paintings, hoardings and radio advertising.

With the objectives of appraising details on correct use and method of application of fertilisers, soil testing, proper storage of fertilisers and quality control regulations, etc., emphasis is given on organising regular dea-

ler training courses in each district. These trainings have been very useful since dealers have direct contact with the farmers and they work as catalyst in promoting correct and balanced use of fertilisers along with other important package of practices.

Under the integrated rural development programme initiated by the Government, IEL adopted 2 villages in U.P. during 1974-75 Chakarpur, a village near Kanpur and Banguri, a village near Agra. The programme envisages total socio-economic development of these villages to increase the farm income of the villagers by 2 to 3 times within a period of 2 years or so. As a result of IEL's efforts, both the per hectare yields as well as the total agricultural production in these villages have considerably improved. After bringing electricity to one of the villages, tube-wells have been installed and network of pucca irrigation channels laid out for developing the irrigation resources. Communication, health and hygiene and children's schooling and other facets of life have also been improved. Gobar gas plants have been installed in order to motivate the farmers to adopt scientific recycling of organic wastes which provides clean fuel for cooking and lighting and enriched manure. Installation of hand-pumps and renovation of existing wells have been undertaken to provide safe drinking water. Local farmer's clubs have been established to mobilise resources in order to manage the infrastructure created under the village adoption programme. The local lead banks have been associated to meet the credit needs of the farmers.

While IEL have withdrawn from these villages on realising its objectives, it has taken up another village Chauka—near Varanasi during 1979 and the progress made so far has been quite encouraging. Commendable progress has been achieved in increasing the

fertiliser consumption and yields of various crops culminating in almost doubling of the agricultural income of the farmers.

To augment irrigation facilities, a medium sized tubewell has been installed which provides irrigation to about 25 hectares of land. Work is in progress for installation of another tubewell. Brick-paving of village streets covering an area of 20,000 sq ft has already been completed. One gobar gas plant has been put up in the village and a second one is under construction.

While work is progressing satisfactorily in Chauka, we have taken up yet another two villages—Baldhan Kalan and Baldhan Khurd in Rewari tehsil of Mohindergarh district in Haryana. These villages have been surveyed and priorities of work identified. A club has been established which will also function as a sale point of fertilisers and other agricultural inputs. Fertilisers and seeds have been given on subsidy to farmers and they were being educated on balanced fertilisation and scientific package of practices.

In order to maintain regular supply of irrigation water which was affected frequent power-cuts, we provided 5 diesel engines to the farmers' club for their use in custom service.

During the first season, i.e., Kharif 82 our emphasis was mainly on agricultural development and once a sound footing has been established on this front, it was decided to concentrate on other aspects like construction of a village club, brickpaving of village streets, provision of doors, windows and furniture for school building, installation of gobar gas plants, sanitation and medical care of the villagers, etc.

Dr. S. S. Baijal, Dy. Chairman and Managing Director, is a Director on the Board of Fertiliser Association of India.

23. INDIAN FARMERS FERTILISER COOPERATIVE LIMITED
34, Nehru Place, New Delhi-110 019

Gram: IFFCO—New Delhi

Telex: 3887
3260Phone: 642030
682510

BOARD OF DIRECTORS
as on 29th August, 1983

Shri M. Srinivasa Reddy Chairman	Shri R. S. Tolia Director
" Samar Pal Singh Vice Chairman	" Sardara Singh Gill Director
" M. H. Avadhani Managing Director	" Vallabhbhai P. Patel Director
" B. Ramdas Finance Director	" Veer Pal Singh Director
Dr. K. K. S. Chauhan Marketing Director	" S. S. Sisodia Director
Shri Ali Ahmad Director	" P. S. Kohli Director
" K. P. Dwivedi Director	" M. Y. Priolkar Director
Sardar Gursher Singh Director	" R. V. Gupta Director
Shri M. N. Kotadia Director	" A. P. Kurian Director
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" S. C. Kesur Director	" R. G. Tiwari Director
" Tapeshwar Singh Director	" S. C. Chaturvedi Director
" J. Somasekharappa Director	" M. S. Chahal Director
" Surya Kumar Jain Director	" H. C. Sarkar Director
" M. Kanakasabapathi Director	

II. BACKGROUND

The Indian Farmers Fertiliser Cooperatives Limited (IFFCO) was conceived at a time when with the rising demand for fertilisers, the Indian Cooperatives, who had been distributing a major share of the fertilisers consumed in the country, realised that the growth and strengthening of their distribution network could be ensured only through the presence of a captive source of supply. It was to fulfil this need of the Indian Cooperatives, that

IFFCO was born with its registered office at New Delhi as a national level multi-unit co-operative society on November 3, 1967, with the purpose of taking up large scale manufacture and distribution of fertilisers.

The jurisdiction of the society extends to all over the country. Initially only 10 States participated and later on six more states and four union territories joined, making it a total of 16 states and 4 union territories.

III CAPITAL STRUCTURE

The authorised capital is Rs. 200 crores of which Rs. 87.90 crores is subscribed and Rs. '83. The capital resources of the Society, as on 30th June, '83 were as follows:

Equity	(Rs. in crores)
1. Government of India	49.2
2. Cooperatives	38.7
	87.9
Retained Earnings	
(Provisional)	185.0
Loans	
Government of India	12.0
World Bank	71.7
U.S.A.I.D.	7.8
Other Financing Institutions	40.8
	132.3

As on June 30, 1983 about 25,410 cooperative societies were share holders.

IV. PLANTS

The Kalol unit consists of an ammonia plant with a rated capacity of 910 tonnes per day and a urea plant with a rated capacity of 1,200 tonnes per day. Besides, a 4.5 tonnes per day Dry Ice plant and a 500 tonnes per year Malathion plant are also in operation at Kalol. The capacity of the NPK/DAP plant at Kandla has been increased from 1,27,000 tonnes of P₂O₅ to 2,60,000 tonnes of P₂O₅ per annum provisionally, with the commissioning of the Kandla Expansion Project in September, 1981. IFFCO's third plant at Phulpur having a capacity of 900 tonnes per day Ammonia and 1500 tonnes per day Urea went into regular production from March, 1981. The feed-stock for the Phulpur Plant is naphtha, whereas Kalol plant uses natural gas. All these plants have been in commercial operation from the dates shown below:

KALOL

Ammonia	March 1, 1975
Urea	April 1, 1975
Dry Ice	March 28, 1978
Malathion	August 18, 1981

KANDLA—NPK/DAP

Phase I	January 1, 1975
Phase II	September 6, 1981

PHULPUR

Ammonia	March 28, 1981
Urea	March 28, 1981

V. MARKETING SET-UP

IFFCO marketing operations cover 16 States and 4 Union Territories. For administrative convenience the marketing area is divided into 4 zones with zonal offices at Chandigarh, Allahabad, Bhopal and Bangalore. The marketing organisation in each State comprises a State Office at the State capital supported by adequate number of area offices. The present number of such area offices is 45. IFFCO has employed nearly 375 persons qualified in agriculture, mostly graduates and post-graduates as field officers/field representatives. Through them the farmers and the cooperatives are reached. All extension and marketing activities in the field centre around them. The guidance, supervision and control is rendered by the Area Managers and Area Agronomists at Area level, State Marketing Manager and State Agronomist at State level and Zonal Manager and Zonal Agronomist at Zonal level. The sale of IFFCO products are organised almost exclusively through 30,000 cooperative sale-points in the country. In a few states the Society has opened Farmers' Service Centres to supply full package of agricultural inputs and services under one roof to the farmers. This has become quite popular with farming community.

The promotional programmes are designed to educate farmers on improved farming techniques and balanced fertiliser concept through field demonstrations, field days, farmers' meetings, crop seminars, campaign programmes (soil testing, seed treatment, plant protection, weed control etc.), village adoption programme, intensive fertiliser promotion campaign in selected districts, distribution of mini-kits of seeds and fertilisers to the small and marginal farmers and seed multiplication programmes, etc.

A Cooperative Rural Development Trust (CORDET) established by IFFCO runs the Moti Lal Nehru Farmers' Training Institute at

Phulpur near Allahabad where the farmers are trained in all aspects of agriculture including dairy, poultry, pisciculture, etc. The Trust also runs Soil Testing Laboratory.

IFFCO has also established a Fertiliser Marketing Development Institute at Gurgaon which has provision for training of IFFCO employees on various aspects of marketing and agriculture and also the farmers on modern agricultural production technology.

The products marketed by IFFCO besides urea, NPK and DAP are malathion technical, dry ice and liquid ammonia for industrial use.

VI. NEW SCHEMES/PROJECTS

Purge Gas Recovery Plant at Phulpur

A purge gas recovery plant is being installed at Phulpur in order to improve on the production of ammonia unit/consumption of energy. The estimated cost of about Rs. 4.0 crores will be met out of IFFCO's internal resources and the plant is expected to be in operation by early 1985.

Soda Ash—Ammonium Chloride Plant at Phulpur

As a measure of diversification as also for making better use of available infrastructure facilities and utilisation of surplus carbon-dioxide gas available, the Society proposes to instal a 200 MTPD soda ash plant at Phulpur, based on the modified Solvey process, which will also produce an equal quantity of ammonium chloride. The plant is estimated to cost Rs. 45 crore. Letter of intent for the project has already been received and other actions are on hand. The project is expected to be taken up for implementation in early 1984 and will be operational by 1987.

New Fertiliser Project

Out of the six sites announced by the Government of India for setting up new fertiliser plants based on Bombay High-South Bersain Gas in the states of UP, MP and Rajasthan, IFFCO has been awarded the Anola site in Distt. Bareilly, U.P. The fertiliser complex comprising an ammonia plant of 1350

MTPD capacity and two urea plant of 1100 MTPD capacity each, is expected to cost about Rs. 740 crore.

VII. PARTICIPATION IN OTHER PROJECTS

A. Promotion of New Society

IFFCO has promoted a new Society Kri shak Bharati Cooperative Ltd. (KRIBHCO) for which it will contribute Rs. 100 crore. The KRIBHCO has been entrusted with the task of a major fertiliser plant installation at Hazira having two ammonia plants of 1350 MTPD capacity each and four urea plants of 1100 TPD each, with all necessary off-site facilities. Construction of this project is in progress. The total cost of project is estimated at Rs. 980 crore.

B. Joint Venture Project in Senegal

Based on the approval accorded by the Government of India, IFFCO is participating in a joint venture project in Senegal. While IFFCO's contribution to the equity is about Rs. six crore. The Government of India and SPIC, Tuticorin have also contributed about Rs. 7.5 crore.

Of the 2,37,600 tonnes of P_2O_5 per year expected to be produced in the Senegal Project, about 1,10,000 tonnes is expected to be supplied to India and the balance converted into solid fertiliser to produce more than 2 lakh tonnes per annum of DAP and TSP. The project is scheduled to go into production in 1984.

C. Participation in Godavari Fertilisers & Chemicals Ltd.

IFFCO will have equity participation with the the Government of Andhra Pradesh for the establishment of a phosphatic fertiliser project at Kakinada. IFFCO as co-promoter would contribute upto Rs. 6.5 crore towards equity of the project i.e. Godavari Fertilisers and Chemicals Limited, contemplated to produce 3,15,000 MT of DAP per annum.

Shri M. H. Avadhani, Managing Director, is a Director on the Board of The Fertiliser Association of India.

24. INDIAN POTASH LIMITED

727, Pathari Road, Off Mount Road, Madras-600 006

Grams: POTINDIA

Telex: 676

Tele: 83155 (PABX 6 Lines)

Indian Potash Limited (IPL) was started in 1955 at the instance of the Ministry of Commerce and Industry as a consortium of the then fertiliser interests.

Back in the early 50s, potash was largely unknown to an average Indian farmer. Organised official research on crop response to potash application was almost non-existent. The data on potash as a fertiliser input was meagre. There was no organised promotional and sales efforts for potash except in a few Southern States on a small scale.

The task before IPL was to establish the need of potash in crop production, promote its usage, develop an effective distribution and marketing network and to sustain and improve the market for potash.

To begin with, IPL relied on data left by "Potascheme" and followed up by further experimentation in cultivators' fields. These results led to official acceptance of potash as an inevitable plantfood, as evidenced by progressive acceptance of potash in official recommendations for many crops.

Since 1961, IPL has been in the forefront for potash promotion through various methods such as award of Research Fellowships and collaboration in research projects on potash in universities and institutions, publications of "Indian Potash Journal" and also supply of reprints and research articles thus keeping research workers up-to-date on potash data, giving annual cash awards for outstanding research work on potash, organising visits of eminent scientists from abroad

for exchange of ideas/views with their counterparts in India, organise demonstrations in cultivators fields, organisation of potash festivals, farmers' conferences, crash programmes and such mass contacts media, besides conducting audio visual programmes, AIR, TV interviews of "success farmers", etc.

Around 1970, the company expanded its capital base with the participation of public, co-operative and private sectors—the public and co-operative sectors together holding the majority in equity capital.

IPL has Zonal/Regional and State offices throughout the country. The Head Office is at Madras. IPL markets potassic fertilisers throughout India through public/cooperative and private distribution agencies and meets the potash requirements of various manufacturers of complex fertiliser and mixtures containing potash.

Since 1978, IPL has been entrusted with the port handling of Pool fertilisers mainly D.A.P. and urea imported through some ports as agents of the Ministry of Agriculture. These fertilisers are distributed in the States of Punjab, Haryana, Rajasthan, Jammu & Kashmir, Uttar Pradesh, Himachal Pradesh, Bihar, Gujarat, Maharashtra, Madhya Pradesh, West Bengal, Assam, Orissa and Andhra Pradesh.

IPL is the pioneer in promotion work in India. About 400 field staff cover all important States doing sales and sales promotional activities. The Potash Research Institute of India has been established to undertake basic research on potassium.

25. THE JAY SHREE CHEMICALS & FERTILISERS**Prop. Jay Shree Tea & Industries Ltd.****Regd. Office: 'Industry House', 10, Camac Street, Calcutta-700 017****Grams: 'JAYSUPER'****Telex: JAYTEA-021-7937****Phone: 44-9821****BOARD OF DIRECTORS**

Shri B. K. Birla
 " B. M. Khaitan
 " D. N. Patodia
 " A. S. Bam

Officers:
 Shri B. C. Biyani
President
 " S. M. Somani
Vice-President (Chemicals)

The Jay Shree Chemicals and Fertilisers unit located at Khardah (24 Parganas), West Bengal is in production since 1961. The present licensed capacity is as follows:

- (1) Sulphuric acid—50 tons per day.
- (2) Single superphosphate—57,360 m.t. per annum.
- (3) Cryolite—300 m.t. per annum.

The unit also acts as authorised distributors for fertilisers throughout the State of West Bengal. Its products are marketed under the trade mark "Annapura". During 1982-83 the unit achieved highest ever production of 70,291 m.t. of single superphosphate. A letter of intent has been received by the unit for expansion of 33,000 m.t. of sulphuric acid and 66,000 m.t. of single superphosphate. The expansions sanctioned is being undertaken and is expected to be completed by middle of 1984.

Other units of Jay Shree Tea & Industries Ltd.

A. Tea Estate

Total 16 Tea Estates located all over the whole country.

Tamil Nadu

- (1) Sholayar Estate, P.O. Sholayar District Coimbatore.
- (2) Kallyar Estate, P.O. Bholyar, Distt. Coimbatore.

Kerala

- (3) Merchiston Estate, P.O. Kallarbridge, Trivendrum.

Sibsagar, Assam

- (4) Towkok Tea Estate, P.O. Sonari.
- (5) Manjushree Tea Estate, P.O. Sonari.
- (6) Mangalam Tea Estate, P.O. Sonari.
- (7) Nahorhabi Tea Estate, P.O. Lakwah.

Jorhat, Assam

- (8) Meleng Tea Estate, P.O. Nakachari.

Cachar, Assam

- (9) Dewan Tea Estate, P.O. Dewan.
- (10) Burtoll Tea Estate, P.O. Dewan.
- (11) Labac Tea Estate, P.O. Dewan.
- (12) Kalline Tea Estate, P.O. Kalline.
- (13) Jellaipore Tea Estate, P.O. Jalalpur.

West Bengal

- (14) Tukvar Tea Estate, P.O. Darjeeling.
- (15) Risheehat Tea Estate, P.O. Darjeeling.
- (16) Liza Hill Tea Estate, P.O. Marybong.

The total area under tea is approx. 7241.19 hectares and the total production during the year 1982-83 was over 11.96 million kgs.

B. Plywood units

- (1) Woodcrafts Assam, P.O. Mariani (Assam).
- (2) Jay Shree Timber Products, P.O. Bakultala, Middle Andamans.

C. Shipping

Jay Shree Shipping, Bombay (Maharashtra).

D. Tyres & Rubber Products

Jay Shree Tyres & Rubber Products, Naini, Allahabad (U.P.).

E. Others

- (1) Warehousing & Tea Export Deptt. Calcutta (West Bengal).
- (2) Tea Warehouse & Sales Deptt., Cochin (Kerala).

