

**PRODUCTION AND  
CONSUMPTION OF  
FERTILISERS**

**ANNUAL  
REVIEW**

**(April-March)**

**1975-76**

## PREFACE

This is the 18th edition of the **Annual Review of Production and Consumption of Fertilisers** brought out annually by the Fertiliser Association of India.

This Review:

1. contains a review of actual performance both of production and consumption during the year 1975-76;
2. discusses the performance during the five-year period 1971-72 to 1975-76; and
3. indicates the likely trend of production and consumption for 1976-77.

The consumption figures of all the years under review except 1971-72 pertain to the period February-January. The figures for 1971-72 are on April-March basis. The increase by the Government of India in the lead period between supply planning and actual supply plan from one to two months some years ago is responsible for this variation. This variation will no longer be there from the next Review.

The consumption figures for the latest year 1975-76 are based on the deliberations at the Zonal Conferences held in January/February 1976 and are as such tentative.

The five-year review period (1971-72 to 1975-76) covers the last three years of the Fourth Five Year Plan and the first two years of the Fifth Five Year Plan.

As against the negative overall growth recorded in 1974-75 compared to the previous year, the overall consumption in 1975-76 increased by 12.4 per cent compared to the previous year. The trend nutrientwise was, however, not encouraging. The positive growth was recorded only by N. The consumption both of  $P_2O_5$  and  $K_2O$  once again dropped compared to the previous year. The main reasons for this decreasing trend were lack of resources at the farmer level and unfavourable input/output price ratio. These have been deliberated upon to a considerable extent in this Review.

The Review also contains the FAI projections for the year 1976-77.

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## INTRODUCTION

### *Need for fertiliser*

India's economy is agro-based. Nearly 50 per cent of the national income of the country at current prices is derived from the agricultural sector. It provides a means of livelihood to nearly 67 per cent of its population. The prosperity of the industrial sector is also closely linked with agriculture. Most of our traditional exports comprise products of agricultural origin. Agricultural base of the country must, therefore, be strengthened if we have to achieve accelerated economic growth. Our agricultural practices must improve from their traditional pattern to a higher technological plane involving *inter-alia* better irrigation, use of better quality seeds and fertilisers. The chemical fertiliser is a king-pin in this process. Evolution of its use and developments which have taken place over the years in the production and marketing of fertilisers, therefore, warrant a closer study.

### *Early developments*

Use of fertilisers started in India towards the end of the last century with fertilisation of tea and coffee plantations. Extension of fertiliser use for major cereal crops was slow to take place. It was only after the Bengal famine of 1942 when the "Grow More Food Campaign" was launched that fertiliser use on food crops started picking up.

The entire requirement of fertilisers was initially imported in the form of ammonium sulphate. Domestic production commenced in 1906 with the setting up of a plant to produce superphosphate based on acidulation of crushed bones. This was followed by the production of small quantities of ammonium sulphate as a by-product from Tata's Steel Plant in 1931, and by synthetic process in Belagula, Karnataka in 1941. Remaining requirements were met through imports.

During the last World War, worldwide shortages developed and the available material had to be rationed under an International Emergency Scheme to fertiliser-needy allied countries to maximise food production for meeting the war needs. Some priority allotments were made to India also. This special allotment ceased in 1950 when fertiliser availability in the international markets became easier.

Meanwhile, more attention was devoted to domestic production of fertilisers. The production of nitrogenous fertiliser on a commercial scale commenced in the country in 1947 and there had since then been significant developments in the production technology. A large number of modern plants have been set up during the last 20 years to manufacture a whole range of materials like SSP, urea, ammonium sulphate, CAN, complex fertilisers and NPKs, using diverse feedstock and technology. The capacity utilisation of the more recent units in the country compares favourably with like units anywhere in the world. Today, we rank amongst the first nine major nitrogenous fertiliser producing countries in the world.

### *The marketing scene*

Marketing of fertilisers in India has passed through varying stages of Government control. Until September 1966, Central Fertiliser Pool procur-

ed and distributed the entire indigenous production of straight nitrogenous and all imported fertilisers. Indigenous manufacturers of ammonium chloride, superphosphates and complex fertilisers were, however, permitted to market their production on their own.

In October 1966, the Government of India accepted the recommendations of the Sivaraman Committee and extended the concept of "free marketing" of fertilisers to straight nitrogenous fertilisers also. Share of production permitted to be marketed by manufacturers themselves was progressively increased from 30 per cent in October 1966 to 50 per cent in October 1967, 70 per cent in October 1968 and 100 per cent in April 1969.

The main objective of the revised liberalised policy was to facilitate availability of fertilisers to farmers by widening the base of distribution through a network of private distribution channels supplementing the existing institutional network. Also, competition was expected to provide better services to the consumers. The last but not the least was the Government's desire to attract fresh investment, both domestic and foreign, for fertiliser production in the country.

The liberalised policy had the desired effect. It resulted in the opening up of fresh areas for fertiliser use. The number of private dealer outlets considerably increased within a period of 5-6 years. It also gave a tremendous boost to the installation of indigenous capacity. The figures given below are self-explanatory.

Particulars	Units	1961-62		1966-67		1975-76	
		N	P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>
(a) Installed capacity (as on 1st April)	'000 tonnes	244	107	632	319	2,676	737
(b) Increase in capacity	percentage	—	—	159	198	323	131
(c) Production	'000 tonnes	154	65	309	146	1,508	320
(d) Increase in production	percentage	—	—	101	125	388	119
(e) Consumption	'000 tonnes	292	64	839	249	2,148	467
(f) Increase in consumption	percentage	—	—	187	289	156	88
(g) Investment in the industry (as on 1st April)	Rs. Crores	75		411		1,068	
(h) Increase in investment	percentage	—		448		160	
(i) Number of dealers	thousand	N. A.		60		90	
(j) Increase in dealers	percentage					50	

#### *Fertiliser consumption*

The fertiliser consumption has been rapidly rising in India and today we rank amongst the first seven major consuming countries of the world, (vide Chapter II, Part C).

Uptil 1971-72, consumption had been more than doubling every five years. The two subsequent years, viz., 1972-73 and 1973-74, however, witnessed acute scarcity of fertilisers. Imports, which meet the gap between the requirement and indigenous availability, were also not adequate during these two years because of non-availability of exportable surplus in the world market and high prices. A close look at requirements agreed at Zonal Conferences and actual total availability shows that there was a shortfall to the extent of 20 per cent in 1972-73 and 28 per cent in 1973-74. The rate of growth of consumption, therefore, dropped to 2.6 and 5.2 per cent respectively.

The situation worsened further in 1974-75 when for the first time in the history of fertiliser use in India the consumption dropped (9.3 per cent) compared to the previous year despite easy availability. This was true not only in India but in many other countries in the world. (vide Chapter II, Part C). A FAI study indicated that a number of factors like aberrant weather, cumbersome physical controls at State levels, sharp hike in fertiliser prices, inadequate credit availability, etc. contributed to this situation. Some remedial measures undertaken by Central and State Governments, i.e., removal of cumbersome physical controls, reduction in prices and increase in credit availability and also availability in time of the right type of material to the farmers, reversed the deteriorating trend witnessed in 1974-75 and the consumption in 1975-76 increased by 12.4 per cent compared to the previous year. Every effort is needed to remove even the remaining constraints like high NPK prices and inadequate credit availability so that the use of fertilisers continues to grow to sustain our projected agricultural production programmes.

#### *Controls on distribution*

To ensure equitable distribution of limited quantity of available fertilisers, the Government of India invoked the provisions of the Essential Commodities Act in July 1972 making it obligatory for producers to distribute agreed quantities in each State. A ban was imposed on inter-State movement of fertiliser without prior permission of the Central/State Government so that fertiliser allotted to a State was used therein and not diverted to another one. It also requisitioned, effective 1st July 1972, 30 per cent of indigenous production of ammonium sulphate for a period of six months for distribution through Central Fertiliser Pool for certain priority users. ECA allocations are made in consultation with the suppliers at the half yearly series of zonal conferences held before commencement of each cropping season, though their supply plans may not be approved in full in all cases. The Government have, however, lately been flexible in the operation of these controls. Requests for changes in the ECA allocations have been promptly and favourably considered.

The movement of fertilisers by rail has been rationalised through periodic discussions between the Railways, the Ministry of Agriculture and the Industry. Quarterly forward planning of fertiliser movement has enabled the Railways to move the agreed quantities as per plans on priority. These measures have, through optimum utilisation of available railway capacity, alleviated most of the movement problems barring those of some specially difficult pockets.

*Fertiliser prices*

Statutory control on ceiling prices of urea, ammonium sulphate and calcium ammonium nitrate, and the informal control on ex-factory price of superphosphate continued during the period under review. The maximum retail selling prices of straight nitrogenous fertilisers were increased sharply on June 1, 1974 to Rs. 2,000,935 and 1,095 for urea, ammonium sulphate and calcium ammonium nitrate (25 per cent N) respectively. This not only covered the additional production cost but also contained an element of Pool Equalisation charge of Rs. 610, 195 and 295 per tonne (for urea, ammonium sulphate and calcium ammonium nitrate (25 per cent N) respectively) to offset the loss accruing to the Government on account of fertiliser imports at high prices and their sale in the country at lower controlled prices. The prices of superphosphate and complex fertilisers produced in the country had also to be frequently revised upwards during 1974-75 to reflect the sharp rise in import prices of the essential intermediates and raw materials—phosphoric acid, rock phosphate and sulphur. Pool issue prices of complex and NPK fertilisers were also increased periodically because of their higher import prices. The sharp hike in fertiliser prices during 1974-75 acted as a major constraint to fertiliser use. Reduction in prices was, therefore, clearly warranted to reverse the deteriorating trend in fertiliser consumption.

The first price reduction came about on July 18, 1975. This was followed by one on December 1, 1975 and the next on March 16, 1976. The nutrientwise prices through different sources from January 1, 1974 onwards are listed in the table on pages 6-7 for ready reference.

There has since then been yet another price revision on April 20, 1976 in the case of single superphosphate and some of the imported pool material. These have also been listed in the this table.

*Straight nitrogenous material*

As is indicated below, the price reduction in these materials has been effected through a corresponding reduction in the Pool equalisation charge contained in the price make up of all these materials.

*Pool equalisation charge in the price make up on dates of price revision*  
(Rs/tonne)

Fertiliser	1.1.74	1.6.74	1.1.75	18.7.75	1.12.75	16.3.76	20.4.76
Urea	—	610	610	335	265 (15.9.75)	165	165
Ammonium Sulphate	—	195	195	135	100 (15.9.75)	100	100
CAN 25% N	—	295	295	155	115 (15.9.75)	115	115

*Phosphatic materials*

Whereas the price reductions during the second half of 1975 were due to drop in raw material prices, reduction in excise/customs duty and fall in Pool prices, the substantial reduction on March 16, 1976 contains through a Government subsidy of Rs. 1250 per tonne of indigenously produced  $P_2O_5$ .

The raw material prices as well as the incidence of excise/customs duty prevailing on the dates of fertiliser price revision are indicated in the table on next page. The products listed are only those in which there has been a price revision.

<i>Raw material/CIF price</i>		<i>(Rs. per tonne)</i>					
<i>Particulars</i>	<i>1.1.74</i>	<i>1.6.74</i>	<i>1.1.75</i>	<i>1.7.75</i>	<i>1.12.75</i>	<i>16.3.76</i>	<i>20.4.76</i>
Rock phosphate (Jordan- 70/72%TPL)	525	525	630	560	570	540	440
Sulphur	514	676	810	679	679	610	540
Excise duty	15%	15%	15%	15%	7½%	7½%	7½%
On single super- phosphate (Rs/tonne)	60	105	117	112	52	37	33
						(17.3.76)	(9.4.76)

#### *Fertiliser production*

Many a constraint to production which existed in 1974-75 were not encountered in 1975-76. The fertiliser industry for the first time in 1975-76 not only achieved but also exceeded the year's target of 1.5 million tonnes of N set for it. The production at 1.508 million tonnes of N (1.535 according to Government's computation) recorded an increase of 27 per cent over the previous year. This narrowed the gap between consumption and indigenous availability of N and reduced the need for imports. Attention must, however, continue to be devoted towards ensuring that the constraints of the type which existed in 1974-75 do not recur.

The prospects for 1976-77 are equally good. The estimated production of N at 1.95 million tonnes in 1976-77 will be more than 29 per cent higher than the previous year. This will further reduce the gap between consumption and indigenous availability of N. However, as long as the gap exists, imports will be inescapable.

The production of  $P_2O_5$  was market limited in 1975-76. No imports were, therefore, necessary. Imports of 326 thousand tonnes of  $P_2O_5$  in the form of NP and NPK did however, take place during the year and this enhanced the inventory levels in the country. One of the major problems for the domestic producers of  $P_2O_5$  was the low selling prices of the imported material compared to the domestic production. This motivated many an institutional agency to go in more for the imported material thereby reducing offtake of domestic production. This also accentuated the problem of heavy inventory levels and virtually choked the institutional distribution channel. The effect of this is being felt even in 1976-77 with the resultant slow offtake of domestic production by institutional agencies.

Our objective, however, clearly is to achieve self-sufficiency in fertiliser production so that we are not dependent on imports of such a vital agricultural input like fertiliser. The only viable long-term strategy to meet our increasing demands of fertiliser is to optimise indigenous production by maximising production through existing plants and by augmenting indigenous capacity.

It will in retrospect be appreciated that the fertiliser policy laid down by the country 10 years ago was indeed very sound. It has now started to pay dividends. We must, therefore, pursue it vigorously.

**Fertiliser prices—Nutrientwise**  
(Inclusive of excise duty but exclusive of C. S. T. & local taxes)

Fertiliser	Nutrient (Rs /Kg)						
	1. 1. 74	1. 6. 74	1. 1. 75	18. 7. 75	1. 12. 75	16. 3. 76	20. 4. 76
<b>I. STRAIGHT FERTILISERS :</b>							
<b>A. Nitrogenous 'N'</b>							
Ammonium sulphate (20.6% N)	2.91	4.54	4.54	4.54	4.54	4.54	4.54
Urea 46% N (50 kg. packing)	2.28	4.35	4.35	4.02	4.02	3.80	3.80
Calcium ammonium nitrate 25% N	2.46	4.38	4.38	4.06	4.06	4.06	4.06
Calcium ammonium nitrate 26% N	2.48	4.40	4.40	4.08	4.08	4.08	4.08
<b>B. Phosphatics 'P<sub>2</sub>O<sub>5</sub>'</b>							
Single superphosphate 16% P <sub>2</sub> O <sub>5</sub>	3.48	5.67	6.25	5.99	5.29	3.95 <sup>+</sup>	3.61 <sup>++</sup>
Triple superphosphate 45% P <sub>2</sub> O <sub>5</sub>	2.71	5.87	5.87	6.47			
Triple superphosphate (Imported)	—	—	—	5.89	4.08	4.08	4.08
<b>C. Potassic 'K<sub>2</sub>O'</b>							
Muriate of potash 60% K <sub>2</sub> O (50 kg packing)	1.13	2.05	2.05	1.97	1.83	1.52	1.52
<b>II. COMPLEX FERTILISERS 'P<sub>2</sub>O<sub>5</sub>'@</b>							
<b>A. Imported and indigenous</b>							
1. DAP 18-46-0 Imported	2.01	4.83	4.83	4.52	4.08	4.17	3.32
Indigenous	2.16	4.83	4.83	4.52	4.52	3.12	3.12
2. Amm phosphate sulphate 20-20-0							
Imported	3.72	4.93	4.93	4.88	4.28	4.50	4.50
Indigenous	4.72	7.15	7.15	9.23	8.23	6.95	6.95
3. NP/NPK Complex 24-24-0							
Imported	—	—	—	8.81	7.02	5.76	5.66
Indigenous	—	—	—	8.48	7.23	5.66	5.66
4. NP/NPK Complex 17-17-17							
Imported	—	—	—	9.24	8.41	7.18	6.07
Indigenous	4.00	8.34	8.34	9.45	7.68	6.27	6.27
5. NP/NPK Complex 15-15-15							
Imported	5.76	4.93	4.93	5.34	5.12	6.65	5.15
Indigenous	4.72	6.07	6.07	6.04	5.92	5.15	5.15
6. NP/NPK Complex 14-28-14							
Imported	3.87	4.87	4.87	5.08	4.29	4.55	4.55
Indigenous	3.40	6.98	6.98	—	—	7.77	7.77
<b>B. Imported</b>							
1. Mono amm. phosphate 11-55-0	1.95	4.84	4.84	4.53	4.08	4.12	4.12
2. Amm. nitro. phos. 26-14-0	—	4.92	4.92	5.00	4.28	4.69	4.69
3. NP/NPK Complex 19-20-0	—	—	—	8.33	6.98	7.19	7.19
4. " " 12-24-12	3.90	4.90	4.90	5.11	4.26	4.53	4.53
5. " " 14-36-12	2.27	4.86	4.86	5.02	4.87	5.06	5.06
6. " " 23-23-0	—	4.87	4.87	4.83	4.28	4.50	4.50
<b>C. Indigenous</b>							
1. Amm. phos. sul. 16-20-0	4.45	7.02	7.02	8.93	7.93	6.61	6.61
2. NP/NPK Complex 22-22-11	—	—	—	8.51	7.11	5.76	5.76
3. " " 14-35-14	2.90	5.58	5.58	6.68	6.03	4.60	4.60
4. " " 19-19-19	—	—	—	9.53	7.68	6.26	6.26
5. " " 19-5-19.5-0	—	—	—	7.26	7.23	5.89	5.89
6. " " 28-28-0	3.05	5.83	5.83	7.33	6.80	5.49	5.49

♦ Indigenously manufactured.

+ w. e. f. 17th March 1976.

++ w. e. f. 9th April 1976.

@ N and K<sub>2</sub>O values through urea and MOP respectively have been taken into account to compute P<sub>2</sub>O<sub>5</sub> values in NP/NPK fertilisers.

### *Fertiliser use strategy*

The era of shortage and high ruling prices during 1972-73 and 1973-74 turned out to be a blessing in disguise as it directed our thinking towards optimising the benefits from fertiliser use. From this emerged the strategy of maximising agricultural production from every kilogram of fertiliser used. To crystallise thought on this issue, FAI built its annual seminar for December, 1974, held in collaboration with FAO and UNIDO around the theme of "Optimising Agricultural Production Under Limited Availability of Fertilisers". This involved a complete re-orientation in our research and development, promotional efforts and marketing strategy. This strategy will need to be continued despite easier fertiliser availability with even greater vigour particularly because of the high ruling fertiliser prices and the Government's decision to keep prices of agricultural produce at a low level to keep inflationary pressures under check. Neither the farmer can afford a wasteful or liberal use of now very costly fertiliser nor can the country spare the scarce foreign exchange liberally for imports. All out efforts to create awareness among farmers about the necessity to make efficient use of fertilisers will, therefore, need to be continued. The changed circumstances have also brought into sharp focus the need for making the best use of all available natural resources including compost, animal and city wastes, green manure, etc. From this has emerged the concept of the "Integrated Nutrient Supply System".

Efficient and judicious use of fertilisers has in some quarters been misunderstood to mean not only a reduction in fertiliser doses but also skipping altogether the application of  $P_2O_5$  and  $K_2O$ . Even official fertiliser recommendations have been accordingly modified. This has worsened the existing imbalances in fertiliser use. It is not easy nor prudent to change recommendations too frequently but at the same time the imbalance is affecting agricultural production. A bold approach is, therefore, needed to get out of this dilemma. A countrywide campaign on use of adequate dosage and balanced fertilisation is badly needed.

There may be merit in developing a simple but an appropriate symbol for balanced utilisation to be repeatedly displayed with a catching slogan through all the media communicating with the rural masses.

### *Notes in presentation*

Tables in the Review following the text contain data covering all the three aspects of the industry, viz., production, distribution and consumption. Nutrientwise tables have been drawn from the Statewise/materialwise production and distribution statistics which have suitably been interspersed to improve presentations. Consumption and distribution statistics cover indigenous as well as imported materials.

As in the past, the Review analyses data for the previous five-year period, i.e., 1971-72 to 1975-76 with projections for 1976-77. The five-year data are presented Statewise/nutrientwise in the relevant tables. The nutrientwise distribution figures are similarly presented. A comparison of nutrientwise distribution and consumption tables represents changes in inventories.

Estimates for 1976-77 are based on past trends duly moderated to take cognizance of anticipated developments.



This Review, as in the previous year, contains data on the trend of world consumption. It also compares the rate of growth in India with a few other countries in the world.

Data on distribution has been obtained from the domestic manufacturers and the Pool and have been presented as such, materialwise. The consumption figures are drawn from the proceedings of the half-yearly Zonal Conferences held by the Central Ministry of Agriculture and Irrigation. Materialwise breakup of consumption is not readily available.

Factors affecting consumption of fertilisers in different States have been analysed in depth in the chapter on "Consumption of Fertilisers".

Figures of production, distribution and consumption—materialwise and nutrientwise—have been rounded off to the nearest thousand tonne for ease of presentation. Percentages are given to the nearest one decimal place. Owing to rounding off, the totals of the columns may not, in every case, tally with the sum of the constituent items.

Except for the consumption figures for the years 1972-73 to 1975-76 all other production, consumption and distribution figures are on April/March basis. The consumption figures for 1972-73 to 1975-76, however, relate to February/January period.

Wherever Statewise consumption figures are not available, regionwise figures are provided.

For the purpose of this Review, the country has been divided into the following five zones.

- South** : Andhra Pradesh, Kerala, Karnataka, Tamil Nadu, Pondicherry and Laccadive Islands.
- West** : Gujarat, Maharashtra, Goa, Daman & Diu and Dadra & Nagar Haveli.
- Central** : Madhya Pradesh, Rajasthan, Uttar Pradesh and Delhi.
- North** : Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab and Chandigarh.
- East** : Assam, Maghalaya, Mizoram, Bihar, Nagaland, Orissa, West Bengal, Manipur, Tripura, NEFA (Arunachal) and Andaman Islands.

## SUMMARY

### I. Production of Fertilisers

#### *Growth of fertiliser industry*

The manufacture of chemical fertilisers commenced in India in 1906, the first fertiliser produced being single superphosphate. Ammonium sulphate was first produced through synthetic ammonia on a commercial scale in 1947 although small quantities were produced as byproduct from the cokeoven plants in the country. The fertiliser industry received a fillip in early 1950s with the dawn of the development era of the country and since then it has developed into a major factor in the India's economic growth. Although some progress was made during the decade 1951-61, the major thrust to the development of the fertiliser industry was given during 1967-71. This process was accelerated with the major shift in the Government's fertiliser policy in 1965 which was aimed at attracting fresh investment.

Table 3 gives in a chronological order the commercial production of the diverse forms of fertilisers in the country. The productwise capacity installed before and during Plan periods, 1906-1976 is given in Table 4, and a consolidated zonewise list of fertiliser plants along with their capacity by end-products is given in Table 5.

The installed capacity of the fertiliser industry as on 1.4.1976 was 2.676 million tonnes of nitrogen and 0.737 million tonnes of  $P_2O_6$ . This is expected to rise to 3.032 million tonnes of nitrogen and 1.175 million tonnes of  $P_2O_6$  by 1.4.77.

#### *Nitrogenous*

The installed capacity of nitrogenous fertiliser plants as on 1.4.76 stood at 2.676 million tonnes of nitrogen, an increase of over 21 per cent compared to the previous year. This increase was contributed by SPIC-Tuticorin, MCFL-Mangalore, FCI-Gorakhpur Expansion and CFL-Vizag Expansion.

Production during the year was 1.508 million tonnes of nitrogen (against 1.535 according to Government computation) compared to 1.186 in 1974-75, an increase of over 27 per cent. The overall capacity utilisation of nitrogenous plants was 63 per cent during 1975-76 compared to 60 per cent in the previous year. Production in most of the plants was higher than during the previous year. The performance of FCI-Durgapur and FACT-Cochin, even though better during 1975-76 than the previous year, continued to be unsatisfactory. SPIC-Tuticorin went into production during the year and had almost stabilised its production. MCFL-Mangalore went into production only during March 1976 and its production will be stabilised during 1976-77.

Four new plants for nitrogenous production including expansion of the existing plants are anticipated to be commissioned during 1976-77. The total capacity by 1976-77 is expected to rise to 3.032 million tonnes of nitrogen and the production is expected to be 1.95 million tonnes of nitrogen.

*Phosphatic*

The installed capacity of phosphatic fertiliser plants as on 1. 4. 76 was 0.737 million tonnes of  $P_2O_5$ , an increase of about 5 per cent over the capacity in the previous year. This increase was due to the commissioning of the expansion of CFL-Vizag plant. Production during 1975-76 was 0.320 million tonnes of  $P_2O_5$  compared to 0.331 million tonnes during the previous year, a fall of about 4 per cent, which was entirely due the lack of offtake of phosphatic fertilisers.

The overall capacity utilisation during 1975-76 was 45 per cent compared to 58 per cent during the previous year. The fall was mainly due to low production as a result of lack of offtake of phosphatic fertilisers.

During the year under review complex fertilisers continued to be more dominant than single nutrient phosphatic fertilisers. Their share during 1975-76 is 77 per cent compared to 59 per cent in the previous year.

Five additional phosphatic fertiliser plants including expansions, are expected to come on stream during 1976-77. The total capacity of  $P_2O_5$  during 1976-77 is expected to be 1.175 million tonnes and the corresponding production, 0.455 million tonnes of  $P_2O_5$ .

*Potassic*

Indigenous production continued to be nil during 1975-76. Entire requirement of the country was met through imports.

*Conclusions*

During the year under review, there has been a substantial improvement in the production of nitrogenous fertilisers to 1.508 million tonnes of 'N' over 27 per cent more than the previous year's production. For the first time, production crossed the one and a half million tonnes mark and exceeded the target of 1.5 million tonnes. Even the capacity utilisation was higher during the year at 63 per cent compared to 60 per cent in the previous year.

Unfortunately, such a bright picture does not extend to phosphatic fertilisers. The production at 0.320 million tonnes of  $P_2O_5$  was lower by about 4 per cent compared to the previous year. The capacity utilisation was substantially low at 45 per cent compared to 58 per cent in the previous year. The low production and unsatisfactory performance of the phosphatic fertiliser plants was due to low offtake of fertilisers in general and phosphatic fertilisers in particular.

**II. Consumption of Fertilisers**

As has been indicated in the Introduction, the rate of growth in consumption declined sharply by 2.6 and 5.2 per cent in 1972-73 and 1973-74 respectively. The position deteriorated even further during 1974-75 when the consumption dropped for the first time after many years. The drop was 8.7 per cent compared to the previous year. Maximum drop of 26.5 per cent in  $P_2O_5$  was followed by 5.8 in  $K_2O$  and 3.0 in N.

The deteriorating trend observed in 1974-75 needed to be arrested immediately to sustain the projected agricultural production programmes in the country. The FAI, therefore, undertook a quick study to identify the factors mainly responsible for the deterioration in consumption situation

and quantify their impact State by State on fertiliser offtake. The FAI provided the framework of the study concerning its scope and methodology, coordinated the effort to help maintain the uniformity in approach, findings and reporting and also prepared a summary of each State report. Thirteen States were selected for the study and survey work was allocated to 10 FAI members.

The study reports clearly indicated that the following factors were mainly responsible for the slowing down of offtake during 1974-75 :

1. Aberrant weather conditions (drought and/or floods).
2. Physical controls on distribution.
3. Sharp hike in fertiliser prices.
4. Inadequate availability of distribution and production credit (credit constraints).
5. Other factors like lack of timely availability, etc.

It has not been possible with the data available from the study reports to give any quantitative weightage to individual factors but the fact remains that the combined effect of the three factors listed above, namely, physical controls, price hike and credit constraints, played havoc with the consumption pattern.

The impact of each constraint as it emerged from the study is explained below :

1. *Aberrant weather*

This not only affected sowings but also damaged crops, in some parts of the country, particularly in Gujarat, Tamil Nadu, U. P., Haryana, Rajasthan, M. P. and Orissa. Fertiliser offtake naturally fell.

2. *Physical controls*

Many States, in their endeavour to ensure equitable distribution during the period of shortage, imposed physical constraints. These covered a wide variety, e.g., card/permit system, restrictions on inter-district or even inter-block movements, limitations of quantities to be released against cards, renewal of dealership registration certificates only on production of sales tax clearance certificates and linking of release of P & K with N. The procedures involved in the implementation of these controls were, to say the least, often frustrating.

The man-made constraints prevented the smooth flow of fertiliser to the farmer and inhibited its use. The aim of these controls was no doubt laudable but an element of rigidity was introduced into the system which failed to respond quickly to the changed situation. Many controls were allowed to continue for too long despite easy availability of materials.

3. *Sharp hike in fertiliser prices*

This created a psychological barrier to normal fertiliser purchases. In their scales of judgment, some farmers found the use of fertiliser uneconomic on crops that they would normally raise because of the absence of a corresponding increase in the produce price. They, therefore, either reduced the quantum of fertiliser use on these crops, or shifted to sowing of crops which needed lesser quantity of fertiliser and also gave them good and quicker

return or reverted to sowing of local variety of crops which needed comparatively lesser quantities of fertilisers. Confusion with regard to selling price of fertiliser in stock at the time of price change was another factor which had an unsettling effect.

#### 4. Inadequate availability of credit

Increased prices resulted in the farmer and the dealer requiring a much larger quantum of money to meet his credit requirements. This was not forthcoming. It reduced the ability of the dealer to stock fertilisers. His inventory holding costs also shot up. He, therefore, held back from his customary stocking before the fertilisation season. The cooperative line of credit was equally hit for the most part of the year since additional credit was made available only at the fag end of the year. Nor did the flow of production credit to the farmer from the cooperatives or the commercial banks increase commensurate with the price rise. The farmer was not only unable to stock fertiliser in advance but he was not even able to buy the usual quantity on credit.

It was considered essential that the sharp decline trend in fertiliser off-take needed to be reversed immediately to sustain the projected agricultural growth in the country.

Immediate remedial measures to remove constraints to fertiliser use were indicated. Withdrawal of cumbersome physical controls in most of the States by end 1974 and early 1975 was a welcome sign. This was followed by drop in prices during the second half of 1975. The weather was good in 1975-76. Adequate fertiliser availability and effective implementation of rationalised movement plans ensured timely availability to the farmer of the right type of material. All these developments reversed the deteriorating trend of 'N' consumption from *Kharif* 1975 onwards and that of  $P_2O_5$  and  $K_2O$  from *Rabi* 1975-76 with the resultant overall increase in consumption in 1975-76 of 12.4 per cent compared to the previous year. The *Kharif* 1975 recorded an overall drop in consumption of 11.7 per cent compared to *Kharif* 1974. *Rabi* 1975-76 on the other hand recorded an increase in consumption of 31.5 per cent compared to *Rabi* 1974-75.

The demand potential is, however, very high and every effort is needed to tap it. A well coordinated promotional effort directed at balanced fertilisation, widening the base of fertiliser use and increase in dosage of existing usage commensurate with the maximum return to the farmer is indicated.

A successful beginning in this direction has already been made through a variety of village adoption schemes. The joint industry effort under the aegis of FAI, village adoption scheme under the ICAR supported integrated nutrient supply system, Maharashtra's Pilot Project, Rajasthan's new extension strategy, etc., are some of the latest innovations in the series. The FAI coordinated programme has already made good progress in West Bengal, Rajasthan and Maharashtra and the area covered by it is being extended with every ensuing season. The integrated nutrient supply system which is essentially a fertiliser industry programme designed to uplift agricultural production of the village with special reference to improving and maintaining soil fertility through the use of all the available nutrients, including organics, in the village, has also made commendable

progress and more than 70 villages have already been adopted under the scheme. The Maharashtra experiment confined only to irrigated command area has an edge over other programmes in that it specifically fixes responsibility on individuals at each level for implementation of various aspects and stages of the programme. Availability of credit for inputs even to the defaulting members of the co-operative societies within the project areas, provided the additional support to the programme. The objective of this approach appears to be to enable defaulting members to pay back their total dues through better yields under the experiment. Very encouraging results have prompted Maharashtra to extend this experiment started in 1975 to a much wider area now. The fertiliser industry has actively cooperated with the Maharashtra Government in the successful implementation of the programme. The need is to multiply these programmes all over the country as fast as possible.

#### *Balance in fertiliser use*

The welcome trend, in the interest of balanced fertilisation, upto 1973-74 of  $P_2O_5$  share in the total NPK consumption increasing each year reversed in 1974-75. The  $P_2O_5$  share dropped from 22.9 to 18.3 per cent. The N share went up from 64.4 per cent in 1973-74 to 68.6 per cent in 1974-75. The  $K_2O$  share, however, continued to increase. It went up from 11.5 per cent in 1971-72 to 13.1 per cent in 1974-75. The reversal in the trend was due to sharp hike in fertiliser prices and non-availability of nitrogenous intermediates to mixing units which could provide balanced fertilisation most effectively.

The farmers with their limited resources in 1974-75 first purchased N and went in for  $P_2O_5$  and  $K_2O$  in that order only if they still had some money left. This trend continued through 1975-76 and the imbalance in fertiliser use further worsened. The percentage share of N increased to 74.3 and that of  $P_2O_5$  and  $K_2O$  dropped to 16.9 and 9.6 respectively. Substantial drop in  $P_2O_5$  prices on March 16, 1976 is likely to stimulate its demand during 1976-77 and its overall share is likely to improve to 17.3 per cent, and that of  $K_2O$  to 10.8 per cent. The share of N is likely to drop to 72.0 per cent.

#### *Seasonwise consumption*

The pattern of seasonwise consumption varied from nutrient to nutrient and from State to State. In the country as a whole, *Kharif* generally accounted for about 42 per cent of the total consumption during 1974-75, the remaining 58 per cent being consumed in *Rabi*. The pattern of consumption over the review period, however, ranged from 35 to 42 per cent in *Kharif* and 65 to 58 per cent in *Rabi*.

#### *Nitrogen*

The drop in N consumption compared to the previous year was for the first time in the history of N use in India observed in 1974-75. The decline was 3 per cent. A number of factors responsible for this disturbing trend are described earlier in the chapter. These factors in fact nullified all that was achieved over the years by the increasing awareness amongst farmers of the benefits of fertiliser responsive HYV crops, multicropping, etc. through IADP, IAAP, extension and promotional programmes of both the Government and the industry and the scientific marketing of fertiliser by the industry.

The weather in 1975-76 turned out to be good. Most of the physical controls were withdrawn. The consumption in *Kharif* 1975 recorded an increase of only 0.9 per cent compared to *Kharif* 1974 due to high prices and very limited resources available with the farmer on account of agriculturally bad 1974-75. Prices dropped twice during the second half of 1975. There was also timely availability of the right type of materials to the farmers. The result was an increase in consumption of 21.6 per cent in 1975-76 compared to the previous year.

The potential demand, however, continues to remain high. With the removal, therefore, of the still persisting constraints like high N, P and K prices and inadequate credit availability the consumption should pick up sharply.

In view, however, of the likely marketing situation in 1976-77, the consumption of N is estimated at 2500 thousand tonnes recording an increase of 16.4 per cent compared to the previous year. The Government of India estimates the rate of growth in 1976-77 at 21 per cent.

The balance in fertiliser use deteriorated in 1974-75. The percentage share of N increased from 64.4 in 1973-74 to 68.6 in 1974-75. The imbalance worsened in 1975-76 with the share of N increasing to 74.3 per cent. It was obvious by this development that whereas most of the farmers considered the use of N economically viable they would not think so about  $P_2O_5$  and  $K_2O$ . In their scale of judgment the use of  $P_2O_5$  and  $K_2O$  would not provide economic returns.

Substantial drop in their prices was, therefore, inescapable since any increase in agricultural produce (output) price had been ruled out by the Government for sound economic reasons. Prices have dropped substantially in the case of  $P_2O_5$  and  $K_2O$  effective from March 16, 1976 and it is hoped that this will now stimulate their consumption. The share of N is therefore, likely to drop to 71.9 per cent during 1976-77. We have still to go a long way in the improvement in the balance of fertiliser use. Promotional efforts both by the Government and the Industry for the balanced use of fertiliser and also the positive encouragement by the Central and State Governments towards re-energising the idling mixing units with the release of the needed quantities of nitrogenous intermediates, would go a long way in putting fertiliser use on the right lines.

Urea continued to be the major source of N. Its contribution to the total N application in fact increased from 59.7 per cent in 1970-71 to 67.1 per cent in 1974-75. High nutrient analysis of urea and high  $P_2O_5$  prices have been the main causes of this trend which is likely to continue.

The consumption of N was around 40-42 per cent in *Kharif* during the first three years of the review period. The percentage in the remaining two years, 1972-73 and 1973-74, was 38 and 43 respectively. The remaining consumption was in *Rabi*. As regards 1974-75, the consumption in *Kharif* dropped by 2 per cent compared to *Kharif* 1973-74. The consumption in *Rabi* 1974-75 correspondingly increased by 2 per cent. This is attributed to comparatively better weather conditions in *Rabi*.

### *Phosphate*

The  $P_2O_5$  consumption for the first time during the review period dropped in 1974-75 compared to the previous year. The sharp drop of 27.4 per cent brought down the consumption level from 650 thousand tonnes in 1973-74 to 472 thousand tonnes in 1974-75. This level of consumption was about 20 per cent lower than even the level achieved in the first year of the review period. Contrary to the previous experience when  $P_2O_5$  consumption followed the pattern of N consumption,  $P_2O_5$  consumption during 1974-75 seemed to float independently depending on the farmer's overall resources for the purchase of fertilisers, the availability of nitrogenous intermediates to support the sale of superphosphate and above all the price of  $P_2O_5$  nutrient.

As a result of frequent hike in international prices of phosphatic raw materials and intermediates like rock phosphate, sulphur and phosphoric acid during 1972-74, the  $P_2O_5$  prices rose correspondingly in India. This resulted in the gap between N and  $P_2O_5$  prices further widening against  $P_2O_5$ . In these circumstances, the farmer tended to use his limited resources to just meet his full requirements of N which showed him visible results in a short time and went in for  $P_2O_5$  only with the balance resources, if any still left over. This trend continued through 1975-76 though the decline in consumption compared to the previous year was only marginal at 1.1 per cent. The materialwise despatches during the year were market limited. As far as the domestic production of  $P_2O_5$  is concerned, all the drop in consumption was accounted for by single superphosphate, the despatch of which dropped by 36 per cent in 1975-76 compared to the previous year. In the case of the Pool materials, the despatch of NP and NPK dropped to 80 thousand tonnes recording a drop of 59 per cent compared to the previous year. Most of the imported materials which included in large measures DAP remained buffer stocked.

The subsidy of Rs. 1,250 per tonne of  $P_2O_5$  enabled through concessions announced in the Union budget for the year 1976-77 is welcome. This should help stimulate  $P_2O_5$  consumption. Another welcome move has been the very recent decision of the Central Government to make Pool urea available to SSP manufacturers in support of SSP sale. Two of the major constraints to SSP consumption have been the high nutrient price and the lack of N support. The price of  $P_2O_5$  through SSP at Rs. 3.61 per kg. is now lower than that even of N through urea at Rs. 3.80 per kg. They have also the N support now. The consumption of SSP should now considerably improve with the resultant increase in the capacity utilisation of SSP units. It is, however, necessary to add a note of caution. In order that the expected growth in consumption is sustained, it is necessary that the level of  $P_2O_5$  prices through SSP remains unchanged and N support now provided for its sale is not only offered on reasonable terms but is also continued on a long-term basis.

The likely consumption of  $P_2O_5$  in 1976-77 is estimated at 600 thousand tonnes recording an increase of 28.5 per cent compared to the previous year. This rate of growth is identical to that estimated by the Government of India.

### *Potash*

The consumption at 336 thousand tonnes in 1974-75 dropped (6.7 per cent) for the first time compared to the previous year during the review



period. The drop would have been much sharper but for the massive increase in consumption during the year in Maharashtra presumably on account of marked increase in consumption on HYV cotton, sugarcane and other cash crops. The increase in Maharashtra was 43 thousand tonnes (102.4 per cent) compared to the previous year.

The deteriorating trend continued through 1975-76 and the consumption dropped again to record a decline of 17.3 per cent compared to the previous year.

The overall growth in consumption of 18.4 per cent recorded during the three-year review period ended 1973-74 dropped to 10.5 and 8.6 per cent over the review periods ended 1974-75 and 1975-76. In absolute terms, the consumption dropped from 304 thousand tonnes in 1971-72 to 278 thousand tonnes in 1975-76.

The highest consumption in any year of 360 thousand tonnes during the review period was recorded in 1973-74.

With the anticipated increase in N,  $P_2O_5$  consumption and also relatively better appreciation of the concept of balanced use of fertilisers the  $K_2O$  consumption in 1976-77 is likely to increase to 375 thousand tonnes recording an increase of 34.9 per cent compared to the previous year.

### III. Zonewise Analysis of Consumption

The South Zone continued to lead all other zones in the consumption of N,  $P_2O_5$  and  $K_2O$  in all the years of the review period except in the case of N in the year 1972-73 when the Central Zone for just one year took a lead over the South Zone.

The percentage share of the South Zone during the review period increased in the case of N,  $P_2O_5$  and  $K_2O$  from 30.8 to 33.7, 36.1 to 37.4 and 44.4 to 44.8 respectively. In 1975-76, however, the share of South Zone compared to the previous year increased only in the case of N and  $K_2O$ . The zone recorded a drop in the  $P_2O_5$  share.

The zonewise status in the order of consumption remained unchanged in 1975-76 compared to the previous year in N,  $K_2O$  but in the case of  $P_2O_5$  the Central zone retrieved its second position which it had lost to the West Zone in 1974-75.

The South and the Central Zones continued to enjoy the first and second positions in terms of total (N +  $P_2O_5$  +  $K_2O$ ) consumption throughout the review period. The third and the fourth positions interchanged between the West and the North Zones. The East Zone continued to be the lowest consumer of the combined three nutrients throughout the review period.

Table 40 gives the zonewise ranking according to nutrientwise consumption during the review period.

### IV. Statewise Analysis of Consumption

Uttar Pradesh continued to lead all other States in the consumption of N during the review period though its percentage share in the total all India N consumption dropped from 19.7 in 1971-72 to 18.1 in 1975-76 also

dropped by 0.5 per cent compared to the previous year. Uttar Pradesh recorded the highest consumption of 389 thousand tonnes in 1975-76.

In the case of  $P_2O_5$ , whereas Uttar Pradesh led other States during the first three years of the review period, Maharashtra and Andhra Pradesh had this distinction during 1974-75 and 1975-76 respectively. The highest consumption in any year during the review period of 99 thousand tonnes was recorded by Uttar Pradesh in 1972-73. The consumption of Andhra Pradesh in 1975-76 was 67 thousand tonnes.

Tamil Nadu was the largest consumer of  $K_2O$  during the first three years of the review period. It gave way to Maharashtra in 1974-75 and the latter continued to retain the first position in 1975-76. The distinction of the record consumption of 83 thousand tonnes during the review period went to Maharashtra in 1974-75. The consumption in Maharashtra during 1975-76 was 54 thousand tonnes.

In terms of total ( $N + P_2O_5 + K_2O$ ) consumption, Uttar Pradesh continued to lead all other States during the review period. The highest total consumption in Uttar Pradesh of 519 thousand tonnes was in 1972-73.

#### V. Seasonwise Analysis of Consumption

In three out of five years of the review period, the percentage share of total ( $N + P_2O_5 + K_2O$ ) consumption during *Kharif* and *Rabi* was around 42 and 58 respectively. The variation was observed only in 1972-73 and 1975-76 when the proportion during the two seasons was around 39 : 61 and 35 : 65 respectively. The main reason for the comparatively much lower consumption in *Kharif* 1975 was the limited resources with the farmer as a result of aberrant weather in 1974-75. The consumption pattern is likely to stabilise in 1976-77 with the consumption proportion in percentage between the two seasons around 42 : 58.

There was no set pattern of nutrientwise consumption seasonwise during the review period though the range of consumption broadly was 35 to 46 per cent in *Kharif* and 54 to 65 per cent in *Rabi*. The range in percentage individually nutrientwise during *Kharif* and *Rabi*, however, was 35 to 43 and 57 to 65 in nitrogen, 35 to 44 and 56 to 65 in  $P_2O_5$  and 36 to 46 and 54 to 64 in  $K_2O$  respectively.

The minimum and maximum variation in seasonwise consumption nutrientwise in any year of the review period was 1.7 and 5.7 per cent respectively. This variation is likely to be around 3 per cent in 1976-77 when the nutrientwise consumption is likely to range from 41 to 44 and 56 to 59 per cent in *Kharif* and *Rabi* respectively.

Table 39 indicates the proportion in percentage of consumption seasonwise during each year of the review period.

#### VI. Districtwise Consumption

The districtwise consumption data in the order of consumption for the year 1973-74 and 1974-75 are detailed in Table 42. A summary of the data for the two years is given on pages 19 and 20.

The data given in table on next page in respect of the first 20 and the first 95 districts in the order of consumption in the years 1973-74 and 1974-75 will be relevant.

No. of districts in the order of consumption	1973-74			1974-75		
	Percent- age to total No. of districts	Consump- tion ('000 tonnes)	Percent- age to all-India consump- tion	Consump- tion ('000 tonnes)	Percent- age to all-India consump- tion	Percentage increase/ decrease over 1973-74
1st 20	5.2	678	24.5	569	22.9	(-) 16
21st to 95th	19.6	1133	40.9	1033	41.9	(-) 9
1st 95	25.0	1811	65.5	1602	65.1	(-) 11

It will be noticed from this Table that the first 20 districts representing 5.2 per cent of the total number of districts in India accounted for 24.5 per cent of the all-India consumption in 1973-74 and 22.9 per cent in 1974-75. In the first 95 districts representing 25 per cent of the total number of districts, however, the share of all India consumption in the two years was at least equal at around 65 per cent. As regards the drop in consumption in 1974-75 compared to 1973-74, whereas it was around 16 per cent in the 1st 20 districts, it reduced to around 9 per cent in the next 75 districts. This clearly suggests that the drop in consumption was relatively much higher in the high consuming districts.

The districtwise analysis presented for the first time in the *Annual Review* should enable identification of districts with high potential for fertiliser consumption so that the fertiliser promotional efforts can be directed mainly towards these districts. A concerted effort in improving fertiliser consumption in the first 95 districts alone which account for 65 per cent of the total consumption in the country may record sizable increase in fertiliser consumption.

#### VII. Plant Nutrients Consumption Per Hectare and its Ratio

Consumption of plant nutrients (N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O) per hectare of agricultural land doubled roughly every five years till 1971-72. During 1972-73 and 1973-74, however, the increases were only marginal mainly due to a shortfall in the total availability of fertilisers. The situation deteriorated further in 1974-75 when for the first time there was a substantial drop (1.2 kg/ha) in plant nutrients consumption over the previous year in spite of easy availability of fertilisers. A number of factors like aberrant weather, cumbersome physical controls at State levels, sharp increase in fertiliser prices, inadequate credit availability, etc., contributed to a drop in fertiliser consumption in 1974-75.

The consumption of plant nutrients in 1975-76, stood at 15.9 kg/ha. While this was an improvement over the best consumption level of 15.4 kg/ha attained in 1973-74, it has fallen far short of our earlier estimate of 17.5 kg/ha for 1975-76. The most important factor inhibiting fertiliser offtake in the year under review was the high fertiliser prices. Despite the small reductions in fertiliser prices effected during 1975 and 1976, the farmer's output/input cost ratio continued to be unfavourable as compared to the position prevalent upto 1973. The situation is likely to improve in 1976-77 when the substantial reduction in fertiliser prices effected in March 1976 would get reflected in increased offtake. It is estimated that the consumption of plant nutrients would go up to 17.9 kg/ha in 1976-77, an increase of 2.5 kg/ha over the previous year.

*Classification of districts according to the range of fertiliser consumption  
(N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) in 1973-74*

Sl. No.	Consumption range (tonnes)	No. of districts	Fertiliser consumption (tonnes)	Cumulative fertiliser consumption (tonnes)	% share of all-India consumption	% cumulative share of all-India consumption	Average consumption in the range (tonnes)	
1.	55,000—50,001	1	54,188	54,188	1.9	1.9	54,188	
2.	50,000—45,001	2	93,430	147,618	3.4	5.3	46,715	
3.	45,000—40,001	2	84,772	232,390	3.1	8.4	42,386	
4.	40,000—35,001	3	117,568	349,958	4.2	12.6	39,189	
5.	35,000—30,001	2	60,306	410,264	2.2	14.8	30,153	
6.	30,000—25,001	10	267,717	677,981	9.7	24.5	26,772	
7.	25,000—20,001	13	290,834	968,815	10.5	35.0	22,372	
8.	20,000—15,001	20	339,598	1308,413	12.3	47.3	16,980	
9.	15,000—10,001	42	503,134	1811,547	18.2	65.5	11,979	
10.	10,000—5,001	79	583,261	2394,808	21.0	86.5	7,383	
11.	5,000—	1	171	364,814	2759,622	13.2	99.7	2,134
		+38*	11,671	2771,293	0.3	100.0	307	
Total		383	2771,239			100.0		

\* Comprises Tripura (3 districts), Nagaland (7 districts), Arunachal Pradesh (5 districts), Andaman (4 districts), Mizoram (3 districts), Goa (3 districts), Delhi (5 districts), Manipur (5 districts) & Meghalaya (3 districts) having very low consumption which adds upto 11,671 tonnes of N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O during 1973-74. (For details, see Table 42.)

The disparity in the consumption of plant nutrients per hectare of agricultural land between different zones and States continued. The North Zone continues to lead all the zones with a consumption of 30.51 kg/ha of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O. The South Zone continues to rank second with a consumption of 26.22 kg/ha followed by West Zone (13.77 kg/ha), East Zone (10.24 kg/ha) and Central Zone (10.03 kg/ha). As compared to the previous year, the level of consumption during 1975-76 has dropped in West Zone, while in Central and East Zones there have been marginal increases. In North and South Zones, however, the consumption levels have increased substantially. The reasons for disparities in consumption levels in the zones and States are discussed.

Classification of districts according to the range of fertiliser consumption  
(N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) in 1974-75

Sl. No.	Consumption range (tonnes)	No. of districts	Fertiliser consumption (tonnes)	Cumulative fertiliser consumption (tonnes)	% share of all-India consumption	% cumulative share to all-India consumption	Average consumption in the range (tonnes)
1.	45,000—40,001	2	84,158	84,158	3.4	3.4	42,079
2.	40,000—35,001	1	35,200	119,358	1.4	4.8	35,200
3.	35,000—30,001	2	66,594	185,952	2.6	7.4	33,297
4.	30,000—25,001	8	225,442	411,394	9.2	16.6	28,180
5.	25,000—20,001	7	157,338	568,732	6.3	22.9	22,477
6.	20,000—15,001	24	415,152	983,884	17.0	39.9	17,298
7.	15,000—10,001	51	618,441	1602,325	25.2	65.1	12,126
8.	10,000— 5,001	76	550,068	2152,393	22.4	87.5	7,238
9.	5,000—	1 168	293,848	2446,241	12.0	99.5	1,749
		+41*	+15,658	2461,899	0.5	100.0	382
Total		380	2461,899			100.0	

\* Comprises Delhi (5 districts), Manipur (5 districts), Tripura (3 districts), Nagaland (7 districts), Andamans (4 districts), Meghalaya (3 districts), Arunachal Pradesh (5 districts), Chandigarh (1 district), Pondicherry (4 districts), Dadra & Nagar Haveli (1 district) and Goa (3 districts) having very low consumption which adds up to 15,658 tonnes of N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O during 1974-75. (For details, see Table 42.)