CAPITAL STRUCTURES (Proprietors)**1. Authorised capital**

1946	Rs. 1,50,00,000
1961	Rs. 2,50,00,000
1973-74	Rs. 3,00,00,000
1981-82	Rs. 5,00,00,000
1982-83	Rs. 5,00,00,000

2. Paid up capital equity shares subscribed

A. Cash Rs.	50,45,000-12%
B. Bonus Issues Rs.	8,59,54,860-88%
<hr/>	
	Rs. 4,09,99,860-100%

26. KAMDHENU CHEMICAL AND FERTILIZER INDUSTRIES

Manufacturers of: Government approved Kamdhenu Manure Mixture and Granulated Fertilizers

"Krishi Bhawan", 1379, Bhawani Peth, Pune-411 002

Cable: KAMDHENU

Telex: PN 393

Phone: Office: 26815
26825

Fact.: 470831

The company was established in 1969 with nine partners. All the partners are serving the agricultural masses by supplying seed, pesticides, agricultural chemicals, agricultural machinery and implements and all other agricultural needs for the last over half a century.

Some of the agro-based services provided by associate concerns of Kamdhenu Chemicals & Fertilizers Industries are as follows:

NUTAN WAREHOUSING CO. PVT. LTD. managed by some of the partners. This unit render C&F services to both public and private sector undertakings by way of bulk receiving and bulk handling by rail in rake-loads as well as road transport, fertilisers manufactured within the country as well as those imported. The incoming consignments are warehoused and accounted for by this unit and are also transported by road transport from railheads to warehouses and thereafter from warehouses to farmers and other institutions all over Maharashtra State.

NAVALAKHA TRANSLINES PVT. LTD.—This is also an associate concern being Bank approved and they render services in distribution by Road of fertilisers from point of warehouses to all destinations in Maharashtra. Handling and transport of over-dimensional consignments of cement, sugar, machinery, fertiliser industries and heavy industries is also their speciality.

NAVALAKHA AGRO EQUIPMENTS—This is also an associate concern managed by a group of partners, their activities being manufacture of farm implements, horticultural tools and spraying equipment.

NAV FIBRO PLASTICS is also another sister concern managed by some of the partners. They are molders and fabricators of fibre glass, specially for chemical industries, chemical vessels, pipelines, ducting, domes, trays and other machinery equipment in fibre glass. They are also specialised in equipment like rain gauges, etc.

NAVALAKHA AGENCIES is also an associate concern managed by some of the partners. This unit deals with distribution of Hybrid Seeds of cereals and vegetables all over India.

NANDLAL SEED FARMS—The activities of this associate concern also being managed by partners grow and develop Hybrid Seeds for cereals and oil seeds and vegetable seeds. They also develop sugarcane seedling nursery and plants orchards.

NATIONAL AGRO SERVICES—This associate concern are marketers of agricultural inputs in several places in Maharashtra and have their own after sales and service.

NAVALAKHA EXPORTS—This associate concern also managed by some of the partners and has recently started activities in export of fruits, vegetables, pesticides and various agricultural inputs and outputs outside India. The Pesticides exported by this unit are manufactured by Kamdhenu Pesticides, an industry located in Poona.

The company is giving advise to the agriculturists in their difficulties about the seeds, pests, etc. and also advises them for use of motorised pumps, implements, etc.

The company has its main production of Government approved manure mixtures. The manure mixtures are sold in the State as Kamdhenu Manure Mixtures. Kamdhenu being the brand name. Manures have become very popular in the State.

Plantovit: Recently another new product named Plantovit containing plant vitamins and micronutrients had been introduced by the company. The company has finalised 20 different formulae as per the actual requirements of micronutrients of various crops.

KAMDHENU PESTICIDES: Company's one sister concern Kamdhenu Pesticides has also commenced producing "Kamdhenu Pesticides" and has put on market various pesticides at present and intends to introduce some more various pesticides.

The company is also manufacturing its new product PLANTOMON containing plant hormones. This has given fine results and is becoming popular among the agricultural masses.

The company has expanded its marketing activities in other States, i.e., Gujarat, Karnataka and Andhra Pradesh and is having its branches at Amravati, Bombay and Poona in

Maharashtra, Chhani, District Baroda in Gujarat, Belgaum in Karnataka, Vijayawada in Andhra Pradesh and has opened a new branch at Delhi for Northern India.

KHAT KAMDHENU MONTHLY AGRICULTURE MAGAZINE: The company started Marathi monthly magazine "Khat Kamdhenu" which is being read over 60,000 progressive farmers in the State and is proved as very good media of advertising for agricultural inputs. Through this magazine the company is imparting modern methods of agriculture and horticulture as well as controlling the various pests and insects, etc. The company also recently started its agricultural library for serving the farmers.

The company has engaged some graduates representatives, who move about in the various districts of State giving advice to the needy farmers and also introducing the Kamdhenu Manure Mixture and other agricultural aids. The company has got over more than 2,000 distributing agents covering all the districts of Maharashtra, Karnataka, Gujarat and Andhra Pradesh States through whom business is carried on in these States for their pesticides, micronutrients and manure mixture.

SOIL TESTING LABORATORY: The company has established a well equipped laboratory to test fertilisers, agricultural chemicals, soil and water of the farmers and to give suitable advice to them.

27. KOTHARI (MADRAS) LIMITED

(Fertiliser Division)

Regd. Office: Kothari Building, 114, Nungambakkam High Road, Madras-600 034

Grams: KOTHARI

Telex: MS-325

Telephone: 812131, 812132
88884, 88885
83127, 83128
85985, 85987

Trunk Tel: 89036/38

BOARD OF DIRECTORS

Shri D. C. Kothari
Chairman & Managing Director

" H. C. Kothari
Vice Chairman

" Pradip D. Kothari
Managing Director

" M. R. M. Punja
Whole-time Director

" K. S. Rangraj
Whole-time Director

Shri Jayantilal R. Mehta
Dr. B. Gopala Reddy
Shri K. Srinivasan
" Arvind N. Lalbhai
" Yogindra N. Mafatlal
" C. R. Pattabhiraman
" K. S. Narayanan
" R. K. Chari
" V. Dixit

Blue Mountain Estates & Industries Limited incorporated in 1943 was amalgamated with M/s. Kothari (Madras) Ltd. The main business carried out from 1943 to 1960 was cultivation of tea and coffee. During 1960, the company erected a fertiliser plant for the manufacture of single superphosphate of 16 per cent P₂O₅. Recently, the company got letter of intent for increasing the capacity of superphosphate from 45,000 MT to 66,000 MT per annum and sulphuric acid from 22,000 MT to 33,000 MT per annum. The plant is situated at Ennore near Madras and the same was commissioned during July, 1962.

The superphosphate is marketed under the Trademark Horse Brand in the States of Tamil Nadu, Karnataka, Andhra Pradesh and Pondicherry.

The unit also manufactures various standard NPK mixtures approved by respective State Governments and market them in the respective States. They are also distributors for Shriram urea in the coastal districts of Andhra Pradesh and Tamil Nadu and also distributors for Zuari, SPIC and Fertilizer Corporation of India. The marketing is done through a network of branches, depots, stock

points, distributors and other agents in all these States. The unit employs technical personnel, field inspectors and propagandists.

The company has also very wide interest in tea, coffee, textile and chemicals. The caustic soda/chlorine plant which was set up in 1979 has now doubled the production capacity of 66,000 MT of caustic soda, 40,000 MT of chlorine, 48,000 MT of hydrochloric

acid and 21,000 MT of ammonium chloride. The company has plans to implement a propylene based chemical plant at Manali to manufacture propynglycol and polyol.

Shri D. C. Kothari, Chairman & Managing Director, is a Director on the Board of The Fertiliser Association of India and ex-Chairman of FAI.

28. KRISHNA INDUSTRIAL CORPORATION LIMITED

Regd. Office: Ramakrishna Building, 183, Mount Road, Madras-600 006

Grams: JEYESCE

Telex: 565

Tele: 86528, 85181

BOARD OF DIRECTORS

Shri P. R. Ramakrishnan,
M.Sc. (M.I.T.), F.I.E.
Chairman
" V. L. Dutt, Grad. (B.I.M.)
" Alluri Sarvarayudu
" R. Baba Chandrasekhar,
B.Tech. M.S. (Cornell)

Smt. Rajeshwary Ramakrishnan, B.A.
Shri S. V. R. Appa Rao Bahadur
" Rajah V. V. V. R. K. Yachandra
" R. Prabhu,
B.E. (Hons), S.M. (M.I.T.), M.P.
" R. Sivaramkrishna Prasad, B.Tech.
" N. Prasad
" V. Selvaraj

Carbon Dioxide Factory:

Vuyyuru, Krishna Dt. A.P.

Fertiliser Division: Nidadavole, West Gadavar, District, A.P.

Incorporated on:
9th August, 1947.

Capital authorised: Rs. 1,00,00,000 divided into 2,50,000: 6½ per cent tax free cumulative preference shares and 7,50,000 equity shares of Rs. 10 each.

Capital paid up:

Rs. 26,45,410 in 2,64,541 equity shares of Rs. 10 each.

The fertiliser division at Nidadavole has a licensed capacity of 18,760 tonnes of sulphuric acid and 50,800 tonnes of single superphosphate per annum.

The company is also licensed for manufacturing fertiliser mixtures.

29. MADHUVAN AGRO CHEMICALS LTD.

Regd. Office: Jeevan Raksha Bhavan, Delhi Gate, Udaipur-313 001 (Raj.)

Gram: PHOSPHATE

Factory: Maduvan Estate Dabak, Udaipur

Phone: 3164, 4471, 6255

Shri R. S. Rathore
Chairman-cum-Managing Director

BOARD OF DIRECTORS

Shri R. S. Rathore
" Ajit Singh
" Ashokaditya Singh Rathore

Shri V. K. Gupta
Director nominated by
Rajasthan Corpn.

Shri Ajay Mehta
Secretary-cum-Finance Controller

Brief history

Madhuvan Chemicals and Fertilisers (P) Ltd., was incorporated on 10th day of July, 1973 as Private Ltd. Co. with a share capital of Rs. 10 lakh, at the initial stage. The com-

pany established the NPK granulated mixture fertiliser plant under Industrial Licence No. IL 171/76 dated 15-12-76, received from the Govt. of India, Ministry of Industries, Udyog Bhavan, New Delhi and the production was started during the month of

Feb. 1976 with the installed capacity 50,000 MT per annum. After the successful running of the above unit, the company received two letters of intent. One No. LI/101/79 dated 24-4-79 to manufacture 66,000 MT SSP and 33,000 MT sulphuric acid per annum. Second letter of intent No. LI/415 (80) of 27-8-80 was received for the establishment of the following items:

1. Oleum 20-30% 5,000 MT per annum
2. Oleum 60-70% 5,000 MT per annum
3. Stabilised liquid SO₂, 5,000 MT per annum
4. Chlorosulphuric acid 5,000 MT per annum

The company has taken all the effective steps for the establishment of the above plant and the Govt. of India have converted the

above letter of intent into Industrial Licence No. IL No. 131 (81)/dated 25-6-1981.

M/s. Madhuvan Chemicals & Fertilisers (P) Ltd. has been converted into Public Ltd. Company on 14-8-1979 and raised its authorised capital from Rs. 10 lakh to Rs. 90 lakh. Further, the MCFL have promoted another company—Madhuvan Agro Chemical Ltd. for the establishment of the above plants in phases. As per production targets the company will start its commercial production of SSP, sulphuric acid and oleum by the end of May, 1982.

We have a marketing network in Rajasthan, Punjab, Haryana, Uttar Pradesh and Madhya Pradesh. The company have no problem of marketing its products.

30. MADRAS FERTILIZERS LIMITED Manali, Madras

Grams: MAFERT

Phone: 552691

Telex: 7351

THE BOARD

Shri Joseph Kurian
Chairman & Managing Director

DIRECTORS

Shri S. M. Kelkar
" Joseph Warren
" C. Tavallali

Shri Yogesh Chandra
" John B. Milwee
" F. Kamali

Background

Madras Fertilizers Limited (MFL) is a public sector undertaking. Government of India holds 51 per cent of the share capital. The other collaborators are Amoco India Inc. and National Iranian Oil Company with a share participation of 24.5 per cent each.

MFL Plant is located at Manali, 16 km north of Madras. The Plant started commercial production in Nov. '71 for manufacturing urea and complex fertilisers. The capacity for complex fertiliser production was increased by 50 per cent in October 1976. The present annual production capacity is 2.48 lakh T of ammonia, 2.92 lakh T of urea of which 1.53 T of urea will be available for sale, and 5.40 lakh T of complex fertiliser products. The principal raw materials are naphtha from Madras Refineries Limited and phosphoric acid and potash from imports.

Fertiliser products manufactured currently are complex fertilisers in the grades 17-17-17, 14-28-14, 24-24-0, 18-46-0 and urea.

Carbon-di-oxide and ammonia (for fertiliser and non-fertiliser use) are also sold.

HIGHLIGHTS OF OPERATIONS DURING APRIL 82-MARCH 83

Production

Plant performance during 1982-83 was good with a production of 2.02 lakh T of ammonia (82 per cent rated capacity), 2.42 lakh T of urea (83 per cent rated capacity) and 6.04 lakh T of NPK complex fertilisers (112 per cent rated capacity). Total product available for sale (urea and NPK complexes) was 6.88 lakh T. Nutrients output was 1.4 lakh T of N, 1.08 lakh T of P₂O₅ and 0.98 lakh T of K₂O making a total of 3.46 lakh T. During the Productivity Year, several new records were established.

Performance of ammonia plant was excellent with highest daily production of 795 T (106 per cent design) was achieved on May 22, 82 and a record monthly production of 23707 T (102 per cent design) was achieved

In July 82. NPK complex production performance was excellent with the highest day's production of 3025 T on Dec. 11, 82; month's production of 62350 T in August 82 and year's production of 603560 T.

Safety record

MFL's safety record continues to be the world's best with 2972 days (18.6 million manhours) completed without a disabling injury at the close of March 1983.

Awards

MFL won two awards from the National Safety Council, USA.

- * Award of First place for 1981 fertiliser section safety contest nitrogen products division.
- * Award of honour for the best record for nitrogenous fertiliser operating without occupational injury or illness for the 1981 fertiliser section safety contest.

MFL has also bagged two FAI awards for best technical innovation and overall performance during 1981-82.

Marketing and distribution

Our fertiliser products are marketed under the brand name 'VIJAY'. Upto March 31, 1982 our products were marketed in all our marketing territories through private and institutional marketers. Though the same marketing arrangements continued in Karnataka, Andhra Pradesh, Kerala and Maharashtra beyond March 1982. MFL entered into direct marketing operations through a wide network of dealers in Tamil Nadu/Pondicherry effective April 1, 1982. MFL has 5 Regional Sales Offices at Trichy, Vellore, Coimbatore, Madurai and Villupuram in Tamil Nadu. VIJAY products are marketed through State Marketing Federation and private dealers in Madhya Pradesh.

MFL has product exchange arrangement with FACT and MCF for the supply of urea in Kerala, Karnataka and Tamil Nadu.

Farmer service and communication programme have been an integral part of MFL's marketing strategy. The service programmes include Village Adoption Programme, Area Development Programme and Long Term Agricultural Development Programme.

During 1982-83, 25 villages were taken up under our Village Adoption Programme in the States of Andhra Pradesh and Karnataka. Six Area Development Programmes covering

18 villages were implemented in Tamil Nadu. Twentyone operating units covering nearly 300 villages were taken up under our Long Term Agricultural Development Programme which has been in implementation since 1977. Of these 21 units, 6 were in Karnataka, 9 in Andhra Pradesh and 6 in Tamil Nadu. All these programmes were in predominantly rainfed areas and a major objective was the propagation of scientific farming technology with particular reference to pulses and oil seeds. A major effort in these programmes is the introduction of suitable low cost seed-cum-fertiliser drills for quicker and more effective placement of seed and fertilisers.

The field communication programmes involved a number of intensive farmer contact programmes, farmer seminars and 8 mobile audio-visual units which covered approximately 6,000 villages. In the field communication programmes also primary emphasis was on fertiliser use for rainfed crops and adoption of soil and moisture conservation practices.

Mass media was extensively used for communication to farmers with particular reference to more efficient use of fertilisers. Language newspapers, commercial radio, cinema and printed literature were used to the maximum extent possible.

MFL has a well equipped soil testing laboratory at Manali with a daily capacity of 200 soil samples. The service is offered free of cost to farmers. The laboratory has facilities for analysing soil samples for micronutrients and for testing of irrigation water samples also.

During the year 1982-83, MFL moved 5.6 lakh T of fertilisers from the plant to various demand points in South India, Maharashtra and Madhya Pradesh. Of this, 2.7 lakh T were despatched by rail and the balance by road. Rail movements were organised largely through block rakes. During the year 102 block rakes were used in addition to the wagons available in city railway terminals.

MFL operated 146 warehouses with a total space reservation of 1,34,650 T/month. Space was hired both in Central and State Warehousing Corporations godowns.

Industrial relations

MFL has been making effective use of the human resources by providing career opportunities and training to its employees. During the year 1982-83, industrial peace was maintained.

Shri Joseph Kurian, Chairman and Managing Director is a Director on the Board of the Fertiliser Association of India.

31. MANGALORE CHEMICALS & FERTILIZERS LIMITED**Regd. Office: 10/2, Kasturba Road, Bangalore-560 001, Karnataka****Telegrams: 'MANGFERT'****Telex: 845 474 MCF IN****Tele: 55691
(4 lines)****Factory Office: Panambur
Mangalore-575 018, Karnataka****Telegrams: 'MANGFERT'****Telex: 984 218 MCF IN****Tele: 7601 to 7608****BOARD OF DIRECTORS**

Shri A. B. Datar, I.A.S.
Chairman & Managing Director

" V. R. Rajagopalan
Director (Marketing)

" A. K. Srinivasa Prasad
Director (Finance)

" G. S. Keshavamurthy
Resident Director

" K. R. Sreenivasan
Secretary

" F. J. Heredia

Shri M. K. Venkateshan, I.A.S.

Dr. M. P. Khare

Shri V. H. Pandya

Dr. S. K. Mukherjee

Shri P. R. Nayak, I.A.S.

" M. C. Nanaiah

" Paul Pothan

" K. S. N. Murthy, I.A.S.

" V. K. Gore, I.A.S.

" T. Shamanna

The company, incorporated on 18th July, 1966 has an authorised capital of Rs. 25 crore, divided into 2,00,00,000 equity shares of Rs. 10 each and 5,00,000, 9.5 per cent redeemable cumulative preference shares of Rs. 100 each. The paid-up capital of the company as on 31-12-1982 stands at Rs. 1545.08 lakh after taking into account the public issue of 72,99,870 equity shares of Rs. 10 each and 1,50,000 9.5 per cent redeemable cumulative preference shares of Rs. 100 each made in November, 1972.

The company has set up a naptha-based fertiliser plant at a total cost of Rs. 74.90 crore at Panambur near Mangalore for the manufacture of 2,17,000 tonnes of ammonia and 3,40,000 tonnes of 'MANGALA' urea per annum, the daily licenced capacity being 660 tonnes of ammonia and 1030 tonnes of urea. The commercial production started in April 1976.

The production for the year 1981 and 1982 was as follows:

	1981 (in Metric Tonnes)	1982 (in Metric Tonnes)
Ammonia	1,70,351	1,37,145
Urea	2,86,147	2,28,265

Diversification

The company is now producing ammonium bi-carbonate at Mangalore. The annual capacity to produce ammonium bi-carbonate is 3600 MT.

The company has received letter of intent for the manufacture of DAP with an annual capacity of 63,500 tonnes of P₂O₅. The technology for the manufacture of DAP has been identified. Necessary clearances have been obtained from the financial institutions. The DAP plant is expected to be commissioned towards first quarter of 1985.

The company's economic marketing zone comprises Karnataka and parts of Kerala, Tamil Nadu, Andhra Pradesh and Maharashtra. The distribution of 'MANGALA' urea is arranged through institutional agencies such as (i) Karnataka Agric Industries Corporation Limited, (ii) Karnataka State Co-operative Marketing Federation Limited, and prominent fertiliser distributors EID Parry Limited. The company has also taken up direct sales to consumers and dealers. Thus, the equitable and timely supply of fertilisers at controlled prices fixed by the Government of India is ensured through a wide network of retailers. The company is endeavouring to distribute about 75 per cent of its urea production in Karnataka. The company's production is moved by road as well as by broad and meter gauge rail in the marketing zone.

The company, in response to the request of the Ministry of Agriculture and Irrigation, Government of India, has also agreed to handle and distribute imported fertilisers on behalf of the Government of India under the company's new brand name of 'SUMANGALA'. It has distributed 'SUMAN-

GALA' fertilisers to the extent of 2,43,543 tonnes in 1981 and 2,26,030 tonnes in 1982.

The company is following an enlightened policy of sales with the long term objectives of exploitation of the market potentialities by securing the confidence and goodwill of the farmers, planters, distributors and their dealers. With a view to assisting the farmer in achieving maximum yield and profit, the company has launched many projects and

programmes like block demonstration, Village Adoption Programmes, Gramvikas Projects and Dryland Development Projects in collaboration with the Department of Agriculture, Government of Karnataka, University of Agricultural Sciences and Grameena Banks in the State.

Shri A. B. Datar, Chairman & Managing Director, is a Director on the Board of The Fertiliser Association of India.

32. THE MINERALS & METALS TRADING CORPORATION OF INDIA LTD.

Regd. Office: 9 & 10, Bahadurshah Zafar Marg,
Express Building, Post Box 7051, New Delhi-110002

Grams: EMTICIFERT

Telex: 2285 & 2934

Tele: 263413

BOARD OF DIRECTORS

Shri S. V. S. Raghavan
Chairman

" A. C. Bose
Executive Director

" Suresh Chandra
Executive Director

Shri P. S. Kohli
Director

" P. G. Ramrakhiani
Director

" C. S. Venugopala Rao
Director

" R. B. Gupta
Director

Company Secretary: Shri S. K. Kapur

The Minerals & Metals Trading Corporation of India was incorporated as a private limited company on 26th September, 1963. It started functioning with effect from 1st October, 1963 and became a public company from 1st July, 1975. The authorized share capital of the Corporation is Rs. 50 crore and the paid up capital is Rs. 35 crore. The entire capital is subscribed by the Government of India.

The central aim of the corporation is to broaden and enlarge the scope of exports of mineral ores and to arrange imports of essential minerals and metals for distribution to the industrial units in the country. The total trade turnover of the corporation in 1982-83 was Rs. 1207 crores, with exports accounting for Rs. 288 crore, imports for Rs. 910 crore and domestic trade for Rs. 9 crore.

Iron ore is the principal item of export handled by the corporation and accounted for over Rs. 259 crore followed by manganese ore for Rs. 16 crore, chrome ore for Rs. 6.5 crore, barytes for Rs. 0.5 crore, and coal for Rs. 4 crore.

To boost the exports of mica, a subsidiary corporation, styled as Mica Trading Cor-

poration of India, was established on 18th June, 1973 with its registered office at Patna. It commenced functioning with effect from 1st June, 1974. During 1982-83 the subsidiary company exported mica worth Rs. 24 crore.

The role of MMTC in regard to the handling of imports is directly related to the import policy announced by the Government from time to time. The corporation has built up expertise in the field of imports and has been entrusted increasingly with the import and distribution of essential raw materials to the industrial units in the country.

The total import turnover in 1982-83 was Rs. 910 crore. Fertiliser and fertiliser raw materials accounted for Rs. 406 crore—a steep decline from the previous year's level of Rs. 894 crore. Due to increase in indigenous production and depressed consumption level fertiliser imports were much lower than in 1981-82. During 1982-83, the corporation arranged import of about 20 lakh tonnes of fertilisers and 23 lakh tonnes of fertiliser raw materials. The import turnover in other items, viz., copper, zinc, lead, tin, aluminium etc., during 1982-83 was Rs. 444 crore, steel Rs. 13 crore, industrial raw materials like raw asbestos, flourspar, antimony metal Rs. 39 crore, and diamonds Rs. 8 crore.

The corporation serves a large number of industrial units spread all over the length and breadth of the country and has regional offices at Bombay, Calcutta, Madras, Viskhapatnam, Vascodagama, Cuttack, Haldia and Nalda and foreign offices in Tokyo and Bucharest. The corporation also has set up godowns in Ahmedabad, Bombay, Calcutta, Bangalore, Delhi, Kanpur, Ludhiana, Hydera-

bad, Madras and Yamuna Nagar. As an organisation responsible for the import of essential industrial raw materials and fertilisers, the MMTC has to play an increasingly important role in the years to come in the development plans of the country.

Shri Suresh Chandra, Executive Director, is a Director on the Board of The Fertiliser Association of India.

33. R. C. MITTER & SONS

"Ramesh Kuthi", 54, Ramkanto Bose Street, Calcutta-700 003

Grams: 'PLANTFOOD' CALCUTTA

Tele: Head Office: 55-3889, 55-3767, 55-7536

The firm started functioning in North-East India about 40 years back as one of the distributors of fertilisers and manufacturers of fertiliser mixtures. The then senior partner of the firm, Late R. C. Mitter, was connected with the fertiliser industry, since about 1910 and was associated to a great extent with almost all the important fertiliser concerns of Eastern India since the inception of their fertiliser departments before starting the present firm.

Late S. C. Mitter, ex-senior partner of the firm, was one of the sponsors and guiding stars of the Fertiliser Association of India. He was the first Chairman of the FAI, Eastern Region and occupied the said post consecutively for many years. He was also a Director of the FAI for a long period. He was a popular figure in the fertiliser trade and was actively connected with it for about 43 years.

The firm has extensive dealings in both organic and inorganic fertilisers of every description in this part of India. The firm has also been acting as one of the distributors to the North East India Tea Industry, appointed by the Ministry of Food and Agriculture, Government of India for about last 30 years. They are also one of the leading distributors of the Fertiliser Corporation of India, Indian Potash Ltd., etc.

The firm is connected in this line of trade traditionally for generations.

Structure

Registered Partnership firm.

Present Partners:

- Shri Asim Kumar Mitra, B.Sc.
- " Amar Jyoti Mitra, M.Sc. (Ag.)
- " Subhas Chandra Mitra, B.Sc.
- " Saibal Mitra
- " Tamal Mitra and others

Products

Handles all types of organic and inorganic fertilisers. Also manufactures every type of fertiliser mixture. The installed capacity of the factory is 20,000 tonnes of mixed fertilisers.

Marketing activities

At present the marketing activities are mainly confined to North East India Tea industry where the firm is very well connected practically with all the major and renowned tea estates.

The other sectors of the industry like agriculture, sugarcane, etc., are being served by some of their sister concerns. The sister concerns of this firm are also manufacturing pesticides, insecticides and some of the fertiliser ingredients, soil amendments, etc., such as rock phosphate powder, dolomite powder, lime stone powder, gypsum powder etc.

34. THE MYSORE FERTILISER COMPANY

Props.: MFC Industries Pvt. Limited, "Lotus Court", 165, Thambu Chetty Street, Post Box No. 1206, Madras-600 001

Grams: 'NITROGEN'

Tele: 22421 & 22422

MANAGING DIRECTOR

Shri V. Mohan Rao

The Mysore Fertiliser Company was established in 1935 at Bangalore as a mixing firm. Later, the Head Office was shifted to Madras and business carried on as a partnership concern. The activities were then extended to Tamil Nadu, Andhra Pradesh, Karnataka, Kerala and Pondicherry States. It was converted into a Private Limited Company in 1965 and a number of sister concerns were started. The paid up share capital of the company and sister concerns are about Rs. 85 lakhs. The company has branches at: Vijayawada, Hyderabad, Kuppam, Cuddappah in Andhra Pradesh; Bangalore, Chikmagalur, Hassan and Koppal in Karnataka State; Palghat and Kottayam in Kerala State and Coimbatore, Erode, Cuddalore and Ootacamund in Tamil Nadu.

The company has a network of over 3000 depots and sub-depots to promote the sale of its products and supervised by the above branches through their sales officers in each district. The company has 11 mixing centres making special balanced fertilisers of all types of all cultivated and plantation crops.

The company is also marketer for nitrogenous, complex and phosphatic fertilisers of Public Sector, Joint Sector and Private manufacturers and also bulk marketer for other products. Manufacturers of various kinds of bone products, leather waste and animal waste into useful manures. It has laboratories at Madras, Vijayawada and Hassan for quality control.

The company is recognised by the State Governments of Tamil Nadu, Andhra Pradesh, Karnataka and Kerala as well as by Commodity Boards. The company also mar-

kets pesticides, copper-sulphate, calcium oxide, dolomite, sprayers, seeds etc. through their network of dealers.

Mysore Insecticides Co. (Private) Ltd., Mysore Insecticides Co. (Andhra Pradesh), Karnataka Chemicals and Pesticides—the sister firms of the company are formulators of various pesticides and insecticides based on BHC, DDT, Heptachlor, Chlordane, Tedion, Zolone, Dimethoate, Malathion etc. Special formulations for Plantations and commercial crops on exclusive basis is a speciality.

Hassan Coffee Curing Works (Private) Ltd., is one of the group companies established with up-to-date machinery and equipped with electronic sorting machine for grading coffee to obtain the best qualities for exports. This company caters to plantation community for all estate requirements.

Mico Farm Chemicals Ltd., Manufacturers of basic pesticides and formulators of various kinds of pesticides. The company manufactures benzene hexachloride technical, lindane technical and dimethoate technical. The company is attached with research and development laboratory and are under diversification on chemical industry.

Under this group, associate concerns are distillers of various essential oils of export market in US, Europe and Far Eastern countries also exports granites, starch, and perfumary compounds. Importers of edible oils, pulses and indenting agents for reputed foreign manufacturers.

Shri V. Mohan Rao, Managing Director of the company, is on the Board of Directors of Fertiliser Association of India.

35. NATIONAL FERTILISERS LIMITED**Regd. Office: 20, Community Centre, East of Kailash, New Delhi-110 065****Gram: FERTNAT****Telex: 4073****Phone: 681706 (PBX) to
681715****BOARD OF DIRECTORS**Shri B. S. Kakkar
Managing Director" Y. P. Passi
Director (Finance)

" P. S. Kohli

" R. Ramanathan

Shri T. K. Sinha

" N. Srinivasan

Other Executives

Shri S. Naranayan, GM, Panipat

" Prem Kumar, GM, Bhatinda

" G. P. Khurana, GM, Nangal

National Fertilisers Limited was incorporated on 23rd August, 1974, initially with the responsibility of implementing two identical fuel oil based fertiliser plants, one each at Panipat (Haryana) and Bhatinda (Punjab). On 1-4-1978, under the scheme of reorganisation of FCI-NFL, Nangal and Nangal Expansion Unit as also marketing offices of Northern Marketing Zone of FCI were taken over by NFL.

Capital Employed

The present authorised capital and the paid up capital of the Company as on date are Rs. 400 crore and Rs. 274.28 crore respectively. The total investment upto 31-3-83 is Rs. 572.53 crore.

Existing capacity

The constituent production units of the company are located at Nangal, Bhatinda and Panipat. While, Nangal Expansion Unit commenced commercial production in November, 1978, Panipat and Bhatinda Units were declared to be as under commercial production, w.e.f. 1-9-79 and 1-10-79 respectively. The total installed capacity is 3,18,160 Te of CAN and 13,52,000 Te of urea, i.e. 7,01,460 Te in terms of nitrogen.

Units profile

Bhatinda, Panipat and Nangal Expansion Projects are first of their kind in the country and employ latest technology for ammonia production by partial oxidation of heavy petroleum feedstocks, sophisticated instrumentation and nearly complete automation for process control. The units have also adopted the latest technology in regard to anti-pollution measures.

Rated capacities

The annual rated capacity in terms of nitrogen and products of the constituent units is indicated below:

1. Nangal

National Fertilizers Ltd.	Nitrogen: 2,31,340
Nangal	Urea : 3,30,000
Naya Nangal	CAN : 3,18,160

2. Bhatinda (Punjab)

National Fertilizers Ltd.	Nitrogen: 2,35,060
Sibbian Road	Urea : 5,11,000
Bhatinda (Punjab)	

3. Panipat

National Fertilizers Ltd.	Nitrogen: 2,35,060
Gohana Road	Urea : 5,11,000

Marketing activities

NFL's marketing area of operation comprises the States of Punjab, Haryana, Rajasthan, Himachal Pradesh, J & K and Union Territories of Delhi and Chandigarh. On the basis of ECA allocation made by Government of India, fertilisers are distributed to the State of UP also.

A double channel of distribution is employed, viz., apex agro-cooperative in institutions and private traders. Private trade constitutes dealers in various categories, viz., small scale traders, dealers appointed entrepreneur development, MPDC, ex-servicemen or dependents of those killed in action, those belonging to SC/ST and dealers from backward classes and economically weaker sections.

In addition to the above, factory gate sale points have been started for the first time in India at Nangal, Bhatinda and Panipat. Plants to supply CAN/Urea in loose form directly to the farmers. These sale points are run departmentally by the marketing division.

As on 31-3-1982, the dealership network of NFL totals to 803 dealers under the various categories.

Sales turnover

The sales turnover of the Company during the financial year 1981-82 was Rs. 319.69 crore including Rs. 3.5 crore for industrial products.

New schemes

For optimum utilisation of ammonia produced at all the three plants, a common ammonia grid is being established with the creation of additional ammonia storage facilities at all the plants and acquiring of a fleet of ammonia tank wagons. To overcome

the power supply problem at Panipat and Bhatinda captive power plants are being installed. A methanol plant mainly for captive use for NFL is also being set up at Nangal.