Data on consumption ratio of major plant nutrients (N : P : K) for the last five years (1971-72 to 1975-76) depicts a rather disquieting trend. During the years 1971-72 to 1973-74, marginal improvements were observed in the N : P : K consumption ratios over 1970-71. However, in 1974-75 the setback in phosphate consumption contributed to the widening of the gap between N and P<sub>2</sub>O<sub>5</sub> consumption and the ratio attained was 5.3 : 1.4 : 1. In the year under review (1975-76), the ratio attained was 7.7 : 1.7 : 1 which is far worse than the consumption ratios attained in any of the previous years. Present indications are that in 1976-77 also the nutrient consumption ratio will remain same as at present. From the point of view of balanced use of NPK fertilisers, West Zone continues to rank first with a ratio of 4.56 : 1.21 : 1 though here again in keeping with the trends in other parts of the country, there was greater imbalance in nutrient ratios as compared to the previous year. South came next (5.65 : 1.40 : 1) followed by East (7.12 : 1.38 : 1), Central (12.35 : 2.35 : 1) and North (24.79 : 4.86 : 1). Factors responsible for the imbalanced use of N, P and K are briefly discussed.

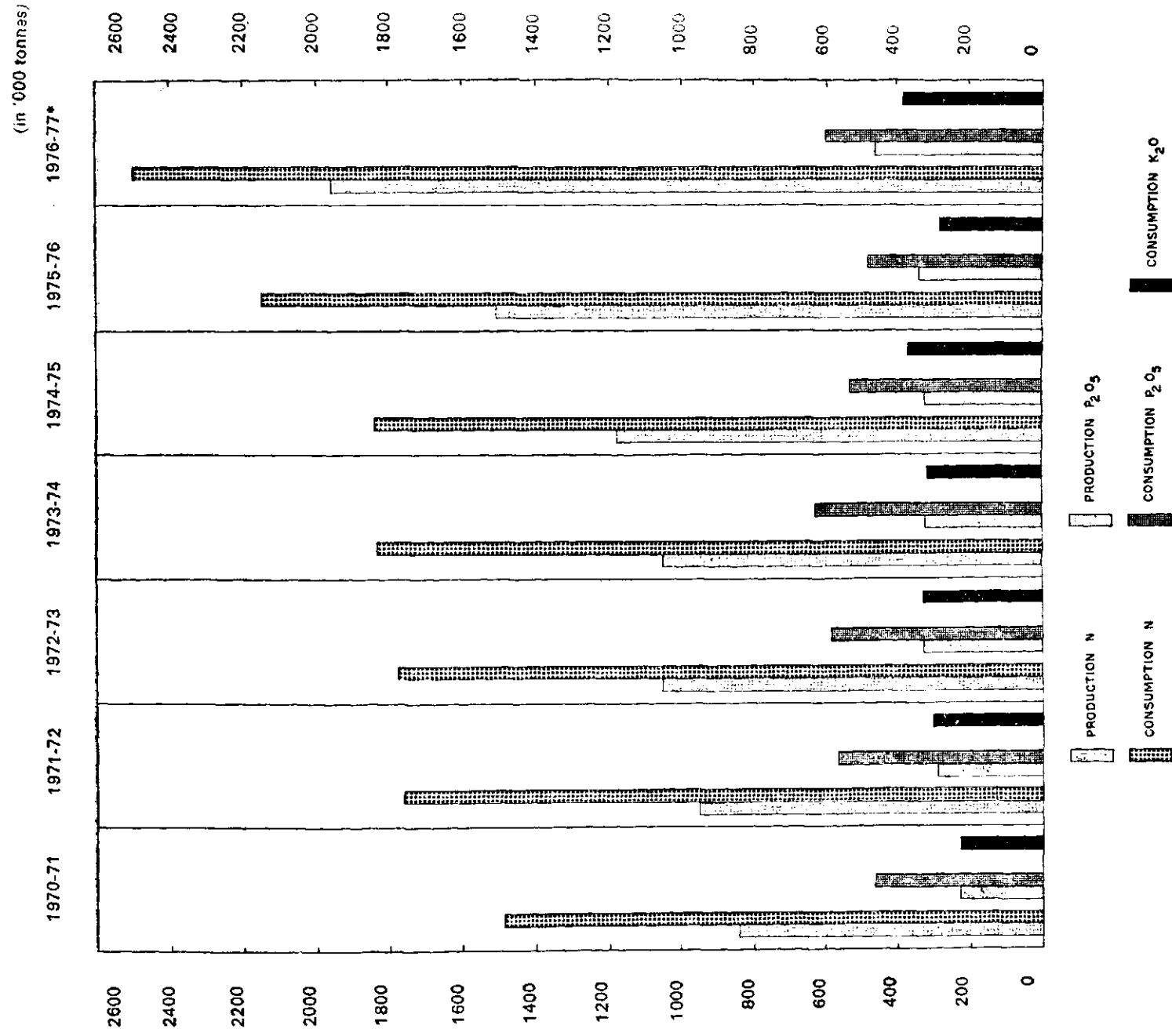
Classification of districts according to the range of fertiliser consumption  
( $N+P_2O_5+K_2O$ ) in 1974-75

Sl. No.	Consumption range (tonnes)	No. of districts	Fertiliser consumption (tonnes)	Cumulative fertiliser consumption (tonnes)	% share of all-India consumption	% cumulative share to all-India consumption	Average consumption in the range (tonnes)
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9.	5,000—	168	293,848	2446,241	12.0	99.5	1,749
		+41*	+15,658	2461,899	0.5	100.0	382
Total		380	2461,899			100.0	

\* Comprises Delhi (5 districts), Manipur (5 districts), Tripura (3 districts), Nagaland (7 districts), Andamans (4 districts), Meghalaya (3 districts), Arunachal Pradesh (5 districts), Chandigarh (1 district), Pondicherry (4 districts), Dadra & Nagar Haveli (1 district) and Goa (3 districts) having very low consumption which adds up to 15,658 tonnes of  $N+P_2O_5+K_2O$  during 1974-75. (For details, see Table 42.)

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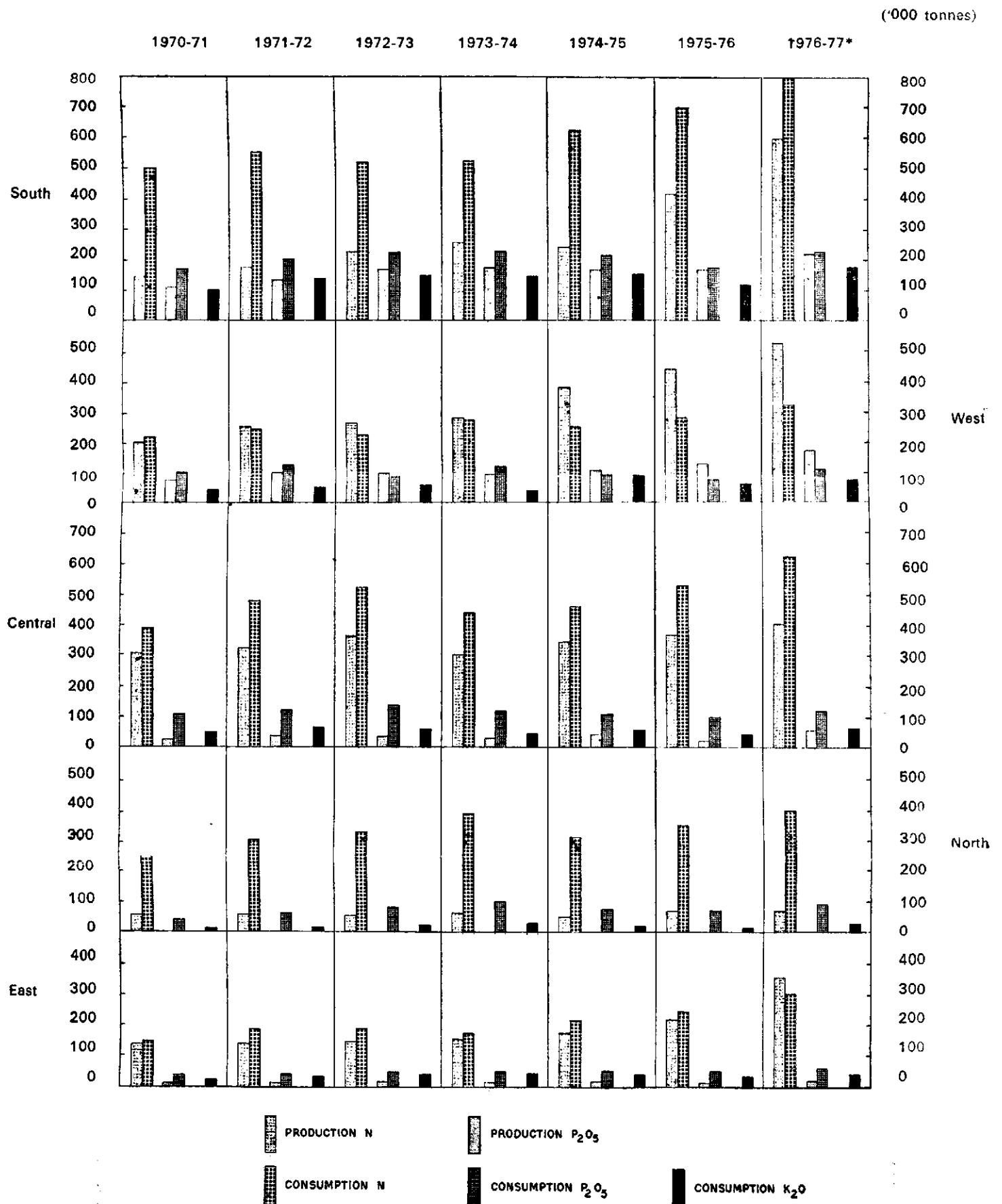
**PRODUCTION AND CONSUMPTION OF N, P<sub>2</sub>O<sub>6</sub> AND K<sub>2</sub>O IN INDIA  
DURING 1970-71 TO 1976-77\*  
(April-March)**



\*Estimated.

Note: Potassic fertilisers are not produced in the country.

**REGIONWISE PRODUCTION AND CONSUMPTION OF N, P<sub>2</sub>O<sub>5</sub> AND K<sub>2</sub>O  
DURING 1970-71 TO 1976-77\*  
(April-March)**

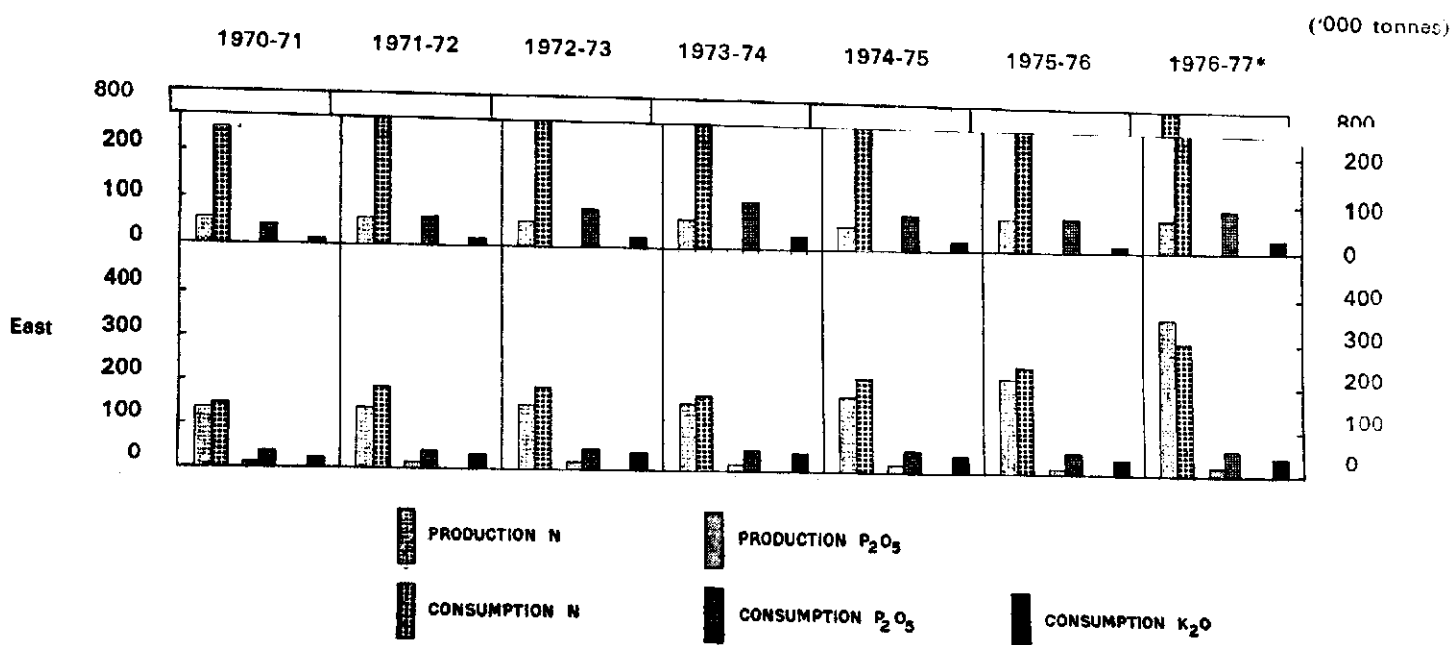


\*Estimated.

Note: Potassic fertilisers are not produced in the country.



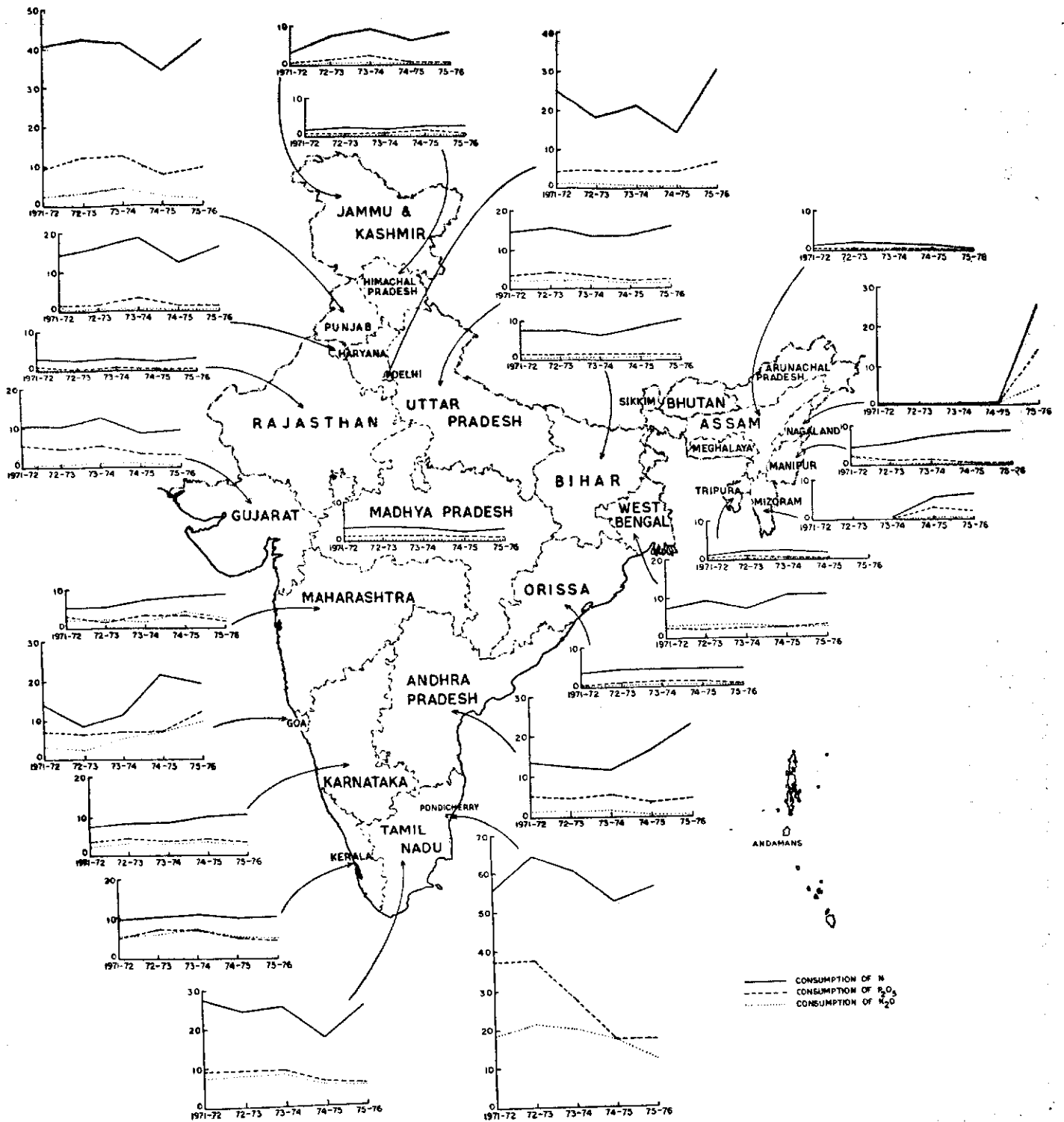
**REGIONWISE PRODUCTION AND CONSUMPTION OF N, P<sub>2</sub>O<sub>5</sub> AND K<sub>2</sub>O  
DURING 1970-71 TO 1976-77\*  
(April-March)**



\*Estimated.

Note: Potassic fertilisers are not produced in the country.

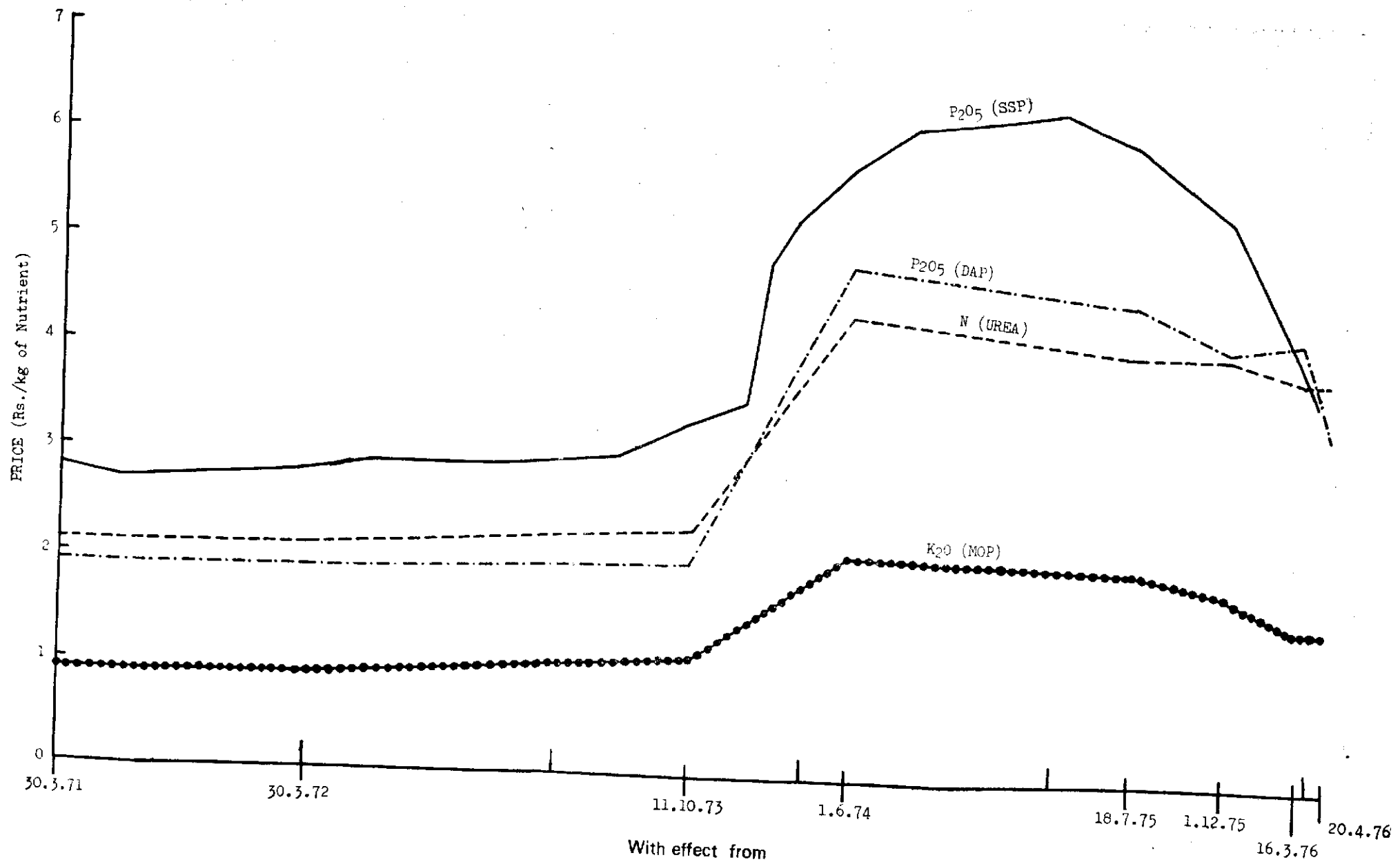
**STATEWISE PLANTFOOD CONSUMPTION PER HECTARE OF AGRICULTURAL LAND (In kgs)**  
(1971-72 to 1975-76)



**ALL INDIA**

Year	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total
1971-72	9.52	3.05	1.65	14.22
1972-73	9.63	3.18	1.80	14.61
1973-74	9.90	3.52	1.95	15.37
1974-75	9.73	2.60	1.85	14.18
1975-76	14.83	2.57	1.53	15.93

RETAIL PRICES OF FERTILISERS IN Rs/Kg OF NUTRIENT (50 kg packing)  
1971-72 to 1976-77



**DETAILS OF PRODUCTION  
AND  
CONSUMPTION**

## CHAPTER I

### PRODUCTION OF FERTILISERS

India produces nitrogenous, phosphatic and complex NP and NPK fertilisers. In the absence of commercial sources for potassic fertilisers, its entire requirement is met from imports.

The installed capacity of the fertiliser industry in India was expected to be 2.980 million tonnes of nitrogen and 1.034 million tonnes of  $P_2O_5$  by the end of 1975-76. For nitrogenous production, SPIC-Tuticorin (258,000), MCFL-Mangalore (160,000), FCI-Barauni (152,000), FCI-Namrup Expansion (152,000), FCI-Gorakhpur Expansion (51,000), CFL-Vizag Expansion (3,000) totalling 776,000 tonnes of nitrogen were anticipated to go into production during 1975-76. However, due to delay in the completion, FCI-Barauni and FCI-Namrup Expansion did not go into production during 1975-76.

Similarly for phosphatic production, SPIC-Tuticorin (51,000), FCI-Sindri Rationalisation (156,000), CFL-Vizag Expansion (31,000) and HCL-Khetri (90,000) totalling 328,000 tonnes of  $P_2O_5$  were expected to go into production during the year; but only CFL-Vizag Expansion could be commissioned.

Thus, the installed capacity of fertiliser units in production in the country as on 1.4.76 (Table 5) was 2.676 million tonnes of nitrogen and 0.737 million tonnes of  $P_2O_5$ .

Production during 1975-76 (Table 8) was 1.508 million tonnes of nitrogen (1.186 million tonnes during 1974-75) and 0.320 million tonnes of  $P_2O_5$  (0.331 million tonnes during 1974-75). The overall capacity utilisation during the year was 63 per cent for nitrogen (60 per cent during 1974-75) and 45 per cent for  $P_2O_5$  (58 per cent during 1974-75). There has been a gradual increase in the capacity utilisation during recent years (from 56 per cent during 1973-74 and 60 per cent during 1974-75 to 63 per cent during 1975-76); at the same time there was a steep fall in the capacity utilisation of phosphatic fertilisers (61 per cent during 1973-74, 58 per cent during 1974-75 and 45 per cent during 1975-76) due to marketing constraints.

Although the capacity utilisation of nitrogenous plants has improved, the overall capacity utilisation during 1975-76 (63 per cent) was still low because :

- (a) SPIC-Tuticorin, MCFL-Mangalore, FCI-Gorakhpur Expansion went into production during the latter half of the year and the operations have yet to stabilise.
- (b) The performance of FCI-Durgapur and FACT-Cochin, even though better than during the previous year, is still unsatisfactory as many of their trouble spots have yet to be eliminated.
- (c) Zuari unit at Goa had to be stopped for about two months due to difficulties connected with pollution.
- (d) Due to obsolescence, units like FCI-Sindri, FACT-Alwaye, NCJM-Varanasi could not show any improvement; NLC-Neyveli and HSL-Rourkela could not produce at their maximum due to insufficient availability of raw materials.

In the case of phosphatic fertilisers, the very low capacity utilisation is primarily due to the lack of offtake of phosphatics in the country. The production of superphosphate has been particularly low (at 33 per cent of the capacity and about 55 per cent of the production of the previous year, vide Table 10), due to various marketing constraints, e.g., high prices of phosphatics, competition from complexes and more particularly pool materials available at lower prices, chocking of institutional channels, etc.

## A. FORMS IN WHICH FERTILISERS ARE PRODUCED

The types of fertilisers produced in the country and the development of the fertiliser industry since 1906 are presented in Table 4. A variety of nitrogenous, phosphatic and complex fertilisers are produced in the country. The nitrogenous fertilisers produced are urea, ammonium sulphate, ammonium sulphate nitrate, calcium ammonium nitrate (25 per cent N) and ammonium chloride. The phosphatic fertilisers produced are single superphosphate (16 per cent water soluble  $P_2O_5$ ), triple superphosphate (45 per cent W.S.  $P_2O_5$ ) and Pelofos (18 per cent total  $P_2O_5$ ). The complex fertilisers produced in India are ammonium phosphate sulphate, diammonium phosphate and nitrophosphate. The various NP/NPK fertilisers produced are: 18-46-0, 28-28-0, 24-24-0, 20-20-0, 19.5-19.5-0, 18-9-0, 14-35-14, 17-17-17, 16-20-0, 15-15-15, 14-28-14, 10-26-26, 12-32-16, 22-22-11, and 19-19-19. Of the various NP/NPK fertilisers, 24-24-0, 20-20-0 (APSN), 19.5-19.5-0, 18-9-0 and 19-19-19 were manufactured for the first time in the country. 24-24-0 was manufactured by MFL-Madras and IFFCO-Kandla. A new product called ammonium phosphate sulphate nitrate 20-20-0 containing  $P_2O_5$  in the water soluble form was produced by FCI-Trombay. Ammonium sulphate phosphate of grade 19.5-19.5-0 was produced by GSFC-Baroda, 18-9-0 by EID-Parry-Madras and 19-19-19 by ZACL-Goa. However, grade 14-28-14 was discontinued during the year 1975-76.

### *Nitrogenous fertilisers*

Small quantities of byproduct ammonium sulphate from cokeoven gas were the earliest fertilisers produced in the steel plants in West Bengal and Bihar during the thirties. But production of nitrogenous fertilisers based on synthetic ammonia was started for the first time in India even though on a small scale by Mysore Chemicals & Fertilisers Ltd., Belagula, Mysore during 1943 using electrolysis of water for production of hydrogen. The plant was closed in 1965, its operations being uneconomic. However, it was only in 1947 that medium scale production of ammonium sulphate was started by the Fertilisers and Chemicals, Travancore Ltd. (FACT) at Alwaye using wood charcoal as raw material for the production of ammonia. The FACT changed the feedstock from wood charcoal to naphtha in 1962.

During 1951-61, four large-scale fertiliser plants went into production. The Sindri plant went into operation in 1951 producing ammonium sulphate, ammonium sulphate nitrate and urea. The Nangal plant was commissioned in February 1961 to manufacture calcium ammonium nitrate. The New Central Jute Mills at Varanasi started production of ammonium chloride in 1959, and the FACT Phase I was completed in 1960.

In January 1961, the Fertilizer Corporation of India (FCI) was established by the Government of India to take over the management of Sindri and Nangal factories. The Corporation has since then grown into a giant organisation managing a substantial portion of fertiliser capacity in the country.

During 1961-71, there was considerable growth in the fertiliser industry in the country due primarily to the liberalised policy of the Government of India. The FACT completed Phase II and Phase III of its expansion during

the decade. FCI-Trombay, FCI-Gorakhpur, FCI-Namrup, Neyveli Lignite Corporation (NLC)-Neyveli, Hindustan Steel Ltd. (HSL)-Rourkela, EID-Parry-Ennore, Gujarat State Fertilizers Co. (GSFC)-Baroda, Coromandel Fertilisers Ltd. (CFL)-Vizag, Indian Explosives Ltd. (IEL)-Kanpur and Shriram Chemical Industries (SCI)-Kota went into production during this period.

During 1971-72 and 1975-76, FACT-Phase IV, Madras Fertilizers Ltd. (MFL)-Madras, Zuari Agro Chemicals Ltd. (ZACL)-Goa, FACT-Cochin, FCI-Durgapur, Indian Farmers Fertiliser Cooperative Ltd. (IFFCO)-Kalol and Kandla, the expansion of Shriram Chemicals Industries (SCI)-Kota, the expansion of CFL-Vizag, the expansion of FCI-Gorakhpur, Southern Petrochemical Industries Corpn. (SPIC)-Tuticorin, the Mangalore Chemicals & Fertilisers Ltd. (MCFL)-Mangalore and the expansion of CFL-Vizag were commissioned. SPIC-Tuticorin went into commercial production during June 1975 and MCFL-Mangalore in March 1976.

The performance of FACT-Cochin improved during the year, sometimes touching a production of about 65 per cent of the capacity. The overall production during the year has been 44 per cent. The performance of FCI-Durgapur continues to be poor, although it has operated at about 45 per cent of capacity during small intervals of time. The overall performance of the plant during the year was only about 24 per cent, as the unit has yet to overcome its troubles.

By 1.4.76, the total capacity of nitrogen had risen to 2.676 million tonnes of nitrogen (Table 5) and the corresponding production during 1975-76 was 1.508 million tonnes of nitrogen (Table 8). It may be seen that the production of nitrogenous fertilisers has gone up from 0.949 million tonnes during 1971-72 to 1.508 million tonnes in 1975-76, an increase of about 60 per cent during these five years.

It may be of interest to note that India is one of the major producers of nitrogenous fertilisers in the world and there are not many countries which produce more than a million and a half tonnes of nitrogen per year. Although the production figures for 1975-76 for other countries are not available, the latest figures available, which are for 1973-74 given below indicate that only five countries produced more than 1.5 million tonnes of nitrogen.

*Major nitrogenous fertiliser producers*

Country	1973-74 (million tonnes)
USA	9.15
USSR	7.24
Japan	2.08
China (Mainland)	2.73
France	1.69
West Germany	1.47
Poland	1.37
Netherland	1.21
Italy	1.11



The production of nitrogenous and complex fertilisers during the last five years is shown in Table 6. Out of a total production of 1.508 million tonnes of nitrogen during 1975-76, urea production from 16 manufacturing units accounted for 67 per cent of the total production, same as last year. Of the total straight nitrogen, urea contributed 78 per cent. Thus, urea continued to play a dominant role in the production of nitrogenous fertilisers in the country. Such a situation is in consonance with the trend in the fertiliser industry to produce fertilisers of higher nutrient content because of resultant saving in packaging, storage and distribution. The two new urea plants which went into production during 1975-76, namely SPIC-Tuticorin and MCFL-Mangalore, had contributed their share to the production of urea.

Next in importance to urea was ammonium sulphate which contributed 8.5 per cent of the total nitrogen production compared to 10 per cent during the previous year. Ammonium sulphate was produced in five large units and a small quantity was produced in six cokeoven plants as a byproduct.

Calcium ammonium nitrate was produced by two plants—FCI-Nangal and HSL-Rourkela—and their share to the total nitrogen production was about 10 per cent compared to 9 per cent during 1974-75. FCI-Nangal's operation was exceedingly satisfactory, the productivity being 96 per cent during 1975-76 as compared to 50 per cent of the previous year, as requisite quantity of power was made available to the unit. Experience has shown that whenever sufficient power is made available to FCI-Nangal plant, it performs satisfactorily. HSL-Rourkela has improved its performance during the year having produced at 64 per cent capacity compared to 51 per cent during the previous year. The performance of HSL-Rourkela plant is low because of the shortage of synthesis gas. It has been decided to supplement the synthesis gas by installing an additional naphtha reforming plant.

Ammonium sulphate nitrate and ammonium chloride were produced in small quantities and their combined share in the total production was around 0.7 per cent compared to around 0.8 per cent during 1974-75.

#### *Phosphatic fertilisers*

The first fertiliser to be manufactured in the country was single superphosphate in 1906 using bone and sulphuric acid. Subsequently, the raw materials were changed to rock phosphate and sulphuric acid. Since then, many superphosphate plants have been established using the same raw material. Currently, there are 29 single superphosphate manufacturing units having a total installed capacity of 226,000 tonnes of  $P_2O_5$  per year.

The entire supply of phosphatic fertiliser in the country was through superphosphate till the end of 1960 when the first ammonium phosphate sulphate factory (FACT-Alwaye) went into production. It was during the decade 1961-71 that many plants to manufacture complex fertilisers were set up in the country. EID-Parry at Ennore also commenced production of ammonium phosphate sulphate during 1963. Production of various grades of nitrophosphates commenced at the FCI-Trombay Unit in 1965. GSFC-Baroda commenced production of diammonium phosphate in 1967. Urea ammonium phosphate was started by CFL-Vizag in 1968. MFL-Madras commenced production of 17-17-17 and 14-28-14 in 1971.

During 1971-76, a few more NP and NPK fertilisers came on the market. IFFCO-Kandla commenced production of 10-26-26 and 12-32-16 during 1974. They also produced 24-24-0 and 22-22-11 during 1975-76. MFL-Madras also commenced production of 24-24-0 during 1975-76. ZACL-Goa started the manufacture of 28-28-0 and 19-19-19 during 1975-76. In addition to the two grades of ammonium phosphate produced by FACT-Alwaye and EID-Parry-Ennore earlier, GSFC-Baroda commenced production of 19.5-19.5-0 and EID Parry-Ennore 18-9-0 during 1975-76. Likewise, FCI-Trombay commenced production of ammonium phosphate sulphate nitrate and nitrophosphate both of grade 20-20-0.

The total capacity of phosphatic fertilisers as on 1.4.76 was 0.737 million tonnes of  $P_2O_5$ , and the corresponding production during 1975-76 was 0.320 million tonnes of  $P_2O_5$  (Table 8). It may be seen from this table that the production of phosphatic fertilisers has gone up from 0.290 million tonnes during 1971-72 to 0.320 million tonnes in 1975-76, an increase of only about 10 per cent during the five years, compared to an increase of 60 per cent in the nitrogen production during the same period.

The total production of  $P_2O_5$  during 1975-76 was 0.320 million tonnes compared to 0.331 million tonnes during 1974-75, a drop of about 4 per cent.

The overall productivity during 1975-76 was 45 per cent compared to 58 per cent in the previous year. The low productivity during 1975-76 was primarily due to the low offtake of phosphatic fertilisers in the country.

The two important straight phosphatic fertilisers produced in the country were single superphosphate (SSP) and triple superphosphate, besides a small quantity of Pelofos containing 18 per cent total  $P_2O_5$  produced by a small unit in Rourkela. Single superphosphate is produced by 29 units (Table 5) in the country and the production during the year was 0.461 million tonnes compared to 0.819 million tonnes during the previous year (Table 7). Out of the total production of  $P_2O_5$  during 1975-76, the share of single superphosphate was only 23 per cent during 1975-76 compared to 40 per cent during the previous year.

Triple superphosphate is produced by only one manufacturing unit and the total production during the year was merely 2,000 tonnes. Its contribution to the total production of  $P_2O_5$  during the year was 0.3 per cent. The production of Pelofos was negligible during the year.

#### *Complex fertilisers*

A variety of complex fertilisers are being produced in the country, namely ammonium phosphate sulphate, diammonium phosphate, nitrophosphate, urea ammonium phosphate and several grades of NP and NPK fertilisers. Their share in the production of  $P_2O_5$  during 1975-76 increased to 77 per cent compared to 59 per cent in the previous year largely at the cost of SSP production

Ammonium phosphate sulphate was produced in three units during the year under consideration, 16-20-0 and 20-20-0 by FACT-Alwaye and 16-20-0 and 18-9-0 by EID-Parry-Ennore and 19.5-19.5-0 by GSFC-Baroda. Its share in the production of  $P_2O_5$  was about 11 per cent compared to about 9 per cent in the previous year.

Only one manufacturing unit produced nitrophosphate, the grade being 15-15-15. Its share in the production of  $P_2O_5$  was about 11 per cent compared to 10 per cent in the previous year.

Diammonium phosphate was produced by one manufacturing unit and its production during 1975-76 was 33 per cent less than the previous year due to market limitations. Its share in the total production of  $P_2O_5$  was only 6 per cent compared to 9 per cent in the previous year.

Urea ammonium phosphate of 28-28-0 was produced in two manufacturing units, CFL-Vizag and ZACL-Goa, the latter having commenced its production during the year. Its production was about 32 per cent more than the previous year and its contribution to the total production of  $P_2O_5$  was 16 per cent compared to 12 per cent in the previous year.

A variety of NP and NPK fertilisers were produced during the year as seen in Tables 6 and 7. For the first time, the grades 22-22-11, 24-24-0 and 19-19-19 were produced in the country. Their share in the production of total  $P_2O_5$  was 33 per cent compared to 20 per cent in the previous year.

## B. STATEWISE PRODUCTION

The factorywise and productwise capacity of various fertilisers as on 1.4.76 is given in Table 4. The Statewise and materialwise production figures for five years ending 1975-76 are given in Tables 9, 10, 11 and 12 and the corresponding nutrient production in Table 8

### *Nitrogenous fertilisers*

It may be seen from Table 8 that out of the total production of 1.508 million tonnes of nitrogen, almost equal quantities were produced in the West and South Zones.

In the West Zone, the production was mainly from units located in Gujarat (GSFC and IFFCO), Maharashtra (FCI-Trombay) and Goa (ZACL).

In the South Zone, FACT-Alwaye and FACT-Cochin (Phase I) in Kerala; EID-Parry-Ennore, NLC-Neyveli; MFL-Madras and SPIC-Tuticorin in Tamil Nadu; CFL-Vizag in Andhra Pradesh and MCFL-Mangalore in Karnataka have contributed to the production during 1975-76. The FACT plants at Alwaye and Cochin and the NLC plant at Neyveli were working at low capacity due to a variety of reasons—obsolescence in the Alwaye plant and technical problems in the Cochin and Neyveli plants. For the first time a nitrogenous fertiliser plant went into production in Karnataka at Mangalore in March 1976. Its contribution during the year was negligible. The SPIC-Tuticorin plant went into operation during June 1975 and is expected to make substantial contribution during the year 1976-77.

In the Central Zone, substantial production was in Uttar Pradesh where two large nitrogenous plants namely IEL-Kanpur and FCI-Gorakhpur and a small one namely NCJM-Varanasi are located. This was followed by Rajasthan, where SCI-Kota plant is located. The production in Madhya Pradesh was very small, the only plant being the byproduct ammonium sulphate plant of HSL at Bhilai.

In the East Zone, FCI-Namrup in Assam, FCI-Sindri in Bihar, HSL Rourkela in Orissa and FCI-Durgapur in West Bengal and a few cokeoven plants in West Bengal, Bihar and Orissa have contributed to the production of nitrogenous fertilisers in the region. FCI-Namrup has performed very satisfactorily during the year. The productivity of FCI-Sindri is low due to the inferior quality of raw materials and obsolescence of plant and equipment. The performance of HSL-Rourkela, though better than the previous year, has been low due to insufficiency of cokeoven gas. FCI-Durgapur continues to face many technical problems.

In the North Zone, there is only one fertiliser plant in operation namely FCI-Nangal which has operated very satisfactorily during 1975-76. The plant is in good shape and whenever sufficient power was made available, it could work beyond its capacity.

Table 9 gives the production of nitrogenous fertilisers in various States and regions.

More than 50 per cent of ammonium sulphate is produced in the East Zone with FCI-Sindri contributing a major proportion. Remaining ammonium sulphate is largely produced in Southern and Western Regions.

Ammonium sulphate nitrate is produced only at Sindri.

Urea is manufactured in 16 units spread all over India. About 35 per cent of urea is produced in the Central Zone, 34 per cent in West Zone, 25 per cent in South Zone and balance in the East Zone. There is no unit producing urea in the Northern Region consisting of Punjab, Haryana, Himachal Pradesh and Jammu & Kashmir.

Calcium ammonium nitrate is produced by FCI-Nangal in the North Zone and HSL-Rourkela in the East Zone.

Ammonium chloride of fertiliser grade is produced by NCJM-Varanasi in Uttar Pradesh.

#### *Phosphatic and complex fertilisers*

The installed capacity of phosphatic and complex fertilisers, product-wise and Statewise is presented in Table 5 and the production in Tables 10, 11 and 12. Production in terms of nutrient during the five years ending 1975-76 is presented in Table 8. The overall production of phosphatic fertilisers during 1975-76 was about 4 per cent lower than the previous year.

Over 50 per cent of the production of phosphate is in South Zone where, besides four large complex fertiliser units, a large number of single superphosphate units are also located. Although two single superphosphate plants are located in Karnataka, both these were closed in 1973-74.

In the West Zone, the complex and superphosphate units in Gujarat and Maharashtra performed satisfactorily. The Zuari plant at Goa with an installed capacity of 42,000 tonnes of  $P_2O_5$  produced only 8,000 tonnes during 1975-76.

In the Central Zone, the production of phosphatic fertilisers is from the four single superphosphate units and the total production for the year was only 21,000 tonnes.

In the North Zone there is neither superphosphate nor complex fertiliser plant and hence, production of phosphatic fertiliser was nil.

In the East Zone also, phosphatic fertiliser production is only as single superphosphate. There are two SSP plants in West Bengal, one in Bihar and one in Assam. In Orissa, there is neither a complex fertiliser plant nor single superphosphate plant but a unit is producing citrate soluble phosphatic fertiliser under the name 'Pelofos' which commenced operation during 1973-74.

Only one triple superphosphate plant was in production during 1975-76, i.e., the DMCC unit located at Ambarnath in Maharashtra in West Zone. Two more TSP units, one at Sindri in Bihar and another at Khetri in Rajasthan, were expected to be in operation during 1975-76, but due to delays in erection and commissioning, these have not gone into production during the year under consideration.

Among the complex fertilisers produced in the country (Table 12) ammonium phosphate sulphate is produced by three units, one each in Kerala, Tamil Nadu and Gujarat. A new product called ammonium phosphate sulphate nitrate (APSN) having a composition 20-20-0 with  $P_2O_5$  soluble in water was produced by the Trombay unit for the first time during 1975-76. Nitrophosphate 15-15-15 was produced by FCI-Trombay in Maharashtra in Western Zone in 1975-76 and the unit operated exceedingly well during the year. Urea ammonium phosphate of grade 28-28-0 was produced by CFL-Vizag in A. P. in South Zone and by ZACL-Goa in the West Zone. Diammonium phosphate was produced by GSFC in the West Zone.

Amongst NP/NPK fertilisers produced in the country MFL-Madras produced 17-17-17 and 14-28-14. They introduced a new grade of 24-24-0 for the first time during the year. IFFCO-Kandla in Gujarat in West Zone produced 10-26-26, 12-32-16 and 22-22-11. They also introduced a new grade 24-24-0 during 1975-76. NACL-Goa produced 19-19-19 for the first time during 1975-76.

The five new grades introduced during 1975-76 were APSN 20-20-0 by FCI-Trombay, ammonium phosphate sulphate 19.5-19.5-0 by GSFC-Baroda and 18-9-0 by EID-Parry-Ennore, urea ammonium phosphate 24-24-0 by MFL-Madras and IFFCO-Kandla and 19-19-19 by ZACL-Goa.

### C. ANTICIPATED PRODUCTION OF FERTILISERS DURING 1976-77

The consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O during 1976-77 has been estimated at 2.5 million tonnes of nitrogen, 0.6 million tonnes of P<sub>2</sub>O<sub>5</sub> and 0.375 million tonnes of K<sub>2</sub>O (vide Tables 36, 37 and 38). Against the requirement, the capacity of plants existing in the country as on 1.4.76 was 2.676 million tonnes of nitrogen and 0.737 million tonnes of P<sub>2</sub>O<sub>5</sub>. This includes the nitrogenous fertiliser plants at SPIC-Tuticorin (258,000), FCI-Gorakhpur Expansion (51,000), MCFL-Mangalore (160,000) and Expansion of CFL-Vizag (3,000 N-31,000 P<sub>2</sub>O<sub>5</sub>). These plants will stabilise their production and contribute substantially towards the total production of fertilisers in the country during 1976-77. Besides, the FACT-Cochin plant is expected to improve its performance during 1976-77. The FCI-Durgapur continues to face considerable technical problems and corrective measures are being taken to rectify the technical deficiencies. It may marginally improve its production performance during 1976-77.

Production of phosphate and NP and NPK fertilisers in the existing plants will depend on the offtake of phosphatic fertilisers in the country.

During 1976-77, FCI-Barauni, FCI-Namrup Expansion, the phosphatic and complex plant of SPIC-Tuticorin, FCI-Sindri rationalisation, FACT-Cochin II and Hindustan Copper Ltd. (HCL)-Khetri are expected to go into production. Besides, a third train of the complex fertiliser plant of MFL-Madras is also expected to be commissioned. The additional capacity expected to be created during 1976-77 and the likely dates of commercial production are given below:

No.	Name of project	Capacity in tonnes per annum		Likely date of commercial production
		N	P <sub>2</sub> O <sub>5</sub>	
1.	FCI-Barauni	152,000	—	September 1976
2.	FCI-Namrup (expansion)	152,000	—	June 1976
3.	SPIC-Tuticorin	—	51,000	December 1976
4.	FCI-Sindri (rationalisation)	—	156,000	October 1976
5.	FACT-Cochin II	40,000	114,000	September 1976
6.	HCL-Khetri	—	90,000	September 1976
7.	MFL-Madras (expansion)	12,000	27,000	July 1976
	<b>Total</b>	<b>356,000</b>	<b>438,000</b>	

Thus a substantial capacity will be added during 1976-77 taking the total to 3.032 million tonnes of nitrogen and 1.175 million tonnes of  $P_2O_5$ .

The SPIC-Tuticorin plant which started producing nitrogen in June 1975 will commence producing NP/NPK fertilisers during 1976-77. For the MCFL-Mangalore plant, though commercial production started in March 1976, the year 1976-77 will be the first year of its commercial production when its operation is expected to stabilise. FCI-Namrup based on natural gas is expected to perform satisfactorily during 1976-77. FCI-Barauni is expected to go into production during 1976-77 without any teething troubles. Completion of FCI-Sindri rationalisation, which will be the largest phosphatic fertiliser unit in the country, has been delayed. It is hoped that the plant will go into operation smoothly during 1976-77. FACT-Cochin II is primarily a NP/NPK fertiliser project based on imported ammonia having accent on production of  $P_2O_5$ . The plant and equipment are in the final stages of erection and it is likely to be commissioned during the year. HCL-Khetri plant has also been delayed and it is expected to go into production during 1976-77. The third stream of NPK plant at MFL-Madras is ready for commissioning and is expected to go into production shortly.

Thus by the end of 1976-77 the total capacity of nitrogenous fertilisers is expected to be 3.032 million tonnes of nitrogen and 1.175 million tonnes of  $P_2O_5$ . The production during 1976-77 is estimated to be (Table 8) 1.95 million tonnes of nitrogen and 0.455 million tonnes of  $P_2O_5$ . The increase in production over the previous year will partly stem from the stabilised production of existing plants and the anticipated production from the seven new projects mentioned in the above table.

When the anticipated production of 1.95 million tonnes of nitrogen is compared with the expected consumption of 2.5 million tonnes of nitrogen during 1976-77, there is a gap of 0.55 million tonnes of nitrogen. This will be met from inventory holding with producers and their dealers, institutional agencies and buffer stocks with the Pool. Besides, some imports are planned against trade deals, subsisting contracts and new contracts.

In the case of phosphatic fertilisers there is ample capacity to meet our needs. During 1975-76, the production was determined by market demand and since the offtake was low the production was correspondingly cut back. When the tentative estimates of production of 0.455 million tonnes of  $P_2O_5$  during 1976-77 is compared with the estimated consumption of 0.6 million tonnes of  $P_2O_5$ , there will appear to be a gap of 0.145 million tonnes of  $P_2O_5$ . This is only notional. There are considerable stocks of phosphatics with the manufacturers, distribution channel and institutional agencies in the country to meet this gap. Taking into consideration the domestic capability for higher production of phosphatics and the stocks with the various agencies, the Government of India has agreed not to import any phosphatic fertilisers during 1976-77. Besides, since there is ample capacity for production of phosphatics in the country, production can be adjusted to meet any spurt in offtake.

It is anticipated that the improved indigenous production and the carry-over of stock of phosphatics with the various agencies will be adequate to meet the demand of  $P_2O_5$  in the country during 1976-77.



## CHAPTER II

### CONSUMPTION OF FERTILISERS

#### A. FORMS IN WHICH FERTILISERS ARE USED

Various forms of fertilisers that were consumed in India during the five-year review period ended 1975-76 are listed in Tables 13, 14 and 15. Materialwise distribution to various States is provided in Tables 16 to 35 from which all-India figures have been drawn.

The figures in the Tables represent quantities distributed and not actually consumed since materialwise consumption data is not available. These figures for purposes of discussions in this chapter and for the overall uniformity have been assumed as consumption figures.

The variation between the distribution and consumption figures depends largely upon the extent of inventory holding in the country at the beginning of each year. If the inventory level is very large in the context of the prevailing marketing situation, as was the case at the beginning of 1975-76, the distribution figure will be lower than the consumption figure and *vice versa*. The variation in general is, however, not large enough to affect the trend of materialwise consumption.

The past trend towards higher analysis straight and NPK fertilisers from which there was a slight shift in 1974-75 was maintained. The process was sustained by lack of import in 1975-76 of lower analysis material unlike the previous year.

##### *Nitrogen*

The main contribution to N use came from the three straight nitrogenous materials, viz, urea, CAN and ammonium sulphate followed by various NPK fertiliser materials.

The percentage contribution from straight nitrogenous materials increased from 86.3 in 1974-75 to 87.9 in 1975-76. The contribution from NPK fertilisers on the other hand decreased from 13.7 to 12.1 during the same period. The main reasons for this were substantial increase in urea consumption and the sizeable drop in consumption of imported NPK fertilisers because of very high  $P_2O_5$  prices through the latter. The largest drop in consumption in any single NPK material of 43 per cent was in imported DAP due to limited release from buffer stocks to help easier flow of indigenous  $P_2O_5$  availability.

##### *Urea*

The contribution of N from urea continued to increase throughout the review period. Beginning with the contribution of 62.1 per cent in 1971-72, it reached a level of 70.3 per cent in 1975-76. Compared to the previous year, the contribution increased by 3.2 per cent. This trend is likely to continue through 1976-77.

Urea has become the most popular and the main source of N because of its various advantages like higher analysis, universal acceptability, etc.

More urea plants coming on stream during the next 3-4 years will further add to its popularity and contribution as a source of N.

Absolute consumption of urea reached a level of 2917 thousand tonnes in 1975-76 recording thereby an increase of 8.7 per cent compared to the previous year and 30.6 per cent over the review period.