New project

The company is presently engaged in setting up of a gas based fertiliser project at Vijaipur, Distt. Guna, Madhya Pradesh.

Shri B. S. Kakkar, Managing Director, is a Director on the Board of The Fertiliser Association of India.

36. NEYVELI LIGNITE CORPORATION LIMITED (A Government of India Enterprise)

**Regd. Office: Corporate Office, Neyveli-607 801,
South Arcot Dist. Tamilnadu**

Gram: "SALES"

Telex: 41-7350 NLC

Phone: NTS/215

BOARD OF DIRECTORS

Shri G. L. Tandon
Chairman-cum-Managing Director
NLC Ltd., Neyveli-607 801

" P. K. Lahiri
**Joint Secretary to the
Govt. of India,**
Ministry of Energy,
Department of Coal,
New Delhi-110 001

" S. Narayan,
Financial Adviser &
Joint Secretary,
Ministry of Energy,
Department of Coal,
New Delhi-110 001

" L. R. Suri,
Member (Thermal)
Central Elecl. Authority
Seva Bhavan, R.K. Puram,
New Delhi-110 057

Shri K. J. M. Shetty,
Secretary to the Government,
Finance Department,
Govt. of Tamil Nadu

" B. Vijayaraghavan,
Chairman,
Tamil Nadu Electricity Board,
157, Anna Salai,
Madras-600 002

" T. V. Lakshmanan,
Director (Mines),
Neyveli Lignite Corpn. Ltd.,
Neyveli-607 801

" K. S. Sastry,
Director (Finance),
Neyveli Lignite Corpn. Ltd.,
Neyveli-607 801

Introductory

The Neyveli Lignite Project is one of the mighty Public Sector Enterprises in India, situated in South Arcot District of Tamil Nadu. The genesis of the project was that the occurrence of lignite in and around Neyveli came to prominent notice in the later thirties, while drilling borewells for irrigation purposes in the region between Neyveli and Chidambaram. During 1943-46, the Geological Survey of India drilled a number of bore holes which revealed the abundant availability of lignite over an area of about 25 square miles in and around Neyveli. The

preliminary exploratory work was carried out by the State Government and then by the Government of India. The project was built into the present vast complex by the Neyveli Lignite Corporation Limited a company owned by the Government of India and incorporated under the Company's Act, 1956. In November, 1956, the present estimated reserve of Lignite is 3300 million tonnes spread over an area of 480 sq. K.M. The present authorised capital of the Company is Rs. 750 crores, consisting of 75,00,000 equity shares of Rs. 1,000 each. The special feature of the project is that it is an

integrated one in which the lignite extracted from the mine is completely utilised by the down stream plants to form an industrial complex.

(2) The constituent units of this project are:

- (i) An open-cast mines to extract lignite @ 6.5M.T./year.
- (ii) Thermal power stations to generate electric power, using Lignite as fuel —600 M.W.
- (iii) A fertiliser plant to manufacture 'UREA' based on lignite as the feed stock, now changed in furnace oil. A modern fertilizer plant based on solid feed stock lignite is under consideration.
- (iv) A briquetting and carbonisation plant to carbonise lignite into coke. Another project under review for the production of coke suitable for industries.
- (v) A clay washing plant to supply refined white clay under the commercial name "NEKOLIN".
- (vi) II mine cut with a capacity of 10.5 millions/annum under development.
- (vii) II thermal power plant of 1470 MW under construction.
- (viii) A III mines cut with a capacity of 13.5 M.T./annum for thermal power & other products under consideration.

(i) **Open cast mine**

The open cast mine was inaugurated by the then Prime Minister, Shri Jawaharlal Nehru on 20-5-1957. The first steam of lignite was exposed in August 1961. The present production of lignite is around six million tonnes per annum. The annual requirements for all the consuming units, viz., thermal power station, and briquetting and carbonisation plant at full production, is around 6.5 million tonnes.

The extraction of lignite in 1980-81 was 48.01 lakh tonnes, in 1981-82 it was 58.76 lakh tonnes and in 1982-83 64.01 lakh tonnes. The cumulative production is around 700.05 lakh tonnes,

(ii) **Thermal power station**

In a traditionally power starved State like Tamil Nadu, the imperative need for Thermal Power Station needs little emphasis. Neyveli Thermal Power Station was constructed in three stages; first 250 MW, next 400 MW and third 600 MW. The 600 MW station has been in operation since 1970. Lignite is used as fuel for the Power Station. However, since the capacity of mine was inadequate to supply lignite for optimum generation at the Power Station. Pending expansion of the mine capacity, two of the 50 MW Units of the power station were converted for operation on furnace oil in 1974.

The two oil fired units are now converted back to lignite fuel since the capacity of the Mines is raised to 6.5 million tonnes. In

1980-81, 2809.81 MU (net) of power was generated in 1981-82, 300.55 MU (net) and in 1982-83 3415 MU (net) of power was generated and the total generation since commissioning the Plant 42,123 MU.

(iii) **Fertiliser plant**

The Fertiliser Plant at Neyveli has a capacity of 465 tonnes of Urea per day and was commissioned in 1966. The Fertiliser Plant which was initially based on lignite since its inception was converted from lignite to oil gasification on 16-7-79. The Fertiliser Unit achieved the production 1.34 lakh tonnes of Urea in 1980-81, 98,640 tonnes of Urea in 1981-82 and in 1982-83 1,01,211 tonnes of Urea. The plant has so far produced from the commencement of the Plant 13.05 lakh tonnes till March, 1983.

(iv) **Briquetting and carbonization plant**

This plant produces carbonised lignite briquettes sold under the trade name "LECO" and different fractions of coke fines. Leco is used both as a fuel and a chemical reductant in a number of industries such as ferro alloys, carbide, mini steel, textiles, paper, tyre retreading, rubber, tea, fried gram, sago, dyeing, sizing mills, magnesite, etc. One supreme advantage in using this reductant is that it is phosphorous-free coke in this process raw lignite is crushed and dried in steam dryers to reduce the moisture content. The dried lignite is compressed and pressed through extrusion presses to yield uniform briquettes. These briquettes are then carbonised in low temperature carbonisers to form carbonised briquettes. The capacity of the plant is 4.36,000 tonnes of coke per year. The gas liquor received from the carbonisers is processed in the Tar Production Unit to yield a number of valuable byproducts such as tar, carbolic acid, orthocresol, metapara cresol, xylolol and multivalent phenols. These chemicals are used in wide range of chemical and plastic industries. The fines that are obtained along with the briquettes are purchased mainly by cement factories and brick kilns. Production of coke during 1980-81 was 1,19,411 tonnes, 1,88,419 tonnes during 1981-82 and in 1982-83, 1,72,112 tonnes and the cumulative production is around 16 lakh tonnes.

(v) **Clay washing plant**

Good quality white China clay deposits occur immediately above the lignite seam. The clay washing plant with a capacity of 6,000 tonnes of washed clay a year was commissioned in December 1961. The clay is used in a number of industries such as manufacture of electrical insulators, sanitary-ware, ceramics, crockery and also in paper and rubber mills.

Shri G. L. Tandon, Chairman-cum-Managing Director, is a Director on the Board of the Fertiliser Association of India.

37. PALLISHREE PRIVATE LIMITED
Fertilisers Sprayers Agro-Chemicals
Farm: Arambagh, Hooghly

New City Office: P-31, C.I.T. Road (1st Floor), Calcutta-700 014

Telegram: METRIPRAN

Telex: CA 2317

Tele: Calcutta Office 24-6398
New Delhi Office 24-2399

BOARD OF DIRECTORS

Shri B. K. Roy, B.A., LL.B.
Managing Director

" B. Bhanja, B.A.
Director

Shri P. K. Bose, LL.B., F.C.A. (England)
Director

" P. K. Roy, M.Sc.
Director

Dr. P. K. Roy, M.S. (Cal.)
Director

Registered Office:

Arambagh, Dist. Hooghly (West Bengal)

Principal Sales Office:

(a) 7, Indian Mirror Street, Calcutta-700 013.

(b) P-31, New C.I.T. Road, Calcutta-700 014

Branches:

1. Muzaffarpur (Bihar)
2. Gauhati (Assam)

The company was started as a joint Stock Company in the 1948 with a view to developing agriculture and rural economy. The promoters of the company were idealistic educated social workers of West Bengal. To improve the time-worn and outdated methods of agriculture of West Bengal, the company started farming business at Arambagh, Dist. Hooghly with modern irrigational and agricultural machines in wasteland. The agricultural farm has been successfully developed and has become a model for other cultivators of the locality. The pioneer efforts

were crowned with success and the company established a cold storage for the benefit of themselves as well as of local cultivators. The cold storage is efficiently managed by the company for storing seed potatoes.

The company is also distributing fertilisers and manures since long in the States of West Bengal, Bihar, Assam, Meghalaya, Manipur and Tripura.

There are storage godowns at Tarakeswar and Arambagh in Hooghly and Seharabazar in Dist. Burdwan and also storage godowns in Calcutta and Muzaffarpur and Gauhati.

The company manufactures fertiliser mixtures of different grades approved by the Government of West Bengal and the Government of Bihar; they also manufacture sterilised animal meal and manure; the product is marketed in brand name of "SULFA PLANTING MIXTURE."

38. PEIRCE LESLIE INDIA LIMITED

Regd. Office: 22/945, Jeppu Road, Mangalore-575 001

Head Office: Bristow Road, Willongdon Island, Cochin-682-003

Other Offices: Calicut, Coimbatore, Mangalore, Bangalore, Madras, Trivandrum, Ernakulam, Tuticorin

Factories: Kara & Mamally (Calicut), Tellichery, Kulshekar & Jeppu (Mangalore), Hassan, Pollachi, Mettupalayam and Trichy

Depots: Pollachi, Trichy, Mettupalayam, Hassan, Hospet, Ernakulam

Telegram: 'PEIRCEWIL COCHIN'

Telex: 0885-215 PLI IN

Phone: 6868, 6869 and 6860

Peirce Leslie started as a partnership in Malabar in 1862, their main business being the curing of coffee and export of agricul-

tural produce, coir yarn, etc. and acting as Lloyd's Agents. The company subsequently acquired agencies for a number of shipping

lines, insurance companies, etc. In 1901 the business was transferred to a Private Limited Company registered in the United Kingdom. Peirce Leslie India Limited was incorporated as a Private Limited Company in May 1968 and took over the business carried on by the U.K. Company. In October 1969, it became a Public Limited Company.

Starting in late 1920's the company over the years has built up a successful business in the processing and export of cashew kernels and cashewnut shell liquid, which is now one of the major activities of the company. It has 5 cashew processing factories located at Mangalore, Tellicherry and Calicut, in which they employ about 3500 workers and the annual export turnover in cashew products is to the tune of Rs. 4 to 5 crores. The Company is a pioneer in the field of cashew processing and export. As agents for the Coffee Board, it handles annually 14/15000 tonnes of coffee for curing in their factories located at Mangalore, Calicut and Hassan.

The company has six mixing works located at Calicut, Hassan, Mangalore, Pollachi, Tiruchirapalli, Mettupalayam and supply Fertiliser Mixtures to tea, coffee, rubber and Cardamom Plantations as well as ryot crops. It has a wide network of over 900 fertiliser dealers in Tamil Nadu, Kerala and Karnataka. The company also represents a few reputed pesticides manufacturers for marketing their various pesticides in Southern India. The Company has acquired management control of an Engineering and Pesticides manufacturing unit, namely, Venkateswara Agro Chemicals & Minerals (P) Ltd., Madras.

The company is an IATA approved travel and air cargo agent and currently is engaged in a substantial expansion of travel and air cargo agency in a big way. It has also secured the approval of the Ministry of Labour, Directorate General of Employment & Training, Government of India, as an overseas Recruiting Agent and has already started recruiting personnel, particularly to Middle East. It has its well equipped travel offices at Ernakulam, Calicut, Bangalore, Trivandrum, Madras and Coimbatore.

The company supplies the entire requirements to planters of tea, coffee, rubber and cardamom estates. For nearly two decades, it has been doing successfully helicopter spraying of weedicides and fungicides to rubber plantations in and around Kerala and is now entering other States for spraying cotton, mango, fruits, etc. It holds agencies for Shalimar Paints, Mafron Refrigerant Gas, Aluminium Linings, VACM Pesticides and NOCIL Agrochemicals, Shipping lines etc., and has specialised departments for Clearing & Forwarding of cargo at Cochin and Mangalore. The Company is now giving greater emphasis on exports and diversifying its activities.

The Company owns two subsidiary companies namely, (a) PL Coffee Limited with a Coffee Curing factory at Hassan and a Cashew Processing Factory at Pollachi and (b) PL Finance & Investment Limited for undertaking equipment leasing to finance the capital expenditure requirements of a large number of users.

The company has an authorised capital of Rs. 1 crore and a paid-up capital of Rs. 55 lakhs. The reserves amount to about Rs. 84 lakhs as at 30th September 1981.

39. THE PHOSPHATE COMPANY LTD. 14, Netaji Subhas Road, Calcutta-700 001

Gram: SUPERALUM

Tel: 22-0771 (3 lines)

BOARD OF DIRECTORS

Shri B. D. Bangur
Chairman
" R. N. Bangur

Shri B. M. Khaitan
" C. M. Mookherjee

The company was established in 1949 and started production of superphosphate in 1950. The company has an authorised capital of Rs. 50,00,000 and subscribed and paid-up capital of Rs. 43,31,200. The promoters of the company are the pioneers of Fertiliser Industry in Eastern India.

The company's works is situated at Rishra in the Hooghly District of West Bengal. It has facilities of manufacturing superphosphate both in powder and granulated forms Fertiliser mixtures both N.P.K. and N.P grades in granular forms are also manufactured at its works. Apart from fertiliser manu-

facturing facilities, there are two streams for production of sulphuric acid and plants to produce various types and grades of sulphate of alumina and sodium silicofluoride.

The organisation has been making steady progress in various fields and sharing their expertise and experience in the fields of fertiliser manufacture, marketing and promotion with others. It also offers its technology for the production of granulated NPK fertiliser mixtures, alums, sodium bicarbonate, etc.

Various firsts are to the credit of the company. It is the first to manufacture superphosphate in both powder and granulated form and the first unit for manufacture of N.P.K. granulated fertilisers in Eastern India. The company is also the first unit in the country to utilise the waste gases of their superphosphate plant to produce fluorine compounds. The fluorine compounds play a vital role in various industries, simultaneously saving valuable foreign exchange.

In its activities for the promotion of balanced fertilisation in the country and optimum use of the scarce resources, the company was the first to set up free soil testing laboratory in Eastern India in the private sector. The company organises large scale demonstrations covering 50 or more acres of compact land of farmers at 3 to 4 selected sites in districts comparatively backward in respect of fertiliser use and disseminate impacts of successful demonstration by organising farmer's field day in presence of soil and agricultural scientists and also administrators for enthusing farmers to use fertilisers and adopt modern method to get increased farm production.

The company's fertilisers, e.g., superphosphate and granulated mixed fertilisers are marketed under the trade name "LAKSHMI".

The company has set up a full fledged marketing and service organisation in the States of West Bengal, Bihar and U.P. with zonal offices at Patna, Varanasi and Delhi.

40. PAUSHAK LIMITED

Regd. Office: Alembic Road, Baroda-390 003 (India)

Gram: "PAUSHAK"

Telex: 0175/304

Phone: 83151/82551/82568

Paushak Limited (which was incorporated on 24th April, 1968) has contributed its services to Indian agriculture and also for the development of sound agricultural practices by offering balanced fertilisation and crop protection measures for agricultural independence and economic development of the nation.

The Board of Directors consists of Shri C. R. Amin (Chairman), Shri R. B. Amin, Shri B. D. Patel, Dr. J. S. Patel, Dr. M. R. S. Iyengar, Shri M. D. Shah and Shri R. C. Shah. The authorised capital of the company is Rs. 3,00,00,000 and subscribed and paid up capital is Rs. 84,90,000 in shares of Rs. 10/- each.

Historically, it has been proved as the common acceptable fact that Alembic has contributed not only in pharmaceutical products but also in other products needed for industrialisation, the fertility of soil and protection of crops.

It started the manufacture of sulphuric acid in 1951 with a 10 tonnes per day capacity plant. In 1964 a new 50 tonnes per day capacity plant of sulphuric acid was installed to cater to the increasing needs of other industries and to increase its

production of superphosphate which provides one of the most required major nutrients for abundant and rich crop.

Superphosphate plant was also established in 1951 with a capacity of 21,000 tonnes per year which was further expanded to 33,000 tonnes per year. Application of balanced fertilisers is a must for maximum yield. And the manufacture of balanced mixed fertilisers (NPK) of the recommended grades was started under the trade name ALCHEMPHOS in the year 1969.