#### *CAN*

This is another popular and important source of N in certain parts of the country. Its contribution as a source of N which is largely a function of availability, dropped from 10.9 per cent in 1971-72 to 7.5 per cent in 1975-76. The drop in contribution compared to the previous year was of 0.1 per cent. This trend is likely to continue as domestic capacity is not being augmented nor are any large scale imports envisaged unlike urea.

Absolute consumption of CAN at 724 thousand tonnes in 1975-76 recorded an increase of 21,000 tonnes or 3 per cent over the previous year due to higher indigenous production during the year under review, but there was a drop of 1.5 per cent over the review period.

#### *Ammonium sulphate*

The percentage contribution of ammonium sulphate to total N consumption over the review period dropped from 10.9 per cent in 1971-72 to 7.5 per cent in 1975-76. In absolute terms the consumption dropped from 877 thousand tonnes to 691 thousand tonnes due primarily to progressively reduced imports. Compared to the previous year, the contribution of ammonium sulphate to total N will continue to drop because of its limited indigenous availability. Additional domestic capacity in this product is not envisaged nor are large scale imports likely due to the overall disadvantages arising from the use of low analysis material.

#### *Diammonium phosphate*

DAP is another popular form of fertiliser because of the availability in it of phosphate in addition to nitrogen at a relatively much lower price per unit of nutrient. Its consumption is, however, conditioned by its availability. There being only one domestic producer of DAP, its consumption would depend on the quantum of imports.

The share of DAP as a source of N to total N consumption which would have normally continued to reduce if no imports were made, may remain static atleast during the current year till the large quantity of imported material goes into consumption.

The percentage contribution of DAP to total N consumption increased from 3.7 in 1971-72 to 4.6 in 1973-74. It started dropping thereafter and was only 1.6 per cent in 1975-76. This level of share is likely to remain unchanged in 1976-77.

The consumption of DAP in 1975-76 at 175 thousand tonnes recorded a drop of 51.8 per cent over the previous year. Its contribution to total N consumption also diminished by 1.9 per cent, the largest drop in any year during the review period. This large drop was due mainly to the controlled limited release into the market of imported DAP to help reduce the high

inventory levels of the domestic producers caused by reduced offtake of phosphatics.

#### *Other forms*

The trend towards preference for NPK fertilisers received a setback in 1974-75 because of the high prices of NPK fertiliser, and reported preference of the farmer for straight nitrogenous material on account of his limited resources. The conditions did not change materially in 1975-76. Combined contribution of NPK material to total N consumption decreased from 13.7 in 1974-75 to 12.1 in 1975-76. The substantial fall in  $P_2O_5$  prices (and therefore of complexes), accepted need for balanced fertilisation and ease of application of NPK materials are, however, likely to revive the trend towards high analysis NPK fertiliser use in 1976-77. The contribution to total N consumption should also correspondingly increase.

#### *Phosphates*

The main sources of  $P_2O_5$  are straight fertiliser materials like single and triple superphosphate and NPK fertiliser materials. The trend over the review period (barring 1973-74) has been towards consistent increase in the share of  $P_2O_5$  through NPK fertiliser materials. The share of  $P_2O_5$  through NPK fertiliser materials in 1975-76 at 79.7 per cent recorded an increase of 4.3 per cent compared to the previous year—the highest annual increase during the entire review period. The share through straight materials correspondingly reduced from 24.6 per cent in 1974-75 to 20.3 per cent in 1975-76. The main reason for this was a substantial drop in superphosphate consumption on account of market resistance to the use of this lower analysis material at its high prevailing nutrient price level and the absence of N support. The domestic production of this material was itself market limited. The substantial drop of single superphosphate prices since then and the availability of Pool urea to SSP manufacturers to support their sales is likely to stimulate its consumption during 1976-77.

#### *Single superphosphate*

The contribution of SSP as a source of  $P_2O_5$  to total  $P_2O_5$  consumption dropped from 23.6 per cent in 1974-75 to 20 per cent in 1975-76. The overall drop during the review period was 5.3 per cent. The consumption of superphosphate in 1975-76 in absolute term at 468 thousand tonnes was the lowest during the review period. Drop in consumption over the previous year of 36.2 per cent was also the sharpest in any year during the review period compared to the previous year.

The utilisation of SSP capacity in 1975-76 was market limited. It represented 30 per cent of the total  $P_2O_5$  capacity in the country. Efforts are needed to maximise utilisation of this capacity as well as that of domestic NPK fertilisers. It was indicated in the last year's review that this low analysis material (SSP) needed adequate support of N as well as price subsidy to enable its regular acceptance by the farmer. The price has since dropped substantially through reduction in prices of inputs, i.e., rock and sulphur and the introduction of Government subsidy scheme. Also, Government have offered supplies of pool urea to SSP manufacturers. These welcome developments should now stimulate SSP consumption in the country. Based on this assumption, the SSP production during 1976-77

has been estimated at 690 thousand tonnes, i.e., 49.7 per cent higher than the previous year (Table 7). The estimated consumption of 750 thousand tonnes in 1976-77 will record an increase of 60.2 per cent compared to the previous year. The contribution to total  $P_2O_5$  consumption through SSP will thus increase by 1.7 per cent to reach 21.7 per cent.

#### *Diammonium phosphate*

The consumption of DAP is largely conditioned by its availability. The domestic production being limited and static, the level of its contribution to total  $P_2O_5$  consumption will depend upon its availability through imports. Further imports are not likely to take place in view of adequate  $P_2O_5$  availability from domestic sources. The impact of imports may, therefore be confined only to the extent of the release of the imported material already lying in the country.

The contribution of  $P_2O_5$  through DAP to total  $P_2O_5$  consumption ranged from 33.6 to 37 per cent during the first 4 years of the review period. It dropped sharply in 1975-76 by 12.1 per cent to 21.5 per cent. Absolute consumption also declined by 188 thousand tonnes from 363 to 175 thousand tonnes. As has been indicated earlier, limited release of imported material to accord priority in consumption to indigenous  $P_2O_5$  materials was responsible for this development.

This declining trend in its contribution to total  $P_2O_5$  consumption is likely to continue.

#### *Nitrophosphates*

The contribution of nitrophosphates to total  $P_2O_5$  consumption remained static at about 6 per cent during the first 4 years of the review period. Another grade of nitrophosphate, viz., 20-20-0 was introduced in October 1975 and this grade along with the already established grade 15-15-15 increased the contribution to 8.1 per cent in 1975-76. The increasing trend in contribution is likely to continue.

The absolute consumption consistently increased during the first 3 years of the review period from 206 thousand tonnes in 1971-72 to 214 thousand tonnes in 1973-74 recording an increase of about 4 per cent. This was followed by a drop in consumption of 30 thousand tonnes in 1974-75 and again an increase of 16 thousand tonnes in 1975-76. The absolute consumption of 200 thousand tonnes in 1975-76 was 3 per cent lower than the consumption in the first year of the review period. The increasing trend of the last two years is likely to continue through 1976-77 with an increase in consumption by around 70 thousand tonnes.

#### *Urea ammonium phosphate*

The review period began in 1971-72 with a contribution to total  $P_2O_5$  consumption of 15.1 per cent of the two grades under this category, namely, 28-28-0 and 20-20-0. The contribution dropped substantially to 9.9 per cent in 1972-73 on account of the drop in availability of both these grades and increase in availability of the other NPK grades. The production of 20-20-0 discontinued in 1973-74 and the contribution to total  $P_2O_5$  consumption dropped further to 8.9 per cent. This declining trend continued through 1974-75 and the contribution of 28-28-0 to total  $P_2O_5$  consumption

dropped to 7.5 per cent. The year 1975-76 recorded spurt in consumption of this grade and its contribution went up to 11.9 per cent though the level of consumption in absolute terms at 75 thousand tonnes was no more than that achieved way back in 1972-73. Zuari's NPK plant commenced production in March 1975. The increasing trend is likely to continue through 1976-77 but even at an estimated consumption of 190 thousand tonnes, its contribution to total  $P_2O_5$  consumption is likely to drop to 9.6 per cent mainly because of substantial increase in consumption of straight  $P_2O_5$  and also through NPK materials.

#### *Ammonium phosphate sulphate*

The contribution of the two grades under the category, namely, 16-20-0 and 20-20-0, to total  $P_2O_5$  consumption was recorded from 3.7 to 5.8 during the first four years of the review period depending upon the availability of 20-20-0. In 1975-76, EID-Parry commenced production of an additional grade 18-9-0 in this category which contributed 2 thousand tonnes towards consumption during the year. The total consumption in 1975-76 at 133 thousand tonnes was, however, about 6 per cent lower than the previous year but its contribution to total  $P_2O_5$  consumption increased by 1.4 per cent to 7.1 per cent because of substantial drop in consumption of straight  $P_2O_5$  material. The consumption in 1976-77 is likely to increase by 33 per cent to 190 thousand tonnes but its contribution will fall by 1.2 per cent to 5.9 per cent due to substantial increase in consumption of straight  $P_2O_5$  material.

#### *NPK materials*

The contribution of NPK materials to total  $P_2O_5$  consumption increased from 12.2 per cent in 1971-72 to 16.7 per cent in 1972-73 in line with the trend for preference for higher analysis material. This was followed in 1973-74 by a drop in the share to 12.3 per cent mainly because of global shortage of fertilisers. Substantially higher imports during 1974-75 compared to the previous year and the commissioning of the IFFCO NPK plant in November 1974 revived the situation and in 1974-75 the contribution of NPK materials increased to 18.1 per cent. The increasing trend continued through 1975-76 despite reduced imports and the contribution increased to 28.7 per cent. Improved availability from IFFCO plant and the better performance of other units contributed to this increase in contribution by 10.6 per cent in a year. Expansion of CFL and MFL and commissioning of SPIC will accentuate the trend at least for some time till TSP plants of HCL-Khetri and FCI-Sindri get going.

#### *Potash*

Potash is used primarily in the form of muriate of potash (MOP). It may be applied directly to the soil as such/as NPK mixture or in the form of NPK fertilisers. The contribution of direct application of MOP (which includes NPK mixtures) to total  $K_2O$  consumption dropped consistently throughout the review period (barring the year 1973-74 when on account of sharp drop in imports of NPK materials its share reached the all time high level of 75 per cent). The overall drop in the contribution of MOP to total  $K_2O$  consumption during the review period from 65.6 per cent in 1971-72 to 51.8 per cent in 1975-76 was of 13.8 per cent. The contribution

of NPK materials to total  $K_2O$  consumption correspondingly increased. In absolute term, the consumption of MOP for direct application decreased from 281 thousand tonnes in 1971-72 to 196 thousand tonnes in 1975-76.

The consumption of MOP as direct application in 1975-76 dropped sharply by 40.1 per cent compared to the previous year because of the high fertiliser prices in general, drop in consumption of N and  $P_2O_5$ , lack of official support in some States to the use of potash and the farmers considering the use of potash as less important than N and  $P_2O_5$ . This situation is likely to reverse in 1976-77 with the drop in MOP price, more emphasis in official quarters on balanced fertilisation and perhaps increased awareness about the likely drop in yields without the use of potash. The consumption in 1976-77 of MOP as direct application is likely to improve substantially compared to the previous year increasing thereby its contribution to total  $K_2O$  consumption by 15.3 per cent to reach 66.5 per cent.

The contribution of NPK materials to total  $K_2O$  consumption increased from 33.8 per cent in 1971-72 to 34.9 per cent in 1972-73; it dropped sharply to 24 per cent in 1973-74 (due to reduced imports of NPKs) and increased again consistently in 1974-75 and 1975-76 to 37.3 and 47.5 per cent respectively.

The consumption of domestic NPK materials consistently rose from 70 thousand tonnes in 1971-72 to 152 thousand tonnes in 1975-76. Their contribution to total  $K_2O$  consumption increased throughout the review period except for 1973-74 when there was a substantial increase in consumption of straight MOP.

The contribution of domestic NPK materials to total  $K_2O$  consumption of 40.2 per cent in 1975-76 recorded an increase of 12.2 per cent compared to the previous year. With the anticipated sharp increase in consumption of straight MOP in 1976-77 and also the development of certain domestic grades without  $K_2O$  nutrient the contribution of 40.2 per cent is likely to drop to around 30 per cent. This may not, however, disturb the trend of consistent increase in absolute consumption of domestic NPK materials and the consumption in 1976-77 may reach a level of 160 thousand tonnes.

The contribution of imported NPK materials to total  $K_2O$  consumption dropped from 17.3 per cent in 1971-72 to 8.6 per cent in 1972-73, reached the all time lowest level of 0.9 per cent in 1973-74, rose to 9.3 per cent in 1974-75 and dropped again to 7.3 per cent in 1975-76. The sharp decline in 1973-74 was due to substantial decrease in imports. The consumption in absolute terms dropped from 296 thousand tonnes in 1971-72 to 107 thousand tonnes in 1975-76. The consumption in 1976-77 is likely to be 56 thousand tonnes recording a drop of 47.7 per cent compared to the previous year.

With adequate availability of indigenous  $P_2O_5$  materials, further imports of NPK materials are not likely to take place. The contribution of imported materials to total  $K_2O$  consumption may thus continue to fall and is estimated at 2.8 per cent in 1976-77.

#### *Sulphate of potash*

The sulphate of potash, another source of potash, is consumed mainly by growers of Virginia Tobacco in India. Its total consumption range

from 3 to 8 thousand tonnes during the review period. The consumption in 1975-76 at 3 thousand tonnes recorded a drop of 50 per cent compared to the previous year and reached the level that prevailed way back in the first year of the review period. The non-availability of the material at the right time appears to be responsible for the sharp decline in consumption during 1975-76. The availability situation is likely to improve in 1976-77 with the resultant rise in consumption by 66.7 per cent compared to the previous year.

The contribution of sulphate of potash to total  $K_2O$  consumption ranged from 0.6 to 1 per cent during the review period. The maximum contribution of 1 per cent was recorded in 1973-74. The contribution of 0.7 per cent in 1975-76 was 0.2 per cent lower than that recorded in the previous year. It is likely to go up to 0.8 per cent in 1976-77.

## B. CONSUMPTION OF FERTILISERS BY STATES

Fertiliser consumption nearly doubled every five years upto 1971-72. This was followed by a two-year period of product shortages during 1972-73 and 1973-74 when the consumption was limited to the level of availability. The increase recorded was only 2.6 and 5.2 per cent respectively compared to the previous years. A situation of easy availability developed in 1974-75 but consumption unfortunately dropped (9.3 per cent) for the first time in the history of fertiliser use in the country compared to the previous year. This was a very disturbing trend in the face of an anticipated growth of 17.8 per cent for the year.

The impact of the various factors which inhibited fertiliser use during the year varied from State to State but in the country as a whole the dominant factors were aberrant weather, high fertiliser prices, cumbersome physical controls, inadequate production and distribution credit availability and lack of timely product availability. The Central and State Governments shared the industry's anxiety about the deteriorating trend of fertiliser consumption and tried to remedy the situation to some extent by (a) withdrawing most of the physical controls on fertilisers, (b) increasing credit availability and (c) reducing prices. The year 1975-76 also ushered in a good weather. Despite all these developments, the consumption during Kharif 1975 dropped by another 11.7 per cent compared to Kharif 1974. It was obvious that the farmer was left with very limited resources as a result of drought and other inhibiting factors during the previous year and this did not permit him to go in for normal purchases during Kharif 1975. The improved resources of the farmer as a result of good Kharif 1975 crops, continued good weather through Rabi 1975-76 and the drop in fertiliser prices twice during the second half of 1975 resulted in a higher fertiliser consumption in Rabi 1975-76 with an increase of 31.5 per cent over Rabi 1974-75. The year as a whole recorded an increase in consumption of 12.4 per cent over the previous year.

Other factors which helped improve fertiliser consumption during 1975-76 were extension of area under HYV of cereals from 27 to 30 million hectares, increase in area under hybrid cotton from 6.9 to 7.3 lakh hectares and intensive oil seed programme covering 8.4 lakh hectares.

The average rate of growth of consumption which stood at 6 per cent over the review period ended 1974-75, increased to 6.6 per cent during the current review period ended 1975-76. The increase in 'N' consumption and drop in  $P_2O_5$  and  $K_2O$  consumption during 1975-76 worsened the imbalance in fertiliser use. The use of  $P_2O_5$  and  $K_2O$  was still considered uneconomic by the farmer because of their higher prices. Substantial decrease in  $P_2O_5$  and  $K_2O$  was, therefore, clearly indicated. The Govt. of India took a bold step towards this direction through concession in 1976-77 budget and enabled the manufacturers to drop their prices substantially. The highest reduction was enabled in  $P_2O_5$  through a Government subsidy of Rs. 1250 per tonne of  $P_2O_5$  nutrient. The market rumours about impending drop in prices authenticated by statements to this effect made in certain responsible quarters were, however, rampant much earlier and this led to a virtual loss of sales for nearly two months. The revised prices should, however, change



the input/output price ratio in favour of the farmer with the resultant hope of better fertiliser offtake by him. Revised prices must stimulate consumption provided the weather continues to remain good.

A tremendous potential no doubt exists for fertiliser use in the country but due to constraints like high NPK complex prices and inadequate availability of credit still prevailing, the growth in consumption during 1976-77 is not likely to be higher than about 20 per cent compared to the previous year. This too may be achieved only through intensive promotional efforts both by the Industry and the Government. It will also have to be ensured that the revision in prices, if any, is made not more than twice in a year at the end of a busy season and that too without any previous indication. Any rumour about impending reduction in price has a long term unsettling effect on the market with the resultant drop in fertiliser consumption.

#### Trend of Nutrientwise All-India Consumption

As is evident from the table on next page, the share of 'N' to the total NPK consumption dropped and that of  $P_2O_5$  and  $K_2O$  gradually increased during the first three years of the review period. The share of N reduced from 67.0 to 64.4 per cent and that of  $P_2O_5$  and  $K_2O$  increased from 21.5 to 22.9 and 11.5 to 12.7 per cent respectively. This healthy trend appeared to be an index of the growing realisation of the benefits of balanced fertilisation despite overall limited product availability during 1972-73 and 1973-74.

The trend however reversed in 1974-75 in respect of N and  $P_2O_5$  and the percentage share of N increased by 4.2 to reach 68.6 and that of  $P_2O_5$  dropped by 4.6 to reach 18.3. The share of  $K_2O$  continued to increase and reached a level of 13.1 per cent.

Fertiliser consumption nutrientwise (1971-72 to 1976-77)

Fertiliser	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
N—Quantity ('000 tonnes)	1,760	1,779	1,829	1,766	2,148	2,500
%± over previous year	18.4	1.1	2.8	-3.5	21.6	16.4
$P_2O_5$ —Quantity ('000 tonnes)	564	587	650	472	467	600
%± over previous year	22.1	4.1	10.7	-27.4	-1.1	28.5
$K_2O$ —Quantity ('000 tonnes)	304	332	360	336	278	375
%± over previous year	33.3	9.2	8.4	-6.7	-17.3	34.9
N+ $P_2O_5$ + $K_2O$ Quantity ('000 tonnes)	2,628	2,698	2,839	2,574	2,893	3,475
%± over previous year	20.8	2.6	5.2	-9.3	12.4	20.1

\* Estimated.

Percentage share of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O to total consumption

Nutrient	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
N	67.0	65.9	64.4	68.6	74.3	71.9
P <sub>2</sub> O <sub>5</sub>	21.5	21.8	22.9	18.3	16.1	17.3
K <sub>2</sub> O	11.5	12.3	12.7	13.1	9.6	10.8
Total	100.0	100.0	100.0	100.0	100.0	100.0

\*Estimated.

The deteriorating trend continued through 1975-76 and the percentage share of 'N' increased by 5.7 to reach 74.3. The P<sub>2</sub>O<sub>5</sub> share further dropped by 3.2 per cent to reach 16.1 per cent. The K<sub>2</sub>O share also dropped for the first time during the review period and reached a level of 9.6 per cent. High prices of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O were mainly responsible for the continued worsening of imbalance in fertiliser use. Substantial drop in P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O prices during March 1976 is expected to stimulate their demand in 1976-77. The trend of nutrientwise consumption is, therefore, expected to change for the better. The percentage share of 'N' is likely to drop by 2.4 and that of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O increase by 1.2 in each case.

There is a dire necessity of speedy improvement in the balance of fertiliser use if the country is to sustain its agricultural production programmes. Reports have already started pouring in of the deterioration in the response even to nitrogen use in the absence of proper dosage of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O. A well planned promotional strategy specially directed at balanced fertilisation needs to be constantly beamed at the farmer. For this purpose a co-ordinated effort of the Government and the Industry can ensure effectiveness.

## NITROGEN

The review period commenced in 1971-72 with an increase in consumption of 18.4 per cent compared to previous year. This was followed by two years of limited fertiliser availability and the rate of growth slumped to 1.1 and 2.8 per cent during 1972-73 and 1973-74 respectively with a lot of pent up demand. The fertiliser availability improved in 1974-75 but on account of a number of factors discussed in the Summary chapter, the consumption dropped (by 3.5 per cent) for the first time in the history of 'N' use in the country compared to the previous year. This very disturbing trend not only needed to be arrested but also reversed immediately to sustain our much needed agricultural production programmes. The constraints to fertiliser consumption had, therefore, to be removed. The weather luckily turned out to be good in 1975-76, cumbersome physical controls were removed in nearly all the States and nitrogen prices dropped. The resultant was an overall increase in consumption of 21.6 per cent compared to the previous year. As indicated in table on next page Kharif 1975 showed only a marginal increase over Kharif 1974 because of the limited resources available with the farmer after an agriculturally bad 1974-75 year. Nearly all the increase came through Rabi 1975-76.

*N Consumption in 1975-76*

('000 tonnes)

Kharif '75	±% over Kharif '74	Rabi '75-76	±% over Rabi '74-75	Total 1975-76	±% over 1974-75
743	+ 0.4	1405	+ 36.9	2148	+ 21.6

The average 'N' usage level still continues to be low compared to most other agriculturally advanced countries even in assured irrigated areas. Several other potential areas remain unexploited. Urgent promotional measures need to be taken to tap this potential. Adequate availability of production and distribution credit, coverage of risk prone areas through crop insurance schemes and Industry/Government coordinated promotional efforts are some such measures.

In view, however, of the likely marketing situation in 1976-77, the rate of growth is anticipated to be 16.4 per cent compared to the previous year. In absolute terms, it will mean an increase from 2148 thousand tonnes in '74-75 to 2500 thousand tonnes in '75-76, a growth in a year of 352,000 tonnes.

**Zonewise Consumption**

Due primarily to drought in the South, Central Zone overtook South Zone to become the largest consumer of N during 1972-73. There being no such constraint during 1973-74 the South regained its first position with the Central Zone reverting to its second position. The South Zone retained its lead during 1974-75 despite severe drought in Tamil Nadu. Good weather coupled with a drop in prices enabled all zones to record increase in consumption during 1975-76 compared to the previous year. The South Zone not only retained the top position but also increased its lead over the Central Zone (second position) by about 71 thousand tonnes and recorded an all time high consumption level of 701 thousand tonnes. The consumption of Central Zone was 531 thousand tonnes. The North Zone retained its third position with a consumption of 347 thousand tonnes and also increased its lead over the West Zone (4th position) by 49 thousand tonnes. The consumption of West Zone was 283 thousand tonnes. Eastern Zone remained the lowest consumer with 242 thousand tonnes.

The 'N' consumption seasonwise varied from zone to zone and in a zone from year to year during the review period. The consistency of the consumption pattern during the review period, however, was that in the case of South, Central, North and East Zones the consumption in Rabi was more than that in Kharif except for a solitary exception in the case of the East Zone in 1973-74 when the consumption in Kharif was more than that in Rabi. But a cyclic variation was noticed in the West Zone. The consumption in Rabi was more than that in Kharif during the alternate years i.e. 1971-72, 1973-74 and 1975-76. The reverse was the case in the rest of the years.

The largest share of consumption in any zone in any year in Kharif and Rabi was 55.1 and 72.1 per cent in West and Central zones respectively.

The cyclic pattern of seasonwise consumption is likely to continue in the West Zone in 1976-77. The proportion of consumption in Kharif will therefore be more than that in Rabi. In the other zones, the share zone-wise of Kharif consumption will be within a range of 35 to 44 per cent with the balance in Rabi.

#### *Actual consumption*

The rate of growth of consumption varied from zone to zone and within each zone from year to year during the review period. Central, North and East Zones showed increase in consumption during the first two years of the review period, though the rate of increase declined substantially in each case in the second year. North Zone showed an increase even in 1973-74. The consumption in Central and East Zones on the other hand dropped in 1973-74 compared to the previous year. In the case of South and West Zones, the consumption increased in the first year of the review period (1971-72), decreased in the second and increased again in the third year. In 1974-75, East Zone recorded the highest increase of 22.6 per cent during the year compared to the previous year. This was followed by South Zone with an increase of 4 per cent. All other zones recorded drops. Maximum drop of 20.8 per cent was recorded by North Zone. All the zones recorded increase in 1975-76 compared to the previous year. The maximum increase of 30.2 per cent in the South Zone was followed by 26.1 in North, 20.9 in Central, 11.5 in East and 8.8 in West Zones. All the zones are likely to record increases even in 1976-77. The maximum increase of 24 per cent in the East Zone is likely to be followed by 16.8 in Central, 15.3 in North, 13.1 in West and 11.4 in South Zones.

*Percentage increase in consumption of N*

Region	± Over previous year						
	1971-72	1972-73	1973-74	1974-75	1975-76	1975-76 over 1971-72	1976- 77*
South	9.7	-5.6	0.9	4.0	30.2	29.3	11.4
West	13.3	-7.3	25.8	-9.8	8.8	14.6	13.1
Central	24.2	7.7	-7.9	-7.6	20.9	11.1	16.8
North	25.9	8.2	4.8	-20.8	26.1	13.4	15.3
East	27.2	2.1	-7.3	22.6	11.5	29.4	24.0
All India	18.4	1.1	2.8	-3.5	21.6	22.0	16.4

\* Estimated. Note : Based on Table 36.

#### *Comparative share*

The comparative share of N consumption zonewise during the review period is shown in the table on opposite page.

No zone recorded a continuous increase in N share during the review period.

*Zonewise percentage share of consumption of N*

Zone	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
South	30.8	28.8	29.0	31.5	33.8	33.2
West	14.0	12.9	15.7	14.7	13.2	12.8
Central	27.2	29.0	26.0	24.9	24.7	24.8
North	17.4	18.6	19.0	15.6	16.2	16.0
East	10.6	10.7	10.3	13.3	12.2	13.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

\* Estimated.

The longest period of continuous increase in share recorded by any zone was three years each by South and North Zones. The share of the former increased from 29.0 per cent in 1973-74 to 33.8 in 1975-76 and of the latter from 17.4 per cent in 1971-72 to 19.0 per cent in 1973-74. The longest period of continuous drop was also three years recorded by Central Zone. The share of Central Zone dropped from 29 per cent in 1972-73 to 24.7 per cent in 1975-76.

The highest increase in share compared to the previous year by any zone in any year was 3 per cent recorded by East Zone in 1974-75. The sharpest decline of 3.4 per cent was recorded by North Zone also in 1974-75.

The share of the largest consuming zone i.e. South Zone at 33.8 per cent in 1975-76 was the highest achieved in any year during the review period. The shares of all other zones were lower than the highest achieved by them in any year during the same period. This enabled the South Zone to attain the highest lead of 9.1 per cent in its share in 1975-76 over the Central Zone, the next highest consuming zone. The previous widest difference between the two zones was 6.6 per cent in 1974-75.

The zonewise share is likely to normalise in 1976-77. This may result in East Zone improving its share by 1 per cent at the expense of South and West Zones.

*South Zone*

Due to drop in consumption during 1972-73, only a marginal increase of 0.9 per cent in 1973-74 and a small increase of 4 per cent in 1974-75 compared to the corresponding previous years, the overall increase during period 1971-72 to 1973-74 was limited to 9 per cent. Limited fertiliser availability during 1972-73 and 1973-74 kept the consumption low to the level of 512 and 517 thousand tonnes respectively. The consumption at 538 thousand tonnes in 1974-75 though not sizeable in view of its being lower than the consumption level of 542 thousand tonnes in the first year of the review period, i.e. 1971-72, it was encouraging in the context of overall All-India decrease in consumption of 3 per cent compared to the previous year. Substantial increase in consumption in Andhra Pradesh (34.1 per cent) and Karnataka (20.4 per cent) in 1974-75 compared to the previous year enabled the zone to record a positive growth. All other zones except the East Zone recorded a negative growth. The increase would have been more impressive

if there had been no drought in Tamil Nadu where the consumption dropped by 29.3 per cent compared to the previous year.

Good weather in Tamil Nadu and continued good performance by Andhra Pradesh and Karnataka in 1975-76 enabled the zone to achieve the highest rate of growth of 30.2 per cent in any year during the review period. Thirteen per cent of the total increase was recorded in Kharif 1975 and the balance 87 per cent in Rabi 1975-76. As is indicated earlier, the consumption in Kharif 1975 remained low despite good weather because of high fertiliser prices and limited resources with the farmer on account of bad weather in 1974-75. Good weather, drop in prices and better resources of the farmers on account of good Kharif crop enabled the zone to achieve commendable results in Rabi 1975-76.

The growth in consumption is likely to stabilise at about 11 per cent during 1976-77.

#### *West Zone*

A cyclic variation in the rate of growth in consumption was observed during the review period. The increase in consumption of 13.3 per cent in 1971-72 compared to the previous year was correspondingly followed by drop of 7.3 per cent in 1972-73, increase again in 1973-74 of 25.8 per cent, drop again in 1974-75 of 9.8 per cent and increase yet again in 1975-76 of 8.8 per cent. The cycle is likely to break in 1976-77 with the anticipated increase for the consecutive second year. The highest increase in any year compared to the previous year was 25.8 per cent recorded in 1973-74.

The drop in consumption compared to the previous year in 1972-73 was due mainly to limited fertiliser availability. In 1974-75, the severe drought in Gujarat coupled with high fertiliser prices, physical controls and inadequate credit availability inhibited the fertiliser use.

The West Zone had the lowest increase (8.8 per cent) in consumption in 1975-76 due to a relatively much sharper decline (11.5 per cent) in Kharif 1975 compared to the other zones. The very sharp increase in consumption during Rabi of 36.0 per cent, however, not only compensated for the decline in Kharif but also increased the overall consumption level considerably.

The demand of the zone is, however, buoyant and with normal weather conditions and removal of even the remaining constraints to marketing the consumption should increase considerably. In view, however, of the likely situation in 1976-77, the consumption at 283 thousand tonnes is estimated to record an increase of 13.1 per cent compared to the previous year.

#### *Central Zone*

Beginning the review period with the maximum growth rate of 24.2 per cent compared to the previous year the growth rate dropped to 7.7 per cent in 1972-73. This was followed in 1973-74 by a drop (7.9 per cent) in consumption over the previous year's level for the first time after many years due primarily to the limited fertiliser availability, particularly in Rabi season. The consumption dropped (7.6 per cent) again in 1974-75 compared to the previous year despite easier fertiliser availability due

to reasons explained in the Summary chapter. This drop in consumption during the two consecutive years brought down the overall growth of 33.8 per cent up to 1972-73 to 8.2 per cent during the review period ended 1974-75. The increase in consumption of 20.9 per cent in 1975-76 compared to previous year increased the overall growth in consumption during the review period to 11.1 per cent. Seasonwise, whereas Kharif recorded a drop in consumption of 8.1 per cent, the Rabi recorded an increase of 37.3 per cent compared to the corresponding seasons during the previous year.

The buoyancy of demand is, however, likely to assert itself with the decrease in fertiliser prices and fewer constraints to fertiliser marketing in 1976-77 and the consumption is likely to show an increase of 16.8 per cent compared to the previous year.

#### *North Zone*

Here again the review period started with a high increase of 25.9 per cent in consumption compared to the previous year on account of ample fertiliser availability but dropped to a rate of growth of 8.2 and 4.8 per cent in 1972-73 and 1973-74 respectively in line with the level of fertiliser availability. The downward trend deteriorated in 1974-75 despite easier production availability, and consumption for the first time went below, and that too very sharply (by 20.8 per cent), the previous year's level. The reasons for such a sharp decline in consumption were no different than those indicated in other zones. This reduced the overall growth of 13.4 per cent recorded up to 1973-74 to 10.1 per cent. The declining trend reversed in 1975-76 and the consumption at 347 thousand tonnes resulted in the highest increase in any year, during the review period, of 26.1 per cent compared to the previous year. This increased the overall growth in consumption during the review period to 13.4 per cent. Like the South Zone, it also recorded an increase in consumption both in Kharif and Rabi during the year. The buoyancy of demand is likely to result in this zone also in an increase in consumption of 15.3 per cent in 1976-77 compared to the previous year.

#### *East Zone*

The East Zone also began the review period with a bang and recorded an increase in consumption of 27.2 per cent compared to the previous year. Due, however, to the limited fertiliser availability the rate of growth dropped sharply to 2.1 per cent in 1972-73. The position further deteriorated in 1973-74 due particularly to poor despatches in Rabi on account of product scarcity and the consumption dropped (7.3 per cent) for the first time compared to the previous year. The trend reversed in 1974-75 due to easier product availability despite marketing constraints and the consumption recorded a sharp increase of 22.6 per cent compared to the previous year. The increase in consumption during 1974-75 was recorded only by South and East Zones and the increase in the latter case was more than 5 times higher than in the former. The sharp increase in consumption during 1975-76 improved the overall growth of 5.3 per cent recorded upto 1973-74 to 29.4 per cent. The increasing trend continued through 1975-76 though with a lower rate of growth (11.5 per cent) and the overall growth of consumption during the review period further improved to 29.4 per cent. The

increase in consumption in 1975-76 was due entirely to a sharp escalation (24.6 per cent) in consumption during Rabi. Kharif rather recorded a drop of 18.1 per cent in consumption compared to the previous year's Kharif.

The situation is likely to further improve in 1976-77 and the consumption is envisaged to rise to a level of 300 thousand tonnes recording an increase of 24.0 per cent compared to the previous year.

### Seasonwise Consumption

The 'N' consumption seasonwise varied from zone to zone and in a zone from year to year during the review period (Table 39). The consistency of the consumption pattern during the review period, however, was that in the case of South, Central, North and East Zones the consumption in Rabi was more than that in Kharif except for a solitary exception in the case of the East Zone in 1973-74 when the consumption in Kharif was more than that in Rabi. But a cyclic variation was noticed in the West Zone. The consumption in Rabi was more than that in Kharif during the alternate years i. e., 1971-72, 1973-74 and 1975-76. The reverse was the case in the rest of the years.

The largest proportion of consumption in any zone in any year in Kharif and Rabi was 55.1 per cent in 1974-75 in the West Zone and 72.1 per cent in 1975-76 in Central Zone respectively.

The cyclic pattern of seasonwise consumption is likely to continue in the West Zone. The proportion of consumption in Kharif will, therefore, be more than that in Rabi. In the other zones, the share zonewise of Kharif consumption will be within the range of 35 to 44 per cent with the balance in Rabi.

The consumption in Kharif 1975 was the lowest compared to the consumption in Kharif during the rest of the review period in all the zones. It ranged from 27.9 per cent in the Central Zone to 46.6 per cent in the West Zone. The consumption in Kharif 1975 in other zones fell within this range. The low consumption in Kharif 1975 was due to very limited resources available to the farmer after the agriculturally bad 1974-75 for reasons indicated in the Summary chapter.

### Statewise Consumption

#### South Zone

##### *Andhra Pradesh*

The consumption dropped continuously from 196 thousand tonnes in 1971-72 to 170 thousand tonnes in 1973-74—a drop of 13.3 per cent. Whereas adequate product was available in the first year of the review period the consumption in the two subsequent years, 1972-73 and 1973-74, was adversely affected by limited product availability. It has been reported that the actual consumption in the State during these two years was much more than the officially recorded consumption as availability was supplemented by unauthorised movements into the state from the neighbouring states.

A very high increase in the N consumption of 34.0 per cent in 1974-75 over the previous year was due to the fresh demand for fertiliser in the



newly developed Nagarjunasagar Command Area and also the higher official allocations during the year which compensated for the unauthorised movements into the State in the past. This enabled the State to improve its rank in the order of N consumption, statewide from the fourth in 1973-74 to the second position in 1974-75. The consumption, in fact, would have been even more had constraints like cumbersome physical controls and inadequate credit availability not curbed offtake in the State during 1974-75.

The consumption of 321 thousand tonnes in 1975-76 recorded the highest rate of growth during the review period of 40.7 per cent compared to the previous year. The main reasons for this encouraging trend were favourable weather and relaxations in the distribution system in the State.

The seasonwise consumption recorded cyclic pattern during the first four years of the review period. The pattern of higher consumption in Rabi compared to that in Kharif in 1974-75 was maintained through 1975-76. This trend is likely to continue. The share of seasonwise consumption between Kharif : Rabi ranged from 36 : 64 to 53 : 47 during the review period.

Andhra Pradesh ranked fourth in the order of 'N' consumption during the first three years of the review period and jumped to the second position in 1974-75 which it retained during 1975-76. Obviously an adequate official allocation of fertilisers to the state has enabled the state to assume its true status as the second largest consuming state.

#### *Karnataka*

This is the only State in India which recorded a steady increase in consumption throughout the review period. It rose from 98 thousand tonnes in 1971-72 to 137 thousand tonnes in 1975-76 recording an overall rate of growth of 40.6 per cent. The highest rate of growth in consumption compared to the previous year of 20.4 per cent was, however, recorded in 1974-75. The consumption in 1974-75 would have been even higher if factors like physical controls, price hike and inadequate availability of distribution and production credit had not come in the way. The rate of growth in consumption, however, slumped to 5.3 per cent in 1975-76 due to failure of pre-blossom monsoon, inadequate availability of intermediates to manure mixing firms and of fertilisers to commodity boards during Kharif 1975.

The pattern of seasonwise consumption varied considerably throughout the review period though the consumption in Kharif was either equal to or lower than that in Rabi throughout the review period except in 1973-74 when dictated by fertiliser availability pattern, the consumption in Kharif was more than that of Rabi. The rate of consumption between Kharif : Rabi thus varied 43 : 57 and 52 : 48.

Karnataka maintained seventh position in the order of 'N' consumption during the first three years of the review period, jumped to the sixth position in 1974-75 and retained this status in 1975-76.

#### *Kerala*

Beginning the review period with a consumption of 31 thousand tonnes in 1971-72, it steadily increased to 35 thousand tonnes in 1973-74 thereby

recording an overall increase of 13 per cent during the first three years of the review period. This was followed in 1974-75 by a drop of 8.6 per cent in consumption for the first time during the review period below the previous year's level and reduced the overall growth during the first four years of the review period to 3.2 per cent. The total drop in consumption during 1974-75 was in Rabi due to sharp hike in fertiliser prices effective from June 1974 and inadequate distribution and production credit availability.

The consumption in 1975-76 recorded an increase of 3.1 per cent compared to the previous year. Here again the total revival in consumption was in Rabi alone.

The consumption in absolute terms remained limited to 31 to 35 thousand tonnes during the review period despite promotional efforts put in by the state government as well as the industry.

One of the reasons for low offtake by plantations in the state was perhaps the inadequate availability of Ammonium Sulphate—a preferred material by the planters.

The share in consumption seasonwise ranged from 36 to 52 per cent in Kharif and the balance in Rabi during the review period.

Kerala ranked fourteenth in the order of consumption throughout the review period.

#### *Tamil Nadu*

The fertiliser consumption pattern in the State during the review period was cyclic and determined by weather conditions. Beginning with a consumption of 214 thousand tonnes in 1971-72, it dropped by 11.2 per cent compared to the previous year to 190 thousand tonnes due to drought and limited fertiliser availability in 1972-73; in 1973-74 it rose by 6.3 per cent compared to the previous year to 202 thousand tonnes but dropped again by 29.3 per cent to 145 thousand tonnes in 1974-75 due to serious drought in the State and other marketing constraints like physical controls and the sharp hike in fertiliser prices. In 1975-76 it rose again by 43.4 per cent (to 208 thousand tonnes) compared to the previous year due to favourable weather, comfortable supply position and decrease in urea price. The consumption of 208 thousand tonnes in 1975-76 was, however, lower by 2.8 per cent than that recorded in 1971-72, the first year of the review period.

The consumption in Kharif was consistently lower than that in Rabi throughout the review period. The ratio of consumption in Kharif : Rabi ranged between 33 : 67 and 46 : 54 during the review period.

The very low consumption in Kharif 1975 (33 per cent) compared to Rabi 1975-76 (67 per cent) was due to limited resources with the farmer after a serious drought in the State during the previous year.

Tamil Nadu stood third in order of consumption during the first three years of the review period. The ranking went down to the fifth position in 1974-75 giving way to Andhra Pradesh and Maharashtra. The State beat Maharashtra and ranked fourth in 1975-76.

**West Zone***Gujarat*

The consumption pattern was cyclic during the review period. The increase in consumption of 8.5 per cent recorded in 1971-72 compared to the previous year, was arrested in 1972-73 due primarily to drought and limited fertiliser availability and the consumption dropped below the previous year's level by 0.9 per cent.

The increase of 51.2 per cent achieved in Rabi 1975-76 compared to the corresponding season during the previous year was the highest recorded in a season in the State during the review period. The consumption in Kharif 1975 was lower by 19.3 per cent compared to Kharif 1974.

Adequate rainfall, comparatively better fertiliser availability and larger land coverage under HYV crops during 1973-74 helped improve the consumption by 21.9 per cent above the previous year's level. With this, the overall rate of growth in consumption during the first three years reached a level of 21 per cent. Severe drought hit the State once again in 1974-75 and this coupled with other marketing constraints like sharp hike in fertiliser prices effective from June 1974, inadequate credit availability and physical controls brought the consumption down from 139 thousand tonnes in 1973-74 to 98 thousand tonnes in 1974-75—a drop of 30 per cent. The impact on fertiliser consumption was the highest in Rabi. It dropped by 49.4 per cent in Rabi and 11.8 per cent in Kharif compared to the corresponding seasons during the previous year. This development not only wiped out the overall increase in consumption recorded upto 1973-74 but also pulled it by 15 per cent below even the 1971-72 level, the first year of the review period. The trend changed for the better again in Rabi 1975-76 and the overall consumption increased by 10.2 per cent compared to the previous year. The increase of 51.2 per cent achieved in Rabi 1975-76 compared to Rabi 1974-75 was the highest recorded in a season in the State during the review period. The consumption in Kharif 1975 was lower by 19.3 per cent compared to the Kharif 1974.

The pattern of seasonwise consumption was also cyclic during the review period. Whereas consumption in Kharif was lower than in Rabi during 1971-72, 1973-74 and 1975-76 the reverse was the position in the rest of the years. The pattern is likely to continue.

Gujarat stood sixth in the order of consumption in the first three years of the review period, gave place to Karnataka in 1974-75 to go down to the seventh position and dropped further down to the eighth position in 1975-76 giving way to Bihar.

*Maharashtra*

Barring 1972-73, the consumption in the State consistently increased during the review period to record an overall growth of 33 per cent. The review period began in 1971-72 with an increase in consumption of 17.1 per cent compared to the previous year. This was followed in 1972-73 by a drop in consumption of 12.3 per cent due to severe drought and even the reduced offtake could not be met due to inadequate availability in the state. The consumption again picked up in 1973-74 due to adequate rain, com-

paratively better fertiliser availability and larger land coverage under HYV crops and recorded an increase of 28.9 per cent compared to the previous year. The increasing trend continued through 1974-75 and 1975-76 and the consumption increased by 8.1 and 8.8 per cent respectively compared to the corresponding previous years. This brought up the overall rate of growth in consumption during the review period to 17 per cent.

There was no set pattern of seasonwise consumption during the review period. The share of consumption in Kharif ranged from 48 to 57 per cent during the review period. The balance consumption was in Rabi.

Maharashtra ranked fifth in the order of consumption during the first 3 years of the review period. It beat Tamil Nadu in 1974-75 and jumped to the fourth position. It reverted to the fifth position in 1975-76.

#### *Other States*

The consumption was too small to warrant any special comments.

#### **Central Zone**

##### *Madhya Pradesh*

The state recorded an exceptional growth of 54.9 per cent in 1971-72 compared to the previous year. Due, however, to limited fertiliser availability in 1972-73 the rate of growth dropped to 16.4 per cent though even at this level it was the highest recorded by any major consuming state in the country during that year. The trend reversed in 1973-74 with a drop in consumption by 5.5 per cent below the previous year's level despite favourable climate and larger land coverage under HYV crops. Acute fertiliser shortage, particularly for Kharif crops, caused this setback. The position deteriorated further during 1974-75 due to cumbersome physical controls and drought in some parts of the state, high fertiliser prices and inadequate credit availability. Consumption dropped by another 28.8 per cent compared to the previous year.

The deteriorating trend was arrested in 1975-76 and the consumption increased by 21.3 per cent compared to the previous year. The consumption in absolute terms at 74 thousand tonnes in 1975-76 was still lower than that achieved in the first year of the review period by about 5 per cent.

The pattern of consumption seasonwise during the review period (barring 1971-72) consistently recorded higher consumption in Rabi compared to that in Kharif. The share of consumption seasonwise ranged from 25 to 52 per cent in Kharif and the balance in Rabi. The lowest consumption of 25 per cent in Kharif was recorded in Kharif 1975 due to extremely limited resources with the farmer after a bad year of 1974-75.

Madhya Pradesh ranked ninth in the order of consumption in 1971-72. It beat Bihar in 1972-73 and attained the eighth position. It reverted to the ninth position in 1973-74 giving way to Haryana. It went down to the eleventh position in 1974-75 and 1975-76.

##### *Rajasthan*

The increase in consumption of 22.0 per cent in 1971-72 compared to the previous year was followed in 1972-73 by a drop in consumption of

4 per cent below the previous year's level due to limited fertiliser availability and drought.

Product availability continued to be limited through 1973-74 but on account of better despatches to the state during Rabi, the consumption improved by 16.7 per cent compared to the previous year. In 1974-75 consumption dropped by 14.3 per cent because of the sharp increase in fertiliser prices, inadequate credit availability, physical controls, etc. Better marketing conditions in 1975-76, however, resulted in an increase in consumption of 33.3 per cent. More than 88 per cent increase was achieved in Rabi 1975-76. The consumption of 64 thousand tonnes in 1975-76 was 28 per cent higher than that recorded in the first year of the review period.

The consumption in Kharif was consistently lower than that in Rabi throughout the review period. The share of consumption seasonwise ranged between 30 and 36 per cent in Kharif and the balance 70 to 64 per cent in Rabi.

Rajasthan ranked twelfth in the order of 'N' consumption throughout the review period except in the year 1973-74 when it achieved the eleventh position.

#### *Uttar Pradesh*

The review period began with an increase of 18.9 per cent compared to the previous year. This was followed in 1972-73 with a decline of 7.8 per cent due to limited fertiliser availability. The continued acute shortage of fertilisers at most of the consuming centres in the state at the time of requirement resulted in a much sharper drop in consumption in 1973-74. For the first time in the review period it dropped (11.8 per cent) below the previous year's level. This trend was arrested in 1974-75 and the consumption remained static at the previous year's level due to drought, physical controls and sharp hike in prices. The consumption in 1975-76 recorded an increase of 18.2 per cent compared to the previous year.

The overall growth during the review period was around 12 per cent. The consumption in Kharif was consistently lower than that in Rabi during the review period. The share of consumption seasonwise ranged between 28 and 36 per cent in Kharif and the balance in Rabi during the review period. The very low consumption of 28 per cent in Kharif 1975 was due to limited resources with the farmer on account of the poor Rabi 1974-75.

U. P. remained the highest 'N' consuming State in the country throughout the review period. The consumption of 389 thousand tonnes in 1975-76 recorded an overall increase of 12.4 per cent over the review period.

#### **North Zone**

##### *Haryana*

The State recorded a consistent growth in consumption during the first three years of the review period. It rose from 73 thousand tonnes in 1971-72 to 94 thousand tonnes in 1973-74 despite limited fertiliser availability

during 1972-73 and 1973-74. The growth of 13.7 and 13.3 per cent in 1972-73 and 1973-74 respectively, compared to the respective previous years was very encouraging due to better irrigation facilities, increased acreage under HYV crops, and state Government's incentive schemes. The position, however, reversed both in Kharif and Rabi in 1974-75 and consumption dropped by 41.1 and 21.9 per cent respectively compared to the corresponding seasons during the previous year. The overall drop during the year was of 29.8 per cent. The main reasons for this drop were drought in the main paddy belt and excessive rains in bajra tract, lack of power for irrigation, high fertiliser prices and inadequate production and distribution credit availability. The overall increase of 28.8 per cent achieved upto 1973-74 during the review period was not only wiped out in 1974-75 but the consumption dropped 9.6 per cent below the level recorded in the first year of the review period.

The deteriorating trend observed in 1974-75 reversed in 1975-76 due to good monsoon, increase in area under HYV crops and irrigation, compact block demonstrations and vigorous efforts of the State Government towards balanced fertilisation and consumption increased by 30.3 per cent compared to the previous year. Nevertheless, consumption in 1975-76 of 86 thousand tonnes was still lower by 8 thousand tonnes than the level achieved in 1973-74.

Consumption in Rabi throughout the review period was higher than that in Kharif though the percentage of consumption in the two seasons varied widely. The share of consumption in Kharif and Rabi varied from 26 to 41 and 59 to 74 per cent respectively.

The State held the tenth position in order of consumption throughout the review period except in the year 1973-74 when on account of substantial increase in consumption to 94 thousand tonnes—the highest level in the review period—it jumped to the eighth position.

### *Punjab*

The pattern of consumption was no different than that recorded in Haryana. It rose from 225 thousand tonnes in 1971-72 to 237 thousand tonnes in 1973-74, dropped to 196 thousand tonnes in 1974-75 and rose again in 1975-76 to 244 thousand tonnes. The growth of 28.6 per cent in 1971-72 compared to the previous year was the highest recorded in any year during the review period. It dropped to 4.4 and 8.5 per cent in the two subsequent years due to limited fertiliser availability. Consumption dropped in 1974-75 by 17.3 per cent due to steep rise in fertiliser prices, aberrant weather, acute power shortage and decline in wheat area in some of the canal irrigated districts because of low produce price.

The upward trend was resumed in 1975-76 due to good weather, assistance to farmers through bonus on levy wheat, timely and adequate availability of power and diesel oil and increase in areas under HYV crops and irrigation. Consumption increased by 24.4 per cent compared to the previous year.

The overall rate of growth in consumption of 5.3 per cent recorded during the first 3 years of the review period dropped in 1974-75 to 14.8 per

cent below the level achieved in the first year of the review period and rose again to 8.4 per cent over the full review period.

Here again consumption in Rabi was more than that in Kharif during the review period. The share of consumption in Kharif and Rabi varied from 28 to 36 and 64 to 72 per cent respectively during the review period.

In the order of 'N' consumption Punjab held the second position in the first three years of the review period and third during the subsequent two years. The main contributory reasons for the high fertiliser consumption in the State are the large area under assured irrigation, extension in the area under HYV crops and multiple cropping.

#### *Himachal Pradesh*

The consumption ranged from 4 to 6 thousand tonnes and recorded an overall growth of 50 per cent during the review period. Himachal Pradesh was one of the six States in India which recorded an increase in consumption even in the aberrant year of 1974-75 compared to the previous year. The level of consumption at 6 thousand tonnes in 1974-75 was maintained in 1975-76.

The consumption was generally equally divided between the two seasons.

#### *Jammu & Kashmir*

The consumption increased steadily during the first three years of the review period from 4 to 10 thousand tonnes recording an overall growth of 150 per cent. It dropped by 30 per cent to 7 thousand tonnes in 1974-75 and increased again by 28.5 per cent to 9 thousand tonnes in 1975-76. The overall growth during the review period was 125 per cent.

It is the only State in the country in which the consumption in Kharif was consistently higher than that in Rabi throughout the review period. This is accounted for by the fact that most of the valley is snow bound during Rabi when agricultural operations are practically at a standstill. The share of consumption during Kharif and Rabi varied between 60 and 75 and 40 and 25 per cent respectively during the review period.

*Other States :* The consumption is too small to merit any discussion.

#### **East Zone**

##### *Assam*

Beginning the review period with a consumption level of 5 thousand tonnes it rose by 40 per cent to 7 thousand tonnes in 1972-73 and dropped during each of the next three years by 28.6, 20 and 25 per cent to 5, 4 and 3 thousand tonnes respectively. Floods, uncertainty of agricultural production and high fertiliser prices were the main contributory causes. The consumption in general is low in Assam because of transportation bottlenecks and high soil fertility on account of silt deposit through floods.

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It is the only State in the country in which the consumption in Kharif was consistently higher than that in Rabi throughout the review period. This is accounted for by the fact that most of the valley is snow bound during Rabi when agricultural operations are practically at a standstill. The share of consumption during Kharif and Rabi varied between 60 and 75 and 40 and 25 per cent respectively during the review period.

*Other States :* The consumption is too small to merit any discussion.

#### **East Zone**

##### *Assam*

Beginning the review period with a consumption level of 5 thousand tonnes it rose by 40 per cent to 7 thousand tonnes in 1972-73 and dropped during each of the next three years by 28.6, 20 and 25 per cent to 5, 4 and 3 thousand tonnes respectively. Floods, uncertainty of agricultural production and high fertiliser prices were the main contributory causes. The consumption in general is low in Assam because of transportation bottlenecks and high soil fertility on account of silt deposit through floods.

There was no particular pattern in regard to seasonwise consumption. In some years the consumption was higher in Kharif and in others during Rabi.

There was a negative overall growth of 40 per cent during the review period.

#### *Bihar*

The consumption at 88 thousand tonnes in 1971-72 recorded an increase of 17.3 per cent compared to the previous year mainly because of the increase in area under HYV wheat, improvement in the marketing and credit arrangements and introduction of crop loans. Due, however, to limited fertiliser availability in 1972-73 the growth dropped to 1.1 per cent. In 1973-74 consumption at 70 thousand tonnes recorded a drop of 21.3 per cent compared to the previous year due to continued shortage of fertilisers. The trend reversed in 1974-75 and consumption increased by 28.5 per cent to 90 thousand tonnes. Bihar was one of the six States in India which recorded an increase in consumption during 1974-75. Large scale campaign on Rabi 1974-75 production by the State government resulted in an increased acreage under HYV wheat. Intermediary crops like sweet potato and leguminous crops were grown in the so far fallow lands. These factors increased fertiliser consumption in Rabi. The consumption would have recorded a higher rate of growth if there were no marketing constraints like physical control, fertiliser price hike, drought in some parts and floods in the other, lack of timely supply and inadequate credit availability. The encouraging trend observed in 1974-75 continued through 1975-76 and with the increase in coverage of HYV wheat and paddy the consumption increased by another 25.5 per cent to 113 thousand tonnes.

The overall growth in consumption during the review period was 28.4 per cent. This would have been much higher had the consumption not declined sharply in 1973-74.

Except in the year 1973-74 when the product availability dictated the consumption pattern the consumption was higher in Rabi compared to Kharif throughout the review period. In 1973-74, the share of consumption in Kharif was 54 per cent compared to 46 per cent in Rabi. The year 1975-76 was also abnormal in this regard with a very low (19 per cent) consumption in Kharif 1975. The share of consumption during Kharif and Rabi in other years varied from 28 to 31 and 72 to 59 per cent respectively.

In terms of 'N' consumption Bihar held the eighth position in the first year of the review period but dropped to the ninth and tenth positions in the subsequent two years. It improved its position from the eighth in 1974-75 to the seventh in 1975-76 though the percentage to total consumption practically remained unchanged.

#### *Orissa*

The review period began in 1971-72 with an exceptionally high growth of 85 per cent compared to the previous year. Due, however, to limited fertiliser availability in the subsequent two years the rate of growth dropped to 10.8 and 7.3 per cent. The situation deteriorated further during 1974-75 due to physical controls, aberrant weather, sharp hike in fertiliser prices and fall in paddy area. Consequently despite easier product availability consumption dropped by 22.8 per cent compared to the previous year.

The deteriorating trend reversed in 1975-76 due to favourable weather, withdrawal of most of the cumbersome marketing constraints and promotional work by the industry. Consumption increased by 5.8 per cent compared to the previous year. The rate of growth would have been higher had the State Government permitted freely renewal of dealer registration certificates. In absolute terms, the consumption at 36 thousand tonnes in 1975-76 was even lower than that recorded in 1971-72 (37 thousand tonnes).

Consumption in Orissa was higher in Rabi compared to Kharif throughout the review period except in the year 1973-74 when on account of the availability constraint the consumption in Kharif was higher than in Rabi. Leaving aside the abnormality of 1973-74, the share of consumption in Kharif and Rabi varied from 35 to 46 and 65 to 54 per cent respectively during the review period.

In the order of consumption, Orissa continued to remain in the thirteenth position in 1975-76 also for yet another year.

#### *West Bengal*

The continued extension of area under HYV wheat and paddy helped increase fertiliser consumption in 1971-72 by 19.1 per cent to 56 thousand tonnes compared to the previous year. The trend was reversed in 1972-73 due to limited fertiliser availability and consumption dropped by 7.1 per cent. Fertiliser availability continued to be restricted in 1973-74 but on account of high despatches for Kharif consumption increased by 3.8 per cent to 54 thousand tonnes. Consumption substantially increased during 1974-75 (by 50.2 per cent) on account of favourable weather, withdrawal of physical constraints, increased fertiliser availability and further increase in area under HYV summer paddy. West Bengal was one of the few States in India which recorded an increase even in 1974-75 in consumption compared to the previous year. This enabled the State to improve its rank in the order of 'N' consumption from the twelfth in 1973-74 to the ninth in 1974-75. The level of consumption of 86 thousand tonnes achieved in 1974-75 was maintained in 1975-76 with the help of effective industry and state government agricultural development programmes.

The overall growth recorded by the State during the review period was 53.6 per cent.

Consumption in Rabi was higher than in Kharif throughout the review period except in 1972-73 when it was equal in both the seasons on account of limited availability of fertilisers. The state of consumption during Kharif and Rabi, however, varied between 30 and 50 and 70 and 30 per cent respectively during the review period.

#### *Other States*

The consumption is too low to warrant any specific comments.

### PHOSPHATES

The growth rate of  $P_2O_5$  consumption followed nearly the same pattern as that of 'N' during the first three years of the review period ended 1973-74. Beginning with an increase in consumption in 1971-72 of 22.1 per cent (18.4 for N), it declined sharply to 4.1 and 10.7 per cent in 1972-73 and 1973-74 respectively (1.1 and 2.8 for N) due mainly to limited product

availability. This was followed in 1974-75 by a drop in consumption compared to the previous year for the first time during the review period despite easier product availability.

The reasons for the sharp decline of 27.4 per cent in consumption in 1974-75 were no different than those responsible for the drop in consumption of 3.5 per cent in the case of 'N' except that their impact on  $P_2O_5$  was very severe because of its much higher nutrient price and importance next only to 'N' in the judgement of the farmer. It seemed that in most of the cases the farmer was left with only a very small amount of money for investment in  $P_2O_5$  purchase after meeting his requirements of 'N'. This accentuated the imbalance in fertiliser use. This trend continued through 1975-76 and the imbalance worsened. The share of  $P_2O_5$  dropped from 18.3 per cent in 1974-75 to 16.1 per cent in 1975-76. The 'N' share increased from 68.6 to 74.3 per cent. This trend must be arrested forthwith lest the use of 'N' also becomes less attractive on account of reduced response even to N with the resultant adverse impact on agricultural production.

Appreciating the problem, the Government have introduced a scheme of subsidy on  $P_2O_5$  effective from March 16, 1976. The subsidy at Rs. 1250 per tonne of  $P_2O_5$  provided through concessions in the annual Union budget has enabled domestic manufacturers to drop their  $P_2O_5$  prices substantially. It is hoped that this will stimulate  $P_2O_5$  consumption and will improve the balance in fertiliser use.

The current  $P_2O_5$  price at Rs. 3.61 per kg. through SSP is, for the first time in the history of fertiliser use, lower than the current 'N' price at Rs. 3.80 per kg. Furthermore, the release of Pool Urea to SSP manufacturers in support of SSP sales should stimulate SSP consumption to be considerably. The price of  $P_2O_5$  though NPK complexes, however, continues to be high and economically less attractive. Ways and means may have found to enable further reduction in their prices to make input/output price ratio more viable with their use.

The other constraints to higher  $P_2O_5$  consumption are inadequate credit availability and lack of agronomic promotional efforts towards balanced fertilisation. These constraints will need to be removed urgently to help improve the situation.

The potential demand in the country is high and once the constraints to its use are removed the consumption should pick up fast. In view, however, of the situation that is likely to prevail during 1976-77, the maximum rate of growth that may be feasible during the year is 28.5 per cent. In absolute terms, it will mean an increase in consumption by 133,000 tonnes, i.e., from 467 in 1975-76 to 600 thousand tonnes in 1976-77.

### Zonewise Consumption

#### *Comparative share*

The South Zone remained the highest consumer of  $P_2O_5$  throughout the review period though its share fluctuated between 35.2 to 38 per cent. Barring the first year of the review period, the second position was maintained by the Central Zone with its share ranging from 18.9 to 22.3 per cent. In 1971-72, it was beaten by the West Zone by 0.6 per cent. The share of West Zone then was 22.9 per cent compared to 22.3 of the Central Zone. The West Zone remained the third largest consumer during the remaining

four years of the review period with its share varying from 15.6 to 22.9 per cent. The North zone maintained its fourth position with the share fluctuating from 11.2 to 14.6 per cent. The East zone was the lowest consumer with the share ranging from 7.4 to 10.2 per cent.

*Zonewise percentage share of consumption of P<sub>2</sub>O<sub>5</sub>*

Zone	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
South	36.2	38.0	35.2	38.2	37.5	36.7
West	22.9	15.8	20.6	21.2	16.1	18.3
Central	22.3	24.5	22.3	18.9	21.6	20.0
North	11.2	13.8	14.5	11.7	14.6	15.0
East	7.4	8.1	7.4	10.0	10.2	10.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

\*Estimated.

The highest share of consumption in any year of the review period was achieved by the South zone in 1974-75. The Central and West Zones achieved this distinction in 1972-73 and 1971-72 respectively. Both the North and the East zones recorded the highest share in 1975-76.

In 1976-77 the share of South, Central and East zones are likely to drop somewhat and that of West and North zones likely to improve. The rating consumptionwise is, however, likely to remain unchanged.

*Actual consumption*

The growth rate of consumption zonewise during the review period as well as the estimated growth during 1976-77 are shown in the table below:

*Percentage increase in consumption of P<sub>2</sub>O<sub>5</sub>*

Region	± over previous year						
	1971-72	1972-73	1973-74	1974-75	1975-76	1975-76 over 1971-72	1976-77*
South	22.9	9.3	0.9	(-)20.5	(-) 2.8	(-)14.7	26.4
West	23.8	(-)29.2	45.7	(-)25.4	(-)25.0	(-)42.3	46.7
Central	13.5	14.3	0.7	(-)38.6	13.5	(-)19.8	18.8
North	53.7	28.6	16.0	(-)41.5	23.6	28.3	32.4
East	10.5	14.3	-	(-) 4.2	2.2	11.9	25.0
All India	22.1	4.1	10.7	(-)27.4	(-) 1.1	(-)17.2	28.5

\*Estimated.

Note : Based on Table 37.

In terms of consumption during the review period, an increase was recorded only by the North and East zones. The consumption in 1975-76 of all other zones was lower than that achieved way back in 1971-72. The highest drop in consumption of 42.3 per cent during the review period was recorded by the West zone, followed by the Central and South zones with the drop of 19.8 and 14.7 per cent respectively. The consumption of North and East zones increased by 28.3 and 11.9 per cent respectively over the review period. The highest increase in consumption compared to the previous year achieved by any zone in any year was 53.7 per cent by the North zone in 1971-72. This was followed by the West and South zones with the increase of 45.7 and 22.9 per cent in 1973-74 and 1971-72 respectively. The highest increase in both the Central and East zones of 14.3 per cent was in 1972-73.

All the zones recorded drop in consumption during 1974-75 because of the factors indicated earlier in the chapter. The maximum decline of 41.1 per cent was observed in the North zone, followed by 38.6 per cent in the Central zone, 25.4 in the West, 20.5 in the South and 4.2 in the East.

The trend reversed in the Central, North and East zones in 1975-76 and the consumption increased by 13.5, 23.6 and 2.2 per cent respectively compared to the previous year. The situation continued to be bad in the West zone and the consumption dropped again by 25.0 per cent. The drop in the South zone was of 2.8 per cent.

The remedial measures undertaken by the government along with good weather and more intensive promotional efforts by the Government and the industry are likely to improve the situation in 1976-77 and substantial rate of growth compared to the previous year is anticipated in all the States.

#### South Zone

The South zone continued to lead all other zones in  $P_2O_5$  consumption throughout the review period. The reason is largely historical. Sustained promotional efforts of the superphosphate industry and mixture manufacturers which were first established in this zone gave this distinction to the zone. It will be interesting to know that in a year of all round deteriorating trend in  $P_2O_5$  consumption in 1975-76 the South Zone recorded the least drop compared to the previous year among the major consuming zones and thereby increased its share from 35.2 in 1973-74 to 38.2 in 1974-75. The position however deteriorated somewhat in 1975-76 as an after effect of bad weather in 1974-75 and it dropped its share to 37.5 per cent.

The review period began with a high rate of growth of 22.9 per cent compared to the previous year—the rate of growth declined to 9.3 and 0.9 per cent in 1972-73 and 1973-74 respectively due mainly to limited fertiliser availability. The deteriorating trend, however, continued through 1974-75 despite easier product availability and the consumption dropped by 20.5 per cent compared to the previous year. The reason was the severe drought in the zone during the year. The effects of the drought continued through Kharif 1975 and the consumption dropped by 19.8 per cent. The trend reversed only in Rabi and the consumption in Rabi recorded an increase of 16.9 per cent. The overall consumption during the ~~year~~ however, once

again recorded a drop in consumption compared to the previous year though the drop was only 2.8 per cent.

The drop in consumption during the last two years of the review period recorded an overall negative growth of 14.7 per cent during the review period.

The good weather in 1976-77 coupled with substantial drop in  $P_2O_5$  prices is likely to result in an increase in fertiliser consumption of 26.4 per cent compared to the previous year.

#### **West Zone**

The increase in consumption of 23.8 per cent in 1971-72 was followed by a sharp drop in consumption of 29.2 per cent compared to the previous year due to severe drought in Maharashtra and Gujarat. Favourable weather and improved product availability in 1973-74 resulted in a sharp increase of 45.7 per cent in consumption compared to 1972-73. A severe drought hit Gujarat again in 1974-75 and this coupled with the factors discussed in the Summary Chapter resulted in a drop in consumption again by 25.4 per cent compared to the previous year. As if this was not enough, there was yet another drop in consumption of 25.0 per cent during 1975-76 compared to the previous year. The main reason for this was a very sharp decline of 46.4 per cent in consumption during Kharif 1975 as an after effect of the bad weather in 1974-75. The Rabi 1975-76 did retrieve the situation to some extent by recording an increase in consumption of 22.6 per cent but the overall consumption during the year remained lower than the previous year.

The sharp decline in consumption during three of the five years of the review period recorded an overall drop of 42.3 per cent during the review period.

The substantial drop in  $P_2O_5$  prices and the greater emphasis by the State Government towards balanced fertilisation are likely to reverse in 1976-77 the deteriorating trend of the past two years to record an increase in consumption of 46.7 per cent compared to the previous year.

#### **Central Zone**

The zone recorded a uniform increase of 13.5 and 14.3 per cent during the first two years of the review period compared to the previous years. Due, however, to poor despatches in Rabi on account of limited product availability the rate of growth dropped to a meagre 0.7 per cent in 1973-74. In line with the rest of the country the consumption dropped in 1974-75 despite easy product availability. The drop at 38.6 per cent was, however, the highest in the year compared to other zones.

The deteriorating trend reversed in 1975-76 due entirely to a sharp increase in consumption of 38.6 per cent in Rabi compared to the corresponding season during the previous year and the full year's consumption increased by 13.5 per cent. Kharif 1975 in fact recorded a drop in consumption of 33.3 per cent. Despite the increase in consumption in 1975-76 there was an overall drop of 19.8 per cent during the review period.

The overall encouraging trend of 1975-76 is likely to continue through 1976-77 due to more favourable marketing conditions and the consumption is anticipated to go up to 101 thousand tonnes recording an increase of 18.8 per cent compared to the previous year.

### North Zone

The zone began the review period in 1971-72 with the highest rate of growth of 53.7 per cent achieved by any zone in any year during the review period compared to the previous year. The growth rates dropped to 28.1 and 16.0 per cent during the two subsequent years due to limited supporting 'N' availability. The position was anticipated to improve in 1974-75 with the easier fertiliser availability but on account of the factors listed earlier in the chapter the consumption in fact dropped so sharp that it even went below the previous year's level by 41.5 per cent. This reduced the overall growth in consumption of 49.2 per cent recorded upto 1973-74 during the review period to 12.7 per cent with the period ended 1974-75. The deteriorating trend reversed in 1975-76 and the zone recorded the highest growth amongst zones of 23.6 per cent during the year. Here again the growth rate of 37.2 per cent recorded in Rabi not only wiped out the drop of 25.0 per cent in Kharif but also increased the overall consumption during the year, by 23.6 per cent compared to the previous years. Despite this increase the consumption of  $P_2O_5$  continued to be very low in proportion to 'N' consumption. As against the 'N' consumption, for example of 347 thousand tonnes in 1975-76 the  $P_2O_5$  consumption was of only 61 thousand tonnes. This serious imbalance in the fertiliser use needs to be corrected urgently. The agricultural universities in the zone in particular will need to devote much greater attention to this problem so that the fertiliser use recommendations are appropriately formulated.

It is hoped that the reversal of trend witnessed in 1975-76 will further improve in 1976-77 with the substantial drop in  $P_2O_5$  prices and more intensive promotional efforts towards balanced fertilisation and the consumption will increase by 32.4 per cent.

### East Zone

After a steady growth in consumption of 10.5 and 14.3 per cent in the first two years of the review period the level of consumption remained unchanged in 1973-74 compared to the previous year. This was followed by a drop in consumption of 4.3 per cent in 1974-75 and an increase of 2.2 per cent in 1975-76. The increase in 1975-76 here also was entirely due to increase in Rabi compared to the previous year's Rabi consumption.

The East zone continued to remain the lowest consumer of  $P_2O_5$  throughout the review period with the annual consumption ranging from 42 to 48 thousand tonnes.

The Eastern zone was one of the two zones, other being the North Zone, which recorded an overall increase in consumption during the review period. The consumption increased from 42 thousand tonnes in 1971-72 to 48 thousand tonnes in 1975-76 recording an overall increase of 11.9 per cent.

The improvements in marketing situation in 1976-77 are likely to result in an increase in consumption of 25.0 per cent compared to the previous years.

### Seasonwise Consumption

Like Nitrogen, the  $P_2O_5$  consumption seasonwise also varied from zone to zone and in a zone from year to year during the review period (Table 39). The consumption in Kharif in the Central, North and East zones was



consistently lower than that in Rabi throughout the review period. No set pattern was, however, observed in the South and West zones. The North zone consumed the lowest proportion of  $P_2O_5$  in Kharif. The largest proportion of consumption in Kharif in general was observed in the West zone. The largest proportion of consumption in any year in any zone in Kharif and Rabi was 67.7 per cent in 1974-75 in the West zone and 86.8 per cent in 1975-76 in the North zone respectively.

The consumption in Kharif 1975 was the lowest compared to the consumption in Kharif during the rest of the review period in all the zones. It ranged from 13.2 per cent in the North zone to 49.3 per cent in the West zone. The consumption in Kharif 1975 in the other zones fell within this range. The reasons for low consumption in Kharif 1975 were no different than those applicable to Nitrogen. The consumption in Kharif 1975 was lower than that in Rabi in all the zones. In 1976-77, whereas the South and West zones are likely to record more consumption in Kharif compared to that in Rabi, the reverse is likely to be the position in the rest of the zones.

### Statewise Consumption

#### South Zone

##### *Andhra Pradesh*

The consumption pattern in the state was cyclic during the review period. Beginning with an increase of 25.4 per cent in 1971-72 compared to the previous year, the consumption dropped by 2.7 per cent in 1972-73; it increased again in 1973-74 by 13.9 per cent followed successively by a drop in 1974-75 by 34.1 per cent and increase in 1975-76 by 24.1 per cent. The net result of the cyclic fluctuation was that the consumption at 67 thousand tonnes in 1975-76 was 9.5 per cent lower than even the level recorded in the first year of the review period. The increase in consumption in 1975-76 was due to favourable weather, reduction in excise duty on superphosphate by 50 per cent and promotional measures for balanced fertilisation by the industry and the State Government. The consumption in 1976-77 is expected to increase for the second year in succession compared to the previous year.

The reasons for the highest drop in consumption in 1974-75 of 34.1 per cent during any year of the review period despite easy product availability were no different than those indicated earlier in the chapter.

The seasonwise consumption varied from year to year though it was only in 1975-76 that the consumption in Kharif was lower than that in Rabi. In all other years the consumption in Kharif was either equal to or more than that in Rabi. The share of consumption during Kharif and Rabi varied from 60 to 45 and 40 to 55 per cent respectively during the review period.

During the past three years the review period U. P. was the top consumer of  $P_2O_5$  with A. P. ranking second. In the fourth year U. P. was relegated to the fifth position with Maharashtra gaining the first position and A. P. retaining the second position. In 1975-76, Andhra Pradesh jumped to the first position and U. P. retrieved most of the lost ground to rank second.

*Karnataka*

The consumption increased from 42 thousand tonnes in 1971-72 to 56 thousand tonnes in 1972-73, 13.5 per cent due to aggressive marketing and extension work in the state to promote NPK fertilisers. The increase in consumption in 1972-73 could not be sustained in 1973-74 and the consumption dropped by 14.3 per cent compared to the previous year. The consumption increased by 12.5 per cent to 54 thousand tonnes in 1974-75. Karnataka and West Bengal were the only two major consuming States in India which recorded an increase in consumption even during 1974-75. The consumption once again dropped by 20.4 per cent to 43 thousand tonnes in 1975-76. All these fluctuations in consumption resulted in the overall growth during the review period of only 2.4 per cent.

The seasonwise consumption recorded a cyclic pattern in the first four years of the review period. Whereas the consumption in Kharif was higher than that in Rabi during 1971-72 and 1973-74 the reverse was the position in 1972-73 and 1974-75. The consumption pattern in 1975-76 was not normal as the offtake was low particularly in Kharif because of the limited resources with the farmers. The consumption in Rabi for the second year in succession was, therefore, higher than that in Kharif. The share of consumption during Kharif and Rabi varied from 66 to 43 and 34 to 57 per cent respectively during the review period.

The ranking of Karnataka in terms of  $P_2O_5$  consumption varied from year to year. Beginning with the seventh position in 1971-72, it rose to the fifth position in 1972-73, went down to the seventh position again in 1973-74, jumped to the third position in 1974-75 and achieved the fifth position in 1975-76.

*Kerala*

The consumption consistently increased from 16 thousand tonnes in 1971-72 to 23 thousand tonnes in 1973-74 recording an overall increase of 43.8 per cent. It, however, dropped by 26.1 and 11.1 per cent to 17 and 15 thousand tonnes in 1974-75 and 1975-76 respectively due mainly to higher  $P_2O_5$  prices. This not only wiped out the overall increase recorded upto 1973-74 but also dropped the consumption to a level even lower (2.4 per cent) than the consumption in the first year of the review period. The share of consumption during Kharif and Rabi varied from 56 to 41 and 44 to 59 per cent respectively during the review period.

In terms of  $P_2O_5$  consumption, Kerala ranked eleventh in 1971-72, rose to the ninth position in 1972-73, maintained this status in 1973-74, went down to the tenth position in 1974-75 and retained this status in 1975-76.

*Tamil Nadu*

The consumption at 71 thousand tonnes in the first year of the review period recorded an increase of 31.5 per cent compared to the previous year. It remained static at 71 thousand tonnes during the two subsequent years on account mainly of limited fertiliser availability. This situation was very discouraging in the context of intensive promotional efforts undertaken by the industry for balanced fertilisation and awareness on the part of the farmer of the benefits of using standard mixtures and complex fertilisers.

The consumption dropped in 1974-75 by 26.8 per cent to 52 thousand tonnes due mainly to drought in the State, high  $P_2O_5$  prices, cumbersome

physical controls and inadequate availability of credit. The deteriorating trend continued through 1975-76 (due mainly to a sharp decline in consumption during Kharif 1975 as an aftereffect of the bad year 1974-75) and the consumption dropped by another 7.3 per cent to 48 thousand tonnes. The consumption in 1975-76 was even below the level of 1971-72 by 32.4 per cent.

The seasonwise consumption pattern was cyclic during the review period. The consumption in Rabi was higher than in Kharif during 1971-72, 1973-74 and 1975-76 and the reverse was the position in the rest of the years. The share of consumption in Kharif ranged from 42 to 56 per cent and that in Rabi between 58 and 44 per cent during the review period.

Tamil Nadu ranked third in the order of  $P_2O_5$  consumption during the first two years of the review period. It dropped to the fifth position in 1973-74, rose to the fourth position in 1974-75 and retained this status in 1975-76.

#### *Other States*

No comments are warranted in view of their low consumption.

#### **West Zone**

##### *Gujarat*

The consumption registered an increase in 1971-72 of 15.1 per cent compared to the previous year. This was followed in 1972-73 by a drop in consumption of 11.5 per cent due mainly to drought in the State. The position improved in 1973-74 with an increase in consumption of 11.1 per cent due to better weather. This was followed in 1974-75 by a sharp decline in consumption of 35.0 per cent due again primarily to severe drought in the State. The other reasons listed earlier in the chapter also contributed to the decline. The deteriorating trend continued through Kharif 1975 and the overall consumption in 1975-76 recorded a drop by 10.3 per cent to 35 thousand tonnes. This level of consumption was even lower than that recorded in the first year of the review period by 42.6 per cent. Apart from the after effects of the bad 1974-75 year, the reduction in area under groundnut, a major consumer of  $P_2O_5$ , in the year 1975-76 contributed towards the deteriorating trend.

Except in the year 1971-72, the consumption in Kharif was higher than that in Rabi throughout the review period. The share of consumption in Kharif ranged between 44 and 80 per cent and that in Rabi between 56 to 20 per cent during the review period.

Gujarat was pushed to the sixth position in terms of  $P_2O_5$  consumption during 1972-73 and 1973-74 after reaching the fifth position in 1971-72. It went down to the Seventh position during the last two years of the review period.

##### *Maharashtra*

The State recorded an increase of 30.8 per cent during the first year of the review period at the consumption level of 68 thousand tonnes. The next year, 1972-73, witnessed a severe drought in the State and due mainly to this factor the consumption dropped by 45.6 per cent compared to the previous year. This was followed in 1973-74 by a year of fair weather and improved product availability which helped retrieve the consumption commendably to reach the maximum level of consumption of 73 thousand tonnes during the review period which also resulted in the highest rate

of growth of 97.3 per cent compared to the previous year. The consumption dropped once again in 1974-75 by 16.4 per cent to 61 thousand tonnes due to factors listed earlier in the chapter.

The deteriorating trend continued mainly through Kharif 1975 on account of the limited resources of the farmer after a bad year in 1974-75 and the overall consumption in 1975-76 dropped by 37.7 per cent to 38 thousand tonnes. The consumption at this level was even lower than the level recorded in 1971-72 by 46.1 per cent.

There was no set pattern in seasonwise consumption. The share of consumption in Kharif ranged between 45 and 68 per cent and that in Rabi between 55 and 32 per cent during the review period.

The ranking of Maharashtra in the order of  $P_2O_5$  consumption fluctuated widely during the review period. Starting with the fourth position in 1971-72 it dropped to the eight position in 1972-73. It regained the fourth position in 1973-74 and continued its ascent in 1974-75 to become the top consumer of  $P_2O_5$ . But it dropped again to the sixth position in 1975-76.

#### *Other States*

The consumption in other states was too low to warrant any comments.

#### **Central Zone**

##### *Madhya Pradesh*

There was a steady growth in consumption during the first three years of the review period from 34 thousand tonnes in 1971-72 to 44 thousand tonnes in 1973-74 due to active promotional work done by the State and the industry. This resulted in an overall increase in consumption during the first three years of the review period of 29.1 per cent. In view, however, of the factors listed earlier in the chapter, the consumption dropped sharply in 1974-75 by 29.5 per cent to 31 thousand tonnes. This brought the level of consumption even lower than that recorded in the first year of the review period by 8.8 per cent. The deteriorating trend continued through 1975-76 due to unfavourable input/output ratio and the consumption dropped again by 9.7 per cent to 28 thousand tonnes. This was the lowest consumption recorded in any year of the review period.

Barring the year 1971-72 when the consumption in Kharif was higher than that in Rabi, the consumption during the review period was higher in Rabi compared to Kharif. The consumption in Kharif during the last four years of the review period ranged between 44 and 29 per cent and that in Rabi between 56 and 71 per cent.

Madhya Pradesh ranked eighth in the order of consumption during the review period barring the year 1972-73 when it achieved the seventh position.

##### *Rajasthan*

The consumption rose by 45.5 per cent to 16 thousand tonnes in the first year of the review period due to extensive promotional efforts by the state government and the industry. The trend reversed in 1972-73 on account of unfavourable weather and the consumption dropped sharply by 56.2 per cent compared to the previous year. This was followed in 1973-74 by the sharpest increase in consumption of 100 per cent achieved in any year of

the review period compared to the previous year though the consumption in absolute terms at 14 thousand tonnes was still 12.5 per cent below the level recorded in the first year of the review period. The various factors listed earlier in the chapter inhibited fertiliser use in 1974-75 and the consumption dropped by 35.7 per cent to 9 thousand tonnes.

That massive drop in consumption during 1972-73 and again in 1974-75 brought the level of consumption even below that of the first year of the review period by 43.7 per cent.

Favourable weather, increase in area under irrigation, adequate availability of inputs on time and promotional efforts towards balanced fertilisation, however, reversed the trend in 1975-76 and the consumption recorded increase of 33.3 per cent compared to the previous year. The absolute consumption at 12 thousand tonnes was still 25 per cent lower than that recorded in 1971-72.

The consumption in Kharif was consistently lower than that in Rabi throughout the review period. The share of consumption seasonwise, however, ranged between 29 and 43 per cent in Kharif and 71 and 57 per cent in Rabi during the review period.

Rajasthan maintained its twelfth position in terms of  $P_2O_5$  consumption in 1975-76 for the second year in succession. It ranked tenth in 1971-72, dropped to the thirteenth position in 1972-73 and retained this status in 1973-74.

#### *Uttar Pradesh*

After a marginal increase of 1.3 per cent in 1971-72 compared to the previous year consumption rose sharply in 1972-73 by 27.6 per cent despite unfavourable climatic conditions. In absolute terms, it increased from 76 thousand tonnes in 1971-72 to 97 thousand tonnes in 1972-73. In the subsequent two years however, consumption dropped by 10.3 and 43.7 per cent reaching in an overall negative growth of 35.5 per cent upto 1974-75. The trend reversed in 1975-76 on account of favourable weather and additional areas being brought under irrigation and HYV crops and consumption recorded an increase of 22.4 per cent compared to the previous year. But the absolute consumption at 60 thousand tonnes was still 31 per cent lower than the level of consumption in the base year of 1971-72. The increase in consumption in 1975-76 was due entirely to a substantially higher offtake by 66.7 per cent in Rabi 1975-76 compared to Rabi 1974-75. In Kharif 1975 there was in fact a drop in consumption of 47.4 per cent compared to Kharif 1974.

The consumption in Rabi was consistently substantially higher than in Kharif during the review period. The share of consumption in Kharif and Rabi varied between 13 and 49 and 87 and 51 per cent respectively during the review period.

U. P. was the largest consumer of  $P_2O_5$  during the first 3 years of the review period. It dropped to the fifth position in 1974-75 giving the first place to Maharashtra, went up to the second position in 1975-76 with Andhra Pradesh on top of the list.

**North Zone****Haryana**

Consumption increased from 7 thousand tonnes in 1971-72 to 8 thousand tonnes in 1972-73 recording a growth of 14.3 per cent. This was followed by a record rate of growth of 112.5 per cent in 1973-74 and the consumption reached 17 thousand tonnes, the highest level achieved during the review period. Intensive promotional efforts for balanced fertilisation brought about this development. This enabled the overall growth upto 1973-74 to reach a level of 143 per cent.

Consumption in 1974-75 dropped by 58.2 per cent to 7 thousand tonnes bringing it back to the level achieved in the base year of 1971-72 due to drought in some parts of the State and the other factors discussed earlier in the chapter. The deteriorating trend continued through Kharif 1975 on account of very limited resources with the farmer after a bad year of 1974-75 and the consumption dropped by another 66.7 per cent compared to Kharif 1974. The trend reversed in Rabi 1975-76 on account of good weather and bumper Kharif output and consumption increased by 75 per cent compared to Rabi 1974-75. The overall consumption during the year 1975-76 increased by 14.3 per cent to eight thousand tonnes. The level of consumption was 14.3 per cent higher than that recorded in the base year of 1971-72 and 53 per cent lower than the highest (17 thousand tonnes) achieved in 1973-74.

Consumption in Rabi was consistently higher than that in Kharif throughout the review period. The share of consumption during Kharif ranged between 13 and 43 and that in Rabi from 87 to 57 per cent during the review period.

Haryana ranked fourteenth in the order of  $P_2O_5$  consumption in 1971-72. Its position improved to thirteenth and eleventh in 1972-73 and 1973-74 respectively, but stood back to the fourteenth position in 1974-75 and the thirteenth position in 1975-76.

**Punjab**

Consumption consistently increased during the first three years of the review period from 57 thousand tonnes in 1971-72 to 73 thousand in 1973-74 recording an overall growth of 40.4 per cent. The rate of growth each year compared to the previous year, however, sharply dropped from 70 per cent in 1971-72 to 30.2 per cent in 1972-73 and to 5.8 per cent in 1973-74 due mainly to limited product availability. The position deteriorated suddenly in 1974-75 on account of high  $P_2O_5$  prices, inadequate credit availability and the consumption dropped for the first time during the review period by 38.4 per cent. The consumption at 45 thousand tonnes in 1974-75 not only wiped out the overall growth recorded upto the previous year but also brought it below the level of the base year (1971-72) by 12.3 per cent. Consumption dropped further during Kharif 1975 by 12.5 per cent due to limited resources with the farmer. The good weather in 1975-76 bumper Kharif 1975 crop and drop in fertiliser prices reversed the trend in Rabi 1975-76 and the consumption increased by 35.1 per cent compared to Rabi 1974-75. The overall increase of 26.7 per cent in 1975-76 enabled the consumption to reach a level of 57 thousand tonnes—9.6 per cent higher than the base figure of 52 thousand tonnes in 1971-72.

Consumption in Rabi was consistently and substantially higher than in Kharif during the review period. The share of consumption seasonwise, however, ranged from 12 to 20 per cent in Kharif and 88 to 90 per cent in Rabi.

Punjab ranked sixth in the order of  $P_2O_5$  consumption in the base year 1971-72, jumped up to the fourth and the third positions in the two subsequent years, reverted to the sixth position in 1974-75 and regained the first position in 1975-76.

#### *Other States*

The consumption in these States is too small to warrant any special comments.

#### **West Zone**

##### *Jharkhand*

The review period began in 1971-72 with a drop in consumption of 22.2 per cent compared to the previous year. The consumption increased in 1972-73 by 35.7 per cent because of better fertiliser availability in Rabi. This trend was, however, short lived and in the very next year consumption again dropped by 15.8 per cent mainly because of inadequate supporting 'N' availability in Rabi. The level of consumption at 16 thousand tonnes remained stationary during 1974-75 despite floods and drought in some parts of the State in Kharif, physical controls on distribution and high  $P_2O_5$  prices. This was mainly because of pressure on balanced fertilisation during Rabi. The pressure considerably reduced in 1975-76 and consumption dropped by 12.5 per cent to 14 thousand tonnes—a level recorded way back in the base year.

Except in 1973-74 when consumption in Kharif was more than that in Rabi, the consistent pattern during the rest of the review period was a higher consumption in Rabi compared to Kharif. The share of consumption seasonwise ranged from 21 to 56 per cent in Kharif and 79 to 44 per cent in Rabi during the review period.

In terms of  $P_2O_5$  consumption, Bihar ranked twelfth in 1971-72, tenth in 1972-73, twelfth again in 1973-74, eleventh in 1974-75 as well as in 1975-76.

##### *Orissa*

The consumption increased consistently during the first 3 years of the review period from 1971-72 to 1973-74 at 33.3, 25.0 and 20.0 per cent respectively and recorded an overall growth upto 1973-74 of 50 per cent. In absolute terms, consumption increased from 8 to 12 thousand tonnes. In view, however, of stringent physical controls on distribution, drought and floods in some parts of the state and high  $P_2O_5$  prices, consumption dropped in 1974-75 by 25 per cent to 9 thousand tonnes. The deteriorating trend continued through 1975-76 the consumption further dropped by 12.2 per cent to 7 thousand tonnes. Consumption during the review period dropped by 12.5 per cent over the level recorded in the base year of 1971-72.

The pattern of seasonwise consumption was erratic. Consumption in Rabi was higher than that in Kharif during 1971-72, 1972-73 and 1974-75 and in the remaining two years of the review period, namely, 1973-74 and 1975-76 the consumption in Kharif was higher than that in Rabi.

During the review period, Orissa continued to hover between the 13th and 14th position in the order of  $P_2O_5$  consumption.

#### *West Bengal*

There was a steady growth in consumption in the State during the review period except in 1972-73 when it dropped by only 5.9 per cent. West Bengal and Karnataka were the only two high consuming States in India which recorded an increase in consumption in 1974-75 compared to the previous year. The increase in West Bengal of 11.1 per cent in 1974-75 was due to withdrawal of cumbersome physical controls on distribution well before the Kharif consumption season commenced and the promotional activities of the major marketers. The increase in absolute consumption from 17 thousand tonnes in 1971-72 to 24 thousand tonnes in 1975-76 recorded an overall growth during the review period of 41.2 per cent.

The consumption in Rabi was consistently higher than that in Kharif during the review period though the gap between the two dropped from 13 thousand tonnes in 1971-72 to 6 thousand tonnes in 1975-76. The share of consumption seasonwise ranged from 23 to 40 per cent in Kharif and 7 to 60 per cent in Rabi.

In the order of  $P_2O_5$  consumption, West Bengal ranked between the ninth and eleventh position during the review period.

#### *Other States*

The consumption was too low to merit any special comments.

### **POTASH**

There was a consistent growth in  $K_2O$  consumption during the first three years of the review period though the rate of growth varied from year to year. Beginning the review period with a rate of growth of 33.3 per cent in 1971-72, it dropped to 9.2 and 8.4 per cent in 1972-73 and 1973-74 respectively due to sharp decline in the growth of N and  $P_2O_5$  on account of limited product availability. The deteriorating trend continued through 1974-75 and the consumption compared to the previous year dropped for the first time during the review period. The reasons for this sharp decline of 6.7 per cent compared to the previous year was no different than those indicated under 'Nitrogen'. The additional factors were the importance of  $K_2O$  only after N and  $P_2O_5$  in the scale of judgement of the farmer and the recommendations of some of the agricultural universities to use potash only if indicated by the soil analysis. Since, however, the drop in consumption of  $P_2O_5$  was much sharper than in the case of  $K_2O$ , the nutrientwise share of  $K_2O$  rose by 0.6 per cent.

The situation worsened in 1975-76 and the consumption recorded a further steep drop of 17.3 per cent compared to the previous year. The nutrientwise share also slumped from 13.1 per cent in 1974-75 to 9.6 per cent in 1975-76. The reasons were not far to seek. The farmer used his limited



resources first to meet his 'N' requirements and only if he was left with some money thereafter did he purchase  $P_2O_5$  and  $K_2O$  in that order. Potash appeared to have the least priority in his scale of judgement. High prices of  $K_2O$  and the least emphasis on its use in the various fertiliser recommendations, which in fact were the carry over of the situation of limited fertiliser availability during the previous years, also inhibited potash use.

There was an overall decrease of 8.6 per cent in potash consumption during the review period. In absolute terms, it dropped from 304 thousand tonnes in 1971-72 to 278 thousand tonnes in 1975-76. The highest consumption achieved in any year during the review period was of 360 thousand tonnes in 1973-74.

The nutrientwise share of  $K_2O$  increased consistently from 11.5 per cent in 1971-72 to 13.1 per cent in 1974-75. This was the highest share held by it during the review period. It dropped to 9.6 per cent in 1975-76.

The deteriorating trend in Potash has worsened the imbalance in fertiliser use. This trend must be reversed to avoid adverse effect on soil fertility particularly in areas under intensive cultivation. Lack of potash in the soil can cause a serious setback to agricultural production. The authorities concerned with the formulation of fertiliser recommendations need urgently to review afresh the question of potash use.

The potential demand is high and in case the constraints to potash use are removed a very substantial rate of growth can be achieved. This is necessary to bring the balance in fertiliser use to a reasonable level.

The coordinated efforts of both the industry and the Central/State Governments towards balanced fertilisation should also help improve the situation. The Government have already reduced its price with effect from March 16, 1976. This should stimulate demand.

The anticipated marketing situation in 1976-77 is likely to record an increase in consumption of 34.9 per cent compared to the previous year. The consumption would then reach the highest level of 375 thousand tonnes achieved so far.

### Zonewise Consumption

#### Actual consumption

The table below gives the pattern of consumption zonewise during the review period.

Percentage increase in consumption of  $K_2O$

Region	± over previous year						1976-77*
	1971-72	1972-73	1973-74	1974-75	1975-76	1975-76 over 1971-72	
South	35.0	9.6	9.5	-14.2	-10.8	-8.1	37.1
West	21.4	15.7	-6.8	76.4	-36.1	21.6	21.0
Central	31.4	-10.5	6.7	-34.4	2.4	-35.8	51.1
North	60.0	37.5	36.4	-40.0	-22.2	-12.5	78.6
East	40.0	20.0	14.7	-16.7	-15.0	-2.9	17.6
All India	33.3	9.2	8.4	-6.7	-17.3	-8.6	34.9

\* Estimated.

Note: Based on Table 38.

There was no set pattern in zonewise consumption except that South, North and East zones recorded consistent increases during the first three years of the review period ended 1973-74. The rate of growth in each case was the highest in the first year and the least in the third year. The consumption in the West zone increased in the first two years and dropped in the third compared to the previous years. The Central zone recorded an increase in the first year, drop in the second and an increase again in the third year of the review period. All the zones except the West zone recorded decreases in 1974-75 compared to the previous year. In 1975-76, the increase was recorded only by the Central zone. The consumption in all other zones decreased in 1975-76 compared to the previous year.

The All-India consumption dropped by 8.6 per cent during the review period. Zonewise, all zones except the West zone recorded decline in consumption over the review period. The highest drop of 35.8 per cent was recorded by the Central zone followed by 12.5 per cent by North, 8.1 by South and 2.9 by East. The increase in the case of West zone was 21.6 per cent. The prospects for 1976-77 after two bad years appear to be bright. All the zones are likely to record substantial increases compared to the previous year. The maximum increase of 78.6 per cent is expected in the North zone followed by 51.1 in the Central zone, 31.1 in the South, 21 in the West and 17.6 in the East.

#### *Comparative Share*

The comparative zonewise shareout during the review period is given in the table below:

Zone	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
South	44.4	44.7	45.1	41.4	44.8	45.3
West	16.8	17.9	15.4	28.8	22.4	20.0
Central	22.0	18.1	17.8	12.5	15.5	17.3
North	5.3	6.6	8.3	5.4	5.1	6.7
East	11.5	12.7	13.4	11.4	12.2	10.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

\* Estimated.

The South zone has traditionally been the leader in potash use. It retained its top position throughout the review period with the share ranging from 41.4 and 45.1 per cent. The Central zone held the second position during the first three years of the review period ended 1973-74 and gave way to the West zone to attain the third position during the last two years of the review period. The West zone recorded an increase of 76.4 per cent in 1974-75 compared to the previous year to beat the Central zone and has since then retained the second position. The East zone retained the fourth position throughout the review period with the share fluctuating between 11.4 and 13.4 per cent. The North zone has always been the lowest consumer of potash. That is why the highest imbalance in fertiliser use is observed in the North zone.

The north zone is likely to improve its share in 1976-77 by about 30 per cent. Improvement is also expected in the South and Central zones. The West and East zones are likely to record drops in their shares in 1976-77.

#### South Zone

The South zone remained the largest potash consumer throughout the review period despite drop in consumption of 14.2 and 10.8 per cent in 1974-75 and 1975-76 respectively compared to the previous years. There was in fact a consistent increase in its share from 44.7 per cent in 1971-72 to 45.1 per cent in 1973-74. The share dropped back to 41.4 per cent in 1974-75 on account mainly of drought in the zone during the year. It has come back to 44.8 per cent in 1975-76 despite drop in consumption of 10.8 per cent compared to the previous year. The share is likely to go up to 45.3 per cent during 1976-77.

The traditionally high  $K_2O$  consumption in the zone is due largely to active promotional efforts of IPL and other major marketers of mixtures and complex fertilisers in the area over comparatively a much larger period.

A consistent increase in consumption during the first three years of the review period resulted in an overall growth of 20.0 per cent. The trend reversed in 1974-75 and the consumption dropped by 14.2 per cent compared to the previous year. This reduced the overall growth to 3.0 per cent. This trend continued through 1975-76 and the consumption dropped by 10.8 per cent compared to the previous year. This resulted in an overall negative growth of 8.1 per cent during the review period.

Rabi recorded a higher consumption compared to Kharif throughout the review period. This trend is likely to continue.

#### West Zone

A cyclic variation in the share of consumption was recorded during the review period. The share of 16.8 per cent in 1971-72 increased to 17.9 in 1972-73, dropped to 15.4 in 1973-74, rose once again, and very sharply this time, to 28.8 in 1974-75 and also dropped sharply to 22.4 per cent in 1975-76.

The rate of growth declined during the first three years of the review period from 21.4 per cent in 1971-72 to -6.8 per cent in 1973-74 compared to the previous year. This was followed by a very sharp increase in consumption of 76.4 per cent in 1974-75. This enabled the West zone to march ahead of the Central zone to become the second largest potash consuming zone in the country. This high rate of growth in consumption could not be sustained in 1975-76 and the consumption dropped by 36.1 per cent compared to the previous year.

This is the only zone which has recorded an overall increase in consumption during the review period. The increase recorded is 21.6 per cent.

This is also the only zone in India which records higher consumption in Kharif compared to Rabi. The only exception has been in 1975-76 when on account of drought in the zone during 1974-75 the Kharif 1975 consumption was badly affected and was lower than in Rabi 1975-76. The normal pattern of higher consumption in Kharif is likely to revive in 1976-77.

#### Central Zone

The share of the Central Zone dropped continuously during the first four years of the review period from 22.0 per cent in 1971-72 to 12.5 per cent in 1974-75. The drop of 5.3 per cent was the highest in 1974-75 and this made the zone lost its second position to the West Zone. The share of the zone increased to 15.5 per cent in 1975-76 but it still remained at the third position.

A cyclic variation in the pattern of consumption was observed during the review period. Beginning with a high rate of growth of 31.4 per cent in 1971-72, it dropped to -10.5 per cent in 1972-73, increased again to 6.7 per cent in 1973-74, dropped again and very sharply this time to -34.4 per cent in 1974-75 and rose once again to 2.4 per cent in 1975-76 compared to the previous years. This fluctuation in the consumption pattern recorded a negative growth rate of 35.8 per cent over the review period.

The consumption is likely to improve considerably in 1976-77 to record an increase of 51.1 per cent over the previous year. The zone will, however, continue to retain its third position.

#### North Zone

The share of the zone consistently increased during the first three years of the review period from 5.3 per cent in 1971-72 to 8.3 per cent in 1973-74. It dropped sharply to 5.4 per cent in 1974-75 presumably because of the advice to the farmer by the authorities concerned with the formulation of fertiliser recommendations to use potash only after soil analysis. This pattern continued through 1975-76 and the share recorded was 5.1 per cent. There are signs that the low potash consumption in this zone has led to a decline in response even to other nutrients. There are, therefore, indications of a likely increase in consumption in 1976-77. The share of the zone is likely to increase to 6.7 per cent. The zone remained the lowest consuming zone in the country during the review period. This position will remain unchanged even in 1976-77.

The zone recorded consistent increase in consumption compared to the previous year during the first three years of the review period ended 1973-74 though the rate of growth declined with each passing year. This was followed by a sharp decline in consumption in 1974-75 of 40 per cent compared to the previous year. In 1975-76, the consumption dropped again and the decrease recorded was 22.2 per cent compared to the previous year. This trend was very disturbing particularly in comparison to anticipated increase in consumption in the zone of 36.4 per cent.

There was no overall increase in consumption during the review period. There was in fact a negative growth of 12.5 per cent. In absolute terms, the consumption level dropped from 16 thousand tonnes in 1971-72 to 14 thousand tonnes in 1975-76. The consumption of 14 thousand tonnes of  $K_2O$  in comparison to 347 thousand tonnes of 'N' in the zone in 1975-76 clearly shows the gross imbalance in fertiliser use in the zone which needs to be corrected urgently.

The trend is likely to change for the better in 1976-77 with an estimated increase in consumption of 78.6 per cent.

**East Zone**

Here again the share of the zone increased from 11.5 per cent in 1971-72 to 13.4 per cent in 1973-74. It dropped to 11.4 per cent in 1974-75 and increased again to 12.2 per cent in 1975-76. The zone held the fourth position in terms of consumption throughout the review period. The share of the zone is likely to drop to 10.7 per cent in 1976-77 retaining the fourth position.

Like the North zone, this zone also recorded consistent increase in consumption compared to the previous year upto 1973-74 though rate of growth declined with each passing year. This was followed by drop in consumption during each of the two last years of the review period resulting in a negative overall growth (2.9 per cent) in consumption during the review period. In absolute terms, the consumption dropped from 35 thousand tonnes in 1971-72 to 34 thousand tonnes in 1975-76. The highest consumption level achieved during any year was 48 thousand tonnes in 1973-74.

The situation is likely to be more favourable in 1976-77 and the consumption at 40 thousand tonnes is estimated to record an increase of 17.6 per cent compared to the previous year.