Presently, Paushak is also marketing all over India, Kilex pesticides formulations for the protection of valuable crops from insects and other pests to offer as much services as possible for increasing agricultural production. The plant for the manufacture of technical carbaryl, one of the largely used pesticides, is already commissioned and commercial production is already commenced. The know-how for the manufacture of intermediates and final product carbaryl is also developed by the research and development division of the company, which can be considered as an achievement in the field of pesticides indigenously manufactured.

Paushak Limited has also been appointed as distributors of ammonium sulphate manufactured by Polymers Corporation of Gujarat Limited, a State Government undertaking for marketing of its entire production of this very important nitrogenous fertiliser. This shows that it has also been accepted by the State Government undertaking that for efficiently marketing their product through established distribution channel and efficient field force Paushak Limited can definitely contribute a lot.

Paushak is known for its quick services and availability of its products at the nearest outlet for the farmers due to its organised

distribution channel throughout India. This channel in all four zones of the country with different stocking points make the products available to the farmers of even interior villages at the right time at the right place and at reasonable price.

In a nutshell, Paushak views from the farmers point of view by constantly viewing the environment in which farmer works. This has helped to develop a perfect formula for prosperity—a unique agricultural service. This package of inputs and practice helps turn agriculture into an organized industry thus helping the farmer to obtain yields and optimum economic benefits.

41. PREMIER FERTILISERS LIMITED
(Regd. Office: No. 29, Police Commissioner's Office Road,
Egmore, Madras-600 008)
19, Wheatcrofts Road, Nungambakkam, Madras-34

Grams: GROWELL

Tele: 83489, 89282

BOARD OF DIRECTORS

Shri S. James Frederick
Chairman
Dr. Easo John
Shri P. N. Devarajan

Shri H. M. Pandey, I.A.S.
" P. Manickavasagam
" Sameer Vyas, I.A.S.

Premier Fertilisers Limited is a public limited company, registered under the Indian Companies Act, 1956 and incorporated on 31-3-1960.

The authorised capital of the company is Rs. 1,00,00,000 consisting of Rs. 2,50,000—9 per cent taxable cumulative preference shares of Rs. 10 each and 7,50,000 equity shares of Rs. 10 each. The paid-up capital of the company is Rs. 50,00,000 consisting of 5,00,000 equity shares of Rs. 10 each fully paid-up.

The company is engaged in the distribution and marketing of popular brand 'Nataraja' N.P.K. fertiliser mixtures. Besides it is also distributing urea and complex fertilisers manufactured by Madras Fertilisers, Rashtriya Chemicals and Fertilisers, Tamil Nadu Agro Industries Corporation, Mangalore Chemicals & Fertilisers, etc. and the various pesticide items manufactured by

Coromandel Indag Group of Companies.

The company has a network of sales organisations in Tamil Nadu and Andhra Pradesh with headquarters at Madras. It has also branches and mixing centres at Vellore, Villupuram, Coimbatore, Salem, Trichy and Madurai in Tamil Nadu and sales office at Anantapur in Andhra Pradesh.

It has ample storage facilities in the above places. At these centres, it has qualified personnel to look after marketing and sales promotion. Each unit is in-charge of experienced personnel with adequate experience in marketing fertilisers. It has established a network of about 1,000 dealers in Tamil Nadu and Andhra Pradesh.

It is proposed to broaden the marketing activities of the company so as to include, in due course, the full range of agro-inputs such as straight fertilisers, seeds, chemicals and water management equipments, in addition to the existing marketing lines.

42. PYRITES, PHOSPHATES AND CHEMICALS LIMITED (A Government of India Undertaking)

6. Community Centre, East of Kaliash, New Delhi

Regd. Office: Dehri-on-Sone, Distt. Rohtas (Bihar)

Gram: SULPHUR

Tele. (Delhi): 681231
681407

BOARD OF DIRECTORS

Shri T. N. Jaggi
Chairman-cum-Managing Director
" K. P. Srivastava
Director, Ministry of Chem. & Fert.
" C. P. S. Nair
Advisor (S&T), Ministry of Steel
& Mines
" V. Krishnamoorthy
Dy. Financial Advisor,
Ministry of Chem. & Fert
" B. N. Dhondiyal
Secretary, Deptt. of Mines,
Govt. of Rajasthan

Shri K. Sundra Rajulu
Chief Director, Cooperation
Ministry of Agriculture &
Cooperation
" R. K. Sinha
Commissioner & Secretary,
Deptt. of Mines, Bihar
Dr. S. P. Dhua
General Manager (Mktg.)
H.F.C. Limited

Introduction

Pyrites, Phosphates & Chemicals Limited was set up in March, 1960 initially as a subsidiary of National Industrial Development Corporation Limited. It assumed independent status in September, 1963 as a wholly owned Government of India enterprise under the administrative control of Ministry of Chemicals & Fertilisers. It is engaged in the mining of pyrites and rock phosphate. Pyrites is the only source of sulphur in the country. Deposits of pyrites are available at Amjhore, Distt. Rohtas (Bihar) and Saladipura, Distt. Sikar (Rajasthan). Rock phosphate ore is available in Mussoorie.

The main activities of the company are:

- Mining of pyrites deposit at Amjhore (Bihar)
- Mining of rock phosphate at Maldeota and Durmala Mines of Mussoorie Phosphorite Project, Dehradun (Uttar Pradesh)
- Exp'oratory mining operations in Mussoorie phosphorite blocks at Maldeota and Durmala
- Exploratory mining operations in pyrites deposits at Saladipura (Rajasthan)
- Marketing of rock phosphate powder under the brand name 'MUSSOORIE PHOS' as fertiliser in suitable soils and Agriculture Grade Pyrites in alkali soils.

Capital employed

The company is a public sector undertaking fully owned by Government of India. It has authorised capital of Rs. 15 crore and paid up capital of Rs. 13 crore and the total investment of Rs. 16.70 crore as on 31-3-1983.

Company's activities

Since its very inception in 1960, Pyrites, Phosphates and Chemicals Ltd. (A Government of India Undertaking) under the administrative control of Ministry of Chemicals and Fertilisers, has been working in a very crucial area—mining for agriculture. Exploring and exploiting indigenous fertiliser mineral deposits for the production of direct fertilisers, PPCL has the alternate use of pyrites and rock phosphate through its products, i.e., agriculture grade pyrites and Mussoorie phos.

PPCL is having three projects:

1. Amjhore Mining Project

Amjhore in Bihar is having the largest pyrites deposit in the country sprawling over an area of about 125 sq. km. with an estimated 300 million tonnes of 40 per cent sulphur grade pyrites and a reserve of 1500 million tonnes of 10 per cent sulphur grade pyrites ferrous shales adding upto 275 million tonnes of equivalent sulphur. The production here is done mainly by underground mining and is presently having a daily production

capacity of 400 tonnes of acid grade and 200 tonnes of agriculture grade pyrites making it the largest pyrites mine in the country. The acid grade pyrites goes into the manufacture of sulphuric acid at F.C.I., Sindri Plant and the agriculture grade pyrites is used to reclaim 'Usar' soils of Bihar and Uttar Pradesh.

2. Mussoorie Phosphorite Project, Dehradun, U.P.

Hidden away in the picturesque slopes of the Himalayan ranges in Mussoorie is a bonanza of nature—45 million tonnes of low grade (16-18 per cent) phosphorite ore which is the second largest deposit of phosphate in the country. The company is presently carrying out mining and detailed exploratory operations in Maldeota and Durmala blocks near Mussoorie. Incidentally, the PPCL mines is the first large scale underground exploitation of mineral deposits in the Himalayan ranges in Uttar Pradesh. The mining activities have been developed for a production of 60,000 tonnes of ore per annum. The rock phosphate so mined is pulverised and marketed under the brand name of Mussoorie phos for direct application as a source of 'P' for the farmers across the country. Another notable feature is that the effectiveness and cost benefit ratio of Mussoorie phos have successfully persuaded the farmers to use it as a direct fertiliser. Besides, Mussoorie phos is a very economical source of phosphorus as compared to other water soluble phosphates. Mussoorie phos has proved its efficiency as compared to water soluble phosphatic fertilisers and thus saves around Rs. 3000 in foreign exchange per tonne of P_2O_5 , thus effecting a saving of foreign exchange of about Rs. 4 crore per annum. The company since its inception has saved Rs. 19.80 crore of foreign exchange by producing about 3 lakhs tonnes of Mussoorie phos.

3. Saladipura Pyrite Project

The Aravali ranges of Rajasthan possesses vast source of pyrites at Saladipura where PPCL is proposing to set up a phosphatic fertiliser plant at a capital cost of over Rs. 100 crore with a capacity of 60,000 tonnes of P_2O_5 per annum to serve the needs of farmers of Rajasthan, Punjab, Haryana and Uttar Pradesh.

Research and Development

The economic feasibility of fully exploiting the above reserves of pyrites and rock phosphate is being examined by our company which would save substantial amount of foreign exchange by way of reducing the import of elemental sulphur and rock phosphate.

PPCL, PDIL and other scientists have confirmed the possibility of extracting elemental

sulphur from Amjhore pyrite ferrous shales.

PPCL with the help of UNDP has sponsored Research and Development and investigation scheme for (i) Amjhore pyrites and (ii) Mussoorie rock phosphate. The scheme for Amjhore pyrite consists of: (a) Studies and preparation of feasibility report for extraction of elemental sulphur, and (b) manufacture of sulphuric acid from low grade pyrites of Amjhore containing low sulphur and high silica.

The scheme regarding Mussoorie rock phosphate consists of conducting beneficiation studies for upgrading the low grade ore from 17 per cent to 30 per cent P_2O_5 and to conduct investigations for preparation of new forms of fertilisers directly from low grade rock phosphate obviating the necessity of beneficiation.

Products of the company

The company is at present having three products, viz.

- Acid grade pyrites for production of sulphuric acid.
- Agriculture grade pyrites—used as soil amendment material and co-fertiliser for different soils.
- Mussoorie phos—phosphatic fertiliser for various agriculture and plantation crops.

The company is further looking forward for manufacture of nitrophosphate out of its own rock phosphate deposits at Mussoorie.

A.G. pyrites is mostly used in U.P. (90 per cent) and a small quantity in Bihar till now its use was limited as soil amendment material in alkali soils but it has been found as a good source of sulphur nutrient and its use is being extended to tea plantation crops in the east for increasing the productivity of deteriorated tea gardens, total sales of the product at present is about 40,000 tonnes per annum.

Mussoorie phos presently being used in various acid soil areas in the southern States consisting of Karnataka, Kerala, Tamil Nadu and in the eastern States, Bihar, U.P. and Himachal Pradesh. Present consumption in the southern States is about 65 per cent, eastern and north-eastern States is about 30 per cent and in U.P. and Himachal Pradesh is about 5 per cent of the total sales of the product. Total sales of the product is about 60,000 MT per annum. Though presently the product is being used in acid soil areas, its use has been established as a source of P_2O_5 is slightly acidic in neutral soils as well. The use of the product in neutral soil areas has given encouraging results and the Directors of Agriculture in U.P., Haryana, Tamil Nadu, etc. have recommended the use of the product as a

source of P_2O_5 in neutral soils. Thus the product has got a great potential.

Marketing activities

Marketing of all the products of the company is controlled by the Delhi office located at 6, Community Centre, East of Kailash. The products are sold by the marketing organisation which is divided into two zones —north zone with headquarters at Lucknow and south zone with headquarters at Bangalore. The north zone is further divided into different area offices. The area offices are located at Gauhati for north-eastern states, Calcutta for West Bengal and Sikkim, Bhubneshwar for Orissa and Madhya Pradesh, Muzaffarpur for north Bihar, Ranchi for south Bihar, Varanasi for eastern U.P., Lucknow for central U.P., Meerut for western U.P., Haldwani for Tarai areas and Saharanpur for states of Haryana, Jammu and Kashmir, Punjab and Himachal Pradesh. The area offices of south zone are located at Bangalore for Karnataka and Andhra Pradesh, Salem for Tamil Nadu and Pondicherry, Cochin for Kerala and Kolhapur for Maharashtra and Goa. The company is also maintaining a research laboratory at Mussoorie for carrying out agronomical and other research studies.

The product is distributed throughout India by network of private dealers and institutional agencies. Intensive publicity and promotional programmes are undertaken every year in close collaboration with state government officials of agriculture department, research universities and institutions. The corporate publicity is undertaken by Manager (PR&P) from Delhi while other publicity and promotional works are undertaken by Area Offices and Zonal Managers.

The media of publicity is newspapers, professional journals, radio, television, crop and product folders, posters, cinema slides, stickers, wall painting, hoarding, glow sign, throw-away our leaflets, etc. The various promotional programmes are demonstrations in farmers fields, conducting field days, farmers and planters meet, dealers training programme, exhibitions and seminars etc. The company has also adopted number of villages in different states all over the country for undertaking rural development programme initiated by Government of India.

In adopted villages, demonstrations are laid out in farmers fields, fertiliser distributed at subsidised rates, special functions held during harvesting seasons and regular exhibitions and seminars are held in collaboration with officials of state deptt. of agriculture and universities.

For marketing the product, mainly Mussoorie phos, warehouses have also been opened in the states of Assam, Tamil Nadu, Kerala, Karnataka and Andhra Pradesh at various strategic locations from where sales are effected by our area offices.

Industrial relations and welfare

Industrial relations of the company has been cordial and harmonious from its inception. The total number of employees on the roll of the company as on 31-3-83 is 2549.

The various welfare facilities and amenities include housing, medical assistance, water supply, recreation etc. PPCL also has its own cooperative consumer stores which cater to the needs of the employees and dependents. Regular recreation and cultural programmes form an integral part of PPCL communities in their townships.

43. RALLIS INDIA LTD.
Ralll House, 21, D. S. Marg, Bombay-400 001

Grams: RALLI

Telex: PR 2357

Tele: 268221

BOARD OF DIRECTORS

Shri D. S. Seth	Dr. F. A. Mehta
Chairman	Shri H. J. Silverston
Sir George Burton	" R. N. Tata
Shri D. R. Peters	" M. R. Shroff
" J. S. Kerridge	" V. J. Sheth
" C. S. Scroggs	

Alternate Directors

Shri J. S. Hewitt (Alternate Director to Shri C. S. Scroggs)	Shri A. S. Mathieson (Alternate Director to Shri D. R. Peters)
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Secretary: Shri B. K. Laskari**Capital structure**

Authorised capital made upto	
8,00,000 ordinary shares of Rs. 100 each	8,00,00,000
1,00,000 6 per cent taxable cumulative preference shares of Rs. 100 each	1,00,00,000
1,00,000 unclassified share of Rs 100 each	1,00,00,000
	Rs. 10,00,00,000
Issued subscribed and paid up capital:	
5,47,843 ordinary shares of Rs. 100 each	5,47,84,300
75,000 cumulative preference shares of Rs. 100 each	75,00,000
Add amount paid up on forfeited shares	1,800
	Rs. 6,22,86,100

Rallis India Limited have, for over a century, been associated with the agriculture of the country as bulk buyers of agricultural commodities, and since 1950 as manufacturers and distributors of fertilisers and pesticides.

Since 1962, they have a factory at Magarwara (U.P.) with an installed capacity of 72,000 tonnes per annum of superphosphate and 100 tonnes per day of sulphuric acid.

Rallis are one of the two principal distributors for Gromor Complex fertilisers manufactured by Coromandel Fertilisers Limited. They also distribute nitrogenous fertilisers manufactured by the Gujarat State Fertilisers Company Limited and Indian Explosives Limited and products manufactured by Madras Fertilisers Limited. They also have taken up the formulation of trade elements.

In the field of plant protection, they have a very wide range of products, with basic technical material factory and 4 formulating units

Rallis operate through 6 regional offices, 13 sales offices, 25 mixing centres and over 5,000 distributors. They run an Agricultural Advisory Service on a national scale for training the field staff, educating the distributors and giving advice to the customers on various technical matters concerning agricultural operations. They have a well equipped soil testing laboratory in Bangalore and also a biological development laboratory which carried out intensive laboratory and field trials on various plant protection chemicals.

The Fertilisers and Pesticides Division is controlled from the Company's Head Office in Bombay.

Other activities of the Company cover light engineering, consumer products, pharmaceuticals, industrial chemicals, tanning materials, and exports.

Rallis is a founder-member of the Fertiliser Association of India. Dr C. A. Verghese, the President of the Company, represents Rallis on the Board of the FAI.

**44. RAMA KRISHI RASAYAN LIMITED
(Formerly West India Chemicals Limited)**

Office: 17/1, M.G. Road, 2nd Floor, Poona-411 001

BOARD OF DIRECTORS

Shri A. J. Ramsinghani	Shri H. D. Ramsinghani
" M. S. Apte	" B. C. Joshi
" P. I. Firasta	Dr. R. J. Rathi
" P. L. Kekre	Shri G. K. Rao

Capital structure

1. Authorised capital made up of	
(a) 60,000 equity shares of Rs. 100 each	Rs. 60,00,000/-
(b) 15,000 11% redeemable cumulative preference shares of Rs. 100 each	Rs. 15,00,000/-
2. Issued, subscribed and paid up	
(a) 40,000 equity shares of Rs. 100 each	Rs. 40,00,000/-
(b) 15,000 11% redeemable cumulative preference shares of Rs. 100 each	Rs. 15,00,000/-

The factory is located at Lonikalbhor on Sholapur Highway at about 10 miles from Poona city. The company started manufacturing operations during June 1967, but stopped operations during January 1970 due to financial problems.