**Seasonwise Consumption**

The  $K_2O$  consumption, like that in 'N' and  $P_2O_5$ , also varied from zone to zone and in a zone from year to year (Table 39). The only consistency observed throughout the review period was lower consumption ranging from 18.2 to 38.1 per cent in Kharif compared to that in Rabi in the Central, North and East zones. This pattern is likely to continue through 1976-77. In the case of South zone, the proportion of consumption in Kharif varied from 53.4 per cent in 1972-73 to 43.5 per cent in 1975-76. The range in consumption in Kharif in the West zone was 60.7 per cent in 1974-75 to 41.9 per cent in 1975-76. The consumption in Kharif in the rest of the years of the review period in both the zones fell within the ranges indicated.

The largest proportion of consumption in any year in any zone in Kharif and Rabi was 60.7 per cent in 1974-75 in the West zone and 81.4 per cent in the Central zone in 1975-76.

The consumption in Kharif 1975 compared to that in the same season during the rest of the review period was the lowest only in the South, West and Central zones. In the case of N and  $P_2O_5$ , the Kharif 1975 consumption was the lowest in all the zones. The lowest consumption of  $P_2O_5$  in Kharif in the North and East zones was recorded in 1972 and 1973 respectively due mainly to limited fertiliser availability.

The consumption in Kharif 1975 was lower than that in Rabi in all the zones. Similar pattern is likely to prevail in 1976-77 in the case of the Central, North and East zones. The South and West zones are likely to record more consumption in Kharif compared to that in Rabi.

**Statewise Consumption****South Zone***Andhra Pradesh*

Substantial increase in consumption of 58.8 per cent compared to the previous year brought the level of consumption in the State in 1971-72 to

27 thousand tonnes. The trend reversed in 1972-73 due to drought in some parts and political instability in the State. The position again reversed in 1973-74 this time for the better and the consumption increased by 20.8 per cent to 29 thousand tonnes. But the improvement was short lived. The high  $K_2O$  prices and the absence of positive recommendations in favour of  $K_2O$  inhibited its use in 1974-75 and in Kharif 1975 and the consumption dropped by 17.2 per cent (to 24 thousand tonnes) and 33.3 per cent respectively. Offtake picked up by 66.7 per cent in Rabi 1975-76 due to good weather and fall in fertiliser prices. The consumption at 25 thousand tonnes in 1975-76 was 4.2 per cent higher than in 1974-75. Andhra Pradesh and Uttar Pradesh were the only two States in the country which recorded increase in consumption in 1975-76 compared to the previous year.

The pattern of consumption seasonwise was cyclic. The consumption in Rabi was higher than in Kharif during the first, third and the fifth year of the review period. The reverse was the position in the second and fourth years. The share of consumption seasonwise ranged from 33 to 63 per cent in Kharif and 67 to 37 per cent in Rabi.

In the order of  $K_2O$  consumption, Andhra Pradesh ranked fifth throughout the review period.

#### *Karnataka*

The consumption at 28 thousand tonnes in the first year of the review period recorded an increase of 7.7 per cent compared to the previous year. It jumped to 39 thousand tonnes in 1972-73 recording an increase of 39.3 per cent. After remaining stationary at 39 thousand tonnes during 1973-74, the consumption increased by 25.6 per cent to 49 thousand tonnes in 1974-75 compared to previous year. The consistent increases in consumption recorded an overall growth upto 1974-75 of 75 per cent. This was followed in 1975-76 by a decline in consumption of 22.4 per cent to 38 thousand tonnes due to high  $K_2O$  prices and change in cropping pattern in Tungbhadra project area from groundnut and potatoes (large consumers of  $K_2O$ ) to pulses on account of the fall in market prices of the former. This reduced the overall growth during the review period to 35.7 per cent.

Barring the first year of the review period when the consumption in Kharif was more than that in Rabi the pattern in the remaining four years of the review period has been of higher consumption in Rabi. The share of seasonwise consumption, however, ranged from 41 to 57 per cent in Kharif and 59 to 43 per cent in Rabi.

Karnataka ranked fourth in the order of  $K_2O$  consumption during the first three years of the review period. It beat Tamil Nadu and U. P., the first and second position holders during the first three years of the review period, in 1974-75 to reach the second position. Tamil Nadu beat Karnataka in 1975-76 and the latter was relegated to the third position.

#### *Kerala*

The consumption increased consistently during the first three years of the review period by 12.5, 5.6 and 31.6 per cent to 18, 19 and 25 thousand tonnes respectively recording an overall growth upto 1973-74 of 39 per cent. This was followed in 1974-75 by a drop in consumption of 28.0 per

ent due to high fertiliser prices in general and low priority to the use of  $K_2O$  compared to N and  $P_2O_5$ ; the level of consumption at 18 thousand tonnes was equal to that recorded in the base year 1971-72. The deteriorating trend continued through 1975-76 on account of abnormally heavy rains in Kharif 1975 which affected basal application and drop in market prices of coconut, tapioca which normally consume large quantities of  $K_2O$ . Consumption dropped by 5.6 per cent to 17 thousand tonnes recording thereby a negative growth of 5.9 per cent over the review period.

Barring the first year of the review period when the consumption in Kharif was more than that in Rabi the pattern in the remaining four years recorded either higher or equal consumption in Rabi compared to Kharif. The share of consumption seasonwise, however, ranged between 61 to 47 per cent in Kharif and 39 to 53 per cent in Rabi.

Kerala ranked seventh in the order of consumption throughout the review period.

#### *Tamil Nadu*

Here again the consumption increased during the first 3 years of the review period by 52.5, 4.9 and 6.3 per cent to 61, 64 and 68 thousand tonnes respectively recording an overall growth upto 1973-74 of 11.4 per cent. Due, however, to the severe drought in the State during 1974-75 the consumption dropped by 30.9 per cent to 47 thousand tonnes. This not only wiped out the overall growth recorded upto the previous year but also registered a negative growth of 23 per cent. The deteriorating trend continued through Kharif 1975 and the consumption dropped further by 24 per cent compared to Kharif 1974. The position in Rabi 1975-76 due to good weather and an increase in 'N' consumption, the  $K_2O$  consumption increased by 13.6 per cent compared to Rabi 1974-75. The overall consumption in 1975-76, however, dropped by 6.4 per cent to 44 thousand tonnes resulting in an overall negative growth during the review period of 27.8 per cent.

The seasonwise consumption followed a cyclic pattern. The consumption in Rabi was higher than in Kharif in the first, third and the fifth years of the review period. The reverse was the position in the remaining two years. The share of seasonwise consumption varied between 43 to 56 per cent in Kharif and 57 to 44 per cent in Rabi.

Tamil Nadu was the largest consumer of  $K_2O$  in the first 3 years of the review period. It was relegated to the third position in 1974-75 by Maharashtra and Karnataka which occupied the first and second position respectively. Tamil Nadu beat Karnataka in 1975-76 and ranked second in the order of consumption.

#### *Pondicherry*

The consumption was too low to warrant any special comments.

#### **West Zone**

##### *Gujarat*

A consistent growth in consumption from 7 thousand tonnes in 1971-72 to 13 thousand tonnes in 1973-74 recorded an overall growth of 85.5 per cent. The consumption remained stationary at 13 thousand tonnes in

1974-75 despite heavy drop in 'N' and  $P_2O_5$  consumption caused by severe drought in the State. This was a commendable performance. The position deteriorated in Kharif 1975 and the consumption dropped by 66.7 per cent compared to Kharif 1974. The Rabi 1975-76 consumption recorded a substantial improvement of 200 per cent compared to Rabi 1974-75 but even this did not prevent an overall decline in consumption of 46.2 per cent to 7 thousand tonnes in 1975-76. This wiped out all the growth achieved during the earlier years of the review period.

The consumption in Kharif was consistently higher than in Rabi throughout the review period. The share of consumption seasonwise, however, varied between 57 to 92 per cent in Kharif and 43 to 8 per cent in Rabi during the review period.

In the order of  $K_2O$  consumption, Gujarat ranged between 9th and 10th positions during the review period.

#### *Maharashtra*

After a consistent growth in consumption during the first two years of the review period by 22.2 and 9.1 per cent to 44 and 48 thousand tonnes respectively, the consumption dropped by 14.6 per cent to 41 thousand tonnes in 1973-74. This was followed in 1974-75 by an exceptionally high increase of 102.4 per cent compared to the previous year on account of large consumption in cash crops like sugarcane. Maharashtra was one of the three States in India which recorded an increase in consumption in 1974-75 compared to the previous year. The increase in consumption to 83 thousand tonnes recorded an overall growth of 88.6 per cent upto 1974-75.

The trend reversed in 1975-76 and the consumption dropped by 34.1 per cent to 54 thousand tonnes. This reduced the overall growth during the review period to 22.7 per cent.

The pattern of seasonwise consumption was erratic. The consumption was higher in Rabi in some years and in Kharif in the other years of the review period. The share of seasonwise consumption varied between 4 to 60 per cent in Kharif and 59 to 40 per cent in Rabi.

Maharashtra ranked third in the order of consumption in the first 3 years of the review period. On account, however, of an exceptionally high rate of growth in 1974-75 it became the top consumer in the country and this status it retained in 1975-76.

#### **Central Zone**

##### *Madhya Pradesh*

The consumption consistently increased during the first 3 years of the review period from 6 thousand tonnes in 1971-72 to 9 thousand tonnes in 1973-74 recording an overall growth of 50 per cent. The consumption dropped by 22.2 per cent to 7 thousand tonnes in 1974-75 compared to the previous year on account of factors listed earlier in the chapter. This reduced the overall growth to 16.7 per cent. The deteriorating trend continued through 1975-76 and the consumption dropped by 14.3 per cent to 6 thousand tonnes. This wiped out all the growth recorded previously during the review period.



The  $K_2O$  consumption in the State is depressingly low particularly when the cropped area in the State is next only to U.P. Great untapped potential exists in the State. Persistent promotional efforts particularly directed towards balanced fertilisation are needed to improve the situation.

The consistent seasonwise consumption pattern recorded high consumption in Rabi compared to Kharif. The share of consumption in Kharif and Rabi ranged between 33 to 43 and 67 to 57 per cent respectively.

Madhya Pradesh maintained the eleventh position in the order of  $K_2O$  consumption throughout the review period.

#### *Rajasthan*

The review period began in 1971-72 with an exceptional rate of growth of 150 per cent compared to the previous year. This was followed by a sudden drop in consumption by 40 per cent in 1972-73. In absolute terms, the consumption dropped from 5 thousand tonnes in 1971-72 to 3 thousand tonnes in 1973-74. A slight improvement in the trend increased the consumption by 2 per cent to 4 thousand tonnes in 1973-74. The consumption dropped by 50 per cent to the lowest level of consumption during the review period of 2 thousand tonnes in 1974-75. This level was maintained in 1975-76. The overall drop in consumption during the review period was 60 per cent.

The consumption was consistently higher in Rabi compared to Kharif during the review period. The share of seasonwise consumption was 33 to 50 per cent in Kharif and 67 to 50 per cent in Rabi.

The position of the state in the order of  $K_2O$  consumption fluctuated between the twelfth and the fourteenth during the review period.

#### *Uttar Pradesh*

The consumption pattern during the review period was cyclic. It increased by 24.4 per cent to 56 thousand tonnes in 1971-72, dropped by 12.5 per cent to 49 thousand tonnes in 1972-73, increased again by 2.0 per cent to 50 thousand tonnes in 1973-74, dropped again by 37 per cent to 33 thousand tonnes in 1974-75 and increased once again by 9.1 per cent to 36 thousand tonnes in 1975-76. This resulted in an overall drop in consumption during the review period of 35.7 per cent.

The bulk of the consumption during the review period was consistently in Rabi. The share of seasonwise consumption was 18 to 36 per cent in Kharif and 82 to 64 per cent in Rabi.

U. P. ranked second in the order of  $K_2O$  consumption during the first 3 years of the review period. It was relegated to the fourth position in 1974-75 by Maharashtra and Karnataka. It retained this status in 1975-76.

#### *Delhi*

The consumption was too low to warrant any comments.

#### **North Zone**

##### *Haryana*

The consumption ranged between 2 to 4 thousand tonnes during the review period. This is an extremely low consumption compared to 'N'

consumption (86 thousand tonnes in 1975-76) causing an acute imbalance in fertiliser use. A sustained programme to promote balanced fertilisation in the State is badly needed.

The consumption in Rabi was either equal to or more than that in Kharif during the review period. The share of seasonwise consumption ranged from 33 to 50 per cent in Kharif and 67 to 50 per cent in Rabi during the review period.

#### *Punjab*

The consumption consistently increased from 12 thousand tonnes in 1971-72 to 23 thousand tonnes in 1973-74 recording an overall growth of 91.7 per cent. The rate of growth, however, declined from 71.4 per cent in 1971-72 to 27.8 per cent in 1973-74 compared to the respective previous years. This was followed in 1974-75 by a sharp decline in consumption compared to the previous year by 60 per cent to 14 thousand tonnes. The reason for this drop was the lowest priority accorded by the farmer to the  $K_2O$  use compared to N and  $P_2O_5$  on account of high prices in general and the recommendations of the Punjab Agricultural University to use  $K_2O$  only if the soil tests indicate. The deteriorating trend continued through 1975-76 and the consumption dropped further by 28.6 per cent to 10 thousand tonnes. This level of consumption was 16.7 per cent lower than even the one recorded in the first year of the review period.

The  $K_2O$  consumption of 10 to 23 thousand tonnes was too low compared to N consumption of 196 to 244 thousand tonnes during the review period. The gross imbalance in fertiliser use is likely to affect the soil fertility over a period of time and the resultant drop in response even to 'N' use. Some recent indications corroborate this statement.

The bulk of  $K_2O$  consumption was consistently in Rabi during the review period. The share of seasonwise consumption varied between 17 and 36 per cent in Kharif and 83 and 64 per cent in Rabi during the review period.

Punjab ranked eighth in the order of  $K_2O$  consumption throughout the review period.

#### *Other States*

The consumption was too low to merit any special comments.

#### **East Zone**

##### *Bihar*

The consumption at 7 thousand tonnes in 1971-72 was in level with that recorded in the previous year. This was followed in 1972-73 by a substantial increase in consumption of 57.1 per cent to 11 thousand tonnes. The consumption remained stationary at 11 thousand tonnes in 1973-74 and increased by 9.1 per cent to 12 thousand tonnes in 1974-75. Bihar was one of the three States in India which recorded an increase in consumption during 1974-75 compared to the previous year. Sustained promotional efforts helped record an overall growth of 71.4 per cent during the review period upto 1974-75. The trend reversed in 1975-76 and the consumption dropped (33.3 per cent) compared to the previous year for the first time during the review period. The consumption at 8 thousand tonnes reduced the overall growth during the review period to 14.3 per cent.

The consumption was consistently high in Rabi compared to Kharif throughout the review period. The seasonwise consumption ranged between 25 to 43 per cent in Kharif and 75 to 57 per cent in Rabi during the review period.

Bihar ranked ninth in the order of  $K_2O$  consumption in 1972-73 and 1975-76. In the remaining three years of the review period, it held the tenth position changing places with Gujarat.

#### *Orissa*

The consumption consistently increased during the first three years of the review period from 4 thousand tonnes in 1971-72 to 7 thousand tonnes in 1973-74 recording an overall growth of 75 per cent. This was followed in 1974-75 and 1975-76 by drops in consumption by 14.3 and 16.7 per cent to 6 and 5 thousand tonnes respectively. The overall growth during the review period was thus reduced to 25 per cent. The drops were due to high fertiliser prices and the rumours about fall in prices.

Barring the final year of the review period the consumption in Rabi was higher compared to Kharif during the review period. In 1975-76, the consumption in Kharif was higher than in Rabi. The share of seasonwise consumption ranged between 25 to 60 per cent in Kharif and 75 to 40 per cent in Rabi.

Orissa ranked thirteenth in the order of  $K_2O$  consumption in 1971-72. In all other years of the review period, it held the twelfth position.

#### *West Bengal*

Sustained promotional efforts resulted in a consistent increase in consumption from 22 thousand tonnes in 1971-72 to 27 thousand tonnes in 1973-74 recording an overall growth of 22.7 per cent. The trend reversed in 1974-75 on account of sharp hike in fertiliser prices which prompted the farmer to economise reducing the use of  $K_2O$  considerably and the consumption dropped by 25.9 per cent to 20 thousand tonnes. The consumption remained stationary at this level during 1975-76 with the resultant overall drop in consumption during the review period of 9.1 per cent.

The bulk of the consumption during the review period was consistently in Rabi. The share of consumption seasonwise ranged between 11 to 39 per cent in Kharif and 89 to 61 per cent in Rabi during the review period.

West Bengal ranked sixth in the order of  $K_2O$  consumption throughout the review period.

#### *Other States*

The consumption was too small to warrant any special comments.

### **C. Consumption Comparison with other Countries**

India continued to remain the seventh largest fertiliser consuming country in the world in 1974-75 for the second year in succession despite serious marketing constraints. China moved to the third position relegating France to the fourth position.

The position nutrientwise was, however, very different. India beat France in 'N' consumption in 1974-75 and improved its world ranking from the fifth in 1973-74 to the fourth in 1974-75, although its share of total world consumption marginally dropped compared to the previous year.

In the case of  $P_2O_5$ , Canada and Spain beat India to acquire the tenth and the eleventh position respectively in 1974-75. India went down from the tenth to the twelfth position. The consumption of  $P_2O_5$  in 1974-75 also upset many other world rankings. USSR beat USA to become the largest  $P_2O_5$  consuming country in the world. Brazil interchanged its ranking with Australia and improved its position from the ninth to fifth. Poland beat West Germany to improve its ranking from the seventh position to the sixth.

In  $K_2O$ , Japan beat India in 1974-75 to become the sixth largest consuming country in the world. India lost one position compared to the previous year and moved to the thirteenth position. The other upsets in the other major  $K_2O$  consuming countries in 1974-75 were: Poland beat France to improve its position compared to the previous year from the fourth to the third. East Germany, Czechoslovakia, China, Brazil and the U. K. similarly lost their positions from the sixth to seventh, seventh to eighth, eighth to ninth, ninth to tenth and tenth to twelfth respectively.

Countrywise ranking in fertiliser consumption 1974-75

Ranking	N	$P_2O_5$	$K_2O$	N + $P_2O_5$ + $K_2O$
1.	U. S. A. (7,798.3)	U. S. S. R. (4,110.0)	U. S. A. (3,986.2)	U. S. A. (15,860.2)
2.	U. S. S. R. (6,746.0)	U. S. A. (4,076.2)	U. S. S. R. (3,708.0)	U. S. S. R. (14,564.0)
3.	China (3,694.0)	France (1,710.8)	Poland (1,443.6)	China ( 5,517.3)
4.	India (1,765.7) [4.6]	China (1,267.0)	France (1,413.1)	France ( 4,678.6)
5.		Brazil ( 914.2)	W. Germany (1,170.5)	Poland ( 3,478.2)
6.		Poland ( 888.2)	Japan ( 722.0)	W. Germany ( 3,248.3)
7.		W. Germany ( 876.9)	E. Germany ( 715.9)	India ( 2,573.3) [3.1]
8.		Japan ( 692.0)	Czechoslovakia ( 675.0)	
9.		Australia ( 630.0)	China ( 556.3)	
10.		Canada ( 482.1)	Brazil ( 521.3)	
11.		Spain ( 474.9)	Hungary ( 423.2)	
12.		India ( 471.5) [2.0]	United Kingdom ( 371.0)	
13.			India ( 336.1) [1.7]	
<b>World total</b>	<b>38,706.9</b>	<b>23,854.5</b>	<b>19,864.6</b>	<b>82,426.0</b>

Note : 1 Figures in ( ) denote consumption in '000 tonnes.

2 Figures in [ ] denote percentage share of world consumption.

India's share of the total world consumption rose from 3.2 per cent in 1970-71 to 3.6 per cent in 1971-72. It then dropped in the subsequent two years to 3.5 and 3.4 per cent respectively due to drop in consumption on account mainly of aberrant weather and limited fertiliser availability. The product availability position improved considerably in 1974-75 but as a result of aberrant weather in some parts of the country and sharp hike in fertiliser prices the overall consumption dropped by 9.4 per cent compared to the previous year with the resultant drop in the share to 3.1 per cent.

The position nutrientwise was different. Whereas the share of 'N' at 4.6 per cent in 1974-75 marginally dropped compared to the previous year, the share of  $P_2O_5$  dropped by 0.7 per cent to 2.0 per cent during the same period. In the case of  $K_2O$ , India's share increased gradually from 1.4 per cent in 1970-71 to 1.8 per cent in 1972-73. It dropped to 1.7 per cent in 1973-74 and this status was maintained during 1974-75.

The trend of fertiliser consumption in India more or less followed the world pattern during the five year review period ended 1974-75 barring 1971-72 when on account of abundant product availability and an abnormally low rate of growth in the previous year the consumption recorded the highest rate of growth of 20.8 per cent compared to the previous year. The rate of growth in developing countries as a whole, however, was exactly in line with the world pattern.

It was for the first time in 1974-75 during the review period that India recorded a drop in consumption compared to the previous year. The level of negative rate of growth (9.4 per cent) was, however, the same as recorded by the developed countries (9.6 per cent).

*Countrywise annual growth rate of fertiliser consumption*

(N +  $P_2O_5$  +  $K_2O$ ) (1970-71 to 1974-75)

(percentage)

Country	1970-71	1971-72	1972-73	1973-74	1974-75
India	9.4	20.8	2.6	5.2	- 9.4
Egypt	- 0.5	15.4	12.0	9.4	6.4
Philippines	11.4	- 8.5	- 2.5	22.2	8.3
Japan	- 5.0	-10.0	7.1	-18.5	- 8.4
Korea, Republic of	5.4	11.5	- 2.5	16.9	5.5
The Netherlands	5.7	- 7.7	0.5	2.5	1.2
U. S. S. R.	17.0	20.9	9.9	9.6	8.2
U. S. A.	5.8	1.9	3.5	7.1	- 9.4
Canada	6.6	10.0	16.7	16.5	3.0
China, Mainland	19.6	15.4	11.8	17.5	0.2
Australia	11.5	0.7	25.5	28.4	-38.9
France	10.2	6.6	9.0	8.5	-19.8
West Germany	5.6	2.1	- 1.8	- 1.8	2.1
Italy	8.7	8.4	6.3	- 8.2	- 2.3
Developing countries		12.7	14.8	8.7	4.8
Developed countries		2.0	4.8	6.8	- 9.6
Centrally planned		8.7	8.1	10.4	8.6
<b>World</b>		<b>5.5</b>	<b>7.2</b>	<b>8.2</b>	<b>- 2.9</b>

Amongst the listed countries, the consumption in USSR, Canada and China alone recorded a consistent increase throughout the five year review period ended 1974-75. In all other countries, there was in one or more than one year a drop in consumption compared to the previous year. Taking the developing and the developed countries as two groups, whereas the consumption in the former group recorded a consistent increase during the whole of the review period that in the latter recorded a drop in consumption in 1974-75 alone compared to the previous year.

The highest rate of growth in consumption recorded by any of the listed countries in the five year review period was 19.6 per cent by China in 1970-71, 20.9 per cent by USSR in 1971-72, 25.5 per cent and 28.4 per cent by Australia in 1972-73 and 1973-74 respectively and lastly 8.3 per cent by Philippines in 1974-75.

## CHAPTER III

### PLANT NUTRIENTS CONSUMPTION PER HECTARE AND ITS RATIO

#### A. PLANT NUTRIENTS CONSUMPTION

Data on consumption of plant nutrients (N, P<sub>2</sub>O<sub>5</sub> & K<sub>2</sub>O) per hectare of agricultural land in the country for five years (1971-72 to 1975-76) and estimates for 1976-77 are presented in Table 43.

Consumption of plant nutrients per unit of agricultural land doubled roughly every five years till 1971-72. Thereafter, the increase was only marginal, 0.4 kg/ha in 1972-73 and 0.5 kg/ha in 1973-74. A shortfall in the total availability of fertilisers during 1972-73 and 1973-74 was responsible for the low increase in the consumption rate. The situation deteriorated further in 1974-75 when for the first time there was a substantial drop (1.2 kg/ha) in plant nutrients consumption over the previous year. Incidentally, the earlier consumption figure of 14.8 kg/ha for 1974-75 given in the previous edition had to be revised to 14.2 kg/ha based on the Ministry of Agriculture's latest figures.

The consumption of plant nutrients in 1975-76 stood at 15.9 kg/ha. While this was an improvement, albeit marginal, over the best consumption level of 15.4 kg/ha attained in 1973-74, it has fallen far short of our earlier estimate of 17.5 kg/ha for 1975-76. This was despite the favourable monsoon over most part of the country, easing of power supply in Northern parts of India for irrigating the Rabi crops and some reduction in the prices of fertilisers to the farmers. The most important factor inhibiting fertiliser offtake in 1975-76 was the high fertiliser prices. In spite of small reductions effected during 1975 and early 1976, the farmers' output/input cost ratio continued to be unfavourable as compared to the position prevalent upto 1973. Consequently, the farmers' first reaction was to cut back on the use of fertilisers, particularly of phosphate and potash since their effect on crops was not as perceptible as that of nitrogen.

The situation is likely to improve in 1976-77 when the substantial reduction in fertiliser prices effected in March 1976 would, it is hoped, get reflected in increased offtake. It is estimated that the consumption of plant nutrients would go up to 17.9 kg/ha in 1976-77 (Table 43).

#### *Zonal disparities*

The disparity in the consumption of plant nutrients per hectare of agricultural land between different zones and States within the zone continued.

Zonewise consumption figures followed a trend more or less similar to that of 1974-75 (Table 44). The highest consumption was in the North Zone followed by South, and West. However, in respect of Central and East Zones the position has reversed with the East Zone being marginally better in respect of plant nutrients consumption than the Central Zone. The North Zone is way ahead of the other three zones with the consumption level in the Central and East Zones being only about 1/3rd of consumption level obtained in North Zone. Compared to last year the level

of consumption has increased in all the zones, except the West Zone. In West Zone, however, plant nutrients consumption has dropped from 14.99 to 13.77 contributed mainly by lower offtake of phosphate and potash.

#### *North Zone*

The Zone comprising the States of Punjab, Haryana, Himachal Pradesh and Jammu & Kashmir leads all other zones and within it Punjab rank first. The consumption level in Haryana, inspite of the impressive growth witnessed during the last few years, still remains only one-third of the obtained in Punjab.

Relatively large areas with assured irrigation facilities, higher acreage under HYV and multiple cropping are the contributory factors for higher consumption of fertilisers in this zone.

This zone leads in respect of consumption of both nitrogen (24.77 kg/ha) and phosphate (4.84 kg/ha) but with regard to potash consumption it occupies the fourth place (1.00 kg/ha). While phosphate consumption has improved vis-a-vis other zones a disquieting feature has been the very poor consumption level of potash in the year under review.

Consumption of NPK during 1975-76 dropped by about 18 per cent in Himachal Pradesh whereas in all other States in this zone there was an increase ranging from 22 to 28 per cent.

In Punjab during 1975-76, there was a substantial increase in N (8.37 kg/ha) and phosphate (2.09 kg/ha) consumption while potash consumption came down by 0.7 kg/ha. The weather this year was favourable for the use of fertilisers during the Kharif season and during the Rabi season adequate and timely supply of electricity and diesel as well as assured irrigation facilities from canal served as encouragement to farmers to invest on fertilisers. The reason for phosphate offtake not picking up to the desired extent was the absence of any incentive scheme like subsidy operating in the neighbouring State of Haryana. Frequent reports appearing in the press regarding impending subsidies and price reductions also did not help matters. As regards potash, the decrease in consumption was mainly because of the State Government's directive that potash should be applied only on the basis of soil tests. Not many farmers came forward to have their soils analysed.

In Haryana also favourable monsoon during the Kharif season helped particularly the entire rice growing region of the State viz. Sonapat, Karnal, Kurukshetra, Ambala and Panipat. The prospects of Rabi crops during 1975-76 also remained good because of favourable soil moisture conditions for Rabi sowing operations. The State Department of Agriculture also made vigorous efforts to promote the balanced use of fertilisers, particularly for use of phosphate for gram and to ensure timely supply of inputs. These efforts coupled with the introduction of 25 per cent subsidy on phosphatic fertilisers made available to farmers through cooperatives in October helped in increasing fertiliser offtake. As regards potash, consumption level has remained static because of situation as obtaining in Punjab.

#### *South Zone*

South zone which comprises the States of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and union territory of Pondicherry continues to rank second amongst the zones. Effective promotional work carried out by the



industry over a long period, general progressive nature of the farmers and cultivation of HYV rice explain the relatively high level of fertiliser consumption.

This zone leads all other zones in respect of potash consumption, while in respect of nitrogen and phosphate it occupies the second place next only to North Zone. Pondicherry with 85.96 kg/ha continued to rank first in NPK consumption not only in this zone but also on All-India basis.

Consumption of nitrogen went up in all the States in this zone over the previous year, though in Karnataka and Kerala, the increases were only marginal. Phosphate as also potash consumption registered marginal fall as compared to the previous year.

In Tamil Nadu, the monsoon conditions turned to be favourable during late Kharif 1975 and seasonal conditions continued to be favourable during Rabi 1975-76. The fertiliser supply position both from pool and non-pool sources was comfortable with the Government offering pool fertilisers to private firms. These factors helped in increasing nitrogen offtake. As regards phosphate, drought during early Kharif discouraged farmers from applying phosphate. However, the more favourable weather conditions which obtained in the Rabi season of 1975-76 and reduction in prices of phosphatic fertilisers contributed to some extent in the increased offtake of phosphates. However, the effect of price reduction on  $P_2O_5$  consumption was rather feeble on the 1975-76 Rabi crop. In respect of potash also, the consumption level registered a fall in Kharif 1975 as compared to Kharif 1974, but a marginal increasing trend was set during Rabi 1975-76.

Consumption level of all the three nutrients went up in Andhra Pradesh. While potash consumption registered a marginal increase, that of nitrogen went up by nearly 40 per cent and of phosphate by 24 per cent as compared to the previous year. The increase in nitrogen consumption could be attributed to the normal rainfall received throughout the State and measures undertaken by the Government to relax the distribution system. In respect of phosphate and potash, high prices have come in the way of their greater use. Also, official recommendations for potash are confined only to High Yielding Varieties of crops and to such of those areas where the soil test values warrant application of potash.

There was only a marginal increase in nitrogen consumption in Karnataka. The failure of the pre-blossom rains (April-May) prevented many planters from applying nitrogen fertilisers. Further, high prices of fertilisers compelled planters to reduce the fertiliser dosage by nearly 35 to 40 per cent. However, timely rains received particularly for paddy helped in making up the short fall during Rabi 1975-76. The consumption of both phosphate and potash declined significantly as compared to that in 1974-75. One of the reasons for this decline was the change in cropping pattern in Thungabhadra project area where groundnut, a high phosphate and potash consuming crop, was replaced by pulses as the second crop.

In Kerala nitrogen consumption went up only marginally. Continuous heavy rains during the Kharif season made it physically impossible for application of fertilisers. The declining trend in the consumption of phosphate and potash continued in 1975-76. The absence of parity in the unit price of phosphate with that of nitrogen, high prices of complex fertilisers available in the market and the non-remunerative prices for coconut and tapioca all collectively reduced consumption of both phosphate and potash.

**West Zone**

There was significant increase in nitrogen consumption in all the States of the region viz., Maharashtra, Gujarat and Goa during 1975-76 over the preceding year. Except for Goa, phosphate and potash consumption levels fell in the States of this zone.

In Gujarat after a substantial drop during 1974-75, there has been an improvement in nitrogen consumption during 1975-76. Good rainfall after two successive drought years, increased area under food grains, higher acreage of high yielding varieties and removal of physical controls contributed to increased consumption of nitrogen. In respect of phosphate and potash the hike in prices appear to have adversely affected their offtake.

Nitrogen consumption level in Maharashtra went up by 0.72 kg/ha as compared to the previous year. The State Governments' efforts in making available inputs on time and the launching of pilot projects appear to have had a favourable impact on the offtake of nitrogen. As mentioned previously, the consumption of phosphate and potash fell in 1975-76 as compared to 1974-75, the reduction being 1.19 kg/ha in respect of phosphate and 1.5 kg/ha in respect of potash. The relatively high prices of phosphate and potash seem to have dissuaded the farmers from applying these nutrients. With the substantial reduction in prices effected recently and the pilot projects on paddy and jowar to be launched by the Government of Maharashtra in Kharif 1976, consumption of both phosphate and potash can be expected to go up substantially.

**Central Zone**

The Central zone comprising the States of Madhya Pradesh, Uttar Pradesh, Rajasthan and the union territory of Delhi ranked fifth in consumption of plant nutrients as compared to the fourth position in the previous year. This was despite the substantial increase in nitrogen consumption and marginal increases in phosphate and potash consumption levels.

In Uttar Pradesh, inspite of increasing the area under irrigation and higher acreage under high yielding varieties, there was a fall in nitrogen consumption during Kharif 1975 as compared to the previous Kharif. Statements appearing in the press regarding imminent price reductions, and lack of adequate credit facilities for fertiliser distribution with the Apex institutions seemed to have had an adverse effect on nitrogen consumption. The offtake of nitrogen during Rabi 1975-76, however registered a substantial increase over the previous season because of favourable weather conditions and additional area being brought under irrigation.

In Rajasthan, while nitrogen and phosphate consumption went up by 33 and 35 per cent respectively, that of potash remained stationary. Favourable monsoon, availability of adequate fertiliser distribution credit with the cooperatives and the Departments' efforts to promote balanced use of fertilisers had favourable effect on fertiliser consumption in the State.

Nitrogen consumption in Madhya Pradesh registered an increase of 0.54 kg/ha during 1975-76 as compared to the previous year. Favourable weather conditions, removal of physical controls, concerted promotional efforts by the Government and Industry and higher acreage under HYV contributed to this increase. There was, however, a marginal fall in consumption of phosphate and potash mainly because of their high prices.

**East Zone**

The East Zone comprising the union Territories of Manipur, Tripura, Nagaland, Meghalaya and four States viz. Assam, Bihar, Orissa and West Bengal recorded the second lowest NPK consumption per hectare (10.24 kg/ha) being only slightly better than the Central Zone. During the year under review, nitrogen consumption in the Zone went up by 0.8 kg/ha and that of  $P_2O_5$  marginally while potash consumption fell by 0.22 kg/ha.

Assam with a consumption of 1.51 kg/ha continued to occupy the last position in respect of fertiliser consumption per hectare not only in this zone but also in the country as a whole. Occurrence of floods during Kharif season, high fertiliser prices, low purchasing power of the farmer, lack of organised promotional activities are the basic causes for the low fertiliser offtake in the State. Another contributory factor has been the non-availability of production credit to farmers as bulk of the credit is being earmarked for the tea gardens.

Bihar registered the highest growth rate in respect of nitrogen consumption per hectare in the Zone (26%). Consumption of phosphate and potash, however, declined during 1975-76 as compared to the previous year, mainly because farmers were reluctant to apply these nutrients with their high prices. The withdrawal of the system of tagging sale of nitrogen with that of phosphate also appears to have had an adverse effect on phosphate consumptions. Large scale campaign for Rabi production undertaken by the State Government helped in increasing nitrogen consumption, more than offsetting the poor consumption during the Kharif 1975 season.

Despite the promotional efforts undertaken by the Government and the industry such as the 'Minikit' Programme for small and marginal farmers and the Indo-German Fertiliser Project, consumption of nitrogen and potash remained stationary in West Bengal. Phosphate consumption, however, went up from 2.54 kg in 1974-75 to 3.05 kg/ha in 1975-76. Fertiliser consumption in the State did not go up significantly apparently because of anticipation with regard to reduction in price of fertilisers.

In Orissa, level of nitrogen consumption went up marginally while that of phosphate and potash registered a fall as compared to the previous year. High prices of phosphate and potash seemed to have come in the way of their greater use in Orissa.

**B. RATIO OF PLANT NUTRIENTS CONSUMPTION**

Data on consumption ratio of major plant nutrients (N: P: K) for the last five years (1971-72 to 1975-76) and estimates for 1976-77 are presented in Table 45.

The data depicts a rather disquieting trend in the consumption ratios of different nutrients. During the years 1971-72, 1972-73 and 1973-74 marginal improvements were observed in the N: P: K consumption ratios over 1970-71. However, in the year under review (1975-76) the ratio attained was 7.7 : 1.7 : 1, which is far worse than the consumption ratios attained in any of the previous eight years.

The efforts of the Government and the fertiliser industry to promote the balanced use of fertilisers, compulsory stocking of phosphatic and potassic fertilisers along with nitrogen by the dealers, increasing domestic production of complex fertilisers and limited availability of straight

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The efforts of the Government and the fertiliser industry to promote the balanced use of fertilisers, compulsory stocking of phosphatic and potassic fertilisers along with nitrogen by the dealers, increasing domestic production of complex fertilisers and limited availability of straight

nitrogenous fertilisers were the main contributory factors for the improvement in consumption ratios upto 1974-75. However, the greater availability of straight nitrogenous fertilisers and with prices continuing to remain high and was particularly of P & K the improvement in consumption ratios witnessed during the last three years received a severe set back. With limited funds to invest on fertiliser nutrients, the farmers' first reaction was to use nitrogen. Phosphate and potash were applied only with the residual funds, if any. The relatively sharper increase in the price of phosphates accentuated the problem. Further, Agricultural Universities in several States started recommending application of potash only if the soil test values showed low potash content. This is in contrast to the earlier situation when potash was included in a blanket recommendation. Present indications are that in 1976-77 the nutrient consumption ratio will remain the same as at present (Table 45).

The adverse effect that such continued imbalanced nutrient application would have on the maintenance of soil fertility and increasing crop production are obvious. Each year more and more nutrients are being removed from Indian soils. Cultivation of High Yielding Varieties over larger areas and higher cropping intensity through multiple cropping accentuate the problem. Realising the depletion in soil fertility due to these developments a realistic ratio of 4 : 2 : 1 of NPK was envisaged by the end of the Fourth Plan period. Unfortunately, present indications are that even by 1976-77 the consumption ratio would be only 7.7 : 1.7 : 1. The leeway we have to make in balancing our nutrient application to soils is, therefore, tremendous. The recent sharp reduction in prices of phosphate and potash will prevent further deterioration that may have taken place with the anticipated increase in the consumption of nitrogen.

The ratios of N : P : K consumption vary widely from zone to zone and State to State (Table 46). These depend to a considerable extent on the cropping pattern and the fertility status of the soil. These ratios are only indicative of an overall comparison of the disparity in NPK consumption.

From the point of balanced fertiliser use of N : P : K, West Zone continues to rank first with a ratio of 4.56 : 1.21 : 1 though here again in keeping with the trends in other parts of the country there was greater imbalance in nutrient ratios as compared to the previous year. South came next (5.65 : 1.40 : 1) followed by East (7.12 : 1.38 : 1), Central (12.35 : 2.35 : 1) and North (24.79 : 4.86 : 1). In the previous year also West Zone ranked first followed by South, Central, East and North.

Compared to the previous year (1974-75) the nutrient ratios in all the States have widened for reasons mentioned previously. The imbalance in consumption is particularly acute in Haryana (43 : 4 : 1), Rajasthan (32 : 6 : 1), Jammu and Kashmir (18 : 2 : 1), Punjab (24.4 : 5.7 : 1), Andhra Pradesh (12.84 : 2.68 : 1), Bihar (14.13 : 1.75 : 1) and Delhi (36 : 8 : 1). These are the areas where immediate corrective action needs to be taken.

# **TABLES**

**(on April-March Basis)**

T-1

Table 1

Percentage increase in production, distribution and consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O  
(1971-72 to 1976-77)

Nutrient	Percentage increase over previous year					1976-77*
	1971-72	1972-73	1973-74	1974-75	1975-76	
<b>Production<sup>1</sup></b>						
Nitrogen	13.2	11.5	(-) 0.5	13.0	27.4	29.1
Phosphate	27.2	13.8	(-) 1.5	1.8	(-) 3.6	33.2
(N & P <sub>2</sub> O <sub>5</sub> )	16.2	11.8	(-) 0.7	10.3	20.8	31.3
<b>Distribution<sup>2</sup></b>						
Nitrogen	26.2	5.4	(-) 7.4	14.4	3.4	25.7
Phosphate	55.2	12.8	1.3	(-) 8.1	(-) 24.9	47.1
Potash	29.6	21.8	22.1	(-) 16.7	(-) 28.5	41.0
(N & P <sub>2</sub> O <sub>5</sub> & K <sub>2</sub> O)	31.4	8.6	(-) 2.1	4.9	(-) 5.7	30.3
<b>Consumption<sup>3</sup></b>						
Nitrogen	18.4	1.1	2.8	(-) 3.5	21.6	18.4
Phosphate	22.1	4.1	10.7	(-) 27.4	(-) 1.1	28.5
Potash	33.3	9.2	8.4	(-) 6.7	(-) 17.3	34.9
(N & P <sub>2</sub> O <sub>5</sub> & K <sub>2</sub> O)	20.8	2.6	5.2	(-) 9.3	12.4	20.1

Note: Requirements of phosphate do not include bonemeal or rock phosphate used directly.

\*Year under estimation.

<sup>1</sup>For details, see Table 8.

<sup>2</sup>For details, see Table 16, 17 and 18.

<sup>3</sup>For regionwise and seasonwise details, see Table 36, 37 and 38.





Table 3

*Chronology of fertiliser manufacture*

Approx. year of first manufacture	Fertiliser material manufactured	Factory which first manufactured	Total no. of units operating (as on 1.4.1976)
(i) 1906	1. Single superphosphate	E.I.D.-Parry, Ranipet, (Tamil Nadu)	30
(ii)	2. Ammonium sulphate		11
1933	(a) As a by-product of steel industry	(a) TISCO, Jamshedpur (Bihar)	6
1941	(b) Using sulphuric acid	(b) Mysore Chemicals Fertilizers, Belagula (Karnataka)	1*
1947	(c) Using gypsum as a raw material	(c) FACT, Alwaye, (Kerala)	4
(iii) 1959	3. Ammonium sulphate nitrate	FCI, Sindri (Bihar)	1
	4. Urea	FCI, Sindri (Bihar)	16
	5. Ammonium chloride	FACT, Alwaye (Kerala)	2**
(iv) 1960	6. Ammonium phosphate sulphate	FACT, Alwaye (Kerala)	3
(v) 1961	7. Calcium ammonium nitrate	FCI, Nangal (Punjab)	2
(vi) 1965	8. Nitrophosphate	FCI, Trombay (Maharashtra)	1
(vii) 1967	9. Diammonium phosphate	GSFC, Baroda (Gujarat)	1
(viii) 1968	10. Triple superphosphate	DMCC, Ambarnath (Maharashtra)	1
	11. Urea ammonium phosphate	CFL, Vizag. (Andhra Pradesh)	4
	12. NPK complex fertilisers	FCI, Trombay (Maharashtra)	5
	13. APSN	FCI, Trombay (Maharashtra)	1

\* Closed in 1965

\*\* FACT produces technical grade.



Table 5

Factorywise, productwise licensed capacity of fertilisers existing as on April 1, 1976

(tonnes)

Region/State/Factory	Ammonium sulphate (20.6% N)	Ammonium sulphate nitrate (26% N)	Calcium ammonium nitrate (25% N)	Urea (46% N)	Ammonium chloride (25% N)	Ammo. phos. sulphate 16-20-0 & 20-20-0 <sup>φ</sup>	Diammonium phosphate 18-46-0	Nitrophosphate 20-20-0	Urea ammonium phosphate 28-28-0 & NPK Com. 17-17-17 & 14-28-14	NPK Com. 10-26-26 & 12-32-16 & 14-36-12	Single super-phosphate (18% P <sub>2</sub> O <sub>5</sub> )	Triple super-phosphate 45% P <sub>2</sub> O <sub>5</sub>	Total	
													N	P <sub>2</sub> O <sub>5</sub>
<b>South</b>	<b>236,610</b>	—	—	<b>1,546,000</b>	<b>24,750</b>	<b>171,500<sup>φ</sup></b> <b>51,480</b>	—	—	<b>360,000<sup>§</sup></b> <b>251,000<sup>**</sup></b> <b>96,500.<sup>  </sup></b>	—	<b>526,610</b>	—	<b>985,000</b>	<b>319,830</b>
<i>Andhra Pradesh</i>	—	—	—	—	—	—	—	—	(251,000) <sup>**</sup>	—	(166,230)	—	(83,000)	(130,590)
Coromandel Fertilisers Ltd., Visakhapatnam	—	—	—	—	—	—	—	—	(96,500) <sup>  </sup>	—	—	—	83,000	104,000
Hyderabad Chemicals & Fertilisers Ltd, Maula Ali	—	—	—	—	—	—	—	—	—	—	41,900	—	—	6,700
Andhra Fertilisers Ltd, Tadepalli	—	—	—	—	—	—	—	—	—	—	40,000	—	—	6,400
Andhra Sugars Ltd., Tanuku	—	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
Krishna Industrial Corp., Nidadavole	—	—	—	—	—	—	—	—	—	—	50,800	—	—	8,130
<i>Kerala</i>	(198,000)	—	—	(330,000)	(24,750)*	(171,500) <sup>φ</sup>	—	—	—	—	(44,700)	—	(234,000)	(43,350)
The Fertilisers & Chemicals Travancore Ltd., Alwaye	198,000	—	—	—	24,750*	171,500	—	—	—	—	44,700	—	82,000	43,350
The Fertilisers & Chemicals Travancore Ltd., Cochin Unit, Ambelamedu	—	—	—	330,000	—	—	—	—	—	—	—	—	152,000	—
<i>Karnataka</i>	—	—	—	(340,000)	—	—	—	—	—	—	(74,170)	—	(160,000)	(11,860)
Mangalore Chemicals & Fertilizers Ltd., Mangalore	—	—	—	340,000	—	—	—	—	—	—	—	—	160,000	—
Mysore Chemicals & Fertilisers Ltd., Belagula	—	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
Chamundi Chemicals & Fertilisers Ltd., Munirabad	—	—	—	—	—	—	—	—	—	—	40,640	—	—	6,500
<i>Tamil Nadu</i>	(38,610)	—	—	(876,000)	—	(51,480)	—	—	(360,000) <sup>§</sup>	—	(241,510)	—	(508,000)	(134,030)
Neyveli Lignite Corpn. Ltd., Neyveli	—	—	—	154,000	—	—	—	—	—	—	—	—	70,000	—
E. I. D.-Parry Ltd., Ennore & Ranipet	38,610	—	—	—	—	51,480	—	—	—	—	40,000	—	16,000	16,700
Kothari (Madras) Ltd., Ennore	—	—	—	—	—	—	—	—	—	—	44,700	—	—	7,150
Coimbatore Pioneer Fertilisers Ltd., Coimbatore	—	—	—	—	—	—	—	—	—	—	40,640	—	—	6,500
Premier Fertilisers Ltd., Cuddalore	—	—	—	—	—	—	—	—	—	—	40,640	—	—	6,500
Shaw Wallace & Co. Ltd., Avadi	—	—	—	—	—	—	—	—	—	—	75,530	—	—	12,180
Madras Fertilizers Ltd., Manali	—	—	—	210,000	—	—	—	—	360,000 <sup>§</sup>	—	—	—	164,000	85,000
Southern Petrochemical Industries Corporation Ltd., Tuticorin	—	—	—	512,000	—	—	28,000 <sup>+</sup>	—	32,000 <sup>+φ</sup>	128,000 <sup>+</sup>	—	—	258,000	51,000 <sup>+</sup>
<b>West</b>	<b>148,000</b>	—	—	<b>1,195,000</b>	—	—	<b>108,000</b>	<b>180,000</b>	<b>10,000<sup>**</sup></b>	<b>275,500</b>	<b>350,230</b>	<b>27,000</b>	<b>682,000</b>	<b>323,190</b>
<i>Gujarat</i>	(148,000)	—	—	(755,000)	—	—	(108,000)	—	—	(375,500)	(99,530)	—	(431,000)	(192,920)
Gujarat State Fertilizers Ltd., Baroda	148,000	—	—	364,000	—	—	108,000	—	—	—	—	—	216,000	50,000

(Continued)

Table 5

Factorywise, productwise licensed capacity of fertilisers existing as on April 1, 1976 (Continued)

(tonnes)

Region/State/Factory	Ammonium sulphate (20.6% N)	Ammonium sulphate nitrate (26% N)	Calcium ammonium nitrate (25% N)	Urea (46% N)	Ammonium chloride (25% N)	Ammo. phos. sulphate 16-20-0 & 20-20-0	Diammonium phosphate 18-46-0	Nitrophosphate 20-20-0	Urea ammonium phosphate 28-28-0 & NPK Com. 17-17-17 & 14-28-14	NPK Com. 10-26-26 & 12-32-16 & 14-36-12	Single super-phosphate (16% P <sub>2</sub> O <sub>5</sub> )	Triple super-phosphate 45% P <sub>2</sub> O <sub>5</sub>	Total	
													N	P <sub>2</sub> O <sub>5</sub>
<b>Adarsh Chemicals &amp; Fertilisers Ltd., Udhna</b>	--	--	--	--	--	--	--	--	--	--	33,530	--	--	5,360
<b>Paushak Ltd., Baroda</b>	--	--	--	--	--	--	--	--	--	--	23,470	--	--	3,760
<b>Anil Starch Product Ltd., Bhavanagar</b>	--	--	--	--	--	--	--	--	--	--	33,530	--	--	5,360
<b>Anish Chemicals Ltd., Ahmedabad</b>	--	--	--	--	--	--	--	--	--	--	9,000	--	--	1,440
<b>Indian Farmers Fertiliser Cooperative Ltd., Kalol and Kandla</b>	--	--	--	392,000	--	--	--	--	--	375,500	--	--	215,000	127,000
<b>Maharashtra</b>	--	--	--	(99,000)	--	--	--	(180,000)	--	--	(250,700)	(27,000)	(81,000)	(88,270)
<b>The Fertilizer Corporation of India Ltd., Trombay</b>	--	--	--	99,000	--	--	--	180,000	--	--	--	--	81,000	36,000
<b>Bharat Fertilizer Ind. Ltd., Bombay</b>	--	--	--	--	--	--	--	--	--	--	22,500	--	--	3,600
<b>Dharamsi Morarji Chemical Co. Ltd., Ambernath</b>	--	--	--	--	--	--	--	--	--	--	146,320	27,000	--	35,570
<b>Western Chemical Industries Ltd., Bombay</b>	--	--	--	--	--	--	--	--	--	--	3,350	--	--	540
<b>West India Chemical Ltd., Loni-Kalbhori</b>	--	--	--	--	--	--	--	--	--	--	33,530	--	--	5,360
<b>Maharashtra Agro-Industries Dev. Corp., Panvel</b>	--	--	--	--	--	--	--	--	--	--	45,000	--	--	7,200
<b>Goa</b>	--	--	--	(340,000)	--	--	--	--	(150,000)**	--	--	--	(170,000)	(42,000)
<b>Zuari Agro Chemicals Ltd., Goa</b>	--	--	--	340,000	--	--	--	--	150,000**	--	--	--	170,000	42,000
<b>Central</b>	32,600	--	--	1,064,920	40,000	--	--	--	--	--	362,960	--	499,720	58,070
<b>Madhya Pradesh</b>	(32,600)	--	--	--	--	--	--	--	--	--	(95,000)	--	(6,720)	(15,200)
<b>Hindustan Steel Ltd., Bhilai</b>	32,600	--	--	--	--	--	--	--	--	--	--	--	6,720	--
<b>Dharamsi Morarji Chemical Co. Ltd., Kumbhari</b>	--	--	--	--	--	--	--	--	--	--	95,000	--	--	15,200
<b>Rajasthan</b>	--	--	--	(330,000)	--	--	--	--	--	--	(75,000)	--	(152,000)	(12,000)
<b>Hindustan Zinc Ltd., Debari</b>	--	--	--	--	--	--	--	--	--	--	75,000	--	--	12,000
<b>Shriram Chemical Industries, Kota</b>	--	--	--	330,000	--	--	--	--	--	--	--	--	152,000	--
<b>Uttar Pradesh</b>	--	--	--	(734,920)	(40,000)	--	--	--	--	--	(60,960)	--	(341,000)	(9,750)
<b>The Fertilizer Corp. of India Ltd., Gorakhpur</b>	--	--	--	284,920	--	--	--	--	--	--	--	--	131,000	--
<b>New Central Jute Mills Co. Ltd., Varanasi</b>	--	--	--	--	40,000	--	--	--	--	--	--	--	10,000	--
<b>Ralli Chemicals Ltd., Magarwara</b>	--	--	--	--	--	--	--	--	--	--	60,960	--	--	9,750
<b>Indian Explosives Ltd., Kanpur</b>	--	--	--	450,000	--	--	--	--	--	--	--	--	200,000	--

(Continued)

Table 5

Factorywise, productwise licensed capacity of fertilisers existing as on April 1, 1976 (Concluded)

(tonnes)

Region/State/Factory	Ammonium sulphate (20.6% N)	Ammonium sulphate nitrate (26% N)	Calcium ammonium nitrate (25% N)	Urea (46% N)	Ammonium chloride (25% N)	Ammo. phos. sulphate 16-20-0 & 20-20-0 <sup>†</sup>	Diammonium phosphate 18-46-0	Nitrophosphate 20-20-0	Urea ammonium phosphate 28-28-0 & NPK Com. 17-17-17 & 14-28-14	NPK Com. 10-26-26 & 12-32-18 & 14-36-12	Single super-phosphate (16% P <sub>2</sub> O <sub>5</sub> )	Triple super-phosphate 45% P <sub>2</sub> O <sub>5</sub>	Total		
													N	P <sub>2</sub> O <sub>5</sub>	
<b>Delhi</b>	—	—	—	—	—	—	—	—	—	—	(132,000)	—	—	—	(21,120)
D.C.M. Chemical Works, Delhi	—	—	—	—	—	—	—	—	—	—	132,000	—	—	—	21,120
<b>North</b>	—	—	320,000	—	—	—	—	—	—	—	—	—	—	80,000	—
<b>Punjab</b>	—	—	(320,000)	—	—	—	—	—	—	—	—	—	—	(80,000)	—
The Fertilizer Corpn. of India Ltd., Nangal	—	—	320,000	—	—	—	—	—	—	—	—	—	—	80,000	—
<b>East</b>	528,700	50,000	480,000	403,000	—	—	—	—	—	—	175,360	—	—	429,360	35,660
<b>Assam</b>	(100,000)	—	—	(55,000)	—	—	—	—	—	—	(33,530)	—	—	(45,000)	(5,360)
The Fertilizer Corpn. of India Ltd., Namrup	100,000	—	—	55,000	—	—	—	—	—	—	—	—	—	45,000	—
Chemical Unit of Associated Ind. (Assam) Ltd., Chandrapur	—	—	—	—	—	—	—	—	—	—	33,530	—	—	—	5,360
<b>Bihar</b>	(356,300)	(50,000)	—	(18,000)	—	—	—	—	—	—	(23,470)	—	—	(97,480)	(3,760)
The Fertilizer Corpn. of India Ltd., Sindri	320,000	50,000	—	18,000	—	—	—	—	—	—	—	—	—	90,000	—
Tata Iron & Steel Co. Ltd., Jamshedpur	23,100	—	—	—	—	—	—	—	—	—	—	—	—	4,760	—
Bihar State Superphosphate Factory, Sindri	—	—	—	—	—	—	—	—	—	—	23,470	—	—	—	3,760
Bokaro Steel Ltd., Bokaro	13,200	—	—	—	—	—	—	—	—	—	—	—	—	2,720	—
<b>Orissa</b>	(28,200)	—	(480,000)	—	—	—	—	—	—	—	(45,000) <sup>‡</sup>	—	—	(125,770)	(7,600)
Hindustan Steel Ltd., Rourkela	28,200	—	480,000	—	—	—	—	—	—	—	—	—	—	125,700	—
Orissa Ferts. & Chems. Ltd., Rourkela	—	—	—	—	—	—	—	—	—	—	45,000 <sup>‡</sup>	—	—	—	7,600
<b>West Bengal</b>	(44,200)	—	—	(330,000)	—	—	—	—	—	—	(118,360)	—	—	(161,110)	(18,940)
Hindustan Steel Ltd., Durgapur	21,200	—	—	—	—	—	—	—	—	—	—	—	—	4,370	—
Indian Iron & Steel Co. Ltd., Burnpur-Kulti	23,000	—	—	—	—	—	—	—	—	—	—	—	—	4,740	—
Jayshree Chemical & Fertiliser Ltd., Khardah	—	—	—	—	—	—	—	—	—	—	57,360	—	—	—	9,180
Phosphates Co. Ltd., Rishra	—	—	—	—	—	—	—	—	—	—	61,000	—	—	—	9,760
The Fertilizer Corpn. of India Ltd., Durgapur	—	—	—	330,000	—	—	—	—	—	—	—	—	—	152,000	—
<b>All-India</b>	945,910	50,000	800,000	4,208,920	64,750	171,500 <sup>‡</sup>	108,000	180,000	401,000 <sup>**</sup>	375,500	1,415,160	27,000	—	2,676,080	736,750
						51,480			96,500 <sup>(a)</sup>		(45,000) <sup>‡</sup>				
									360,000 <sup>§</sup>						

\* This material is not used for agricultural purposes.

\*\* Urea ammonium phosphate.

† Of grade 20-20-0.

‡ Of grade 15-15-15.

+ Production of NP and NPK complexes is expected in December 1976; therefore, excluded from the totals—State and all-India.

‡ 'Pelofos' of grade 18% P<sub>2</sub>O<sub>5</sub>.

\$ NPK complex fertiliser of grades (14-28-14) and (17-17-17).

@ NPK complex fertiliser of grade (14-35-14).

Table 6

## Forms in which fertilisers are produced (N)

Fertiliser	Grade	Production ('000 tonnes)						Percentage of increase over previous year						
		1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*	1972-73	1973-74	1974-75	1975-76	1976-77*	1971-72 to 1975-76	
Ammonium sulphate	(20.6% N)	582 (12.7)	554 (10.1)	574 (11.2)	583 (10.1)	611 (8.5)	613 (16.5)	(-)5.5	3.6	1.6	4.6	0.5	4.8	
Ammonium sulphate nitrate	(26% N)	30 (0.8)	58 (1.4)	48 (1.1)	27 (0.6)	21 (0.4)	25 (0.3)	99.3	(-)17.3	(-)43.7	(-)22.2	19.0	(-)30.0	
Urea	(46% N)	1237 (60.1)	1413 (61.1)	1408 (61.8)	1734 (67.4)	2197 (66.9)	3115 (73.5)	14.0	(-) 0.1	23.2	26.7	41.8	77.6	
Calcium ammonium nitrate	(25% N)	412 (10.9)	412 (9.8)	431 (10.3)	406 (8.6)	618 (10.0)	580 (7.4)	-	4.6	(-) 5.8	52.2	(-) 6.1	50.0	
Ammonium chloride	(25% N)	18 (0.5)	14 (0.4)	14 (0.3)	10 (0.2)	15 (0.3)	16 (0.2)	22.2	-	(-)28.6	50.0	6.7	(-)16.7	
Ammonium phosphate sulphate	(16-20-0) (20-20-0) (18-9-0)	103 — —	94 3 —	104 20 —	120 24 —	113 30 7	100 25 25	(-)8.7 — —	10.6 566.7 —	15.4 20.0 —	(-) 5.8 25.0 —	(-)11.5 (-)116.7 257.1	9.7 — —	
Ammonium sulphate phosphate	(19.5-19.5-0)	—	—	—	—	20 (0.3)	18 (0.2)	—	—	—	—	(-)10.0	—	
Nitrophosphate	(15-15-15) (20-20-0)	204 <sup>1</sup> —	240 —	213 —	211 —	181 35	120 125	20.0 —	(-)11.3 —	(-) 0.9 —	(-)14.2 —	(-)33.7 257.1	(-)11.3 —	
Diammonium phosphate	(18-46-0)	50 (1.0)	69 (1.1)	60 (1.0)	67 (1.0)	53 (0.6)	50 (0.5)	38.0	(-)13.0	11.6	(-)20.9	(-) 5.7	6.0	
Urea ammonium phosphate	(28-28-0) (20-20-0)	195 36	175 17	172 —	137 —	181 —	197 —	110.3 152.8	(-) 1.7 —	(-)20.3 —	32.1 —	8.8 —	(-) 7.2 —	
PK complex fertilisers	(17-17-17) (18-27-3) (14-28-14) (14-35-14) (10-26-26) (12-32-16) (19-19-19) (24-24-0) (22-22-11)	55 5 13 3 — — — — 7	242 — 44 28 — — — — —	209 — 59 37 — — — — —	226 — 34 28 14 13 — 9	282 — — 12 2 72 15 94 3	294 — 15 50 101 122 20 60 —	40.0 — 28.0 33.0 — — — — —	(-)13.6 — 34.0 32.1 — — — — —	8.1 — (-)42.4 (-)24.3 — — — — —	24.8 — — — (-)57.1 (-)85.7 453.8 — —	4.3 — — — 316.7 4950.0 69.4 33.3 —	412.7 — — — — — — — (-)36.2 —	(-)57.1 — — — — — — — —
Total N		949 (100.0)	1055 (100.0)	1050 (100.0)	1186 (100.0)	1508 (100.0)	1950 (100.0)	11.5	(-) 0.5	13.0	27.1	29.3	58.9	

\* Estimated.

<sup>1</sup> Of different grades, break up of which is given in Table 12.

( ) Figure in bracket represents contribution of a particular fertiliser, to the total nutrient taken as 100 (vertical).

Table 7

Forms in which fertilisers are produced (P<sub>2</sub>O<sub>5</sub>)

Fertiliser	Grade	Production ('000 tonnes)						Percentage $\pm$ increase over previous year					
		1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*	1972-73	1973-74	1974-75	1975-76	1976-77*	1971-72 to 1976-76
Superphosphate	(16% w.s. P <sub>2</sub> O <sub>5</sub> )	773 (42.7)	789 (38.1)	773 (38.2)	819 (39.6)	461 (23.1)	690 (24.3)	2.1	(-)2.2	5.9	(-)43.8	49.7	(-)40.5
High grade super-phosphate		3 (0.2)	-- (-)	101 (0.6)	121 (0.4)	21 (0.1)	51 (0.2)	--	--	20.0	(-)83.3	150.0	(-)33.3
Triple super-phosphate	(45% w.s. P <sub>2</sub> O <sub>5</sub> )	8 (0.6)	5 (0.5)	3 (0.3)	3 (0.7)	2 (0.3)	90 (8.9)	(-)37.5	(-)40.0	--	(-)33.3	4400.0	(-)75.0
Ammonium phosphate sulphate	(16-20-0) (20-20-0) (18-9-0)	103 -- -- (7.2)	94 3 -- (5.8)	104 20 -- (7.7)	120 24 -- (8.7)	113 30 7 (8.6)	100 25 25 (6.0)	(-)8.7 -- --	10.6 566.7 --	15.4 20.0 --	(-)15.8 25.0 --	(-)11.5 (-)16.7 57.1	9.7 -- --
Ammonium sulphate phosphate	(19.5-19.5-0)	--	--	--	--	20 (1.2)	18 (0.8)	--	--	--	--	(-)10.0	--
Nitrophosphate	(15-15-15) (20-20-0)	2042 (13.7)	240 (10.9)	213 (9.8)	211 (9.6)	181 35 (10.7)	120 125 (9.5)	20.0 --	(-)11.3 --	(-)0.9 --	(-)14.2 --	(-)33.7 257.1	(-)11.3 --
Diammonium phosphate	(18-46-0)	50 (7.8)	69 (9.7)	60 (8.6)	67 (9.3)	53 (7.6)	50 (5.1)	38.0	(-)13.0	11.7	(-)20.9	(-)5.7	6.0
Urea ammonium phosphate	(28-28-0) (20-20-0)	195 36 (21.3)	175 17 (15.8)	172 -- (14.8)	137 -- (11.6)	181 -- (15.9)	197 -- (12.1)	(-)10.3 (-)52.8	(-)1.7 --	(-)20.3 --	32.1 --	8.8 --	(-)7.2 --
NPK complex fertilisers	(17-17-17) (18-27-3) (14-28-14) (14-35-14) (10-26-26) (12-32-16) (19-19-19) (24-24-0) (22-22-11)	55 5 13 3 -- -- -- -- 7 (5.9)	242 -- 44 28 -- -- -- -- -- (19.1)	209 -- 59 37 -- -- -- -- -- (20.0)	226 -- 34 28 14 13 -- -- 9 (20.1)	282 -- -- 12 2 72 15 94 3 (32.5)	294 -- 15 50 101 122 20 60 -- (33.1)	340.0 -- 228 833.0 -- -- -- -- -- --	(-)13.6 -- 34.0 32.1 -- -- -- -- -- --	8.1 -- (-)42.4 (-)24.3 -- -- -- -- -- --	24.8 -- -- (-)57.1 453.8 -- -- -- -- --	4.3 -- -- 316.7 4950.0 69.4 33.3 (-)36.2 -- (-)66.7	412.7 -- -- 300.0 -- -- -- -- -- -- (-)57.1
<b>Total P<sub>2</sub>O<sub>5</sub></b>		<b>290</b> (100.0)	<b>330</b> (100.0)	<b>325</b> (100.0)	<b>331</b> (100.0)	<b>320</b> (100.0)	<b>455</b> (100.0)	<b>13.8</b>	<b>(-)1.5</b>	<b>1.8</b>	<b>(-)3.3</b>	<b>42.2</b>	<b>1.03</b>

\* Estimated.

- (1) "Pelofos" (18% available P<sub>2</sub>O<sub>5</sub> containing 5% w.s. P<sub>2</sub>O<sub>5</sub>).  
(2) Of different grades, breakup of which is given in Table 12.

( ) Figure in bracket represents contribution of a particular fertiliser to the total nutrient taken as 100 (vertical).



Table 8

## Production of fertilisers in States (nitrogen and phosphates)

('000 tonnes)

Zone/State	Nitrogen (N) <sup>1</sup>						Phosphate (P <sub>2</sub> O <sub>5</sub> )					
	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>174</b>	<b>225</b>	<b>253</b>	<b>232</b>	<b>415</b>	<b>597</b>	<b>134</b>	<b>170</b>	<b>175</b>	<b>165</b>	<b>163</b>	<b>215</b>
Andhra Pradesh	65	59	54	47	48		74	71	72	60	57	
Kerala	36	29	50	75	110		15	14	22	22	22	
Karnataka	—	—	—	—	1		1	1	a	—	—	
Tamil Nadu	73	137	149	111	256		44	84	81	82	84	
<b>West</b>	<b>253</b>	<b>264</b>	<b>282</b>	<b>376</b>	<b>438</b>	<b>525</b>	<b>104</b>	<b>104</b>	<b>100</b>	<b>110</b>	<b>127</b>	<b>165</b>
Gujarat	184	203	161	183	257		39	42	38	51	68	
Maharashtra	69	61	56	58	69		65	62	62	59	51	
Goa	—	—	65	135	112		—	—	—	a	8	
<b>Central</b>	<b>321</b>	<b>263</b>	<b>298</b>	<b>360</b>	<b>363</b>	<b>406</b>	<b>40</b>	<b>39</b>	<b>33</b>	<b>38</b>	<b>21</b>	<b>55</b>
Madhya Pradesh	5	6	5	6	6		14	11	10	14	5	
Rajasthan	107	127	110	86	108		8	8	4	7	3	
Uttar Pradesh	209	230	183	268	249		5	5	5	6	4	
Delhi	—	—	—	—	—		13	15	14	12	9	—
<b>North</b>	<b>57</b>	<b>54</b>	<b>62</b>	<b>40</b>	<b>77</b>	<b>70</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
Punjab	57	54	62	40	77		—	—	—	—	—	—
<b>East</b>	<b>141</b>	<b>148</b>	<b>155</b>	<b>178</b>	<b>215</b>	<b>353</b>	<b>12</b>	<b>17</b>	<b>17</b>	<b>18</b>	<b>9</b>	<b>20</b>
Assam	30	34	36	40	44		1	—	—	a	1	
Bihar	56	59	61	56	51		2	2	1	2	a	
Orissa	50	51	48	64	80		—	—	2	2	a	
West Bengal	5	4	10	18	40		9	15	14	15	8	
<b>All India</b>	<b>949</b>	<b>1055</b>	<b>1050</b>	<b>1186</b>	<b>1,508</b>	<b>1,950</b>	<b>290</b>	<b>330</b>	<b>325</b>	<b>331</b>	<b>320</b>	<b>455</b>

\* Estimated.

a Less than 500 tonnes.

<sup>1</sup> Excludes production of industrial nitrogen and ammonium chloride not meant for agricultural purposes.

Table 9

## Production of nitrogenous fertilisers

('000 tonnes)

Fertiliser	Zone/State	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977*
Ammonium sulphate (20.6%N)	<b>South</b>	<b>151</b>	<b>117</b>	<b>122</b>	<b>102</b>	<b>137</b>	<b>130</b>
	Kerala	131	96	104	93	126	
	Tamil Nadu	20	21	18	9	11	
	<b>West</b>	<b>110</b>	<b>126</b>	<b>126</b>	<b>133</b>	<b>111</b>	<b>120</b>
	Gujarat	110	126	126	133	111	120
	<b>Central</b>	<b>23</b>	<b>28</b>	<b>26</b>	<b>29</b>	<b>31</b>	<b>30</b>
	Madhya Pradesh	23	28	26	29	31	30
	<b>North</b>	—	—	—	—	—	—
	<b>East</b>	<b>298</b>	<b>271</b>	<b>300</b>	<b>320</b>	<b>332</b>	<b>333</b>
	Assam	55	60	64	69	94	
	Bihar	209	188	208	221	204	
	Orissa	7	11	11	12	14	
	West Bengal	27	20	17	18	20	
	<b>All India</b>	<b>582</b>	<b>550</b>	<b>574</b>	<b>584</b>	<b>611</b>	<b>613</b>
Ammonium sulphate nitrate (26% N)	<b>East</b>	<b>30</b>	<b>58</b>	<b>48</b>	<b>27</b>	<b>21</b>	<b>25</b>
	Bihar	30	58	48	27	21	
	<b>All India</b>	<b>30</b>	<b>58</b>	<b>48</b>	<b>27</b>	<b>21</b>	<b>25</b>
Urea (46% N)	<b>South</b>	<b>113</b>	<b>173</b>	<b>241</b>	<b>221</b>	<b>556</b>	<b>931</b>
	Andhra Pradesh	2	5	2	10	2	
	Karnataka	—	—	—	—	2	
	Kerala	—	—	32	86	147	
	Tamil Nadu	111	168	207	125	405	
	<b>West</b>	<b>393</b>	<b>411</b>	<b>465</b>	<b>656</b>	<b>738</b>	<b>882</b>
	Gujarat	332	357	270	304	437	
	Maharashtra	61	54	53	58	76	
	Goa	—	—	142	294	225	
	<b>Central</b>	<b>678</b>	<b>771</b>	<b>628</b>	<b>763</b>	<b>765</b>	<b>880</b>
	Uttar Pradesh	445	494	388	577	531	
	Rajasthan	233	277	240	186	234	

## Production of nitrogenous fertilisers (Concluded)

('000 tonnes)

Fertiliser	Zone/State	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977
	<b>North</b>	—	—	—	—	—	—
	<b>East</b>	<b>52</b>	<b>56</b>	<b>74</b>	<b>94</b>	<b>138</b>	<b>441</b>
	Assam	40	46	49	55	54	
	Bihar	12	10	11	7	6	
	West Bengal	—	—	14	32	68	
	<b>All India</b>	<b>1237</b>	<b>1411</b>	<b>1408</b>	<b>1734</b>	<b>2197</b>	<b>3114</b>
Calcium ammonium nitrate (25% N)	<b>North</b>	<b>226</b>	<b>216</b>	<b>247</b>	<b>161</b>	<b>309</b>	<b>280</b>
	Punjab	226	216	247	161	309	280
	<b>East</b>	<b>186</b>	<b>196</b>	<b>184</b>	<b>245</b>	<b>309</b>	<b>300</b>
	Orissa	186	196	184	245	309	300
	<b>All India</b>		<b>412</b>	<b>431</b>	<b>406</b>	<b>618</b>	<b>580</b>
**Ammonium chloride (25% N)	<b>Central</b>	<b>18</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>15</b>	<b>16</b>
	Uttar Pradesh	18	14	14	10	15	16
	<b>All India</b>	<b>18</b>	<b>14</b>	<b>14</b>	<b>10</b>	<b>15</b>	<b>16</b>

\*Estimated

\*\*Production at FACT, Alwaye is not meant for agricultural purposes.

Note : Excludes production of industrial nitrogen.

Table 10

## Production of superphosphate

('000 tonnes)

Region/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
(i) Single superphosphate (17% W. S. P <sub>2</sub> O <sub>5</sub> )						
<b>South</b>	<b>235</b>	<b>219</b>	<b>235</b>	<b>255</b>	<b>140</b>	<b>220</b>
Andhra Pradesh	60	54	67	78	40	—
Kerala	16	20	36	23	15	—
Karnataka	8	8	1	—	—	—
Tamil Nadu	151	137	131	154	84	—
<b>West</b>	<b>218</b>	<b>224</b>	<b>242</b>	<b>231</b>	<b>133</b>	<b>188</b>
Gujarat	82	65	65	70	29	—
Maharashtra	136	159	177	161	104	—
<b>Central</b>	<b>250</b>	<b>243</b>	<b>201</b>	<b>235</b>	<b>128</b>	<b>190</b>
Madhya Pradesh	86	70	59	85	28	—
Uttar Pradesh	34	33	32	38	25	—
Rajasthan	47	47	27	44	20	—
Delhi	83	93	83	68	55	—
<b>North</b>	—	—	—	—	—	—
<b>East</b>	<b>70</b>	<b>103</b>	<b>95</b>	<b>102</b>	<b>60</b>	<b>92</b>
Assam	(3)	—	—	a	4	—
Bihar	10	11	5	10	3	—
West Bengal	60	92	90	92	52	—
<b>All-India</b>	<b>773</b>	<b>789</b>	<b>773</b>	<b>823</b>	<b>461</b>	<b>690</b>
(ii) 'Pelofos' (5% W. S. P <sub>2</sub> O <sub>5</sub> )						
<b>East</b>	—	—	<b>10</b>	<b>12</b>	<b>2</b>	<b>5</b>
Orissa	—	—	10	12	2	—
<b>All-India</b>	—	—	<b>10</b>	<b>12</b>	<b>2</b>	<b>5</b>

\* Estimated.

a = less than 500 tonnes.

( ) = Superphosphate containing 18% W. S. P<sub>2</sub>O<sub>5</sub>.

Table 11

*Production of triple superphosphate*

('000 tonnes)

Region/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	—	—	—	—	—	—
<b>West</b>	<b>8</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>
Maharashtra	8	5	3	3	2	—
<b>Central</b>	—	—	—	—	—	<b>55</b>
Rajasthan	—	—	—	—	—	—
<b>North</b>	—	—	—	—	—	—
<b>East</b>	—	—	—	—	—	<b>33</b>
Bihar	—	—	—	—	—	—
<b>All-India</b>	<b>8</b>	<b>5</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>90</b>

\* Estimated.

Table 12

## Production of complex fertilisers

		('000 tonnes)					
Fertiliser	Zone/State	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977*
Ammonium phosphate sulphate	South (16-20-0)	103	94	104	120	113	100
	(20-20-0)	—	3	20	24	30	25
	(18-9-0)	—	—	—	—	7	25
	Kerala (16-20-0)	60	51	65	68	67	—
	(20-20-0)	—	3	20	24	30	—
Ammonium sulphate phosphate	Tamil Nadu (16-20-0)	43	43	39	52	46	—
	(18-9-0)	—	—	—	—	7	—
	West (19.5-19.5-0)	—	—	—	—	20	18
	Gujarat <sup>1</sup> (19.5-19.5-0)	—	—	—	—	20	—
	All-India (16-20-0)	103	94	104	120	113	100
Nitrophosphate	(20-20-0)	—	3	20	24	30	25
	(18-9-0)	—	—	—	—	7	25
	(19.5-19.5-0)	—	—	—	—	20	18
	South (20-20-0)	—	—	—	—	—	15
	Tamil Nadu (20-20-0)	—	—	—	—	—	—
Urea ammonium phosphate	West (20-20-0)	—	—	—	—	35	110
	Maharashtra <sup>2</sup> (15-15-15)	134	240	213	211	181	120
	(20-20-2)	45	—	—	—	—	—
	(18-18-9)	25	—	—	—	—	—
	All India (20-20-0)	—	—	—	—	35	125
Kerala (28-28-0)	(15-15-15)	134	240	213	211	181	120
	(20-20-2)	45	—	—	—	—	—
	(18-18-9)	25	—	—	—	—	—
	Andhra Pradesh (28-28-0)	195	175	172	137	162	170
	(20-20-0)	36	17	—	—	—	—
Andhra Pradesh (14-35-14)	(14-35-14)	3	28	37	28	12	50
	(22-22-11)	7	—	—	—	—	—

(Continued)

## Production of complex fertilisers (Concluded)

		('000 tonnes)					
Fertiliser	Zone/State	1971-1972	1972-1973	1973-1974	1974-1975	1975-1976	1976-1977*
Ammonium phosphate sulphate	West Goa <sup>3</sup> (28-28-0)	—	—	—	a	19	22
	All-India (28-28-0)	195	175	172	137	181	197
	(20-20-0)	36	17	—	—	—	—
	(14-35-14)	3	28	37	28	12	50
	(22-22-11)	7	—	—	—	—	—
Diammonium phosphate	South (18-46-0)	—	—	—	—	—	3
	Tamil Nadu (18-46-0)	—	—	—	—	—	—
	West (18-46-0)	50	69	60	67	53	47
	Gujarat (18-27-3)	5	—	—	—	—	—
	All-India (18-46-0)	50	69	60	67	53	50
NPK complex fertilisers	(18-27-3)	5	—	—	—	—	—
	South (17-17-17)	—	—	—	—	—	50
	Kerala (24-24-0)	—	—	—	—	50	60
	Tamil Nadu (17-17-17)	55	242	209	226	282	244
	(14-28-14)	13	44	59	34	—	15
Urea ammonium phosphate	(10-26-26)	—	—	—	—	—	21
	West (10-26-26)	—	—	—	14	2	80
	Gujarat <sup>1</sup> (12-32-16)	—	—	—	13	72	122
	(22-22-11)	—	—	—	9	3	—
	(24-24-0)	—	—	—	—	44	—
Kerala (19-19-19)	Goa <sup>3</sup> (19-19-19)	—	—	—	—	15	20
	All-India (24-24-0)	—	—	—	—	94	60
	(10-26-26)	—	—	—	14	2	101
	(12-32-16)	—	—	—	13	72	122
	(22-22-11)	—	—	—	9	3	—
Andhra Pradesh (17-17-17)	(17-17-17)	55	242	209	226	282	294
	(19-19-19)	—	—	—	—	15	20
	(14-28-14)	13	44	59	34	—	15

\* Estimated

1 = 19.5-19.5-0 w.e.f. 1.4.1975.

2 = Includes production of ammonium phosphate sulphate nitrate of grade (20-20-0) from October 1976.

a Less than 500 tonnes

3 Started in March 1975.

4 Started in November 1974.

Table 13

## Forms in which fertilisers are consumed : Sources of N

Kind of fertiliser	Grade	Distribution ('000 tonnes)						Percentage $\pm$ over previous year					
		1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*	1972-73	1973-74	1974-75	1975-76	1975-76 over 1971-72	1976-77*
Ammonium sulphate	(20.6% N)	877 (10.9)	774 (9.3)	629 (8.0)	757 (8.6)	691 (7.5)	620 (5.3)	(-)11.7	(-)18.7	20.3	(-) 8.7	(-)21.2	(-)10.3
Ammonium sulphate nitrate	(26% N)	44 (0.7)	56 (0.8)	50 (0.7)	41 (0.6)	28 (0.4)	25 (0.3)	27.3	(-)10.7	(-)18.0	(-)31.7	(-)36.4	(-)10.7
Urea	(46% N)	2234 (62.1)	2424 (64.2)	2280 (65.0)	2684 (67.1)	2917 (70.3)	3800 (72.8)	8.5	(-) 6.0	17.7	8.7	30.6	30.2
Calcium ammonium nitrate	(25% N) (26% N)	412 323 (11.3)	417 297 (10.4)	421 178 (9.4)	413 290 (9.6)	598 126 (9.5)	600 200 (8.3)	1.2 (-) 8.0	1.0 (-)40.1	(-) 1.9 62.9	44.8 (-)56.6	45.1 (-)61.0	0.3 58.7
Ammonium chloride	(25% N)	20 (0.3)	14 (0.2)	14 (0.2)	30 (0.4)	12 (0.2)	15 (0.2)	(-)30.0	nil	114.3	(-)60.0	(-)40.0	25.0
Ammonium phosphate sulphate	(16-20-0) (20-20-0) (18-9-0)	101 36 (1.4)	99 2 (0.9)	103 22 (1.3)	117 24 (1.3)	105 26 (1.2)	115 35 (1.3)	(-) 2.0 (-)94.4	4.0 100.0	13.6 9.1	(-)10.3 8.3	4.0 (-)27.8	9.5 34.6 1400.0
Ammonium sulphate phosphate	(19.5-19.5-0)	—	—	—	—	20 (0.2)	20 (0.2)	—	—	—	—	—	—
Nitrophosphate	(15-15-15) (20-20-0)	206 (1.9)	211 (1.9)	214 (1.9)	184 (1.5)	192 21; 6 <sup>2</sup> (1.6)	135 80; 55 <sup>2</sup> (2.0)	2.4	1.4	(-)14.0	4.3	(-) 6.8	(-)29.7 1587.5
Ammonium nitrate phosphate	(20-20-0)	—	36 (0.4)	190 (2.4)	122 (1.3)	26 (0.3)	75 (0.6)	—	427.8	(-)35.8	(-)78.7	—	188.5
Diammonium phosphate	(18-46-0)	344 (3.7)	429 (4.4)	412 (4.6)	363 (3.5)	175 (1.6)	210 (1.6)	24.7	(-) 4.0	(-)11.9	(-)51.8	(-)49.1	20.0
Urea ammonium phosphate	(28-28-0) (20-20-0)	226 42 (4.3)	175 20 (3.1)	173 — (3.0)	134 — (2.0)	159 — (2.3)	190 — (2.1)	(-)22.6 (-)52.4	(-) 1.1	(-)22.5	18.7	(-)29.6	19.5
Mono-ammonium phosphate	(11-55-0)	—	12 (0.1)	9 (0.1)	—	—	—	—	(-)25.0	—	—	—	—
NPK fertilisers	(10-26-26) (12-32-16) (13-13-20) (14-28-14) (14-35-14) (15-15-15) <sup>@</sup> (17-17-16) (17-17-17) (18-17-17) (19-19-19) (22-22-11) (24-24-0)	— — — 12 — 296 — 45 3 <sup>4</sup> — 6 — (3.4)	— — — 44 26 178 — 238 2 <sup>4</sup> — — — (4.3)	— — — 59 39 22 — 222 — — — (3.4)	5 13 — 34 30 196 — 211 — — — (4.1)	12 40 1 a 13 95 a 282 <sup>3</sup> 8 2 2 92 (4.9)	100 100 — 15 50 30 — 340 <sup>5</sup> — 30 105 <sup>6</sup> (5.3)	— — — 266.7 — (-)39.9 — 428.9 (-)33.3 <sup>1</sup> — — — (5.3)	— — — 34.0 50.0 (-)87.6 — (-) 6.7 — — — —	— — — (-)42.4 (-)23.1 790.9 — (-) 5.0 — — — —	140.0 207.7 — — (-)56.7 (-)51.5 — 33.6 — — — —	— — — — (-)67.9 (-)66.7 — — — —	733.3 150.0 — — 284.6 (-)88.4 — 20.6 — 1400.0 — 14.1
N	Through straight fertilisers	1412 (85.3)	1479 (84.9)	1344 (83.3)	1592 (86.3)	1677 (87.9)	2074 (86.4)	4.7	(-) 9.1	18.5	5.3	18.8	23.7
	Through complex fertilisers	243 (14.7)	263 (15.1)	269 (16.7)	253 (13.7)	232 (12.1)	326 (13.6)	8.2	2.3	(-) 5.9	(-) 8.3	(-) 4.5	40.5
<b>Total N</b>		<b>1655</b> (100.0)	<b>1742</b> (100.0)	<b>1613</b> (100.0)	<b>1845</b> (100.0)	<b>1909</b> (100.0)	<b>2400</b> (100.0)	<b>5.3</b>	<b>(-) 7.4</b>	<b>14.4</b>	<b>3.5</b>	<b>15.3</b>	<b>25.7</b>

\* Estimated.

<sup>1</sup> Includes 392 tonnes of imported material.<sup>2</sup> Ammonium phosphate sulphate nitrate of grade (20-20-0)<sup>3</sup> Include 4218 tonnes of imported material.<sup>4</sup> Of grade (18-27-3).<sup>5</sup> Includes 26,000 tonnes of imported<sup>6</sup> Includes 30,000 tonnes of imported material.<sup>@</sup> Gradewise break-up of imported NPK complex fertilisers is not available, therefore, it is assumed to be of grade (15-15-15).

a Less than 500 tonnes.

( ) Figure in bracket represents contribution of a particular fertiliser to the total nutrient taken as 100 (vertical).

Table 14

Forms in which fertilisers are consumed : Sources of P<sub>2</sub>O<sub>5</sub>

Kind of Fertiliser	Grade	Distribution ('000 tonnes)						Percentage ± over previous year					
		1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*	1972-73	1973-74	1974-75	1975-76	1975-76 over 1971-72	1976-77*
Superphosphate	(16% w. s. P <sub>2</sub> O <sub>5</sub> )	750 (25.3)	794 (24.0)	835 (24.7)	733 (23.6)	468 (20.0)	750 (21.7)	5.9	5.2	(-)12.2	(-)36.2	(-)37.6	60.2
'Pelofos'	(18% total P <sub>2</sub> O <sub>5</sub> )	—	—	9	10	3	5	—	—	11.1	(-)70.0	—	66.7
Triple superphosphate	(45% w. s. P <sub>2</sub> O <sub>5</sub> )	7 (0.7)	4 (0.3)	5 (0.4)	7 (0.6)	2 (0.2)	20 (1.6)	(-)42.9	25.0	40.0	(-)71.4	(-)71.4	990.0
Ammonium phosphate sulphate	(16-20-0) (20-20-0) (18-9-0)	101 36 —	99 2 —	103 22 —	117 24 —	105 26 2	115 35 30	(-)2.0 (-)94.4 —	4.0 1000.0 —	13.6 9.1 —	(-)10.3 8.3 —	4.0 (-)27.8 —	9.5 34.6 1,400.0
Ammonium sulphate phosphate	(19.5-19.5-0)	—	—	—	—	20	20	—	—	—	—	—	Nil
Nitrophosphate	(15-15-15) (20-20-0)	206 (6.5)	211 (5.9)	214 (5.9)	184 (5.6)	192 (8.1)	135 (8.6)	2.4	1.4	(-)14.0	4.3	(-)6.8	(-)29.7 1,587.5
Ammonium nitrate phosphate	(20-20-0)	—	36 (1.4)	190 (7.0)	122 (4.9)	26 (1.4)	75 (2.7)	—	427.8	(-)35.8	(-)78.7	—	188.5
Diammonium phosphate	(18-46-0)	344 (34.4)	429 (37.0)	412 (35.0)	363 (33.6)	175 (21.5)	210 (17.5)	24.7	(-)4.0	(-)11.9	(-)51.8	(-)49.1	20.0
Urea ammonium phosphate	(28-28-0) (20-20-0)	226 42 (15.1)	175 20 (9.9)	173 — (8.9)	134 — (7.5)	159 — (11.9)	190 — (9.6)	(-)22.6 (-)52.4	(-)1.1	(-)22.5	18.7	(-)29.6	19.5
Mono-ammonium phosphate	(11-55-0)	—	12 (1.1)	9 (0.9)	—	—	—	—	(-)25.0	—	—	—	—
NPK complex fertilisers	(10-26-26) (12-32-16) (13-13-20) (14-28-14) (14-35-14) (15-15-15)@ (17-17-16) (17-17-17) (18-17-17) (19-19-19) (22-22-11) (24-24-0)	— — — 12 — 296 — 45 351 — 6 —	— — — 44 26 178 — 238 404 — — —	— — — 59 39 22 — 222 404 — — —	5 13 — 34 30 196 — 211 — — — —	12 40 1 a 13 95 a 282 <sup>3</sup> 8 2 2 92	100 100 — 15 50 30 — 340 <sup>5</sup> — 30 105 <sup>6</sup>	— — — 266.7 — (-)39.9 — 428.9 (-)33.3 <sup>4</sup> — — —	— — — 34.0 50.0 (-)87.6 — (-)6.7 — — — —	— — — (-)42.4 (-)23.1 790.9 — (-)5.0 — — —	— — — — (-)56.7 (-)51.5 — 33.6 — — —	— — — — (-)67.9 — 526.7 — (-)66.7 —	733.3 150.0 — — 284.6 (-)68.4 — — — 1,400.0 — 14.1
P <sub>2</sub> O <sub>5</sub>	Through straight fertilisers	123 (26.0)	130 (24.3)	137 (25.4)	122 (24.6)	76 (20.3)	130 (23.6)	5.7	5.4	(-)10.9	(-)37.7	(-)38.2	71.1
	Through complex fertilisers	351 (74.0)	404 (75.7)	404 (74.6)	375 (75.4)	298 (79.7)	420 (76.4)	15.1	—	(-)7.2	(-)20.5	(-)15.1	40.9
<b>Total P<sub>2</sub>O<sub>5</sub></b>		<b>474</b> (100.0)	<b>534</b> (100.0)	<b>541</b> (100.0)	<b>497</b> (100.0)	<b>374</b> (100.0)	<b>550</b> (100.0)	<b>12.7</b>	<b>1.3</b>	<b>(-)8.1</b>	<b>(-)24.7</b>	<b>(-)21.1</b>	<b>47.1</b>

\* Estimated.

1 Includes 392 tonnes of imported material.

2 Ammonium phosphate sulphate nitrate of grade (20-20-0).

3 Includes 4,218 tonnes of imported material.

4 Of grade (18-27-3).

5 Includes 26,000 tonnes of imported material.

6 Includes 30,000 tonnes of imported material.

a Less than 500 tonnes.

@ Gradewise breakup of imported NPK complex fertilisers is not available, therefore, it is assumed to be of grade (15-15-15).

( ) Figure in bracket represents contribution of a particular fertiliser to the total nutrient taken as 100 (vertical).

Table 15

Forms in which fertilisers are consumed : Sources of K<sub>2</sub>O

Kind of fertiliser	Grade	Distribution ('000 tonnes)						Percentage ± over previous year					
		1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*	1972-73	1973-74	1974-75	1975-76	1975-76 over 1971-72	1976-77*
1. Muriate of potash (straight use)	(60% K <sub>2</sub> O)	281 (65.6)	335 (64.5)	476 (75.0)	327 (61.8)	196 (51.8)	355 (66.5)	19.2	42.1	(-)31.3	(-)40.1	(-)30.2	81.1
2. Muriate of potash (used as intermediate for complex fertilisers)	(60% K <sub>2</sub> O)	70 (16.5)	137 (26.3)	147 (23.1)	148 (28.0)	152 (40.2)	160 (29.9)	95.7	7.3	0.7	2.7	117.1	5.3
3. Sulphate of potash (straight use)	(50% K <sub>2</sub> O)	3 (0.6)	4 (0.6)	8 (1.0)	6 (0.9)	3 (0.7)	5 (0.8)	33.3	100.0	(-)25.0	(-)50.0	--	66.7
4. NPK complex fertilisers (imported)	(various grades)	296 (17.3)	178 (8.6)	22 (0.9)	196 (9.3)	107 <sup>1</sup> (7.3)	56 <sup>2</sup> (2.8)	(-)39.1	(-)87.6	790.9	(-)45.4	(-)63.9	(-)47.7
K <sub>2</sub> O {	Through straight fertilisers	169 (66.2)	203 (65.1)	290 (76.0)	199 (62.7)	119 (52.5)	215 (67.3)	20.1	42.9	(-)31.4	(-)40.2	(-)29.6	80.7
	Through complex fertilisers	87 (33.8)	109 (34.9)	91 (24.0)	119 (37.3)	108 (47.5)	105 (32.7)	25.3	(-)16.5	30.8	(-) 9.2	24.1	(-) 2.8
<b>Total : K<sub>2</sub>O</b>		<b>256</b> <b>(100.0)</b>	<b>312</b> <b>(100.0)</b>	<b>381</b> <b>(100.0)</b>	<b>318</b> <b>(100.0)</b>	<b>227</b> <b>(100.0)</b>	<b>320</b> <b>(100.0)</b>	<b>21.9</b>	<b>22.1</b>	<b>(-)16.5</b>	<b>(-)28.6</b>	<b>(-)11.3</b>	<b>41.0</b>

\* Estimated.

( ) Figure in bracket represents contribution of a particular fertiliser to the total nutrient taken as 100 (vertical)

1 Includes.

7,584 tonnes of grade 18-17-17  
 4,218 —do— 17-17-17  
 72 —do— 17-17-16 and  
 987 —do— 13-13-20  
 besides 94,609 —do— 15-15-15 (Gradewise breakup in respect of some NPK fertilisers is not available. Those are assumed to be of grade 15-15-15).  
 107,470 tonnes of various grades of NPK fertilisers=16.3 thousand tonnes of K<sub>2</sub>O.

<sup>2</sup> Includes  
 26,000 tonnes of grade 17-17-17  
 and 30,000 —do— 15-15-15  
 56,000 tonnes.



Table 16

## Distribution of nitrogen (N) by States

Zone/State	('000 tonnes)					
	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>468</b>	<b>470</b>	<b>453</b>	<b>599</b>	<b>765</b>	<b>1000</b>
Andhra Pradesh	131	170	155	285	376	
Kerala	68	26	32	33	44	
Karnataka	74	82	85	114	122	
Tamil Nadu	148	174	161	152	210	
Pondicherry	1	3	2	2	5	
UPASI	5	8	5	a	—	
Coffee Board	8	8	7	8	4	
Rubber Board	—	—	5	a	1	
Cardamom Board	—	a	a	—	1	
Tea Board	—	—	—	3	2	
<b>West</b>	<b>225</b>	<b>230</b>	<b>248</b>	<b>229</b>	<b>258</b>	<b>300</b>
Gujarat	171	116	128	99	108	
Maharashtra	54	114	118	128	148	
Goa	—	a	2	2	2	
Dadra & Nagar Haveli	—	a	a	a	a	
<b>Central</b>	<b>390</b>	<b>469</b>	<b>442</b>	<b>457</b>	<b>373</b>	<b>450</b>
Madhya Pradesh	66	85	74	86	51	
Rajasthan	43	51	58	50	49	
Uttar Pradesh	276	330	309	319	271	
Delhi	5	3	1	2	2	
<b>North</b>	<b>273</b>	<b>319</b>	<b>274</b>	<b>295</b>	<b>263</b>	<b>350</b>
Haryana	70	81	78	64	73	
Himachal Pradesh	4	3	3	6	5	
Jammu & Kashmir	4	15	7	7	9	
Punjab	196	220	185	217	176	
Chandigarh	—	a	1	1	a	
<b>East</b>	<b>178</b>	<b>205</b>	<b>193</b>	<b>265</b>	<b>250</b>	<b>300</b>
Assam	17	18	6	5	2	
Bihar	78	74	69	105	112	
Orissa	27	42	40	40	29	
West Bengal	39	54	55	84	82	
Manipur	—	1	a	2	2	
Tripura	—	1	1	1	a	
Nagaland	—	—	a	a	a	
Mizoram	—	a	—	a	a	
Andamans	—	—	—	a	a	
Tea v.c. India	3	14	20	23	23	
Meghalaya	—	—	1	2	a	
<b>Total</b>	<b>1535</b>	<b>1693</b>	<b>1609</b>	<b>1845</b>	<b>1909</b>	<b>2400</b>
<b>Others</b>	<b>119</b>	<b>49</b>	<b>4</b>	<b>—</b>	<b>a(@)</b>	<b>—</b>
<b>All India</b>	<b>1653</b>	<b>1742</b>	<b>1613</b>	<b>1845</b>	<b>1909</b>	<b>2400</b>

\* Estimated. a Less than 500 tonnes.

(@) Includes 136 tonnes of N supplied to Bhutan.

Note: Zonal totals for 1971-72 include quantities supplied to the States in the Zone whose break-up is not available.

Table 17

Distribution of phosphates (P<sub>2</sub>O<sub>5</sub>) by States

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>113</b>	<b>183</b>	<b>208</b>	<b>207</b>	<b>170</b>	<b>200</b>
Andhra Pradesh	45	72	88	87	82	
Kerala	11	12	15	15	12	
Karnataka	20	42	33	46	34	
Tamil Nadu	33	56	70	56	40	
UPASI	—	—	—	a	—	
Pondicherry	a	1	1	1	1	
Tea Board	—	—	—	—	a	
Coffee Board	—	—	a	2	1	
Rubber Board	—	—	—	—	a	
<b>West</b>	<b>121</b>	<b>86</b>	<b>110</b>	<b>68</b>	<b>62</b>	<b>110</b>
Gujarat	81	49	53	36	27	
Maharashtra	37	37	57	31	34	
Goa	3	a	a	1	1	
Dadra & Nagar Haveli	—	a	a	a	a	
<b>Central</b>	<b>82</b>	<b>102</b>	<b>96</b>	<b>93</b>	<b>56</b>	<b>90</b>
Madhya Pradesh	32	30	35	25	19	
Rajasthan	5	15	11	6	10	
Uttar Pradesh	45	57	49	62	26	
Delhi	a	a	a	a	1	
<b>North</b>	<b>60</b>	<b>53</b>	<b>64</b>	<b>72</b>	<b>29</b>	<b>60</b>
Haryana	9	5	14	7	6	
Himachal Pradesh	a	a	a	a	a	
Jammu & Kashmir	—	1	a	2	1	
Punjab	51	47	50	63	22	
Chandigarh	—	a	—	a	—	
<b>East</b>	<b>32</b>	<b>36</b>	<b>43</b>	<b>46</b>	<b>50</b>	<b>80</b>
Assam	1	2	2	1	1	
Bihar	17	9	11	18	27	
Orissa	1	6	12	9	5	
West Bengal	12	18	17	17	17	
Meghalaya	—	1	a	a	—	
Manipur	a	a	a	a	a	
Tripura	a	a	1	a	a	
Nagaland	a	—	a	a	—	
Assamans	—	a	—	a	—	
Mizoram	—	—	—	—	a	
<b>Total</b>	<b>408</b>	<b>460</b>	<b>521</b>	<b>486</b>	<b>367</b>	<b>540</b>
<b>Others</b>	<b>66</b>	<b>7</b>	<b>9</b>	<b>—</b>	<b>a<sup>(i)</sup></b>	<b>—</b>
Used in mixtures	—	67	11	11	8	10
<b>All India</b>	<b>474</b>	<b>534</b>	<b>541</b>	<b>497</b>	<b>375</b>	<b>550</b>

\* Estimated.

a Less than 500 tonnes.

<sup>(i)</sup> Includes 73 tonnes of P<sub>2</sub>O<sub>5</sub> supplied to Bhutan.

Note : Zonal totals for 1971-72 include quantities supplied to the States in the zone whose break-up is not available.

Table 18

Distribution of potash (K<sub>2</sub>O) by States

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>110</b>	<b>137</b>	<b>127</b>	<b>84</b>	<b>65</b>	<b>90</b>
Andhra Pradesh	11	18	24	16	9	
Kerala	22	21	29	21	20	
Karnataka	14	16	27	22	12	
Tamil Nadu	50	82	46	25	24	
Pondicherry	a	a	1	a		
Coffee Board	—	—	—	—	a	
Tea Board	—	—	—	—	a	
<b>West</b>	<b>71</b>	<b>69</b>	<b>50</b>	<b>34</b>	<b>27</b>	<b>45</b>
Gujarat	7	10	20	10	4	
Maharashtra	41	59	29	23	23	
Goa	a	a	1	1	a	
<b>Central</b>	<b>35</b>	<b>35</b>	<b>48</b>	<b>45</b>	<b>10</b>	<b>30</b>
Madhya Pradesh	7	4	5	5	1	
Rajasthan	1	4	5	2	1	
Uttar Pradesh	27	27	38	38	8	
Delhi	—	a	a	a	a	
<b>North</b>	<b>8</b>	<b>11</b>	<b>22</b>	<b>22</b>	<b>7</b>	<b>15</b>
Haryana	1	1	4	2	1	
Himachal Pradesh	a	a	—	a	a	
Jammu & Kashmir	a	a	a	—	—	
Punjab	7	10	18	20	6	
<b>East</b>	<b>30</b>	<b>46</b>	<b>46</b>	<b>43</b>	<b>27</b>	<b>40</b>
Assam	4	12	7	6	7	
Bihar	7	9	9	12	5	
Orissa	2	5	8	6	4	
West Bengal	17	20	22	19	11	
Manipur	—	a	a	a	—	
Tripura	—	a	a	—	a	
Nagaland	—	a	—	a	—	
Andamans	—	a	a	a	—	
<b>Total</b>	<b>254</b>	<b>298</b>	<b>293</b>	<b>228</b>	<b>136</b>	<b>220</b>
<b>Others</b>	<b>2</b>	<b>14</b>	<b>88<sup>@</sup></b>	<b>89<sup>@</sup></b>	<b>91<sup>@</sup></b>	<b>100<sup>@</sup></b>
<b>All India</b>	<b>256</b>	<b>312</b>	<b>381</b>	<b>317</b>	<b>227</b>	<b>320</b>

\* Estimated.

a Less than 500 tonnes.

② Quantities of K<sub>2</sub>O supplied to NPK complex fertiliser manufacturers are not included in the respective State totals.