Shri Ashok J. Ramsinghani and his associates have taken over the company since December 1979. The company was re-named Rama Krishi Rasayan Limited in May 1980.

The company manufactures single super phosphate (16 per cent P_2O_5) and sulphuric acid, the respective licensed capacities being 62,704 TPA and 16,500 TPA. The licensed capacity to single superphosphate was re-endorsed from 33,000 TPA to the current level by the Central Government on the basis of capacity utilisation attained by the company.

The company has its own sales and marketing organisation for distribution of single superphosphate in Maharashtra, Karnataka and Madhya Pradesh.

45. RASHTRIYA CHEMICALS & FERTILIZERS LIMITED

Chembur, Bombay-400 074

Grams: FERTILIZER

Telex: 11-3027 RCF

Phone: 5511451

BOARD OF DIRECTORS

Shri Duleep Singh
Chairman & Managing Director
 Rashtriya Chemicals &
 Fertilizers Ltd.
 Administrative Building
 Chembur, Bombay-400 074

Shri S. M. Kelkar
Secretary
 Industries, Energy & Labour Deptt.
 Govt. of Maharashtra, Mantralaya
 Bombay-400 032

" N. Srinivasan,
 Chief Executive,
 Government of India,
 Heavy Water Projects,
 Deptt. of Atomic Energy,
 Chhatrapathi Shivaji Maharaj Marg,
 Bombay-400 039

" S. Sunder
 Joint Secretary
 Government of India
 Ministry of Finance
 Deptt. of Economic Affairs
 New Delhi

" V. K. Bhussry
 Joint Secretary & FA
 Government of India
 Ministry of Chem. & Ferts
 Shastri Bhavan, New Delhi-110 001

" M. S. Chahal
 Joint Secretary
 Ministry of Agriculture
 New Delhi

" Vinay Malik
 Joint Secretary
 Ministry of Chem & Ferts.
 New Delhi

The Rashtriya Chemicals & Fertilizers Limited was incorporated in April 1978. Apart from manufacturing and selling chemical fertilisers and a whole range of industrial chemicals, RCF also acts as channelising agency for imported Methanol, Ammonia and Urea.

Production performance

During the year 1982-83, RCF produced 477 thousand tonnes of complexes and 270 thousand tonnes of urea. This gives an attainable capacity utilization 66 per cent and 71 per cent 'N' and P₂O₅ respectively.

Capital

Rashtriya Chemicals & Fertilizers Limited is a Public Sector Company, fully owned by the Government of India. It has an authorised capital of Rs. 500 crore as on 31.3.1983 and capital employed as on that date was Rs. 298 crore.

Marketing of fertilizers

The fertilisers of RCF are marketed in a number of states through a well established dealer network well dispersed in the country-side close to the consumption points. The marketing operations are supported by objective oriented promotion and publicity programmes aimed at educating the farmers on judicious use of fertilisers and adoption of modern package of practices. RCF has also evinced keen interest to the rapid development of the agrarian economy of specific areas through various development projects and village adoptior schemes.

Existing capacity

The total attainable capacity of Trombay Unit at present is 317 thousand tonnes of 'N' and 120 thousands tonnes of P₂O₅. Trombay Unit produces both types of fertilisers, namely complexes 'SUPHALA' and 'UREA' with brand name 'UJJWALA'.

The sale of fertilisers during 82-83 was of the following order:

Expansion projects

The work on two urea plants to be erected at Thal-Vaishet in Raigad District of Maharashtra is in progress. This project has a designed capacity of 644 thousand tonnes of 'N' is equivalent to 1,400 thousand tonnes of urea per annum.

	Qty. Thousand tonnes	
Complexes	RCF urea	Imported Products
434	215	13

Marketing of industrial chemicals

RCF continues to make its contribution towards meeting the requirements of some of the specialised chemicals required by chemical industry such as methanol, methanamines, di-methylether, ammonium bi-carbonate, sodium nitrate and nitrite, nitric acid,

ammonium nitrate, argon, hydro fluosilicic acid, gypsum chalk.

The total turn-over of fertilisers comes to 212.44 crore and industrial products 52.83 crore during 1982-83.

Shri Duleep Singh, Chairman & Managing Director, is Vice-Chairman of the Fertiliser Association of India.

46. SHAKTI CHEMICAL & FERTILIZER PRIVATE LTD.
Manufacturers of Quality Fertilizer Granules
Works & Registered Office: Lokai, Kodarma, Dist. Hazaribagh,
Bihar, Pin. 825 410

Phone No.: 33 & 27

Calcutta Office:

9, Esplanade Mansions
 Calcutta-700 069

Manufacturers of mixed granulated fertiliser since 1976

Directors:

Shri M. C. Agarwala
 " U. C. Agarwala
 " V. K. Agarwala

47. SHAW WALLACE & COMPANY LIMITED
4, Bankshall Street, Calcutta-700 001

Grams: SHAWLACE

Tele: 23-5601, 23-9151

BOARD OF DIRECTORS

Shri S. P. Acharya
Chairman & Managing Director
 " Ajaib Singh
 " Santanu Chaudhuri

Shri P. Sen Gupta
 " Tun Tan Siew Sin
 " M. S. Berry
 " R. M. Bhandari

Funds employed

As on 31st December, 1982

Share capital		Rs. '000
Issued, subscribed and paid up		
75,000 6% taxable cumulative preference shares of Rs. 100 each	75.00	
60,00,000 ordinary shares of Rs. 10 each	6,00,00	6,75,00
Reserves and surplus		8,44,38
Loans		
Secured loans		1,07,78
Unsecured loans		3,22,89
		<hr/> 19,50,04 <hr/>
Employment of funds		
Fixed assets		7,14,47
Investments		2,64,25
Current assets	27,12,43	
Less: Current liabilities and provisions	17,41,11	9,71,32
Total		<hr/> 19,50,04 <hr/>

The company was established as a partnership firm on the 1st January, 1886 and became a Public Limited Company in January, 1947.

The Shaw Wallace Group of companies have interest in a wide field which includes manufacturing, marketing, distribution and agencies.

The activities include fertilisers, agro-chemicals, mineral supplements, ossein, glue, gelatine, liquore, wines, beer, shipping, tea, flour, yeast computer services, exports, pesticides, footwear, detergents and offshore services.

MAIN SUBSIDIARY COMPANIES

Cruickshank & Co. Ltd. Calcutta

The Hooghly Flour Mills Co. Ltd.,

Calcutta

The Indian Yeast Co. Ltd., Calcutta and Uran (Maharashtra)

Maharashtra Distilleries Ltd., Bombay and Aurangabad (Maharashtra)

Shaw Wallace Gelatines Ltd., Calcutta and Jabalpur.

Tezpre Tea Co. Ltd., Calcutta and Darrang (Assam)

Shaw Wallace & Hedges Ltd., Sri Lanka

Shaw Wallace Overseas Ltd., London.

PRINCIPAL INVESTMENTS

Indian Potash Ltd.

M. B. & Co. Ltd.

Rewa Coal-fields Ltd.

SKOL Breweries Ltd.

PRINCIPAL AGENCIES

Shipping—Shaw Wallace & Co. Limited

Hapag-Lloyd A. G., Hamburg, at all Indian ports.

CMB Societe Anonyme, Antwerp, at all Indian ports.

Ellerman City Liners, London.

The Shipping Division of Ellermen Lines (Ltd.) at Calcutta and Madras.

Pacific International Lines (Pte) Ltd., Singapore at Calcutta, Madras, Kakinada, Paradip, Vishakhapatnam, Cuddalore, Nagapattinam and Cochin.

British Steel Corporation, London at all Indian ports.

The Sanko Steamship Co. Ltd., Tokyo at all Indian ports.

Varnima Corporation International S. A., Piraeus at all Indian ports.

Ocean Service Corporation, New York at all Indian ports.

Efshipping Co. S. A. (Panama), Piraeus at all Indian ports

Ratnakar Shipping Co. Ltd., Calcutta at all Indian ports, except Calcutta.

Poompuher Shipping Corporaion Ltd., Madras at Calcutta and Madras.

Kerala Shipping Corporation Ltd., Cochin at all Indian ports except Goa and Cochin.

Seven Seas Transportation Ltd., Bombay at Calcutta and Madras.

Essar Bulk Carriers Ltd., Madras at all Indian ports.

Jay Shree Shipping, Bombay at Malabar Coast, Cuddalore, Nagapattinam, Pondi cherry, Madras and Calcutta.

Dempo Steamships Ltd., Bombay at Calcutta.

Taiyo Gyogyo Kabushiki Kaisha (Taiyo Fishery Co. Ltd.) Tokyo, at all Indian ports except Cochin and Mangalore.

Garware Shipping Corporation Ltd., Bombay at Madras and Kakinada.

Catu Containers S. A., Geneve, Switzerland in India.

Companhia Paulist de Commercio Maritime, Rio de Janeiro at Bombay.

Texmaco Limited, Calcutta, at all Indian ports, except Calcutta.

Frota Oceanica Brassileire S.A., Rio de Janeiro at all Indian ports.

Shipping—Cruickshank & Company Limited

Compagnie Generals Maritime, Paris at Calcutta.

Societe Navale Chargeurs Delmas-Vieljeux, Paris at Calcutta.

World-Wide Shipping Ltd., Hong Kong at Calcutta and Bombay

Searland Shipping Management Ges.m.b.h., Austria at Bombay.

Assuranceforeningen Skuld Copenhagen at Bombay.

Sveriges Angfartygs Assurans Forening, Goteborg at Bombay.

Shipping—(Offshore)

Western Geophysical Company of America, USA (Division of Litton Group, Houston) at Madras.

Griffin-Alexander Drilling Company, USA at Madras.

Geophysical Services Inc., Singapore (Subsidiary of Texas Instruments Inc., Dallas) at Madras and Bombay.

McClelland Engineers, S.A., England at Madras at Bombay.

Fertiliser and sulphur

Madras Fertilisers Ltd.

Southern Petro-chemicals Industries Corporation Ltd.

Fertilizers and Chemicals Travancore Ltd.

Nederlandse Stikstof Maatschappij n.v., Belgium.

Ruhr-Stickstoff A.G., West Germany.

Societe Carbochimique Societe Anonyme, Belgium.

Unie Van Kunstmest-fabrieken b.v., Holland.

Sime Darby Trading Ltd, London.

Edible products

Kempas Edible Oil Sdn, Berhad, Malaysia.

Edible Products Ltd., Singapore.

Insecticides and agrochemicals

Agromore Ltd.

BASF India Ltd.

Indofil Chemicals Ltd.

Sandoz (India) Ltd.

Engineering

Takraf Export-Import, GDR.

SKET Export-Import, GDR.

Techno Commerz GmbH, GDR.

Wines and spirits

Cognac Exshaw S.A., France.

Deinhard & Co. Ltd., West Germany.

Long John Distilleries Ltd.

PRODUCTS

Agriculture

Manufacturers of superphosphate at Avadi (Tamil Nadu).

Fertiliser mixtures at several mixing works in East, South and Western India.

Manufacturers of Organo-phosphorous pesticides at Haldia (West Bengal).

Marketeers of urea and complex fertilisers backed by an extensive marketing and technical advisory service.

Adhesives

Manufacturers of quality glue and industrial gelatine at factories in South and Central India.

Food

Manufacturers of baker's yeast, yeast extracts, flour and other wheat products with complete service to meet customers' needs.

Footwear

Manufacturers of pre-lasted pullovers for leather footwear.

Tea

Producers and exporters of tea.

Liquor and Wines

Distillers and distributors of fine liquors, liqueure and beer.

Manufacturers of wines and brandies.

Others

Manufacturers of sulphuric acid, sodium silico fluoride, ossein, gelatine, Di-calcium phosphate, mineral supplements and detergents.

SHIPPING

The organisation covers all major and minor ports in India and offshore services

EMPLOYMENT

The group employs about 7,000 persons.

MARKETING ACTIVITIES

The organisation has built a strong marketing network spread over more than 6,000 centres.

PLANS OF EXPANSION AND DIVERSION

The group aims to continue to expand its sales of fertilisers and pesticides and its export of traditional and non-traditional products. A letter of Intent has been issued for a synthetic detergent unit in the Fatehpur district of Uttar Pradesh. Production is expected to commence in mid-1984. Application has also been made for a letter of Intent to manufacture white cement in Himachal Pradesh for which we are expecting the approval.

CHAIRMAN

Shri S. P. Acharya, Chairman and Managing Director, is a Director on the Board of the Fertiliser Association of India.

48. SHRIRAM FERTILISERS & CHEMICALS
Kanchenjunga Building, 18, Barakhamba Road,
New Delhi-110 001

Grams: SHRICHEM

Telex: 031-3532

Phone: 46801

Shriram Fertilisers & Chemicals was set up in 1963 at Kota with an integrated complex for the manufacture of polyvinyl chloride, caustic soda and calcium carbide.

In 1969, nitrogenous fertiliser complex was added to its production facilities. The complex had an ammonia plant of 450 TPD and urea plant of 700 TPD capacity. Since then, this has been expanded to 550 TPD ammonia and 930 TPD urea.

The fertilizer plant is based on naphtha feedstock. The process of manufacture involved catalytic steam reforming of naph-

tha purification and synthesis to produce ammonia. Ammonia and carbon dioxide are synthesized at high pressure and temperature by the total recycle process to produce urea.

The original fertiliser project as well as the expansion are results of very close Indo-Japanese cooperation. There is no equity participation by the foreign collaborators in the project.

Dr. Charat Ram is a Director and ex-chairman of the Board of Fertiliser Association of India.

SHRIRAM FOODS & FERTILISERS INDUSTRIES, DELHI
 (Formerly known as DCM Chemicals Works)

Head Office: Kanchenjunga Building, 18, Barakhamba Road,
New Delhi-110 001

Works: Shivaji Marg, New Delhi-110 015

Grams: CHEMSALES

Telex: 2416

Phone: 500190

Grams: CHEMWORKS

Telex: 2488

Shriram Foods & Fertiliser Industries, a unit of DCM Limited, is engaged in the manufacture of vegetable oil products, hereby chemicals and phosphatic fertiliser.

The phosphatic fertiliser plant which was set up in 1945 has now established as one of the largest single superphosphate plants with capacity for full conversion to granulated form, incorporating trace elements.

The unit has built capabilities for project and engineering services in the field of preparation of feasibility reports, process design, engineering designs, training of personnel and turnkey projects.

The unit is actively engaged in the development of products not only for water-treatment and sterilization but also in control of plant/soil borne diseases for specific

crops in order to improve crop yields qualitatively and quantitatively.

Superphosphate under brand name "SHRIRAM" is marketed largely in the northern and central India through a large network of area sales offices and normal trade channels to ensure its ready availability to the farmers.

To continuously support the marketing efforts, Shriram Khad Programme promotes proper dosages and application methods for individual crops for its effective utilisation. The broad objectives are to educate the farmer about the practical techniques involving balanced use of fertilisers and in proper dosages. Assistance to the farmers in deciding rotation of crops, intercropping, soil testing and field demonstrations is readily provided.

49. SOUTHERN PETROCHEMICAL INDUSTRIES CORPORATION LIMITED

Regd. Office: "South India House", 39, Arminina St.,
Madras-600 001

Principal Office: 97, Mount Road, Guindy, Madras-600 032

Plant: SPIC Nagar, Tuticorin-628 005

Telegrams: SOUTHPETRO

Telex: 7108

Telephone: 433241/
(8 lines)

BOARD OF DIRECTORS

Thiru M. A. Chidambaram
Chairman

" S. Venkitaramanan, IAS
Vice-Chairman & President

" A. C. Muthia
Vice-President (Administration & Personnel)

" G. Dwarakanathan
Vice-President (Finance)

Directors

Thiru S. Govind Swaminathan

" S. T. Sadasivan

" B. K. Shah

" S. Krishnamurthy

" Frederic J. Heredia

" Bhoj Raj Singh

" C. V. R. Panikar, IAS

" K. J. M. Shetty, IAS

" M. A. K. Tayab, IAS

" V. T. Thuraiaraj, IAS

Southern Petrochemical Industries Corporation Limited, popularly known as "SPIC", has set up modern facilities for the manufacture of fertilisers at SPIC Nagar, near Tuticorin, in Tamilnadu.

The company which was promoted by the Tamil Nadu Government and private entrepreneurs headed by Thiru M. A. Chidambaram, is a joint sector venture. It was registered on 18-12-1969 with the main object of manufacturing fertilisers and chemicals including petrochemicals and plastics.