Table 19

## Distribution of ammonium sulphate (20.6% N)

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>350</b>	<b>237</b>	<b>173</b>	<b>201</b>	<b>244</b>	<b>225</b>
Andhra Pradesh	150	78	50	62	104	
Kerala	30	36	37	37	33	
Karnataka	45	36	25	33	41	
Tamil Nadu	97	77	57	63	58	
Pondicherry	1	a	a	—	1	
UPASI	10	7	1	2	—	
Coffee Board	9	3	2	4	1	
Rubber Board	—	—	1	a	4	
Cardamom Board	—	—	a	—	2	
Tea Board	—	—	—	—	a	
<b>West</b>	<b>108</b>	<b>151</b>	<b>124</b>	<b>107</b>	<b>100</b>	<b>70</b>
Gujarat	68	76	91	71	68	
Maharashtra	40	75	33	36	32	
Goa	—	a	a	—	—	
Dadra and Nagar Haveli	—	a	—	a	—	
<b>Central</b>	<b>67</b>	<b>34</b>	<b>38</b>	<b>67</b>	<b>37</b>	<b>40</b>
Madhya Pradesh	23	51	15	19	10	
Rajasthan	1	9	4	2	a	
Uttar Pradesh	43	24	18	46	27	
Delhi	a	a	a	a	a	
<b>North</b>	<b>5</b>	<b>18</b>	<b>5</b>	<b>47</b>	<b>2</b>	<b>10</b>
Haryana	—	2	—	5	1	
Himachal Pradesh	a	a	a	—	1	
Jammu & Kashmir	4	—	—	—	—	
Punjab	2	16	5	42	a	
Chandigarh	—	a	—	—	—	
<b>East</b>	<b>275</b>	<b>276</b>	<b>289</b>	<b>334</b>	<b>308</b>	<b>275</b>
Assam	60	43	3	1	—	
Bihar	88	90	131	130	126	
Orissa	28	20	26	33	18	
West Bengal	86	91	88	103	97	
Nagaland	a	a	a	—	—	
Meghalaya	—	3	3	7	1	
Tripura	—	a	—	—	—	
Tea (N.E. India)	13	29	39	60	66	
<b>Total</b>	<b>805</b>	<b>766</b>	<b>629</b>	<b>757</b>	<b>691</b>	<b>620</b>
Others	72	8	—	—	—	—
<b>All India</b>	<b>877</b>	<b>774</b>	<b>629</b>	<b>757</b>	<b>691</b>	<b>620</b>

\*Estimated. a Less than 500 tonnes.

Table 20

*Distribution of ammonium sulphate nitrate (26% N)*

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>35</b>	<b>22</b>	<b>5</b>	<b>11</b>	<b>15</b>	<b>10</b>
Andhra Pradesh	32	19	5	11	11	
Karnataka	a	1	—	—	2	
Tamil Nadu	3	2	—	—	1	
Rubber Board	a	—	—	—	—	
Kerala	—	—	—	—	1	
<b>West</b>	<b>—</b>	<b>3</b>	<b>—</b>	<b>—</b>	<b>1</b>	<b>—</b>
Gujarat	—	2	—	—	1	
Maharashtra	—	1	—	—	—	
<b>Central</b>	<b>6</b>	<b>3</b>	<b>13</b>	<b>7</b>	<b>6</b>	<b>5</b>
Madhya Pradesh	a	a	—	1	a	
Uttar Pradesh	6	3	13	6	6	
<b>East</b>	<b>2</b>	<b>28</b>	<b>32</b>	<b>23</b>	<b>6</b>	<b>10</b>
Bihar	1	15	13	13	5	
Orissa	1	3	5	2	—	
West Bengal	a	10	14	8	1	
<b>Total</b>	<b>44</b>	<b>56</b>	<b>50</b>	<b>41</b>	<b>28</b>	<b>25</b>
<b>Others</b>	<b>a</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>All-India</b>	<b>44</b>	<b>56</b>	<b>50</b>	<b>41</b>	<b>28</b>	<b>25</b>

\* Estimated.

a less than 500 tonnes.

Table 21

## Distribution of urea (46% N)

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>528</b>	<b>557</b>	<b>536</b>	<b>792</b>	<b>1,118</b>	<b>1,500</b>
Andhra Pradesh	81	171	155	382	511	
Kerala	5	19	29	33	58	
Karnataka	49	88	120	161	179	
Tamil Nadu	164	256	202	196	349	
Pondicherry	1	5	2	3	9	
UPASI	2	10	6	—	—	
Coffee Board	1	8	11	11	6	
Rubber Board	a	—	11	1	2	
Cardamom Board	a	—	a	—	1	
Tea Board	—	—	—	5	4	
<b>West</b>	<b>386</b>	<b>349</b>	<b>369</b>	<b>383</b>	<b>449</b>	<b>600</b>
Gujarat	234	188	197	149	184	
Maharashtra	76	161	168	230	260	
Goa	—	a	4	4	4	
Dadra & Nagar Haveli	a	a	a	a	a	
<b>Central</b>	<b>665</b>	<b>799</b>	<b>799</b>	<b>823</b>	<b>677</b>	<b>850</b>
Madhya Pradesh	124	139	127	157	87	
Rajasthan	66	88	101	96	88	
Uttar Pradesh	473	568	569	568	500	
Delhi	2	4	2	2	2	
<b>North</b>	<b>356</b>	<b>507</b>	<b>413</b>	<b>420</b>	<b>397</b>	<b>500</b>
Haryana	86	125	114	98	107	
Himachal Pradesh	—	1	1	2	6	
Jammu & Kashmir	7	31	15	13	18	
Punjab	263	350	283	306	266	
Chandigarh	—	a	a	1	a	

## Distribution of urea (46% N)

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>East</b>	<b>190</b>	<b>182</b>	<b>162</b>	<b>266</b>	<b>276</b>	<b>350</b>
Assam	5	19	10	9	3	
Bihar	49	86	65	127	144	
Orissa	6	15	16	20	8	
West Bengal	27	40	41	70	96	
Tr.pura	1	3	1	1	a	
Nagaland	—	—	—	a	a	
Manipur	—	—	1	4	4	
Mizoram	—	1	—	a	a	
Tea (N.E. India)	—	17	26	32	19	
Meghalaya	—	1	1	1	—	
Arunachal Pradesh	—	—	a	a	a	
Andamans	—	—	—	—	a	
<b>Total</b>	<b>2,127</b>	<b>2,394</b>	<b>2,280</b>	<b>2,684</b>	<b>2,916</b>	<b>3,800</b>
<b>Others</b>	<b>107</b>	<b>30</b>	<b>a</b>	<b>a</b>	<b>1</b>	<b>—</b>
<b>All-India</b>	<b>2,234</b>	<b>2,424</b>	<b>2,280</b>	<b>2,684</b>	<b>2,917</b>	<b>3,800</b>
Bangladesh	16	—	—	—	—	—

\* Estimated.

a Less than 500 tonnes.

Note : 64 tonnes of urea was supplied to Bhutan which is not included in the all-India total.

Table 22

*Distribution of calcium ammonium nitrate (25% N)*

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>71</b>	<b>39</b>	<b>25</b>	<b>66</b>	<b>163</b>	<b>165</b>
Andhra Pradesh	63	32	25	66	163	
Coffee Board	8	7	—	—	—	
<b>West</b>	—	—	—	—	a	—
Gujarat	—	—	—	—	—	
Maharashtra	—	—	—	—	a	
<b>Central</b>	<b>61</b>	<b>53</b>	<b>52</b>	<b>39</b>	<b>85</b>	<b>85</b>
Madhya Pradssh	2	8	8	4	a	
Rajasthan	12	13	18	8	20	
Uttar Pradash	41	29	26	27	65	
Delhi	6	3	—	—	a	
<b>North</b>	<b>210</b>	<b>186</b>	<b>231</b>	<b>155</b>	<b>246</b>	<b>245</b>
Haryana	72	76	79	37	79	
Himachal Pradesh	6	2	9	19	7	
Punjab	132	108	141	98	159	
Chandigarh	—	a	2	1	1	
<b>East</b>	<b>70</b>	<b>136</b>	<b>113</b>	<b>153</b>	<b>104</b>	<b>105</b>
Bihar	2	19	15	26	14	
Orissa	63	96	79	61	60	
West Bengal	5	21	19	66	30	
<b>Total</b>	<b>412</b>	<b>414</b>	<b>421</b>	<b>413</b>	<b>598</b>	<b>600</b>
Others	a	3	—	a	—	—
<b>All-India</b>	<b>412</b>	<b>417</b>	<b>421</b>	<b>413</b>	<b>598</b>	<b>600</b>

\* Estimated.

a Less than 500 tonnes.

Note 196 tonnes CAN was supplied to Bhutan which is not included in the all-India total.

Table 23

*Distribution of calcium ammonium nitrate (26% N)*

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>80</b>	<b>94</b>	<b>92</b>	<b>117</b>	<b>69</b>	<b>110</b>
Andhra Pradesh	29	44	17	58	37	
Kerala	2	a	2	1	—	
Karnataka	20	52	17	16	8	
Tamil Nadu	1	17	38	38	23	
Pondicherry	—	a	1	a	—	
Coffee Board	15	4	7	2	1	
Rubber Board	—	—	—	a	a	
UPASI	9	7	8	—	—	
Cardamom Board	—	a	a	—	—	
Tea Board	—	—	—	2	a	
<b>West</b>	<b>a</b>	<b>5</b>	<b>13</b>	<b>13</b>	<b>3</b>	<b>10</b>
Gujarat	a	a	5	11	1	
Maharashtra	—	5	8	2	2	
Goa	—	a	a	—	—	
<b>Central</b>	<b>78</b>	<b>108</b>	<b>55</b>	<b>42</b>	<b>8</b>	<b>15</b>
Madhya Pradesh	—	—	—	a	—	
Rajasthan	10	—	13	8	1	
Uttar Pradesh	65	108	41	34	4	
Delhi	3	—	1	a	3	
<b>North</b>	<b>130</b>	<b>75</b>	<b>15</b>	<b>88</b>	<b>17</b>	<b>25</b>
Haryana	36	12	2	23	1	
Himachal Pradesh	3	6	2	a	—	
Punjab	92	57	11	64	16	
<b>East</b>	<b>22</b>	<b>15</b>	<b>3</b>	<b>31</b>	<b>29</b>	<b>40</b>
Bihar	14	1	3	11	15	
Orissa	6	13	—	10	9	
W. Bengal	1	a	—	10	3	
Tripura	1	—	—	—	—	
Tea Board (N.E. India)	—	—	—	—	2	
<b>Total</b>	<b>310</b>	<b>297</b>	<b>178</b>	<b>290</b>	<b>126</b>	<b>200</b>
Others	13	—	—	—	—	—
<b>All-India</b>	<b>323</b>	<b>297</b>	<b>178</b>	<b>290</b>	<b>126</b>	<b>200</b>

\* Estimated.  
a Less than 500 tonnes.



Table 24

*Distribution of ammonium chloride (25% N)*

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	1	a	—	9	a	—
Andhra Pradesh	1	a	—	9	a	
Karnataka	—	—	—	—	a	
<b>West</b>	1	a	—	—	a	1
Gujarat	1	—	—	—	—	
Maharashtra	—	a	—	—	a	
<b>Central</b>	13	10	8	6	10	10
Madhya Pradesh	1	a	a	a	a	
Rajasthan	a	—	—	—	—	
Uttar Pradesh	12	10	8	6	10	
Delhi	a	—	—	—	—	
<b>North</b>	a	a	1	8	a	1
Haryana	a	a	1	—	—	
Punjab	—	—	—	8	a	
<b>East</b>	2	3	4	7	2	3
Bihar	2	3	4	7	2	
Orissa	a	—	—	—	—	
West Bengal	a	a	—	—	—	
<b>Total</b>	17	14	13	30	12	15
<b>Others</b>	3	—	1	a	a	—
<b>All-India</b>	20	14	14	30	12	15

\* Estimated.

a Less than 500 tonnes.

Table 25

(i) Distribution of ammonium phosphate sulphate (16-20-0), (20-20-0)  
and (18-9-0)

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>101</b>	<b>97(2)</b>	<b>103(21)</b>	<b>117(24)</b>	<b>99(26)[2]</b>	<b>110(35) [30]</b>
Andhra Pradesh	8	4(a)	4(8)	8(11)	13(18)	
Kerala	26	31	36(a)	40(3)	28	
Karnataka	26	25(1)	19(3)	28(9)	25(3) [1]	
Tamil Nadu	41	37(1)	43(10)	40(1)	32(5) [1]	
Pondicherry	a	(a)	1	a	1	
<b>West</b>	<b>a</b>	<b>2</b>	<b>a</b>	<b>—</b>	<b>3</b>	<b>5</b>
Maharashtra	a	2	a	—	3	
<b>Central</b>	<b>a</b>	<b>a</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
Uttar Pradesh	a	a	—	—	—	—
<b>North</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>East</b>	<b>a</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>3</b>	<b>—</b>
Bihar	a	—	—	—	—	—
West Bengal	a	—	—	—	—	—
Orissa	—	—	—	—	3	—
Others	—	—(2)	—	—	a	—
<b>All-India</b>	<b>101</b>	<b>99(2)</b>	<b>103(21)</b>	<b>117(24)</b>	<b>105(26) [2]</b>	<b>115(35) [30]</b>

\* Estimated. ( ) of grade (20-20-0).  
a Less than 500 tonnes. [ ] of grade (18-9-0).

(ii) Distribution of ammonium sulphate phosphate (19.5-19.5-0)

('000 tonnes)

Zone/State	1975-76	1976-77*
<b>Central</b>	<b>1</b>	<b>2</b>
Madhya Pradesh	a	
Rajasthan	a	
Uttar Pradesh	a	
<b>North</b>	<b>3</b>	<b>2</b>
Haryana		
Punjab	2	
<b>South</b>	<b>5</b>	<b>4</b>
Andhra Pradesh	5	
<b>West</b>	<b>11</b>	<b>12</b>
Gujarat	8	
Maharashtra	3	
<b>All India</b>	<b>20</b>	<b>20</b>

\* Estimated.

Table 26

## (i) Distribution of ammonium nitrate phosphate (20-20-0)

Zone/State	(imported)					1976-77*
	1971-72@	1972-73	1973-74	1974-75	1975-76	
<b>South</b>	22 <sup>++</sup>	—	45; 1@	40	11	35
Andhra Pradesh		—	27	12	10	
Karnataka		—	7	17	1	
Tamil Nadu		—	10; 1@	11	a	
Pondicherry		—	1	—	—	
<b>West</b>	2 <sup>++</sup>	—	61	26	2	20
Gujarat		—	20	13	—	
Maharashtra		—	41	13	2	
<b>Central</b>	6	11	26	22	7	10
Madhya Pradesh		—	a	2	—	
Rajasthan		a	1	—	—	
Uttar Pradesh	6	11	25	20	7	
<b>North</b>	—	(12+)	8 (9+)	9	—	5
Haryana		—	2	a	—	
Punjab		(12+)	6 (9+)	8	—	
<b>East</b>	4 <sup>++</sup>	14	50	26	6	5
Assam		—	2; a@	1	—	
Bihar		2	5; a@	4	4	
West Bengal		11	42	21	2	
Orissa	—	1	a	—	—	
<b>Others</b>	2	11	—	—	—	
<b>Total</b>	36 <sup>++</sup>	36 (12+)	190; 1@ (9+)	122	26	75

\* Estimated.

a less than 500 tonnes.

@ Ammonium phosphate (20-20-0).

(+ ) Monoammonium phosphate (11-55-0).

Note : A quantity of 392 tonnes of imported nitrophosphate (20-20-0) was distributed to Bihar (342) and U. P. (50).

++ Statewise breakup is not available.

## (ii) Distribution of ammonium nitrate phosphate (24-24-0)

Zone/State	('000 tonnes)	
	1975-76	1976-77*
<b>South</b>	49	55
Andhra Pradesh	38	
Karnataka	11	
Tamil Nadu	a	
<b>West</b>	4	5
Gujarat	a	
Maharashtra	4	
<b>Central</b>	17	20
Madhya Pradesh	3	
Rajasthan	1	
Uttar Pradesh	13	
<b>North</b>	22	25
Haryana	4	
Punjab	18	
<b>All-India</b>	92	105

\* Estimated.

a less than 500 tonnes.

Table 27

## (i) Distribution of nitrophosphate (15-15-15)

('000 tonnes)

Zone/State	1971-72+	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>61</b>	<b>69</b>	<b>81</b>	<b>83</b>	<b>37</b>	<b>20</b>
Andhra Pradesh	34	24	30	38	6	
Kerala	—	1	—	—	a	
Karnataka	18	40	49	35	26	
Tamil Nadu	9	4	—	—	2	
Coffee Plantation	—	—	2	10	3	
<b>West</b>	<b>80</b>	<b>105</b>	<b>117</b>	<b>60</b>	<b>74</b>	<b>70</b>
Gujarat	80	5	5	3	4	
Maharashtra	—	100	112	57	70	
<b>Central</b>	<b>28</b>	<b>22</b>	<b>15</b>	<b>23</b>	<b>32</b>	<b>20</b>
Madhya Pradesh	a	8	10	7	3	
Uttar Pradesh	28	14	5	16	27	
Rajasthan	—	a	—	—	2	
<b>North</b>	<b>7</b>	<b>1</b>	<b>—</b>	<b>—</b>	<b>4</b>	<b>5</b>
Punjab	7	1	—	—	—	
Haryana	—	a	—	—	4	
Himachal Pradesh	—	a	—	—	—	
<b>East</b>	<b>30</b>	<b>9</b>	<b>—</b>	<b>17</b>	<b>45</b>	<b>20</b>
Assam	a	—	—	—	1	
Bihar	9	a	—	—	15	
Orissa	2	—	—	—	—	
West Bengal	19	9	—	17	29	
<b>Total</b>	<b>206</b>	<b>206</b>	<b>213</b>	<b>183</b>	<b>192</b>	<b>135</b>
<b>Others</b>	<b>—</b>	<b>4</b>	<b>1</b>	<b>a</b>		
<b>All-India</b>	<b>206</b>	<b>210</b>	<b>214</b>	<b>184</b>	<b>192</b>	<b>135</b>

\* Estimated.

+ Constitutes grades 20-20-2; 18-18-9 and 15-15-15.

a Less than 500 tonnes.

Note : A quantity of 383 tonnes of nitrophosphate (15-15-15) was supplied to Bhutan.

## (ii) Distribution of nitrophosphate (20-20-0)

('000 tonnes)

Zone/State	1975-76	1976-77*
<b>South</b>	<b>1</b>	<b>25</b>
Andhra Pradesh	a	
Karnataka	a	
<b>West</b>	<b>1</b>	<b>40</b>
Gujarat	a	
Maharashtra	1	
<b>Central</b>	<b>—</b>	<b>15</b>
<b>All-India</b>	<b>2</b>	<b>80</b>

\* Estimated.

a Less than 500 tonnes.

## (iii) Distribution of ammonium phosphate sulphate nitrate (20-20-0)

('000 tonnes)

Zone/State	1975-76	1976-77*
<b>South</b>	<b>1</b>	<b>15</b>
Andhra Pradesh	1	
<b>West</b>	<b>1</b>	<b>20</b>
Gujarat	a	
Maharashtra	1	
<b>Central</b>	<b>—</b>	<b>10</b>
<b>North</b>	<b>4</b>	<b>10</b>
Punjab	4	
<b>All-India</b>	<b>6</b>	<b>55</b>

\* Estimated.

a Less than 500 tonnes.

Table 28

## Distribution of diammonium phosphate (18-46-0)

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	—	32	44	77	15	20
Andhra Pradesh	—	a	4	26	12	
Kerala	—	—	5	4	—	
Karnataka	—	4	a	21	—	
Tamil Nadu	—	26	35	25	3	
Pondicherry	—	1	a	a	a	
UPASI	—	—	—	a	—	
<b>West</b>	111	87	105	72	41	60
Gujarat	55	71	71	50	34	
Maharashtra	5	16	34	20	6	
Goa	—	a	a	1	1	
Dadra and Nagar Haveli	—	a	a	a	a	
<b>Central</b>	92	128	128	91	47	50
Madhya Pradesh	17	4	20	13	16	
Rajasthan	7	27	14	8	12	
Uttar Pradesh	68	97	93	69	18	
Delhi	1	a	1	a	1	
<b>North</b>	110	72	101	101	19	25
Haryana	16	5	26	11	2	
Himachal Pradesh	—	a	a	a	a	
Jammu & Kashmir	—	2	1	5	2	
Punjab	94	65	74	85	15	
Chandigarh	—	—	—	a	—	
<b>East</b>	29	20	13	22	53	55
Assam	—	a	—	—	—	
Bihar	25	8	10	16	38	
Orissa	—	—	2	4	—	
West Bengal	4	12	a	2	1	
Manipur	—	a	a	a	14	
Tripura	—	—	1	—	—	
Nagaland	—	—	a	a	—	
<b>Total</b>	342	339	391	363	175	210
<b>Others</b>	2	90	21	—	a	—
<b>All-India</b>	344	429	412	363	175	210

Note : The sum of State totals may not tally with zonal total because of supplies made by Pool to fertiliser manufacturers under seeding programme.

\* Estimated.

a Less than 500 tonnes.

A quantity of 144; 48 and 32 tonnes was supplied to Coffee Board, Rubber Board and Tea Board (South) respectively.

Table 29

## (i) Distribution of NPK complex fertiliser (17-17-17)

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	45	238	221	211	279	300
Andhra Pradesh	6	62	31	49	48	
Kerala	1	14	20	10	21	
Karnataka	11	60	28	29	81	
Tamil Nadu	27	98	139	118	126	
Pondicherry	a	2	3	5	3	
Tea Board	—	—	—	—	a	
<b>West</b>	—	—	—	—	2	20
Maharashtra	—	—	—	—	2	
<b>Central</b>	—	—	—	—	1	20
Madhya Pradesh	—	—	—	—	1	
<b>All-India</b>	45	238	221	211	282	340

## (ii) Distribution of NPK complex fertiliser (14-28-14)

<b>South</b>	12	44	59	34	a	15
Andhra Pradesh	1	21	29	23	—	
Kerala	a	1	a	—	—	
Karnataka	1	7	11	9	a	
Tamil Nadu	10	15	18	2	—	
Pondicherry	a	a	1	—	—	
<b>All-India</b>	12	44	59	34	a	15

## (iii) Distribution of NPK complex fertilisers (18-17-17), (17-17-16) and (13-13-20)

('000 tonnes)

Zone/State	1975-76		
	18-17-17	17-17-16	13-13-20
<b>South</b>			1
Kerala	—	—	1
<b>West</b>	8	a	—
Maharashtra	8	a	—
<b>All-India</b>	8	a	1

\* Estimated.  
a Less than 500 tonnes

## (iv) Distribution of NPK complex fertilisers (18-27-3) and (19-19-19)

('000 tonnes)

Zone/State	1971-72	1972-73	1975-76	1976-77*
	<b>18-27-3</b>		<b>(19-19-19)</b>	
<b>South</b>			1	15
Andhra Pradesh	—	—	a	
Karnataka	—	—	1	
Tamil Nadu	—	—	a	
Coffee Board	—	—	a	
<b>West</b>	—	2	1	15
Maharashtra	—	2	1	
Goa	—	—	a	
<b>North</b>	3	—	—	—
Haryana	1	—	—	
Punjab	2	—	—	
<b>All-India</b>	3	2	2	30

## (v) Distribution of NPK complex fertilisers (10-26-26) and (12-32-16)

('000 tonnes)

Zone/State	10-26-26			12-32-16		
	1974-75	1975-76	1976-77*	1974-75	1975-76	1976-77*
<b>South</b>	—	4	40	—	1	15
Andhra Pradesh	—	a	—	—	—	—
Karnataka	—	1	—	—	1	—
Tamil Nadu	—	3	—	—	—	—
<b>West</b>	1	1	30	1	7	25
Gujarat	1	1	—	1	3	—
Maharashtra	—	a	—	a	4	—
<b>Central</b>	1	7	20	7	11	25
Madhya Pradesh	—	2	—	1	3	—
Rajasthan	—	—	—	a	4	—
Uttar Pradesh	1	5	—	6	4	—
<b>North</b>	3	—	10	5	21	35
Haryana	1	—	—	a	9	—
Punjab	2	—	—	5	12	—
<b>All-India</b>	5	12	100	13	40	100

\* Estimated  
a Less than 500 tonnes

Table 30

*Distribution of NPK complex fertilisers\*\*  
(Imported)*

('000 tonnes)

Zone/State	1971-72‡	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>91‡</b>	<b>55</b>	<b>20</b>	<b>74</b>	<b>58</b>	<b>15</b>
Andhra Pradesh	—	8	3	24	17	
Kerala	—	8	1	6	12	
Karnataka	—	24	2	17	12	
Tamil Nadu	—	15	14	27	15	
Pondicherry	—	a	—	a	a	
Coffee Board	—	—	—	—	2	
<b>West</b>	<b>152‡</b>	<b>1</b>	<b>a</b>	<b>1</b>	<b>26</b>	<b>10</b>
Gujarat	—	—	—	1	—	
Maharashtra	—	1	—	—	26	
Goa	—	a	a	—	—	
<b>Central</b>	<b>46</b>	<b>19</b>	<b>1</b>	<b>67</b>	<b>8</b>	<b>3</b>
Madhya Pradesh	5	7	1	a	—	
Uttar Pradesh	41	9	—	67	8	
Rajasthan	—	3	—	—	—	
<b>North</b>	<b>—</b>	<b>5</b>	<b>—</b>	<b>50</b>	<b>1</b>	<b>1</b>
Punjab	—	—	—	49	1	
Haryana	—	2	—	1	—	
Jammu & Kashmir	—	3	—	—	—	
<b>East</b>	<b>1</b>	<b>6</b>	<b>a</b>	<b>4</b>	<b>2</b>	<b>1</b>
Bihar	—	—	a	4	1	
Orissa	1	a	—	—	—	
West Bengal	a	6	a	a	1	
Nagaland	—	—	—	—	—	
<b>Total</b>	<b>290</b>	<b>86</b>	<b>22</b>	<b>196</b>	<b>95</b>	<b>30</b>
<b>Others</b>	<b>6</b>	<b>92@</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>All-India</b>	<b>296</b>	<b>178</b>	<b>22</b>	<b>196</b>	<b>95</b>	<b>30</b>

Note : \* Estimated.

\*\* In the absence of gradewise breakup, entire quantity is assumed to be of grade 15-15-15.

a Less than 500 tonnes.

@ Distributed for seeding programme and others.

‡ Statewise breakup is not available.

Table 31

## Distribution of urea ammonium phosphate

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>						
28-28-0	56	114	131	98	121	135
20-20-0	18	18	—	—	—	—
22-22-11	6	—	—	—	a	—
14-35-14	—	20	29	22	11	40
Andhra Pradesh						
28-28-0	56	100	124	94	117	—
20-20-0	18	8	—	—	—	—
22-22-11	6	—	—	—	—	—
14-35-14	—	20	27	18	11	—
Kerala						
28-28-0	—	a	—	—	—	—
20-20-0	—	a	—	—	—	—
Karnataka						
28-28-0	—	7	4	2	3	—
20-20-0	—	4	—	—	—	—
14-35-14	—	—	1	2	a	—
22-22-11	—	—	—	—	a	—
Tamil Nadu						
28-28-0	—	7	3	2	1	—
20-20-0	—	5	—	—	—	—
14-35-14	—	—	1	2	—	—
Coffee Board						
28-28-0	—	—	—	—	a	—
<b>West</b>						
28-28-0	—	5	—	a	4	5
20-20-0	—	2	—	—	—	—
22-22-11	—	—	—	—	a	—
Gujarat						
28-28-0	—	a	—	—	—	—
Maharashtra						
28-28-0	—	4	—	—	3	—
20-20-0	—	2	—	—	—	—
22-22-11	—	—	—	—	a	—
Goa						
28-28-0	—	—	—	a	1	—
<b>Central</b>						
28-28-0	—	16	17	14	15	20
14-35-14	—	—	3	5	1	5
22-22-11	—	—	—	—	2	—
Madhya Pradesh						
28-28-0	—	20	17	14	15	—
14-35-14	—	—	3	5	1	—
Rajasthan						
28-28-0	—	a	—	—	—	—
22-22-11	—	—	—	—	1	—
Uttar Pradesh						
28-28-0	—	5	—	—	—	—
22-22-11	—	—	—	—	1	—

## Distribution of urea ammonium phosphate

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>North</b>						
28-28-0	—	2	—	—	—	—
Haryana						
28-28-0	—	1	—	—	—	—
Punjab						
28-28-0	—	1	—	—	—	—
<b>East</b>						
28-28-0	—	23	25	22	19	30
14-35-14	—	6	7	4	1	5
Bihar						
28-28-0	—	3	1	—	3	—
14-35-14	—	—	a	—	—	—
Orissa						
28-28-0	—	11	19	14	11	—
14-35-14	—	6	6	2	1	—
West Bengal						
28-28-0	—	9	5	8	5	—
14-35-14	—	a	1	2	a	—
<b>Other†</b>						
28-28-0	189	—	—	—	—	—
20-20-0	24	—	—	—	—	—
22-22-11	—	—	—	—	—	—
<b>Total</b>						
28-28-0	226	170	173	134	159	190
20-20-0	42	20	—	—	—	—
22-22-11	6	—	—	—	2	—
14-35-14	—	28	39	30	13	50

\* Estimated.

a Less than 500 tonnes.

† Statewise breakup is not available.



Table 32

(i) Distribution of superphosphate (16% w.s.  $P_2O_5$ )

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>210</b>	<b>219</b>	<b>231</b>	<b>197</b>	<b>130</b>	<b>220</b>
Andhra Pradesh	85	85	101	78	63	
Kerala	8	9	14	11	7	
Karnataka	58	64	58	56	25	
Tamil Nadu	58	60	58	52	35	
Pondicherry	1	1	a	a	a	
<b>West</b>	<b>203</b>	<b>170</b>	<b>198</b>	<b>138</b>	<b>106</b>	<b>180</b>
Gujarat	121	96	98	60	46	
Maharashtra	82	74	100	77	60	
Goa	—	—	a	1	a	
<b>Central</b>	<b>161</b>	<b>175</b>	<b>167</b>	<b>160</b>	<b>78</b>	<b>130</b>
Madhya Pradesh	136	128	110	74	31	
Rajasthan	10	16	21	16	13	
Uttar Pradesh	15	31	36	70	33	
Delhi	a	a	a	a	1	
<b>North</b>	<b>39</b>	<b>73</b>	<b>69</b>	<b>87</b>	<b>39</b>	<b>70</b>
Haryana	10	10	8	8	3	
Himachal Pradesh	1	a	1	1	2	
Punjab	28	63	60	78	34	
<b>East</b>	<b>70</b>	<b>98</b>	<b>101</b>	<b>103</b>	<b>67</b>	<b>100</b>
Assam	6	11	8	4	9	
Bihar	21	28	32	44	30	
Orissa	6	14	18	13	3	
West Bengal	37	37	40	39	24	
Tripura	a	a	1	a	1	
Nagaland	a	a	a	—	—	
Manipur	—	a	a	—	—	
Meghalaya	—	3	2	2	a	
Andaman	—	—	—	a	—	
Mizoram	—	—	—	—	a	
<b>Total</b>	<b>683</b>	<b>730</b>	<b>766</b>	<b>685</b>	<b>420</b>	<b>700</b>
Used in mixtures	67	64	69	49	48	50
<b>All-India</b>	<b>750</b>	<b>794</b>	<b>835</b>	<b>734</b>	<b>468</b>	<b>750</b>

\* Estimated.

a Less than 500 tonnes.

Note: A quantity of 100 tonnes of single superphosphate was supplied to Bhutan.

(ii) Distribution of 'Pelofos' (5% w.s.  $P_2O_5$ )

('000 tonnes)

Zone/State	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>a</b>	<b>a</b>	—	—
Andhra Pradesh	a	a		
<b>West</b>	<b>a</b>	<b>1</b>	<b>a</b>	<b>1</b>
Maharashtra	a	1	a	
<b>Central</b>	<b>2</b>	<b>1</b>	<b>a</b>	<b>1</b>
Madhya Pradesh	2	1	a	
Uttar Pradesh	—	—	a	
<b>North</b>	—	—	—	—
<b>East</b>	<b>6</b>	<b>8</b>	<b>2</b>	<b>3</b>
Bihar	2	2	1	
Orissa	4	4	1	
West Bengal	—	2	a	
<b>Others</b>	—	<b>a</b>	—	—
<b>All-India</b>	<b>9</b>	<b>10</b>	<b>3</b>	<b>5</b>

\* Estimated.

a Less than 500 tonnes.

Table 33

*Distribution of triple superphosphate (45% w.s. P<sub>2</sub>O<sub>5</sub>)*

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>a</b>	<b>a</b>	<b>1</b>
Andhra Pradesh	a	a	a	a	a	
Kerala	—	a	a	a	—	
Karnataka	a	a	1	a	a	
Tamil Nadu	a	a	a	a	a	
Pondicherry	a	a	—	a	a	
<b>West</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>3</b>
Gujarat	a	1	a	2	a	
Maharashtra	2	2	1	a	1	
Goa	—	—	—	a	—	
<b>Central</b>	<b>2</b>	<b>a</b>	<b>1</b>	<b>a</b>	<b>a</b>	<b>5</b>
Madhya Pradesh	2	—	—	—	a	
Rajasthan	—	a	1	a	a	
Uttar Pradesh	a	a	a	a	a	
Delhi	a	a	—	—	—	
<b>North</b>	<b>2</b>	<b>—</b>	<b>a</b>	<b>a</b>	<b>a</b>	<b>1</b>
Punjab	2	—	a	a	—	
Chandigarh	—	—	—	—	a	
<b>East</b>	<b>a</b>	<b>—</b>	<b>a</b>	<b>4</b>	<b>a</b>	<b>10</b>
Assam	a	—	a	—	—	
Bihar	a	—	a	4	a	
West Bengal	a	—	a	a	—	
Orissa	—	—	a	a	a	
<b>All-India</b>	<b>7</b>	<b>4</b>	<b>5</b>	<b>7</b>	<b>2</b>	<b>20</b>

\* Estimated.

a Less than 500 tonnes.

Note : Year 1974-75 includes 4.2 thousand tonnes of imported triple superphosphate supplied to Bihar.

Table 34

Distribution of muriate of potash (60% (K<sub>2</sub>O)

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>160</b>	<b>212</b>	<b>281</b>	<b>196</b>	<b>171</b>	<b>220</b>
Andhra Pradesh	16	25	46	24	11	
Kerala	37	32	48	33	30	
Karnataka	23	21	44	31	16	
Tamil Nadu	84	133	142	108	114	
Pondicherry	a	1	1	a		
<b>West</b>	<b>81</b>	<b>114</b>	<b>148</b>	<b>125</b>	<b>108</b>	<b>135</b>
Gujarat	12	16	33	30	31	
Maharashtra	69	98	114	92	69	
Goa	a	a	1	3	8	
<b>Central</b>	<b>46</b>	<b>54</b>	<b>79</b>	<b>58</b>	<b>14</b>	<b>50</b>
Madhya Pradesh	10	6	8	9	2	
Rajasthan	2	5	8	3	1	
Uttar Pradesh	34	43	63	46	11	
Delhi	a	a	a	a	a	
<b>North</b>	<b>14</b>	<b>17</b>	<b>37</b>	<b>24</b>	<b>11</b>	<b>35</b>
Haryana	1	1	7	2	1	
Himachal Pradesh	a	a	a	a	1	
Punjab	13	16	30	22	9	
<b>East</b>	<b>50</b>	<b>75</b>	<b>78</b>	<b>72</b>	<b>44</b>	<b>75</b>
Assam	6	20	11	11	11	
Bihar	11	16	16	19	8	
Orissa	4	8	13	9	7	
West Bengal	29	31	37	33	18	
Tripura	a	a	a	a	a	
Nagaland	NA	a	NA	a	—	
Manipur	a	a	a	a	—	
Andamans	NA	NA	a	a	—	
<b>Total</b>	<b>351</b>	<b>472</b>	<b>623</b>	<b>475</b>	<b>348</b>	<b>515</b>
<b>Others</b>	—	a	—	—	—	—
<b>All-India</b>	<b>351</b>	<b>472</b>	<b>623</b>	<b>475</b>	<b>348</b>	<b>515</b>

\* Estimated.

a Less than 500 tonnes.

NA Not available.

Note : 1. Material supplied to NPK complex fertiliser manufacturers is included in the respective States in which their factories are located.

2. A quantity of 96 tonnes was supplied to Bhutan during 1975-76.

Table 35

*Distribution of sulphate of potash (50% K<sub>2</sub>O)*

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77*
<b>South</b>	<b>3</b>	<b>3</b>	<b>7</b>	<b>5</b>	<b>3</b>	<b>3</b>
Andhra Pradesh	2	2	5	3	3	
Kerala	a	a	a	—	—	
Karnataka	a	a	1	2	a	
Tamil Nadu	a	a	a	a	a	
Pondicherry	a	—	—	—	—	
<b>West</b>	<b>a</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>a</b>	<b>1</b>
Gujarat	a	a	1	a	—	
Maharashtra	a	1	a	1	a	
<b>Central</b>	<b>a</b>	<b>a</b>	<b>a</b>	<b>a</b>	<b>—</b>	<b>2</b>
Madhya Pradesh	—	—	a	—	—	
Uttar Pradesh	—	—	a	a	—	
Delhi	a	a	a	a	—	
<b>North</b>	<b>a</b>	<b>a</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
Himachal Pradesh	a	—	—	—	—	
Punjab	—	a	—	—	—	
<b>East</b>	<b>a</b>	<b>a</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
West Bengal	a	a	—	—	—	
<b>All-India</b>	<b>3</b>	<b>4</b>	<b>8</b>	<b>6</b>	<b>3</b>	<b>5</b>

\* Estimated.

a Less than 500 tonnes.

Table 36

## Seasonwise consumption of nitrogen (N) by states and their percentage increase (1971-72 to 1976-77)

('000 tonnes)

Zone/State	1971-72			1972-73 $\phi$			1973-74 $\phi$			1974-75 $\phi$			1975-76 $\phi$ @			1976-77*		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
<b>South</b>	<b>256</b>	<b>286</b>	<b>542</b>	<b>227</b>	<b>285</b>	<b>512</b>	<b>257</b>	<b>260</b>	<b>517</b>	<b>239</b>	<b>299</b>	<b>538</b>	<b>260</b>	<b>441</b>	<b>701</b>	<b>350</b>	<b>450</b>	<b>800</b>
Andhra Pradesh	101	95	196	80	99	179	90	80	170	97	131	228	116	205	321			
Karnataka	49	49	98	48	59	107	56	52	108	62	68	130	58	79	137			
Kerala	16	15	31	12	21	33	15	20	35	15	17	32	15	18	33			
Tamil Nadu	89	125	214	85	105	190	94	108	202	63	82	145	69	139	208			
Pondicherry	1	1	2	2	1	3	2	1	3	2	1	3	2	1	3			
<b>West</b>	<b>115</b>	<b>132</b>	<b>247</b>	<b>124</b>	<b>105</b>	<b>229</b>	<b>135</b>	<b>153</b>	<b>288</b>	<b>149</b>	<b>111</b>	<b>260</b>	<b>132</b>	<b>151</b>	<b>283</b>	<b>165</b>	<b>155</b>	<b>320</b>
Gujarat	52	63	115	59	55	114	58	81	139	57	41	98	46	62	108			
Maharashtra	62	68	130	64	50	114	76	71	147	91	69	159	85	88	173			
Goa	1	£	2	1	£	1	1	1	2	1	1	3	1	1	3			
Dadra, Nagar Haveli	N. A.	N. A.	N. A.	N. A.	N. A.	N. A.	£	£	£	£	£	£	N. A.	N. A.	N. A.			
<b>Central</b>	<b>184</b>	<b>294</b>	<b>478</b>	<b>159</b>	<b>356</b>	<b>515</b>	<b>169</b>	<b>306</b>	<b>475</b>	<b>161</b>	<b>278</b>	<b>439</b>	<b>148</b>	<b>383</b>	<b>531</b>	<b>220</b>	<b>400</b>	<b>620</b>
Madhya Pradesh	41	38	79	34	58	92	28	59	87	19	42	61	19	55	74			
Rajasthan	18	32	50	15	33	48	19	37	56	17	30	48	19	45	64			
Uttar Pradesh	124	222	346	110	263	373	121	208	329	125	205	329	109	280	389			
Delhi	1	2	3	£	2	2	£	2	3	£	1	2	£	3	4			
<b>North</b>	<b>97</b>	<b>209</b>	<b>308</b>	<b>111</b>	<b>220</b>	<b>331</b>	<b>133</b>	<b>114</b>	<b>347</b>	<b>87</b>	<b>188</b>	<b>275</b>	<b>107</b>	<b>240</b>	<b>347</b>	<b>140</b>	<b>260</b>	<b>400</b>
Haryana	22	51	73	30	53	83	39	55	94	23	43	66	23	63	86			
Himachal Pradesh	2	2	4	2	3	5	2	2	4	3	2	6	3	3	6			
Jammu & Kashmir	3	1	4	5	3	8	6	4	10	5	2	7	6	3	9			
Punjab	70	155	225	74	161	235	85	152	237	56	140	196	74	170	244			
Chandigarh	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	£	1	1	N.A.	1	N.A.	1	1	1			
<b>East</b>	<b>83</b>	<b>104</b>	<b>187</b>	<b>61</b>	<b>130</b>	<b>191</b>	<b>92</b>	<b>85</b>	<b>177</b>	<b>87</b>	<b>130</b>	<b>217</b>	<b>80</b>	<b>162</b>	<b>242</b>	<b>125</b>	<b>175</b>	<b>300</b>
Assam	2	3	5	4	3	7	1	4	5	1	3	4	2	2	3			
Bihar	36	52	88	25	64	89	38	32	70	35	55	90	22	91	113			
Orissa	17	20	37	15	26	41	24	20	44	15	19	34	16	20	36			
West Bengal	27	29	56	15	37	52	27	27	54	35	51	86	39	47	86			
Manipur	£	£	£	£	1	1	1	1	2	£	1	1	£	1	2			
Tripura	1	£	1	1	£	1	1	£	1	1	£	1	£	N. A.	N. A.			
Nagaland	N.A.	N.A.	N.A.	N.A.	N.A.	£	£	£	£	£	£	£	£	2	2			
Meghalaya	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1	1	2	£	1	1	£	1	1			
Others	—	—	—	—	—	—	N.A.	N.A.	25	16	20	36	17	27	44	20	40	60
<b>All India</b>	<b>735</b>	<b>1,025</b>	<b>1,760</b>	<b>682</b>	<b>1,097</b>	<b>1,779</b>	<b>786</b>	<b>1,018</b>	<b>1,829</b>	<b>740</b>	<b>1,026</b>	<b>1,766</b>	<b>743</b>	<b>1,405</b>	<b>2,148</b>	<b>1,020</b>	<b>1,480</b>	<b>2,500</b>

Source : Zonal conferences on fertilisers held by Ministry of Agriculture and Irrigation, New Delhi.

Table 36

Seasonwise consumption of nitrogen (N) by states and their percentage increase (1971-72 to 1976-77) (Concluded)

Zone/State	1971-72			1972-73 $\phi$			1973-74 $\phi$			1974-75 $\phi$			1975-76 $\phi$ @			1976-77*		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
<b>South</b>	+11.3	+8.3	+9.7	-11.3	-0.3	-5.6	+13.2	-8.8	+0.9	-7.1	+16.0	+4.0	+8.7	+47.4	+30.2	+34.6	+2.0	+11.4
Andhra Pradesh	-1.0	-9.5	-5.3	-20.8	+4.2	-8.7	+12.5	-19.2	-5.1	+7.8	+63.8	+34.1	+19.5	+56.4	+40.7			
Karnataka	-2.0	+13.9	+5.4	-2.1	+20.4	+9.1	+16.7	-11.9	+0.9	+10.7	+30.8	+20.4	-6.5	+16.1	+5.3			
Kerala	+33.3	+7.1	+19.2	-25.0	+40.0	+6.5	+25.0	-4.8	+6.0	-	-15.0	-8.6	-	+5.8	+3.1			
Tamil Nadu	+36.9	+25.7	+29.7	-4.5	-16.0	-11.2	+10.6	+2.9	+6.3	-33.0	-24.1	-29.3	+9.5	+69.5	+43.4			
<b>West</b>	+5.5	+21.1	+13.3	+7.8	-20.5	-7.3	+8.9	+45.7	+25.8	+10.3	-27.5	-9.8	-11.5	+36.0	+8.8	+25.0	+20.6	+13.1
Gujarat	+23.8	-1.6	+8.5	+13.5	-12.7	-0.9	-1.7	+47.3	+21.9	-1.8	-49.4	-29.5	-19.3	+51.2	+10.2			
Maharashtra	-6.1	+51.1	+17.1	+3.2	-26.5	-12.3	+18.8	+42.0	+28.9	+19.7	-2.9	+8.1	-6.6	+27.5	+8.8			
<b>Central</b>	+24.3	+24.1	+24.2	-13.6	+21.1	+7.7	+6.3	-14.0	-7.9	-4.8	-9.2	-7.6	-8.1	+37.3	+20.9	+48.6	+4.4	+16.8
Madhya Pradesh	+41.4	+72.7	+54.9	-17.1	+52.6	+16.4	-17.7	+1.7	-5.5	-32.2	-28.8	-29.9	-	+30.9	+21.3			
Rajasthan	+28.6	+18.5	+22.0	-16.7	+3.1	-4.0	+26.7	+12.1	+16.7	-10.6	-19.0	-14.3	+11.7	+50.0	+33.3			
Uttar Pradesh	+19.2	+18.7	+18.9	-11.3	+18.4	+7.8	+10.0	-21.0	-11.8	+3.3	-1.5	-	-12.8	+36.5	+18.2			
<b>North</b>	+27.6	+25.1	+25.9	+14.4	+5.3	+8.2	+19.8	-2.8	+4.8	-34.6	-12.1	-20.8	+22.9	+27.6	+26.1	+30.8	+8.3	+15.3
Haryana	+15.8	+21.4	+19.7	+36.4	+3.9	+13.7	+30.0	+3.8	+13.3	-41.1	-21.9	-29.8	-	+46.5	+30.3			
Himachal Pradesh	+100.0	-	+33.3	-	+50.0	+25.0	-	-33.3	-20.0	+50.0	-	+50.0	-	+50.8	-			
Jammu & Kashmir	-	-	-	+66.7	+200.0	+100.0	+20.0	+33.3	+25.0	-16.7	-50.0	-30.0	+20.0	+50.0	+28.5			
Punjab	+32.1	+27.0	+28.6	+5.7	+3.9	+4.4	+14.9	-5.6	+8.5	-34.1	-7.9	-17.3	+32.1	+21.4	+24.4			
<b>East</b>	+29.7	+25.3	+27.2	-26.5	+25.3	+2.1	+50.8	-34.4	-7.3	-5.5	+52.6	+22.6	-8.1	+24.6	+11.5	+56.3	+8.0	+24.0
Assam	-	-	-	+100.5	-	+40.0	-75.0	+33.3	-28.6	-	-25.0	-20.0	+100.0	-33.3	-25.0			
Bihar	+12.5	+20.9	+17.3	-30.5	+23.1	+1.1	+52.0	-50.0	-21.3	-7.9	+71.8	+28.5	-37.2	+65.4	+25.5			
Orissa	+142.8	+53.8	+85.0	-11.8	+30.0	+10.8	+60.0	-23.1	+7.3	-37.5	-5.0	-22.8	+6.6	+5.2	+5.8			
West Bengal	+17.4	+20.8	+19.1	-44.5	+27.8	-7.1	+80.0	-27.0	+3.8	+29.6	+88.8	+59.2	+11.4	-7.9	-			
<b>All India</b>	+17.0	+19.3	+18.4	-7.2	+7.0	+1.1	+15.2	-7.3	+2.8	-5.9	+0.7	-3.5	+0.4	+36.9	+21.6	+37.3	+5.3	+16.4

N. A. Not available.

$\phi$  For 12 months (February/January).

@ It includes Kharif 1975 actuals and Rabi 1975-76 estimates presumably for December 1975 and January 1976.

£ Less than 500 tonnes.

\* FAI estimates.

Table 37

Seasonwise consumption of Phosphates (P<sub>2</sub>O<sub>5</sub>) by States and their percentage increase  
(1971-72 to 1976-77)

('000 tonnes)

Zone/State	1971-72			1972-73 $\phi$			1973-74 $\phi$			1974-75 $\phi$			1975-76 @ $\phi$			1976-77*		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
<b>South</b>	111	93	204	109	114	223	113	113	225	96	83	179	77	97	174	120	100	220
Andhra Pradesh	42	32	74	35	37	72	42	40	82	32	22	54	30	37	67			
Karnataka	28	14	42	24	32	56	25	24	48	26	28	54	20	24	43			
Kerala	9	7	16	9	13	22	12	11	23	9	9	17	8	8	15			
Tamil Nadu	31	40	71	40	31	71	33	38	71	28	24	52	20	29	48			
Pondichery	1	1	2	1	1	2	1	1	2	1	1	1	£	£	1			
<b>West</b>	63	66	130	60	32	92	71	63	134	69	31	100	37	38	75	65	45	110
Gujarat	27	34	61	35	19	54	34	26	60	31	8	39	19	16	35			
Maharashtra	36	32	68	25	12	37	36	37	73	38	23	61	17	21	38			
Goa	£	£	£	£	£	1	1	£	1	£	£	1	1	1	2			
Dadra & Nagar Haveli	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	£	£	£	£	£	N.A.	N.A.	N.A.			
<b>Central</b>	40	86	126	32	112	144	44	101	145	33	57	89	22	79	101	35	85	120
Madhya Pradesh	19	15	34	17	22	39	18	26	44	11	21	31	8	20	28			
Rajasthan	6	10	16	2	5	7	6	8	14	3	6	9	4	8	12			
Uttar Pradesh	15	61	76	13	84	97	20	67	87	19	30	49	10	50	60			
Delhi	£	£	£	£	£	1	£	£	£	£	£	£	£	1	1			
<b>North</b>	10	53	63	15	66	81	24	70	94	12	43	55	9	59	68	20	70	90
Haryana	1	6	7	2	6	8	7	10	17	3	4	7	1	7	8			
Himachal Pradesh	1	1	2	1	1	2	1	1	2	1	1	3	1	1	2			
Jammu & Kashmir	£	£	1	1	1	2	2	1	3	1	1	1	1	1	1			
Punjab	8	45	52	12	57	69	15	58	73	8	37	45	7	50	57			
Chandigarh	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	£	£	£	£	£	£	£	£	£			
<b>East</b>	14	28	42	15	33	48	24	25	48	18	28	46	17	30	48	20	40	60
Assam	1	1	2	1	1	2	£	£	£	£	1	1	1	£	1			
Bihar	6	8	14	6	13	19	9	7	16	6	9	16	3	11	14			
Orissa	3	5	8	3	7	10	7	5	12	3	6	9	4	3	7			
West Bengal	4	13	17	4	12	16	7	12	18	8	12	20	9	15	24			
Manipur	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£			
Tripura	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£			
Nagaland	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	£	£	£	N.A.	£	N.A.	£	1	1			
Meghalaya	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	£	£	£	£	£	£	£	£	£			
Others	—	—	—	—	—	—	N.A.	N.A.	3	1	1	2	1	1	2			
<b>All India</b>	<b>238</b>	<b>326</b>	<b>564</b>	<b>231</b>	<b>356</b>	<b>587</b>	<b>275</b>	<b>372</b>	<b>650</b>	<b>229</b>	<b>243</b>	<b>472</b>	<b>162</b>	<b>305</b>	<b>487</b>	<b>280</b>	<b>340</b>	<b>600</b>

Source : Zonal conferences on fertilisers held by Ministry of Agriculture and Irrigation, New Delhi.