Share capital

The authorised share capital of the company is Rs. 35 crore divided into 2,60,00,000 equity shares of Rs. 10 each and 9,00,000 redeemable cumulative preference shares of Rs. 100 each. The paid-up capital consists of Rs. 16,96,57,700 equity and Rs. 1,99,85,500 of preference capital.

Shri S. Venkitaramanan Vice-Chairman and President of SPIC is a Director on the Board of The Fertiliser Association of India and is also the Chairman of the Association.

Plants

SPIC ammonia and urea plants are amongst the largest single stream units in Asia involving no foreign collaboration. Approximately 70 per cent of the total equipment and material used in setting up these facilities have been indigenously procured. The present installed capacities of the plants are given in Table 1.

The prime contractors for these plants are:
Ammonia : M/s. Davy Powergas, UK.

Urea : M/s. Toyo Engineering Corporation, Japan.

Acid

group of
plants (PA,

SA, DAP) : M/s. Hitachi Ship Building & Engineering Company, Japan (Hitachi Zosen).

The commercial production from these plants, which are put in two phases, started as under:

Ammonia and urea: June, 1975

Acid group of plants: Middle of 1976

Table— 1 Present installed capacities of plants.

Plants	Rated daily capacity (in MT)	Annual Licensed capacity(in MT)
Ammonia	1,100	3,52,000
Urea	1,600	5,12,000
Sulphuric acid	470	1,50,000
Phosphoric acid	165	52,800
Diammonium phosphata DAP) I	500	1,60,000
-do- II	500	1,50,000

The capacity of DAP plant, which was restricted to about 1.11 lakh MT per annum by the capacity of the phosphoric acid plant was augmented to 1.60 lakh MT per annum by installing facilities for importing phosphoric acid. Since December, 1979, the production of DAP has been augmented by imports of phosphoric acid.

A purge gas hydrogen recovery unit was installed and commissioned in December 1980 to recover and reuse hydrogen in the production of ammonia.

Terminal facilities for storage and distribution of ammonia from imported sources have been installed. Since December 1981, ammonia is being imported to enable better capacity utilisation of urea and DAP plants. The urea plant has been consistently operated at over 100 per cent load.

The phosphatic group of plants have been run at a fairly high level of operation. The supply of sulphur and rock phosphate have been good. DAP, in particular, was operated at over 100 per cent capacity.

A second train of DAP with the same capacity as the first train is ready for commercial production.

Production of urea and DAP during the period July 1981 to Dec. 1982 and the cumulative production since commencements of production are given in Table 2.

Marketing

Organisation: The marketing territory consists of Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Pondicherry, Maharashtra, Madhya Pradesh, Punjab and Uttar Pradesh. There are 16 regions/subregional offices at Cuddalore, Coimbatore, Trichy, Tirunelveli, Palghat, Bangalore, Hubli, Hassan, Hyderabad, Kurnool, Vijayawada, Rajahmundry, Bhopal, Bombay and New Delhi reporting to the head office in Madras. A well-dispersed network of 3,000 dealers in the core marketing area of Tamil Nadu, Kerala, Andhra Pradesh, Karnataka and the Union Territory of Pondicherry are supplied material through well over 200 warehouses. The other States are considered as secondary marketing territory where most of the sales is mainly

through State Cooperative Marketing Federations, State Agro-Industries Corporations and a few private bulk marketers.

Sales

For two years in succession, the sales volume has been over a million MT of fertiliser material. Urea and diammonium phosphate (DAP) are the main products of which urea accounts for about 80 per cent of the turnover. In 1981-82 SPIC's sales of urea was 13.4 lakh MT and 3.5 lakh MT of DAP. We have taken up marketing of ammonium chloride and soda ash manufactured by Tuticorin Alkali Chemicals and Fertilisers Ltd. adding to the product range. An agency named SPIC Industrial Products Agency (SIPA) has been established to facilitate the handling of industrial products.

Imports

About half the sales volume of one million MT comes from imports. For the past three years, SPIC has remained the largest among private import handling agents, next only to FCI and IPL. The imports are handled through Tuticorin, Cuddalore, Pondicherry and Kakinada ports. Most of the handling is done in high seas and SPIC has become widely recognised for efficiency in this field.

Promotion

SPIC's promotion objective is to contribute to increase in agricultural output and productivity by:

- Increasing levels of fertiliser application in irrigated tracts.
- Introducing fertiliser application in dry tracts.
- Making farmers aware of better farming methods in fertiliser application, water management, soil management, etc.

These objectives are sought to be achieved through mass media as well as personal media such as demonstrations, village-level meetings, intensive farmer contact programmes, etc.

In addition, the districts of Tirunelveli, Ramnad, Kanyakumari and Madurai are covered by a special programme whereby

Table 2—Production of urea and DAP during July 81 to Dec. 82
(18 months)

Product	July '81	Dec. '82	Cumulative production from commencement till 1982
Urea	705 (92)		2802
DAP	224 (92)		584

Figures in brackets: % capacity utilisation

a number of villages selected in these districts are adopted to improve their overall economic status.

SPIC has also been selected as lead manufacturer for the districts of Ramanathapuram, Tirunelveli, Kanyakumari, Kolar and

Nellore to promote the application of fertilisers.

SPIC has promoted an independent agency for presenting latest agricultural technology, called the Rural Services and Consultancy Pvt. Ltd. with its Head Office in Madras.

50. STEEL AUTHORITY OF INDIA LTD

Ispat Bhawan, Integrated Office Complex, Lodhi Road,
P. B. No. 673, New Delhi-110 003

Gram: STEELINDIA

Telex: 031-2979

Phone: 690481 (10 lines)

M/s. Steel Authority of India Ltd. (SAIL) joined the Association as an active member from 1st January, 1976. SAIL controls the 5 integrated steel plants located in Bhilai, Bokaro, Burnpur, Durgapur and Salem. Besides contributing 9.4 million tonnes to the crude steel making capacity through its five integrated steel plants and 100,000 tonnes of special steel ingot capacity at Durgapur and 32,000 tonnes of stainless steel making capacity at Salem per year it also controls at present a total production capacity of

1,57,000 tonnes of ammonium sulphate per year in all its steel plants and 4,60,000 tonnes of CAN 25 per cent N per year at its Fertiliser Plant at Rourkela. It's Ammonium Sulphate is sold under the brand name 'RAJA' and CAN 25 per cent N under the brand name 'SONA'.

As the largest industrial enterprise in India accounting for an investment of over Rs. 4,000 crores and with a work force of nearly 2,40,000 people SAIL plays a dominant role in Indian economic development.

51. T. STANES & COMPANY LIMITED

Agricultural Division, Post Box No. 3709,
Coimbatore-641 018 (Tamil Nadu)

Grams: 'STANES'

Phone: 33514 to 33518

The firm was founded in 1861 by Sir Robert Stanes and was formed as company in 1910.

From the time of its commencement the company has been supplying to the planters and farmers of South India all agricultural inputs such as Fertiliser, Pesticides, Farm tools and implements, Seeds, Plant growth Hormones, etc.

The company has now 13 Fertiliser Mixing factories at the following places:

1. Tudyalur;
2. Madurai;
3. Tirunelveli;
4. Vellore; and
5. Salem in Tamil Nadu.
1. Ettumanoor;
2. Calicut; and
3. Trichur in Kerala.
1. Hassan;
2. Mangalore;

3. Hospet; and
4. Belgaum in Karnataka.
1. Vijayawada in Andhra Pradesh.

The company also has its own branches as well as sale depots in Kotagiri Madras and Theni in the State of Tamil Nadu, at Palghat and Cochin in Kerala, at Shimoga, Bangalore and Mysore in Karnataka State and Kurnool in A.P.

The Tudyalur Mixing Unit is equipped with a modern mechanical mixing plant for compounding all types of fertiliser mixture for all crops.

The sales organisation is backed by a well-equipped laboratory run by qualified Agricultural Chemists to ensure quality control and to maintain a high standard of products. The company extends free technical advice to both planting and cultivator customer on all agricultural problems through their qualified agricultural sales officers.

T. STANES & COMPANY LIMITED are also the authorised Distributors for:

1. Madras Fertilizers Ltd.—for Kerala and Karnataka.
2. The Rashtriya Chemicals & Fertilisers— for Tamil Nadu, Kerala, Karnataka and Andhra Pradesh.
3. Southern Petrochemical Industries Corporation Ltd. (SPIC)—for Tamil Nadu, Kerala, Karnataka and Andhra Pradesh.
4. CIBA-GEIGY Agrochemicals—all over Tamil Nadu, Pondicherry and Andhra Pradesh.
5. INDOFIL CHEMICALS LTD.—Kerala and Karnataka States.
6. TUCAS Pesticides—All over Kerala State.
7. NATIONAL ORGANIC CHEMICAL INDUSTRIES LTD.—all over Karnataka State.

The company has under its control three wholly subsidiary companies:

1. M/s. Stans Motor (South India) Ltd., Dealers in Ambassador Cars, Trucks, Massey-Ferguson Tractors, Yazdi Motor Cycles and Vijay Scooters.
2. The United Coffee Supply Company Limited, Manufacturers of the famous 'STANES' brand Coffee and Tea.
3. M/s. Stanes Tyre & Rubber Products Limited.

A long standing well-known company in the tyre retreading and relugging service, serving throughout South India.

The company is also a subsidiary of M/s. Simpson & Co. Ltd., Madras and a Unit Company of M/s. Amalgamations Limited, Madras.

52. A. TALUKDAR & CO. (FERTILISERS) LIMITED

Regd. Office: 15, Clive Row, Calcutta-700 001

Branch Office: Dibrugarh, Assam

Grams: PLANTLIFE

Tele: 22-7712, 22-1036

As agents of Government of India for distribution of Pool nitrogenous fertilisers to North East India tea estates and agents of Government of West Bengal and Assam for distribution of fertilisers for paddy, potato, jute, sugarcane, vegetable, etc. and also appointed distributor for Steel Authority of India Ltd., Hindustan Fertiliser Corporation Ltd., The Indian Iron & Steel Co. Ltd., the company manufactures every kind of fertiliser mixture to the tune of 20,000 tonnes per annum.

The Company has three Associate concerns:

- (1) Talukdar & Co. (Misc.).
- (2) Hindustan Bone Mill.

(Manufacturer of bone meal, bone grist, etc. to export to foreign countries).

- (3) Rashmohan Cold Storage.

53. M/s. UDAIPUR CHEMICALS & FERTILISERS PVT. LTD.

F-145-146, Mewar Industries Area, Udaipur-313 001

Admitted as Active Member from 1st Oct. 1981.

54. M/s. VIRAJ CHEMICALS

75, G.I.D.C. Estate, Nandesari-391 340, DL Baroda

Admitted as Active Member from 1st July, 1981.

55. THE WESTERN CHEMICAL INDUSTRIES
Manufacturers and Dealers in Acids, Chemicals & Fertilisers
Sonawala Cross Road, Goregaon East, Bombay-400 063

Gram: WESTCHEMIN

Phone: 691485

The company was incorporated in 1946 as a private partnership group to manufacture single superphosphate fertiliser, sulphuric acid, sodium bisulphate, sulphate of alumina ferric and non-ferric etc.

The present capacity of single superphosphate fertiliser plant is 6,700 MT per annum.

The company has plants for increasing the sulphuric acid and single superphosphate fertiliser capacity.

The main Executives of this company are Mr. S. C. Patel, Shri M. M. Patel and Shri R. C. Patel.

The company has its Factory and its Office at Goregaon East, Bombay-400 063.

56. ZUARI AGRO CHEMICALS LIMITED
Registered Office: Jai Kisaan Bhawan, Zuarinagar-403 726 (Goa)

Grams: JAIKISAAAN

Telex: 0191-224 & 0191-275

Phone: 21-25 (5 lines) & Vasco 3100

BOARD OF DIRECTORS

Shri K. K. Birla
Chairman

" K. B. Chore
 (IDBI Nominee)

" C. M. Henderson
 (Alternate: Shri D. B Engineer)

" R. P. Fitton
 (Alternate: Shri A. R. Wadia)

" W. W. LaRoche

Dr. R. F. MacFarlin
 (Alternate: Shri H. C. Ashar)

Shri D. P. Mandelia
 (Alternate: Shri R Maheshwari)

" F. J. Prinzo
 (Alternate: Shri C. H. Pardiwala)

" B. Richter
 (Alternate: Shri V. Talwar)

Zuari Agro Chemicals Limited was registered in May, 1967 and has its head office at Goa, where its modern single stream fertiliser plant for production of urea and complex fertilisers is located.

Sponsored by the Birla Group with the active collaboration of the United States Steel Corporation of Pittsburg, U.S.A., the plant achieved mechanical completion in the latter half of 1972 and commenced production of urea in May, 1973. Production of complex fertilisers commenced in March 1975.

The company has an issued share capital of Rs. 17 crore, the total project cost being Rs. 57 crore.

The plant has annual capacity of 220,000 tonnes of ammonia, 340,000 tonnes of urea and 150,000 tonnes of complexes.

Its main raw material requirements at full production capacity are:

Naphtha	220,000 tonnes per annum
Fuel oil	85,000 "
phosphoric acid	42,000 "

The manufacturing process used are:
 Ammonia:

1. Hydro-desulphurization — Institute of Francais Du Petrole
2. Steam Naphtha Reform — I.C.I. Limited
3. CO₂ Removal System — Benfield
4. Ammonia Synthesis — Mitsui-Toatsu.

Urea:

Mitsui-Toatsu Total Recycle Process.

Complex fertilizers:

Mitsui-Toatsu Process.

The company employs over 600 people including its marketing staff stationed outside Goa. The company has established a dealer network through which it is directly selling its JAI KISAAN brand fertilisers which comprise of urea, uramphos (28:28:0), sampurna (19:19:19), saubhagya (14:35:14) and samrat (18:46:0). The sales activities

are effected through regional offices located at Bangalore, Hubli, Nagpur, Poona, Vijaya wada, Secunderabad and Indore.

The company has received a letter of intent from the Government of India to double its NPK capacity by additional manufacture of DAP to the extent of 42,000 tonnes of P.O.. Production from this project is expected to commence from 1985.

Shri H. S. Bawa, Executive President, is a Director on the Board of The Fertiliser Association of India.

ASSOCIATE MEMBERS

1. M/s. Adarsh Agri-Aids Agencies,
12/3156-A, Bajiwali Pole,
Buranpuri Bhagoi,
Surat-395 001,
Gujarat.
2. M/s. Agro Nutrients Pvt. Ltd.,
Vijay Bhawan, Morshi Road,
Amravati-444 601,
Maharashtra.
3. M/s. Assam Agro Industries
Development Corporation Ltd.,
Ulbari, Distt. Gauhati,
Assam.
4. M/s. Albright Morarji & Pandi' Ltd.,
Raj Mahal, 3rd Floor,
Veer Nariman Road,
Bombay-400 020.
5. Assam Farmers Friends,
(Agriculture Development Centre),
P.O. Sorbhog,
Distt. Kamrup (Assam).
6. M/s. A. P. State Cooperative,
Marketing Federation Ltd.,
Hyderabad-500 001,
Andhra Pradesh.
7. M/s. A. P. State Agro Industries
Development Corporation Ltd.,
10-2-3, A.C. Guards, Agro Bhawan,
Hyderabad-500 047.
8. Aries Agro-Vet Industries
Private Ltd.,
53/54, B-Nand Bhuvan Estate,
Maharshi Karve Estate,
Andheri East,
Bombay-400 099.
9. M/s. BASF India Ltd.,
Maybaker House,
Sudam Kalu Ahire Marg,
Post Box No. 19108,
Bombay-400 025.
10. M/s. Bihar State Cooperative Marketing
Union Ltd.,
Agriculture Marketing Division,
P.O. Box 104, G.P.O.,
West Lawn,
Patna-800 001,
Bihar.
11. M/s. Borax Morarji Ltd.,
Mahatma Gandhi Road,
Ambernath,
Distt. Thane-400 601,
Maharashtra.
12. M/s. Bharat Heavy Electricals Ltd.,
Heavy Power Equipment Plant,
Ramachandra Pura,
Hyderabad-500 032
13. M/s. Bharat Alums & Chemicals Ltd.,
Aiwan-i-Ghalib,
Mata Sundari Lane,
New Delhi-110 002.
14. M/s. Bharat Heavy Plates and
Vessels Limited,
Visakhapatnam-530 012,
Andhra Pradesh.
15. M/s. Berja Brothers Pvt. Ltd.,
Dibrugarh P.O.,
Dibrugarh-786 001,
Assam.
16. M/s. Bidan Chandra Krishi
Vishwa Vidyalaya,
Harinaghata,
P.O. Mohanpur,
Distt. Nadia,
West Bengal.
17. M/s. Bihar Agro Industries,
Hospital Road,
Forbesganj,
Distt. Purnea-854 301,
Bihar.
18. M/s. Carborundum Universal Ltd.,
28, Rajaji Road,
Madras-600 001.
19. M/s. Cardamom Board,
(Government of India),
Banerjee Road,
Cochin-682 001,
Kerala.
20. M/s. Catalyst (India) Ltd.,
Embassy Centre, 10th Floor,
207, Backbay Reclamation,
Nariman Point,
Bombay-400 021.
21. M/s. Central Warehousing Corpn.,
Ware Housing Bhawan,
4/1, Siri Institutional Area,
Opp. Siri Fort, Hauz Khas,
New Delhi-110 016.
22. M/s. Chembur Bone & Fertilisers Co.
Pvt. Ltd.,
"Derab Shaw House",
3rd Floor, Soorji Vallabhdas Marg,
Bombay-400 038.

23. M/s. D. R. Chemicals and Fertilizers Pvt. Limited, P.O. Golghar, Gorakhpur-273 001, U.P.
24. Development Consultants Pvt. Ltd., 24-B, Park Street, Calcutta-700 016
25. M/s. Dynacraft Machine Co. Ltd., C.D. Barfiwala Marg, Andheri (West), Bombay-400 068.
26. M/s. Deluxe Chemicals Industries, 192, Jamunlal Bajaj Street, Calcutta-700 007.
27. M/s C. Dhanwantraï & Co., 131/2, "A" Wing, Mittal Towers, 13th Floor, Nariman Point, Bombay-400 021.
28. M/s. Deepak Fertilisers & Petrochemicals Corpn. Ltd., Shiv Shakti Building, B.G. Kher Road, (Love grow lane), Worli, Bombay-400 018.
29. M/s. Elecon Engineering Co. Ltd., Vallabh Vidyanagar, Distt. Kaira, Gujarat-387 111.
30. M/s. Engineers india Ltd., PTI Building, 4th Floor, 4, Parliament Street, New Delhi-110 001.
31. M/s. European Nitrogen Service Programme, Post Box No. 3547, New Delhi-110 024.
32. M/s. Projects & Development India Ltd., CIFT Buildings, P.O. Sindri-882 122, Distt. Dhanbad, Bihar.
33. M/s. Fert. Chem. Ltd., Narangi, Gauhati-781 020, Assam.
34. M/s. Gir Raj Fertiliser & Chemicals Pvt. Ltd., Etah Road, Shikohabad-205 135, Distt. Mainpuri, Uttar Pradesh.
35. M/s. Pesticides Formulations Unit, Gujarat Agro-Industries Corporation Ltd., Karanj Baugh, National Highway No. 8, Near Chest Disease Hospital, Naroda-380 014, Ahmedabad, Gujarat.
36. M/s. C. Gurusiddappa Sons, Prop. Karnataka Fertilisers, New Tharagupet, Bangalore-560 001, Karnataka.
37. M/s. Godavari Fertilisers Ltd., Vani Nilayam, 5th Floor, 50, Sabestian Road, Secunderabad-500 003.
38. M/s. Gujarat State Cooperative Marketing Federation Ltd., Sahakar Bhawan, Relief Road, Ahmedabad-380 001, Gujarat.
39. M/s. Harshadray Pvt. Ltd., Jiji House, Ravelini Street, Bombay-400 001.
40. M/s. Hindustan Lever Ltd., Hindustan Lever House, Backbay Reclamation, Bombay-400 020.
41. M/s. Himalaya Fertilisers Ltd., Post Office Majoholi, Nalagarh, Solan, Himachal Pradesh.
42. M/s. Hindustan Dorr-Oliver (I) Ltd., Dorr-Oliver House, Chakala, Andheri (East), Bombay-400 099.
43. M/s. Humphreys & Glasgow Consultants Pvt. Ltd., "Gammon House", Veer Savarkar Marg, Prabha Devi, Bombay-400 025.
44. M/s Haryana State Cooperative Supply & Marketing Federation Ltd., SCO 19, Sector 7-C, Madhya Marg, Chandigarh-160 017.
45. M/s. INKA Chemicals Pvt. Ltd., G-4, Hans Bhawan, 1-Bahadurshah Zaffar Marg, New Delhi-110 002.
46. M/s. International Ore & Fertiliser (India) Pvt. Ltd., 66, Rashtrapathi Road, Secunderabad-500 003, Andhra Pradesh.
47. M/s. Indian Sulphuracid Industries Limited, 4, Deen Dayal Upadhyaya Marg, New Delhi-110 002.
48. M/s. Instrumentation Ltd., Kota-324 004, Rajasthan.

49. M/s. Jaipal Udyog,
202, Akash Deep,
Barakhamba Road,
New Delhi-110 001.
50. M/s. Jay Sree Ferti-Pest Industries,
278, Katra Peran,
Tilak Bazar,
Delhi-110 006.
51. M/s. Jeevan Fertilisers & Chemicals
Co. Pvt. Ltd.,
42, Large Scale Industrial Area,
Kota-324 004,
Rajasthan.
52. M/s. Jain Brothers,
Bana Bazar,
Jalgaon-425 001,
Maharashtra.
53. M/s. Kamal Chemical & Fertilisers,
Shed No. 232, C/B Type,
G.I.D.C. Industrial Estate,
Pandesara Udaahna-394 210.
Distt. Surat,
Gujarat.
54. M/s. Kineitics Technology India Ltd.,
Sheetla House,
73-74, Nehru Place,
New Delhi-110 019.
55. M/s. Khicha Industries,
Bhandari Mansion,
Opp. Town Hall,
Udaipur-313 001.
6. M/s. Kisan Brothers,
311, Cloth Market,
Ahmedabad-380 002,
Gujarat.
57. M/s. Kisan Khad Agency,
Sasaram,
Bihar-821 115.
58. The Kerala State Cooperative Rubber,
Marketing Federation Ltd.,
Carmel Centre, 2nd Floor,
Banerjee Road,
Cochin-582 018,
Kerala.
59. M/s. Krishna Fibre Corporation,
283-284, Old Tharagupet,
Bangalore-560 053.
60. M/s. Krishak Bharati Coop. Ltd.,
Red Rose House,
49-50, Nehru Place,
New Delhi-110 019.
61. M/s. Liberti Pesticides &
Fertiliser Pvt. Ltd.,
F-225, Mewar Industrial Area,
Madri,
Udaipur-313 001,
Rajasthan
62. M/s. Lurgi India Co. Pvt. Ltd.,
Hindustan Times House,
18-20, Kasturba Gandhi Marg,
New Delhi-110 001.
63. M/s. Liberty Fertilisers,
Behind Jammadai Hospital,
Baroda-390 005,
Gujarat.
64. M/s. Larsen & Toubro Ltd.,
L & T House,
Ballard Estate,
P.O. Box No. 278,
Bombay-400 038.
65. M/s. The Maharashtra Agro Industries
Development Corpn. Ltd.,
"Rajan House", 3rd Floor,
Near Century Bazar,
Prabhadevi,
Bombay-400 025.
66. M/s. Madhya Pradesh State Mining
Corporation Ltd.,
E1/2, Arera Colony,
Bhopal-462 014.
67. M/s. Meteor Pvt. Ltd.,
121-122, Ansal Bhavan,
Kasturba Gandhi Marg,
New Delhi-110 001.
68. M/s. Mitsui & Co. Ltd.,
Hindustan Times House,
6th Floor,
18-20, Kasturba Gandhi Marg,
New Delhi-110 001.
69. M/s. Multitech International Ltd.,
G-4, Main Market,
South Extension Part I,
New Delhi-110 049.
70. M/s. M.P. Agro Morarji Fertilisers Ltd.,
Plot No. 9, Jhabua Kothi,
Municipal No. 170,
Ravindranath Tagore Marg,
Indore-452 001,
Madhya Pradesh.
71. M/s. Nagarjuna Fertilisers &
Chemicals Ltd.,
Vani Nilayam,
50, Sebastian Road,
Secunderabad-500 003.
72. M/s. National Council of Applied
Economic Research,
"Parisila Bhavan",
11, Indraprastha Estate,
New Delhi-110 002.

73. M/s. Nitin Castings Ltd.,
Eastern Express Highway,
Panch Pakhadi,
Thana-400 601,
Maharashtra.
74. M/s. National Agricultural Cooperative
Marketing Federation Ltd.,
54, East of Kailash,
Sapna Building,
New Delhi-110 065.
76. M/s. Noble Chemicals,
Development Corporation,
4, Siri Institutional Area,
Behind Hauz Khas,
New Delhi-110 016.
76. M/s. Noble Chemicals,
207-208, Navjiwan,
121/127, Kazi Syed Street,
Bombay-400 003.
77. M/s. Orissa State Cooperative
Marketing Federation Ltd.,
Station Road,
Bhubaneswar-751 006,
Orissa.
78. M/s. Pragati Fertilizers Ltd.,
10-2-9, Hijili Home,
Siripuram Junction,
Visakhapatnam-530 003 A.P.
79. M/s. Punjab National Fertilizers
& Chemicals Ltd.,
SCO-119-120, Sector 17-B,
Chandigarh-160 017.
80. M/s. P.S.K. Fertilisers & Minerals,
395, Bazar Street,
Salem-636 001,
Tamil Nadu
81. M/s. Punjab Agro Industries
Corporation Limited,
166, Sector 19-A,
Chandigarh-160 019.
82. M/s. Punjab State Cooperative
Marketing Federation Ltd.,
Post Box No. 67,
Sector 17-E,
Chandigarh-160 017.
83. M/s. The Potash Fertilizers (I) Pvt.
Ltd.,
6, Lotus Court, P.B. No. 524,
Jamshedji Tata Road,
Bombay-400 001.
84. Pardeep Phosphates Ltd.,
101, Hemkunt Tower,
98, Nehru Place,
New Delhi-110 019.
85. M/s. Pearey Lal Rajendra Kumar,
45, Fateh Ganj,
Bullandshahr-203 001.
Uttar Pradesh.
86. M/s. Rajasthan State Mines &
Minerals Ltd.,
222, Sahelion-ki-Bari Road,
Udaipur-313 001,
Rajasthan.
87. M/s. Rajendra Agriculture University,
Pusa,
Distt. Samastipur-848 125,
Bihar.
88. M/s. Rubber Board,
P.O. Kottayam,
Kottayam-686 001,
Kerala.
89. M/s. Radhika Vitamalt Pvt. Ltd.,
118, New Delhi House,
27, Barakhamba Road,
New Delhi-110 001.
90. M/s. Sadhana Enterprises (India)
Pvt. Ltd.,
M-32, Market Flat,
Greater Kailash,
New Delhi-110 048.
91. M/s. M. Saha & Co.,
23-A, Netaji Subhas Road,
Calcutta-700 001.
92. M/s. Sanjay Trading Company,
Tezpur-748 001.
Assam.
93. Sri Ganganagar Fertiliser Corpn.,
Hanumangarh Road,
Sri Ganganagar,
Rajasthan.
94. M/s. Shriram Khad Programme,
71, Nehru Place,
Angad Bhawan,
New Delhi-110 019.
95. M/s. S. K. Samy & Sons,
Samy Fertiliser Co.,
55, Sathy Road,
P.O. Box No. 140,
Erode-638 001,
Tamil Nadu.
96. M/s. Shivalik Fertilisers Ltd.,
201, Ansal Bhawan,
16, Kasturba Gandhi Marg,
New Delhi-110 001.
97. M/s. Socotra International Pvt. Ltd.,
112, New Delhi House,
27, Barakhamba Road,
New Delhi-110 001.
98. M/s. Shrikat-E-Hind-O-Iran, Pvt. Ltd.,
71, Nehru Place,
Guru Angad Bhawan,
New Delhi-110 019.
99. M/s. Simon Carves India Ltd.,
Simon House,
Transport Depot Road,
Calcutta-700 027.

100. M/s. The South India Chemicals & Fertilisers Ltd.,
IV/135, Kanjikuzhy,
K.K. Road,
Post Box No. 7,
Kottayam-686 004.
101. M/s. Stephen Balram & Sons,
317, Shahibag,
Ahmedabad-380 004.
102. M/s. State Farms Cooperative of India Ltd.,
Beej Bhawan, C.T.O. Building,
Pusa Inst., Complex,
New Delhi-110 012.
103. M/s. Subir Paul,
2, Church Lane,
Calcutta-700 001.
104. M/s. Sunrise Manures & Chemicals,
813-814, Bhavani Peth,
Pune-411 005.
105. M/s. Tata Consulting Engineers,
34, Sant Tukaram Road,
Carnae,
Bombay-400 009.
106. M/s. Toyo Engineering India Limited,
United Commercial Bank Bldg.,
1st Floor, Parliament Street,
New Delhi-110 001.
107. M/s. Tulsi Fine Chemical Industries Private Ltd.,
1216/7, Ferguson College Road,
Shivajinagar,
Poona-411 004.
108. M/s. Tuticorin Alkali Chemicals & Fertilisers Ltd.,
East Coast Centre,
553, Anna Salai,
Teynampet, Madras-600 018.
109. M/s. Udaipur Phosphate & Fertilizers Ltd.,
53-57, Laxmi Insurance Building,
Sir P.M. Road,
Bombay-400 001.
110. M/s. Unitrade,
606-B, Akash Deep Building,
Connaught Lane,
New Delhi-110 001.
111. M/s. United Catalysts (I) Ltd.,
240, Dr. Dadabhoy Nairoji Road,
Bombay-400 001.
112. M/s. U.P. State Agro Industrial Corporation Limited,
22, Vidhan Sabha Marg,
Lucknow-226 001,
Uttar Pradesh.
113. M/s. U.P. Cooperative Federation Limited,
6, Copper Road,
Lucknow-226 001,
Uttar Pradesh.
114. M/s. United Planters Association of Southern India,
Gleen View,
P.B. No. 11,
Coonoor-643 101,
Distt. Nilgiris,
Tamil Nadu.
115. M/s. Uni Abex Alloy Products Ltd.,
S.V. Road,
Mandapa,
Thane-400 607, Maharashtra.
116. M/s. The University of Agricultural Sciences,
Post Bag No. 2477,
Hebbal,
Bangalore-560 024.
117. M/s. Voltas Limited,
19, Graham Road,
Ballard Estate,
Post Box No. 900,
Bombay-400 001.
118. M/s. Varinder Agro Chemicals Ltd.,
85, Industrial Area-A,
P. Box 339,
Ludhiana-141 003.
119. M/s. Vijay Fertilisers Ltd.,
17-B, East Azad Nagar,
Kanti Marg, Delhi-110 051.
120. M/s. West Bengal Agro Industries Corporation Limited,
23-B, Netaji Subash Road,
Calcutta-700 001.
121. M/s. West Bengal Minerals Development & Trading Corpn. Ltd.,
13, Lindsay Street (2nd Floor),
Calcutta-700 016.
122. M/s. The West Bengal State Cooperative Marketing Federation Ltd.,
18, Ravindra Sarani,
7th Floor, Poddar Court,
Calcutta-700 001.
123. M/s. Woodward & Dickerson (India) Pvt. Ltd.,
3/10, Shanti Niketan,
New Delhi-100 021.

OVERSEAS ASSOCIATE MEMBERS

1. M/s. Agriculture Inputs Corporation,
Post Box. No. 195,
Kathmandu, Nepal.
2. M/s. Agricultural and Industrial
Chemical Inc,
665, Fifth Avenue,
New York NY-100 22, U.S.A.
3. M/s. British Sulphur Corpn. Ltd.,
Parnell House,
25, Wilton Road,
London SW1V 1NH, U.K.
4. M/s. CAN Potex Ltd..
P.B. No. 233,
Commerce Court Postal Station,
Toronto, Ontario M5L 1E8,
Canada.
5. M/s. Ceylon Fertiliser Corpn.,
P.O. Box No. 841,
294, Galle Road,
Colombo-3, Sri Lanka.
6. M/s. Compagine des Phosphates
et du, Chemin de Fer de Gafsa,
9, Rue du Royaumeed Arabic Seoudits,
Tunis le Tunisia.
7. M/s. Compagnie Senegalaise
Des Phosphates De Taiba,
B.P. 1713,
Daker, Senegal,
Africa.
- 8 M/s. Chemical Company of Malaysia,
P.O. Box 95,
Klang Salangor,
Malaysia.
9. M/s. Fertilizantes Mexicanos SA,
Zacatecas 80, Piso 11,
Mexico-7, D.F.
10. M/s. Fisons Licensing & Consultancy
Services,
Fertiliser Division,
Harvest House, Felixtowe,
Sufflok IP117LP,
U.K.
11. M/s. Foster Wheeler Ltd.,
Foster Wheeler House,
Barkashire Rgl I1K,
England.
12. M/s. Haldor Topsoe A/S,
Bibliotek,
P.O. Box 213,
DK-2800, Lyngby, Denmark.
13. M/s. The International Minerals &
Chemicals Corporation,
IMC Plaza, Libertyville,
Illinois-600 48, U.S.A.
14. The International Ore & Fertilizer
Corporation,
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