(Continued)

Seasonwise consumption of Phosphates (P<sub>2</sub>O<sub>5</sub>) by States and their percentage increase (Concluded)  
(1971-72 to 1976-77)

Zone/State	1971-72			1972-73 $\phi$			1973-74 $\phi$			1974-75 $\phi$			1975-76 @ $\phi$			1976-77		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
<b>South</b>	+23.3	+22.2	+22.9	-1.8	+22.6	+9.3	+3.7	-0.9	+0.9	-15.1	-26.5	-20.5	-19.8	+16.9	-2.8	+55.8	+3.0	+26.4
Andhra Pradesh	-	-88.2	+25.4	-16.7	+15.6	-2.7	+20.0	+8.1	+13.9	-23.8	-45.0	-34.1	-6.2	+68.2	+24.1	-	-	-
Karnataka	+75.0	-33.3	+13.5	-14.3	-128.6	+33.3	+4.2	-25.0	-14.3	-4.0	-16.7	+12.5	-23.1	-14.3	-20.4	-	-	-
Kerala	+28.6	-	+14.3	-	+85.7	+37.5	+33.3	-15.4	+4.5	-25.0	-18.2	-26.1	-11.1	-11.1	-11.1	-	-	-
Tamil Nadu	+34.9	+29.0	+31.5	+29.0	-22.5	-	-17.5	+22.6	-	-15.2	-36.8	-26.8	-28.6	+20.8	-7.3	-	-	-
<b>West</b>	+6.8	+43.5	+23.8	-4.8	-51.5	-29.2	+18.3	+96.9	+45.7	-2.8	-50.8	-25.4	-46.4	+22.6	-25.0	+75.7	+18.4	+46.7
Gujarat	-6.9	+41.7	+15.1	-29.6	-44.1	-11.5	-2.9	+36.8	+11.1	-8.8	-69.2	-35.0	-38.7	+100.0	-10.3	-	-	-
Maharashtra	+20.0	+45.5	+30.8	-30.6	-62.5	-45.6	+44.0	+208.3	+97.3	+5.6	-37.8	-16.4	-55.3	-8.7	-37.7	-	-	-
<b>Central</b>	+11.1	+14.7	+18.5	-20.0	+30.2	+14.3	+37.5	-9.8	+0.7	-25.0	-43.6	-38.6	-33.3	+38.6	+13.5	+51.1	+7.6	+18.8
Madhya Pradesh	+26.7	+50.0	+36.0	-10.5	+46.7	+14.7	+5.9	+18.2	+12.8	-38.9	-19.9	-29.5	-27.3	-4.8	-9.7	-	-	-
Rajasthan	+100.0	+25.0	+45.5	-66.7	-50.0	-56.2	+200.0	+60.0	+100.0	-50.0	-25.0	-35.7	+33.3	+33.3	+33.3	-	-	-
Uttar Pradesh	-16.7	+7.0	+1.3	-13.3	+37.7	+27.6	+53.8	-20.2	-10.3	-5.0	-55.2	-43.7	-47.4	+66.7	+22.4	-	-	-
<b>North</b>	+66.7	+51.4	+53.7	+50.0	+24.5	-28.6	+60.0	+6.0	+16.0	-50.0	-38.6	-41.5	-25.0	+37.2	+23.6	+122.2	+18.6	+32.4
Haryana	-	-	-	+100.0	-	+14.3	+250.0	+66.7	+112.5	-57.1	-60.0	-58.2	-66.7	+75.0	+14.3	-	-	-
Himachal Pradesh	-	-	-	-	-	-	-	-	-	-	-	+50.0	-	-	-	-	-	-
Jammu & Kashmir	-	-	-	+100.0	+100.0	+100.0	+100.0	-	+50.0	-50.0	-	-66.7	-	-	-	-	-	-
Punjab	+166.7	+60.7	+70.9	+50.0	+26.7	+30.2	+25.0	+1.8	+5.8	-46.7	-36.2	-38.4	-12.5	+35.1	+26.7	-	-	-
<b>East</b>	+7.7	+12.0	+10.5	+7.1	-21.4	+14.3	+60.0	-24.2	-	-25.0	+12.0	-4.2	-5.6	+7.1	+2.2	+17.6	+33.3	+25.0
Assam	-	-	-	-	-	-	+50.0	-50.0	-50.0	-100.0	+100.0	+100.0	-50.0	-	-	-	-	-
Bihar	+20.0	-38.5	-22.2	-	-62.5	+35.7	+50.0	-46.2	-15.8	-33.3	+28.6	-	-50.0	+22.2	-12.5	-	-	-
Orissa	-	+66.7	+33.3	-	+40.0	-25.0	+133.3	-28.6	-20.0	-57.1	+20.0	-25.0	+33.3	-50.0	-22.2	-	-	-
West Bengal	-	+62.5	+41.7	-	-7.7	-5.9	+110.0	-	+12.5	-14.3	-	+11.1	+12.5	+25.0	+20.0	-	-	-
<b>All India</b>	+16.7	+26.4	+22.1	-3.0	+9.2	+4.1	+19.0	+4.5	+10.7	-16.3	-34.7	-27.4	-29.3	+25.5	-1.1	+60.5	+11.5	+28.5

$\phi$  For 12 months (February/January).

@ It includes Kharif actuals and Rabi estimates presumably for December 1975 and January 1976.

$\phi$  Less than 500 tonnes.

\* FAI estimates.  
N.A.-Not available.



Table 38

Seasonwise consumption of Potash ( $K_2O$ ) by States and their percentage increase  
(1971-72 to 1976-77)

('000 tonnes)

Zone/State	1971-72			1972-73 $\phi$			1973-74 $\phi$			1974-75 $\phi$			1975-76 $\phi$ @			1976-77*		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
<b>South</b>	64	71	135	79	69	148	74	88	162	73	66	139	54	70	124	90	80	170
Andhra Pradesh	9	18	27	15	9	24	13	16	29	15	9	24	10	15	25			
Karnataka	16	12	28	18	21	39	19	20	39	23	26	49	18	20	38			
Kerala	11	7	18	9	10	19	12	13	25	9	9	18	8	9	17			
Tamil Nadu	27	34	61	36	28	64	29	39	68	25	22	47	19	25	44			
Pondicherry	1	£	1	1	£	1	1	£	1	1	£	1	£	£	1			
<b>West</b>	29	22	51	35	24	59	32	23	55	62	35	97	26	36	62	40	35	75
Gujarat	5	2	7	10	1	11	11	2	13	12	1	13	4	3	7			
Maharashtra	24	20	44	25	23	48	20	21	41	50	33	83	22	32	54			
Goa	£	£	£	£	£	£	£	£	1	£	£	1	1	1	1			
Dadra & Nagar Haveli	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	£	£	£	£	£	£	N.A.	N.A.	N.A.			
<b>Central</b>	14	53	67	12	48	60	16	48	64	16	27	43	8	35	43	15	50	65
Madhya Pradesh	2	4	6	3	5	8	3	6	9	3	5	8	2	4	6			
Rajasthan	2	3	5	1	2	3	2	3	5	1	1	2	£	1	2			
Uttar Pradesh	10	46	56	9	40	49	11	39	50	12	21	33	6	30	36			
Delhi	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£			
<b>North</b>	4	12	16	4	18	22	9	21	30	7	11	18	3	11	14	5	20	25
Haryana	1	2	3	£	2	2	2	2	4	1	2	2	£	2	2			
Himachal Pradesh	£	£	1	£	1	1	1	1	1	1	1	2	£	1	1			
Jammu & Kashmir	£	£	£	£	£	1	1	1	1	£	£	£	£	£	£			
Punjab	3	9	12	3	15	18	5	18	23	5	9	14	2	8	10			
Chandigarh	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	£	£	£	£	£	N.A.	£	—	£			
<b>East</b>	10	25	35	16	26	42	11	37	48	13	27	40	9	25	34	15	25	40
Assam	1	1	2	1	1	2	1	1	2	£	1	1	£	£	1			
Bihar	3	4	7	4	7	11	4	7	11	5	8	13	2	6	8			
Orissa	1	3	4	2	4	6	3	4	7	3	3	6	3	3	5			
West Bengal	5	17	22	9	14	23	3	24	27	5	15	20	4	16	20			
Manipur	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£			
Tripura	£	£	£	£	£	£	£	£	£	£	£	£	£	£	£			
Nagaland	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	£	£	£	N.A.	£	N.A.	£	£	£			
Meghalaya	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	£	£	£	£	£	£	£	£	£			
<b>All India</b>	<b>121</b>	<b>183</b>	<b>304</b>	<b>146</b>	<b>186</b>	<b>332</b>	<b>142</b>	<b>218</b>	<b>360</b>	<b>170</b>	<b>166</b>	<b>336</b>	<b>101</b>	<b>177</b>	<b>278</b>	<b>165</b>	<b>210</b>	<b>376</b>

Source: Zonal conferences on fertilisers held by Ministry of Agriculture and Irrigation, New Delhi.

(Continued)

Seasonwise consumption of Potash (K<sub>2</sub>O) by States and their percentage increase (Concluded)  
(1971-72 to 1976-77)

Zone/State	1971-72			1972-73 $\phi$			1973-74 $\phi$			1974-75 $\phi$			1975-76 $\phi$ @			1976-77*		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
<b>South</b>	+30.6	+39.2	+35.0	+23.4	-2.8	+9.6	-6.3	+27.5	+9.5	-1.4	-25.0	-14.2	-26.0	+6.1	-10.8	+66.7	+14.0	+37.1
Andhra Pradesh	+12.5	+100.0	+58.8	+66.7	-50.0	-11.1	-13.3	+77.8	+20.8	+15.4	-43.7	-17.2	-33.3	+66.7	+4.2			
Karnataka	+33.3	-14.3	+7.7	+12.5	+75.0	+39.3	+5.6	-9.5	-	+21.1	+30.0	+25.6	-21.7	-23.1	-22.4			
Kerala	+37.5	-12.5	+12.5	-18.2	+42.8	+5.6	+33.3	+30.0	+31.6	-25.0	-30.8	-28.0	-11.1	-	-5.6			
Tamil Nadu	+35.0	+70.0	+52.5	+33.3	-17.6	+4.9	-19.5	+39.3	+6.3	-13.8	-43.6	-30.9	-24.0	+13.6	-6.4			
<b>West</b>	+52.6	-4.3	+21.4	+20.7	+9.0	+15.7	-8.6	-4.2	-6.8	+93.8	+52.2	+76.4	-98.1	+2.9	-36.1	+53.8	-2.8	+21.0
Gujarat	+25.0	-	+16.7	+100.0	-50.0	+57.1	+10.0	+100.0	+18.2	-9.1	-50.0	-	-66.7	+200.0	-46.2			
Maharashtra	+60.0	-4.8	+22.2	+4.2	+15.0	+9.1	-20.0	-8.7	-14.6	-150.0	+57.1	+102.4	-56.0	-3.0	-34.9			
<b>Central</b>	+7.7	+39.5	+31.4	-14.3	-9.5	-10.5	+33.3	-	+6.7	-	-43.7	-34.4	-50.0	+29.6	+2.4	+87.5	+42.8	+51.1
Madhya Pradesh	+100.0	+33.3	+50.0	+50.0	+25.0	+33.3	-	+20.0	+12.5	-	-16.7	+22.2	-33.3	-20.0	-14.3			
Rajasthan	+100.0	+200.0	+150.0	-50.0	-33.3	-40.0	-100.0	+50.0	+33.3	-50.0	+67.7	-50.0	-50.0	-	-			
Uttar Pradesh	-16.7	+39.4	+24.4	-10.0	-13.0	-12.5	+22.2	-2.5	+2.0	+9.1	-46.2	-37.0	-50.0	+42.9	+9.1			
<b>North</b>	+100.0	+50.0	+60.0	-	+50.0	+37.5	+125.0	+16.7	+36.4	-22.2	-47.6	-40.0	-57.1	-	-22.2	+66.7	+81.9	+78.6
Maryana	+100.0	-	+50.0	-50.0	-	-33.0	+200.0	-	+100.0	-50.0	-	-50.0	-50.0	-	-			
Himachal Pradesh	-	-	-	-	-	-	-	-	-	-	-	-50.0	-50.0	-	-50.0			
Jammu & Kashmir	-	-	-	-	-	-	-	-	-	-	-	-50.0	-	-	-50.0			
Punjab	+200.0	+50.0	+71.4	-	+66.7	+50.0	+66.7	+20.0	+27.8	-	-50.0	-39.3	-60.0	-11.1	-28.6			
<b>East</b>	-	+66.7	+40.0	+60.0	+4.0	+20.0	-31.2	+42.3	+14.3	+18.2	-27.0	-16.7	-30.8	-7.4	-15.0	+66.7	NIL	+17.6
Assam	-	-	-	-	-	-	-	-	-	-50.0	-	-50.0	-	-50.0	-			
Bihar	-25.0	+33.3	-	+33.3	+75.0	+57.1	-	-	-	+25.0	+44.3	+9.1	-60.0	-25.0	-33.3			
Orissa	-	+200.0	+100.0	+100.0	+33.3	+50.0	+50.0	-	+16.7	-	-25.0	-14.3	-	-33.3	-16.7			
West Bengal	+25.0	+70.0	+57.1	+80.0	-17.6	+4.5	-66.7	+71.4	+17.4	+66.7	-37.5	-25.9	-20.0	+6.7	-			
<b>All India</b>	+30.0	+35.6	+33.3	+20.7	+1.6	+9.2	-2.8	+17.2	+8.4	+19.7	-23.9	-6.7	-40.6	+6.8*	-17.3	+63.4	+18.6	+34.9

$\phi$  For 12 months (February/January).

£ Less than 500 tonnes.

@ It includes Kharif actuals and Rabi estimates presumably for December 1975 and January 1976.

\* FAI Estimates.

N.A. Not available.

Table 39

Percentage share seasonwise of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O to total nutrientwise consumption  
( 1971-72 to 1976-77 )

Zone	1971-72		1972-73		1973-74		1974-75		1975-76		1976-77*	
	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi	Kharif	Rabi
<b>South</b>												
N	47.2	52.8	44.3	55.7	49.7	50.3	41.9	58.1	37.1	62.9	43.7	56.3
P <sub>2</sub> O <sub>5</sub>	54.4	45.6	48.9	51.1	50.2	49.8	49.0	51.0	44.3	55.7	54.5	45.5
K <sub>2</sub> O	47.4	52.6	53.4	46.6	45.7	54.3	49.0	51.0	43.5	56.5	52.9	47.1
N+P+K	49.0	51.0	47.0	53.0	49.0	51.0	44.6	55.4	40.1	59.9	47.1	52.9
<b>West</b>												
N	46.6	53.4	54.1	45.9	46.9	53.1	55.1	44.9	46.6	53.4	51.6	48.4
P <sub>2</sub> O <sub>5</sub>	48.5	51.5	65.1	34.9	53.0	47.0	67.7	32.3	49.3	50.7	59.1	40.9
K <sub>2</sub> O	56.9	43.1	59.3	40.7	58.2	41.8	60.7	39.3	41.9	58.1	53.3	46.7
N+P+K	48.3	51.7	57.6	42.4	49.9	50.1	59.0	41.0	46.4	53.6	53.5	46.5
<b>Central</b>												
N	38.5	61.5	30.8	69.2	35.5	64.5	35.1	64.9	27.9	72.1	35.5	64.5
P <sub>2</sub> O <sub>5</sub>	37.7	68.3	22.2	77.8	30.3	69.7	29.7	70.3	21.8	78.2	29.2	70.8
K <sub>2</sub> O	20.9	79.1	20.0	80.0	25.0	75.0	26.8	73.2	18.6	81.4	23.1	76.9
N+P+K	35.5	64.5	28.2	71.8	33.5	66.5	33.4	66.6	26.4	73.6	33.5	66.5
<b>North</b>												
N	31.7	68.3	33.5	66.5	38.3	61.7	32.5	67.5	30.8	69.2	35.0	65.0
P <sub>2</sub> O <sub>5</sub>	15.9	84.1	18.5	81.5	25.5	74.5	20.8	79.2	13.2	86.8	22.2	77.8
K <sub>2</sub> O	25.0	75.0	18.2	81.8	30.0	70.0	31.8	68.2	21.4	78.6	20.0	80.0
N+P+K	28.8	71.2	30.0	70.0	35.2	64.8	30.4	69.6	27.7	72.3	32.0	68.0
<b>East</b>												
N	44.4	55.6	31.9	68.1	52.0	48.0	43.9	56.1	33.1	66.9	41.7	58.3
P <sub>2</sub> O <sub>5</sub>	33.3	66.7	31.3	68.7	50.0	50.0	40.0	60.0	35.4	64.6	33.3	66.7
K <sub>2</sub> O	28.6	71.4	38.1	61.9	22.9	77.1	34.1	65.9	26.5	73.5	37.5	62.5
N+P+K	40.5	59.5	32.7	67.3	46.5	53.5	41.8	58.2	32.7	67.3	40.0	60.0
<b>Total</b>												
N	41.8	58.2	38.3	61.7	43.0	57.0	41.0	59.0	34.6	65.4	40.8	59.2
P <sub>2</sub> O <sub>5</sub>	42.2	57.8	39.4	60.6	42.3	57.7	43.7	56.3	34.7	65.3	43.3	56.7
K <sub>2</sub> O	39.8	60.2	44.0	56.0	39.4	60.6	45.7	54.3	36.3	63.7	44.0	56.0
N+P+K	41.6	58.4	39.2	60.8	42.4	57.6	42.2	57.8	34.8	65.2	41.6	58.4

\* FAI Estimates.

Based on Tables 36, 37 and 38.

Table 40

## Zonewise ranking in terms of consumption (1971-72 to 1975-76)

Rank	N					P <sub>2</sub> O <sub>5</sub>					K <sub>2</sub> O					Total (N + P <sub>2</sub> O <sub>5</sub> + K <sub>2</sub> O)				
	1971-72	1972-73	1973-74	1974-75	1975-76	1971-72	1972-73	1973-74	1974-75	1975-76	1971-72	1972-73	1973-74	1974-75	1975-76	1971-72	1972-73	1973-74	1974-75	1975-76
1.	South (542) [30.8]	Central (515) [29.0]	South (530) [29.0]	South (556) [31.5]	South (723) [33.7]	South (204) [36.1]	South (223) [37.9]	South (227) [35.0]	South (180) [38.2]	South (175) [37.4]	South (135) [44.4]	South (148) [44.7]	South (162) [45.3]	South (139) [41.4]	South (124) [44.8]	South (881) [33.6]	South (883) [32.7]	South (920) [32.4]	South (875) [34.0]	South (1022) [35.4]
2.	Central (478) [27.2]	South (512) [28.8]	Central (475) [26.0]	Central (439) [24.9]	Central (531) [24.7]	West (130) [23.0]	Central (144) [24.5]	Central (145) [22.4]	West (100) [21.2]	Central (101) [21.6]	Central (67) [22.0]	Central (60) [18.1]	Central (64) [7.8]	West (97) [28.9]	West (62) [22.4]	Central (671) [25.5]	Central (719) [26.6]	Central (684) [24.1]	Central (570) [22.2]	Central (675) [23.3]
3.	North (306) [17.4]	North (331) [18.6]	North (347) [19.0]	North (275) [15.6]	North (347) [16.1]	Central (126) [22.3]	West (92) [15.6]	West (134) [20.6]	Central (89) [18.9]	West (75) [16.0]	West (51) [16.8]	West (59) [17.8]	West (55) [15.3]	Central (42) [12.5]	Central (43) [15.5]	West (428) [16.3]	North (435) [16.1]	West (477) [16.8]	West (457) [17.8]	North (429) [14.8]
4.	West (247) [14.0]	West (229) [12.9]	West (288) [15.7]	West (260) [14.7]	West (283) [13.2]	North (63) [11.2]	North (81) [13.8]	North (94) [14.5]	North (55) [11.7]	North (68) [14.5]	East (35) [11.5]	East (42) [12.7]	East (48) [13.3]	East (41) [11.9]	East (34) [12.3]	North (385) [14.6]	West (381) [14.1]	North (471) [16.6]	North (348) [13.5]	West (420) [14.5]
5.	East (187) [10.6]	East (191) [10.7]	East (189) [10.3]	East (235) [13.3]	East (264) [12.3]	East (42) [7.4]	East (48) [8.2]	East (49) [7.5]	East (47) [10.0]	East (49) [10.5]	North (16) [5.3]	North (22) [6.6]	North (30) [8.3]	North (18) [5.3]	North (14) [5.0]	East (264) [10.0]	East (280) [10.4]	East (286) [10.1]	East (322) [12.5]	East (347) [12.0]
<b>Total</b>	<b>1760</b> [100.0]	<b>1779</b> [100.0]	<b>1829</b> [100.0]	<b>1766</b> [100.0]	<b>2148</b> [100.0]	<b>564</b> [100.0]	<b>587</b> [100.0]	<b>650</b> [100.0]	<b>472</b> [100.0]	<b>467</b> [100.0]	<b>304</b> [100.0]	<b>332</b> [100.0]	<b>360</b> [100.0]	<b>336</b> [100.0]	<b>278</b> [100.0]	<b>2628</b> [100.0]	<b>2699</b> [100.0]	<b>2839</b> [100.0]	<b>2574</b> [100.0]	<b>2893</b> [100.0]

Note : ( ) Figures in brackets represent zonewise consumption in '000 tonnes.  
[ ] Figures in brackets represent zonewise share vertically in percentage.

Ranking of States according to fertiliser consumption (1971-72 to 1975-76)

Rank	N					P <sub>2</sub> O <sub>5</sub>					K <sub>2</sub> O					TOTAL (N + P <sub>2</sub> O <sub>5</sub> + K <sub>2</sub> O)					
	1971-72	1972-73	1973-74	1974-75	1975-76	1971-72	1972-73	1973-74	1974-75	1975-76	1971-72	1972-73	1973-74	1974-75	1975-76	1971-72	1972-73	1973-74	1974-75	1975-76	
1.	U.P. (346) 19.7	U.P. (373) 21.0	U.P. (329) 18.0	U.P. (329) 18.6	U.P. (389) 18.1	U.P. (76) 13.5	U.P. (99) 16.7	U.P. (87) 13.4	Maha. (61) 12.9	A.P. (67) 14.3	T. Nadu (61) 20.1	T. Nadu (64) 19.3	T. Nadu (68) 18.9	Maha. (83) 24.7	Maha. (54) 19.4	U.P. (478) 18.2	U.P. (519) 19.2	U.P. (465) 16.4	U.P. (411) 16.0	U.P. (485) 16.8	
2.	Punjab (235) 12.8	Punjab (235) 13.2	Punjab (237) 13.0	A.P. (228) 12.9	A.P. (321) 14.9	A.P. (74) 13.1	A.P. (72) 12.3	A.P. (82) 12.6	A.P. (54) 11.4	A.P. (60) 12.8	U.P. (56) 18.4	U.P. (49) 14.8	U.P. (50) 13.9	Karna. (49) 14.6	T. Nadu (44) 15.8	T. Nadu (346) 13.2	T. Nadu (324) 12.0	T. Nadu (341) 12.0	A.P. (306) 11.9	A.P. (412) 14.2	
3.	T. Nadu (214) 12.2	T. Nadu (197) 10.7	T. Nadu (202) 11.0	Punjab (196) 11.1	Punjab (244) 11.4	T. Nadu (71) 12.6	T. Nadu (71) 12.1	Punjab (73) 11.2	Karna. (54) 11.4	Punjab (57) 12.2	Maha. (44) 14.5	Maha. (48) 14.5	Maha. (41) 11.4	T. Nadu (47) 14.0	Karna. (38) 13.7	A.P. (297) 11.3	Punjab (323) 12.0	Maha. (333) 11.7	Maha. (303) 11.8	Punjab (311) 10.8	
4.	A.P. (196) 11.1	A.P. (179) 10.1	A.P. (170) 9.3	Maha. (159) 9.0	T. Nadu (208) 9.7	Maha. (67) 11.9	Punjab (69) 11.8	Maha. (73) 11.2	T. Nadu (52) 11.0	T. Nadu (48) 10.3	Karna. (27) 8.9	Karna. (39) 11.7	Karna. (40) 11.1	U.P. (33) 9.8	U.P. (36) 12.9	Punjab (290) 11.0	A.P. (275) 10.2	A.P. (281) 9.9	Punjab (255) 9.9	T. Nadu (300) 10.4	
5.	Maha. (130) 7.4	Maha. (114) 6.4	Maha. (147) 8.0	T. Nadu (145) 8.2	Maha. (173) 8.1	Gujarat (61) 10.8	Karna. (56) 9.5	T. Nadu (71) 10.9	U.P. (49) 10.4	Karna. (43) 9.2	A.P. (27) 8.9	A.P. (24) 7.2	A.P. (29) 8.1	A.P. (24) 7.1	A.P. (24) 8.6	Maha. (241) 9.2	Karna. (202) 7.5	Maha. (261) 9.2	T. Nadu (244) 9.5	Maha. (265) 9.2	
6.	Gujarat (114) 6.5	Gujarat (114) 6.4	Gujarat (139) 7.6	Karna. (130) 7.4	Karna. (137) 6.4	Punjab (53) 9.4	Gujarat (54) 9.2	Gujarat (60) 9.2	Punjab (45) 9.5	Maha. (38) 8.1	W.B. (22) 7.2	W.B. (23) 6.9	W.B. (27) 7.5	W.B. (20) 6.0	W.B. (20) 7.2	Gujarat (182) 6.9	Maha. (200) 7.4	Gujarat (212) 7.5	Karna. (233) 9.1	Karna. (218) 7.5	
7.	Karna. (98) 5.6	Karna. (107) 6.0	Karna. (108) 5.9	Gujarat (98) 5.5	Bihar (113) 5.2	Karna. (42) 7.4	M.P. (39) 6.6	Karna. (48) 7.4	Gujarat (39) 8.3	Gujarat (35) 7.5	Kerala (18) 5.9	Kerala (19) 5.7	Kerala (25) 6.9	Kerala (18) 5.4	Kerala (17) 6.1	Karna. (167) 6.4	Gujarat (178) 6.6	Karna. (196) 6.9	Gujarat (150) 5.8	Gujarat (150) 5.2	
8.	Bihar (88) 5.0	M.P. (93) 5.2	Haryana (94) 5.1	Bihar (90) 5.1	Gujarat (108) 5.9	M.P. (34) 6.0	Maha. (37) 6.3	M.P. (45) 6.9	M.P. (31) 6.6	M.P. (28) 6.0	Punjab (12) 3.9	Punjab (18) 5.4	Punjab (23) 6.4	Punjab (14) 4.2	Punjab (10) 3.6	M.P. (118) 4.5	M.P. (140) 5.2	M.P. (141) 5.0	W.B. (126) 4.9	Bihar (155) 4.7	
9.	M.P. (79) 4.5	Bihar (89) 5.0	M.P. (87) 4.8	W.B. (86) 4.9	W.B. (86) 4.0	W.B. (18) 3.2	Kerala (23) 3.9	Kerala (23) 3.5	W.B. (20) 4.2	W.B. (24) 5.1	Gujarat (7) 2.3	Bihar (11) 3.3	Gujarat (13) 3.6	Gujarat (13) 3.8	Bihar (8) 2.9	Bihar (108) 4.1	Bihar (119) 4.4	Haryana (115) 4.1	Bihar (118) 4.6	W.B. (130) 4.5	
10.	Haryana (73) 4.1	Haryana (83) 4.7	Bihar (70) 3.8	Haryana (66) 3.7	Haryana (86) 4.0	Raj. (16) 2.8	Bihar (19) 3.2	W.B. (18) 2.7	Kerala (17) 3.6	Kerala (15) 3.2	Bihar (7) 2.3	Gujarat (11) 3.3	Bihar (11) 3.1	Bihar (12) 3.6	Gujarat (7) 2.5	W.B. (95) 3.6	Haryana (34) 3.5	W.B. (99) 3.5	M.P. (99) 3.8	M.P. (108) 3.7	
(a)	<b>Consumption of the 10 listed States</b>																				
	1,563	1,577	1,583	1,527	1,865	512	539	580	422	415	281	206	327	313	258	2,322	2,374	2,444	2,245	2,514	
(b)	<b>All India Consumption</b>																				
	1,760	1,779	1,829	1,766	2,148	564	587	650	472	467	304	332	360	336	278	2,628	2,699	2,839	2,574	2,893	
(c)	<b>Percentage share of (a) to (b)</b>																				
	88.9	88.6	86.6	86.5	86.8	90.8	91.8	89.2	89.4	88.9	92.4	92.2	90.8	93.2	72.8	88.4	87.9	86.1	87.2	86.9	

( ) Figures in brackets indicate the quantity of fertiliser nutrient ('000 tonnes) consumed in a particular State.

Figures in bold indicate vertically the percentage of consumption in the State to total all-India consumption

Note: U.P. = Uttar Pradesh M.P. = Madhya Pradesh Maha. = Maharashtra A.P. = Andhra Pradesh Karna. = Karnataka Raj. = Rajasthan  
W.B. = West Bengal T. Nadu = Tamil Nadu



Table 42

Classification of districts according to percentage share of total consumption of plant nutrients ( $N+P_2O_5+K_2O$ ) in 1973-74 and 1974-75 (Continued)

No of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Consumption	Cumulative percentage share to all-India consumption	No. of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all-India consumption
<b>1973-74</b>						<b>1974-75</b>					
7	27	Gurdaspur (Pb)	22,594			7	30	Kurnool (AP)	17,820		
	28	Karnal (Hr)	22,284				31	Jalgaon (Maha)	17,626		
	29	Kurnool (AP)	21,390				32	Osmanabad (Maha)	17,491		
	30	Hissar (Hr)	20,877				33	Raichur (Kar)	17,410		
	31	Krishna (AP)	20,460				34	Kaira (Guj)	17,148		
	32	Bhatinda (Pb)	20,090				35	Bhir (Guj)	16,776		
	33	Deoria (UP)	20,014				36	Krishna (AP)	16,455		
			147,709	968,815	35				120,726	856,911	35
7	34	Salem (TN)	19,960			8	37	Burdwan (WB)	16,454		
	35	Gorakhpur (UP)	18,800				38	Karimnagar (AP)	16,419		
	36	Kolhapur (Maha)	18,724				39	Bangalore (Kar)	16,098		
	37	Basti (UP)	18,463				40	24 Parganas (WB)	15,947		
	38	Poona (Maha)	18,311				41	Saharanpur (UP)	15,754		
	39	Ambala (Hr)	18,156				42	Midnapore (WB)	15,708		
	40	Junagarh (Guj)	18,070				43	Poona (Maha)	15,493		
			130,484	1,099,299	40		44	Tirunelveli (TN)	15,100		
									126,793	983,884	40
9	41	Surat (Guj)	18,004			9	45	Hooghly (WB)	14,991		
	42	Chitradurga (Kar)	17,707				46	Belgaum (Kar)	14,722		
	43	Muradabad (UP)	17,025				47	Varanasi (UP)	14,689		
	44	Rajkot (Guj)	16,844				48	Ganganagar (Raj)	14,598		
	45	Jalgaon (Maha)	16,027				49	Deoria (UP)	14,359		
	46	Sambalpur (Ors)	15,988				50	Jamnagar (Guj)	14,267		
	47	Shimoga (Kar)	15,947				51	Karnal (Hr)	13,814		
	48	Hoshiarpur (Pb)	15,417				52	Gorakhpur (UP)	13,683		
	49	Mysore (Kar)	15,358				53	Baroda (Guj)	13,655		
			148,317	1,247,616	45				128,778	1,112,662	45
10	50	Varanasi (UP)	15,313			9	54	Chandrapur (Maha)	13,628		
	51	Raichur (Kar)	15,195				55	Basti (UP)	13,450		
	52	Raipur (MP)	15,153				56	Gurdaspur (Pb)	13,412		
	53	Ahemadabad (Guj)	15,136				57	Birbhum (WB)	13,363		
	54	Dhulia (Maha)	14,977				58	Faizabad (UP)	13,246		
	55	Sabarkanta (Guj)	14,475				59	Surat (Guj)	13,199		
	56	Bhir (Guj)	14,420				60	Murshidabad (WB)	13,050		
	57	Amreli (Guj)	13,670				61	Bhatinda (Pb)	13,026		
	58	Bulandshahr (UP)	13,474				62	Akola (Maha)	12,954		
	59	Neillore (AP)	13,085						119,328	1,231,990	50
			144,898	1,392,514	50						

(Continued)

Table 42

Classification of districts according to percentage share of total consumption of plant nutrients (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) in 1973-74 and 1974-75 (Continued)

No of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Consumption	Cumulative percentage share to all-India consumption	No. of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all-India consumption
<b>1973-74</b>						<b>1974-75</b>					
10	60	Bareilly (UP)	13,003			10	63	Dharwar (Kar)	12,826		
	61	Kota (Raj)	12,894				64	Yoetmal (Maha)	12,699		
	62	Cuttack (Ors)	12,884				65	Sholapur (Maha)	12,467		
	63	Bijnor (UP)	12,794				66	Nellore (AP)	12,374		
	64	Kottayam (Krl)	12,533				67	Nizamabad (AP)	12,353		
	65	Kapurthala (Pb)	12,431				68	Hassan (Kar)	12,263		
	66	Palghat (Krl)	12,419				69	Faizabad (UP)	12,082		
	67	Bhavnagar (Guj)	12,410				70	Alleppy (Krl)	11,790		
	68	Bangalore (Kar)	12,212				71	Buidhana (Maha)	11,716		
	69	Satara (Maha)	12,014				72	Nainital (UP)	11,670		
			<u>125,594</u>	1,518,108	55				<u>122,240</u>	1,354,230	55
12	70	Nasik (Maha)	11,916			11	73	Bijnaur (UP)	11,583		
	71	Nalgonda (AP)	11,832				74	Nalgonda (AP)	11,555		
	72	Sirsa (Hr)	11,824				75	East Godavari (AP)	11,396		
	73	Trichur (Krl)	11,823				76	Nadia (WB)	11,312		
	74	Burdwan (WB)	11,757				77	Nanded (Maha)	11,286		
	75	Agra (UP)	11,691				78	Allahabad (UP)	11,272		
	76	Hassan (Kar)	11,687				79	Kota (Raj)	11,269		
	77	Farrukhabad (UP)	11,615				80	Amraoti (Maha)	11,170		
	78	Hooghly (WB)	11,558				81	Moradabad (UP)	11,109		
	79	24 Parganas (WB)	11,476				82	Dhulia (Maha)	10,824		
	80	Belgaum (Kar)	11,379				83	Palghat (Krl)	10,820		
	81	Alleppy (Krl)	11,343						<u>123,596</u>	1,477,826	60
			<u>139,901</u>	1,658,009	60						
13	82	Nainital (UP)	11,324			12	84	Barabanki (UP)	10,795		
	83	Dharwar (Kar)	11,135				85	Kolar (Kar)	10,756		
	84	Sholapur (Maha)	11,005				86	Sirsa (Hr)	10,468		
	85	Budaun (UP)	10,950				87	Hoshiarpur (Pb)	10,434		
	86	Mehsana (Guj)	10,878				88	Ambala (Hr)	10,414		
	87	Mandsaur (MP)	10,791				89	L. Khiri (UP)	10,396		
	88	Barabanki (UP)	10,742				90	Prakasam (AP)	10,308		
	89	Tirunelveli (TN)	10,681				91	Salem (TN)	10,300		
	90	Chittoor (AP)	10,667				92	S. Kanara (Kar)	10,227		
	91	Ramanathapuram (TN)	10,554				93	Sambalpur (Ors)	10,165		
	92	Ganjam (Ors)	10,415				94	Azamgarh (UP)	10,089		
	93	Broach (Guj)	10,054				95	Tumkur (Kar)	9,993		
	94	Allahabad (UP)	9,779						<u>124,345</u>	1,602,171	65
			<u>138,975</u>	1,796,984	65						

(Continued)



Table 42

Classification of districts according to percentage share of total consumption of plant nutrients ( $N+P_2O_5+K_2O$ ) in 1973-74 and 1974-75 (Continued)

No of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Consumption	Cumulative percentage share to all-India consumption	No. of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all-India consumption
<b>1973-74</b>						<b>1974-75</b>					
16	95	Nagpur (Maha)	9,706			13	96	Sangli (Maha)	9,887		
	96	Jaunpur (UP)	9,687				97	Rajkot (Guj)	9,783		
	97	Faizabad (UP)	9,548				98	Satara (Maha)	9,753		
	98	Tumkur (Kar)	9,438				99	Mahboobnagar (AP)	9,749		
	99	Ernakulam (Krl)	9,138				100	Bhagalpur (Bihar)	9,678		
	100	Azamgarh (UP)	9,010				101	Bankura (WB)	9,665		
	101	Karimnagar (AP)	8,991				102	Srikakulam (AP)	9,546		
	102	Amravati (Maha)	8,805				103	Ganjam (Ors)	9,541		
	103	Aurengabad (Maha)	8,800				104	Jaunpur (UP)	9,453		
	104	Gonda (UP)	8,693				105	Junagadh (Guj)	9,335		
105	Mainpuri (UP)	8,689			106	Nagpur (Maha)	9,312				
106	Birbhum (WB)	8,611			107	Rohtas (Bihar)	9,270				
107	Buldhana (Maha)	8,562			108	Sabarkantha (Guj)	9,021				
108	Mangalore (Kar)	8,555									
109	Nanded Maha)	8,458									
110	Bilaspur (MP)	8,457									
			143,148	1,940,132	70				123,992	1,726,163	70
17	111	Srikakulam (AP)	8,456			14	109	Kapurthala (Pb)	8,945		
	112	Hyderabad (AP)	8,454				110	Kanpur (UP)	8,902		
	113	L. Khiri (UP)	8,431				111	Bhavnagar (Guj)	8,830		
	114	Rupar (Pb)	8,429				112	Kottayam (Krl)	8,616		
	115	Midnapore (WB)	8,362				113	Amraei (Guj)	8,558		
	116	Jamnagar (Guj)	8,361				114	Sareilly (UP)	8,528		
	117	Bankura (WB)	8,333				115	Bhandara (Maha)	8,400		
	118	Dharamपुर (TN)	8,198				116	Gonda (UP)	8,318		
	119	Murshidabad (WB)	8,100				117	Rajpur (MP)	8,316		
	120	Rampur (UP)	8,011				118	Mehsana (Guj)	8,261		
121	Aligarh (UP)	7,977			119	Nasik (Maha)	8,197				
122	Ganganagar (Raj)	7,942			120	Bhojpur (Bihar)	8,033				
123	Gurgaon (Har)	7,940			121	Kolhapur (Maha)	7,954				
124	Etah (UP)	7,843			122	Cuttack (Ors)	7,909				
125	Shahjahanpur (UP)	7,746									
126	Warangal (AP)	7,718									
127	Nadia (WB)	7,694									
			137,995	2,078,127	75				117,807	1,843,970	75

(Continued)

Table 42

Classification of districts according to percentage share of total consumption of plant nutrients (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) in 1973-74 and 1974-75 (Continued)

No. of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Consumption	Cumulative percentage share to all-India consumption	No. of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all-India consumption
<b>1973-74</b>						<b>1974-75</b>					
19	128	Thana (Maha)	7,691			18	123	Khammam (AP)	7,811		
	129	Bhandara (Maha)	7,518				124	Cuddalore (TN)	7,771		
	130	Khammam (AP)	7,461				125	Warangal (AP)	7,700		
	131	Nizamabad (AP)	7,449				126	Aligarh (UP)	7,647		
	132	Kolar (Kar)	7,424				127	Visakhapatnam (AP)	7,570		
	133	Visakhapatnam (AP)	7,424				128	Bijapur (Kar)	7,343		
	134	Mathura (UP)	7,367				129	Trichur (Krl)	7,125		
	135	Bulsar (Guj)	7,332				130	Sitapur (UP)	7,067		
	136	Prakasam (AP)	7,297				131	Manipur (UP)	6,996		
	137	Parbhani (Maha)	7,294				132	Patna (Bihar)	6,872		
	138	Pilibhit (UP)	7,113				133	Ghazipur (UP)	6,829		
	139	Kanpur (UP)	7,110				134	Rupar (Pb)	6,773		
	140	Mehboobnagar (AP)	7,108				135	Wardha (Maha)	6,762		
	141	Balia (UP)	7,046				136	Bulsar (Guj)	6,742		
	142	Ghazipur (UP)	7,036				137	Rampur (UP)	6,661		
	143	Wardha (Maha)	7,033				138	Ananthpur (AP)	6,586		
	144	Sitapur (UP)	7,013				139	Rae Bareli (UP)	6,499		
	145	Ratnagiri (Maha)	7,009				140	Ahmedabad (Guj)	6,436		
	146	Sangli (Maha)	6,964								
			<b>137,689</b>	<b>2,215,816</b>	<b>80</b>				<b>127,190</b>	<b>1,971,160</b>	<b>80</b>

(Continued)

Table 42

Classification of districts according to percentage share of total consumption of plant nutrients (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O) in 1973-74 and 1974-75 (Concluded)

No of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Consumption	Cumulative percentage share to all-India consumption	No. of districts in the classification	Sl. No.	Name of district	Consumption (tonnes)	Cumulative consumption (tonnes)	Cumulative percentage share to all-India consumption
<b>1973-74</b>						<b>1974-75</b>					
26	147	Patna (Bihar)	6,755			24	141	Nalanda (Bihar)	6,430		
	148	Chittorgarh (Raj)	6,649				142	Budaun (UP)	6,396		
	149	Osmanabad (Maha)	6,554				143	Bundi (Raj)	6,326		
	150	Morena (MP)	6,523				144	W. Champaran (Bihar)	6,250		
	151	Yeotmal (Maha)	6,462				145	Samastipur (Bihar)	6,042		
	152	Khargone (MP)	6,426				146	Broach (Guj)	6,041		
	153	Kolaba (Maha)	6,401				147	Balia (UP)	6,019		
	154	Rae Bareli (UP)	6,342				148	Shahjahanpur (UP)	5,678		
	155	Hardoi (UP)	6,259				149	Sultanpur (UP)	5,607		
	156	Lucknow (UP)	6,231				150	Puri (Ors)	5,579		
	157	Akole (Maha)	6,217				151	Hardoi (UP)	5,548		
	158	Kozhikode (Krl)	5,908				152	Ramanathapuram (TN)	5,500		
	159	Rohtas (Bihar)	5,875				153	Hissar (Har)	5,473		
	160	Chandrapur (Maha)	5,874				154	Morena (MP)	5,456		
	161	Banaskantha (Guj)	5,811				155	Saran (Bihar)	5,437		
	162	Cannanore (Krl)	5,686				156	Khargone (MP)	5,418		
	163	Bundi (Raj)	5,684				157	E. Champaran (Bihar)	5,355		
	164	Sultanpur (UP)	5,668				158	Medak (Kar)	5,304		
	165	Nalanda (Bihar)	5,639				159	Pudukottai (TN)	5,200		
	166	Pondicherry	5,602				160	Pilibhit (UP)	5,150		
	167	Saran (Bihar)	5,556				161	Chickmagalur (Kar)	5,088		
	168	Malapuram (Krl)	5,533				162	Howrah (WB)	5,071		
	169	Indore (MP)	5,502				168	Monghyr (Bihar)	5,036		
	170	Quilon (Krl)	5,196				164	Unnao (UP)	5,011		
	171	Anantapur (AP)	5,180								
	172	Bhilwara (Raj)	5,117								
			154,650	2,370,466	85				134,415	2,105,575	85

Note : Out of 383 districts accounted for, 172 districts consumed 2,370.5 thousand tonnes of N + P<sub>2</sub>O<sub>5</sub> + K<sub>2</sub>O constituting 85 per cent of the total consumption of 2,771.2 thousand tonnes. The remaining 211 districts having consumption of 400.7 thousand tonnes constitute 15 per cent of the total consumption.

Note : Out of 380 districts accounted for, 164 districts consumed 2,105.6 thousand tonnes of N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O constituting 85 per cent of the total consumption of 2,461.9 thousand tonnes. The remaining 216 districts having consumption of 356.3 thousand tonnes constitute 15 per cent of the total consumption.

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Table 43

*All-India consumption of plant food (N+P<sub>2</sub>O<sub>5</sub>+K<sub>2</sub>O)  
per hectare of agricultural land (kg.)  
(1971-72 to 1976-77)*

Year	Consumption
1971-72	14.5
1972-73	14.9
1973-74	15.4
1974-75	14.2
1975-76	15.9
1976-77 (Estimated)	17.9

Table 44

Plant food consumption in kilograms per hectare  
of agricultural land (1974-75 and 1975-76)

Zone/State	Consumption in kg. per hectare of agricultural land*							
	1974-75				1975-76			
	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total
<b>South</b>	<b>14.12</b>	<b>4.70</b>	<b>3.65</b>	<b>22.47</b>	<b>18.40</b>	<b>4.57</b>	<b>3.25</b>	<b>26.22</b>
Andhra Pradesh	16.33	3.87	1.72	21.92	23.00	4.80	1.79	29.59
Karnataka	10.08	4.19	3.80	18.07	10.63	3.33	2.95	16.91
Kerala	10.30	5.47	5.79	21.56	10.62	4.83	5.47	20.92
Tamil Nadu	17.90	6.42	5.80	30.12	25.66	5.93	5.43	37.02
Pondicherry	52.63	17.54	17.54	87.71	56.14	17.54	12.28	85.96
<b>West</b>	<b>8.53</b>	<b>3.28</b>	<b>3.18</b>	<b>14.99</b>	<b>9.28</b>	<b>2.46</b>	<b>2.03</b>	<b>13.77</b>
Gujarat	8.93	3.55	1.18	13.66	9.84	3.19	0.64	13.67
Maharashtra	8.22	3.15	4.29	15.66	8.94	1.96	2.79	13.69
Goa	21.27	7.09	7.09	35.45	19.15	12.06	9.93	41.14
Dadra, Nagar Haveli	3.57	0.36	1.43	5.36	N.A.	N.A.	N.A.	N.A.
<b>Central</b>	<b>6.53</b>	<b>1.32</b>	<b>0.62</b>	<b>8.47</b>	<b>7.89</b>	<b>1.50</b>	<b>0.64</b>	<b>10.03</b>
Madhya Pradesh	2.52	1.28	0.29	4.09	3.06	1.16	0.25	4.47
Uttar Pradesh	13.51	2.01	1.35	16.87	15.97	2.46	1.48	19.91
Rajasthan	2.58	0.48	0.11	3.17	3.44	0.65	0.11	4.20
Delhi	14.29	4.20	0.84	19.33	30.25	6.72	0.84	37.81
<b>North</b>	<b>19.55</b>	<b>3.91</b>	<b>1.28</b>	<b>24.74</b>	<b>24.67</b>	<b>4.84</b>	<b>1.00</b>	<b>30.51</b>
Haryana	12.95	1.37	0.39	14.71	16.87	1.57	0.39	18.83
Himachal Pradesh	2.82	1.41	0.94	5.17	2.82	0.94	0.47	4.23
Jammu & Kashmir	6.33	0.90	0.45	7.68	8.14	0.90	0.45	9.49
Punjab	34.19	7.85	2.44	44.48	42.56	9.94	1.74	54.24
<b>East</b>	<b>6.87</b>	<b>1.46</b>	<b>1.27</b>	<b>9.60</b>	<b>7.67</b>	<b>1.49</b>	<b>1.08</b>	<b>10.24</b>
Assam	1.21	0.30	0.30	1.81	0.91	0.30	0.30	1.51
Bihar	8.14	1.45	1.09	10.68	10.22	1.27	0.72	12.21
Orissa	4.15	1.10	0.73	5.98	4.39	0.85	0.61	5.85
West Bengal	10.92	2.54	2.54	16.00	10.92	3.05	2.54	16.51
Manipur	8.19	0.58	0.58	9.35	8.77	0.58	0.35	9.70
Tripura	1.89	0.21	0.21	2.31	N.A.	N.A.	N.A.	N.A.
Nagaland	N.A.	N.A.	N.A.	N.A.	25.40	14.29	4.76	44.45
Meghalaya	7.77	3.11	0.52	11.40	6.74	2.07	0.52	9.33
<b>All-India</b>	<b>9.73</b>	<b>2.60</b>	<b>1.85</b>	<b>14.18</b>	<b>11.83</b>	<b>2.57</b>	<b>1.53</b>	<b>15.93</b>

Note : These figures are based on consumption data given in Tables 36, 37 and 38 and agricultural area pertains to year 1971-72.

N.A. : Not available.

\* It includes total cropped area, permanent pasture and other grazing lands and land under miscellaneous tree crops & groves, etc.

**Table 45**

*All-India ratio of plant nutrients consumed  
(1971-72 to 1976-77)*

Year	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
1971-72	5.8	1.9	1
1972-73	5.4	1.8	1
1973-74	5.1	1.8	1
1974-75	5.3	1.4	1
1975-76	7.7	1.7	1
1976-77 (Estimated)	7.7	1.7	1

Table 46

Ratio of N, P<sub>2</sub>O<sub>5</sub> & K<sub>2</sub>O consumption (1974-75 & 1975-76)

Zone/State	1974-75			1975-76		
	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
<b>South</b>	<b>3.87</b>	<b>1.29</b>	<b>1</b>	<b>5.65</b>	<b>1.40</b>	<b>1</b>
Andhra Pradesh	9.5	2.25	1	12.84	2.68	1
Kerala	1.78	0.94	1	3.61	1.13	1
Karnataka	2.65	1.10	1	1.94	0.88	1
Tamil Nadu	3.09	1.11	1	4.73	1.09	1
Pondicherry	2.70	1.30	1	4.57	1.43	1
<b>West</b>	<b>2.68</b>	<b>1.03</b>	<b>1</b>	<b>1.56</b>	<b>1.21</b>	<b>1</b>
Gujarat	7.54	3.00	1	15.43	5.00	1
Maharashtra	1.92	0.73	1	3.20	0.70	1
Goa	2.77	0.77	1	1.93	1.21	1
Dadra, Nagar Haveli	2.50	0.25	1	NA	NA	NA
<b>Central</b>	<b>10.45</b>	<b>2.12</b>	<b>1</b>	<b>12.35</b>	<b>2.35</b>	<b>1</b>
Madhya Pradesh	8.71	4.43	1	12.33	4.67	1
Uttar Pradesh	9.97	1.48	1	10.80	1.67	1
Rajasthan	24.00	4.50	1	32.00	6.00	1
Delhi	17.00	5.00	1	36.00	8.00	1
<b>North</b>	<b>15.28</b>	<b>3.06</b>	<b>1</b>	<b>24.79</b>	<b>4.86</b>	<b>1</b>
Haryana	33.00	3.50	1	43.00	4.00	1
Himachal Pradesh	3.00	1.50	1	6.00	2.00	1
Jammu & Kashmir	14.00	2.00	1	18.00	2.00	1
Punjab	14.00	3.21	1	24.40	5.70	1
Chandigarh	NA	NA	NA	11.00	20.0	1
<b>East</b>	<b>5.43</b>	<b>1.15</b>	<b>1</b>	<b>7.12</b>	<b>1.38</b>	<b>1</b>
Assam	4.00	1.00	1	3.00	1.00	1
Bihar	7.50	1.33	1	14.13	1.75	1
Orissa	5.67	1.50	1	7.20	1.40	1
West Bengal	4.30	1.00	1	4.30	1.20	1
Manipur	14.00	1.00	1	2.00	2.17	1
Tripura	9.00	1.00	1	NA	NA	NA
Nagaland	NA	NA	NA	5.33	3.00	1
Maghalaya	15.00	6.00	1	13.00	4.00	1
<b>All-India</b>	<b>5.26</b>	<b>1.40</b>	<b>1</b>	<b>7.73</b>	<b>1.68</b>	<b>1</b>

Note : These figures are based on consumption data given in Tables 36, 37 and 38.  
N.A. = Not available.