

Production and Consumption of Fertilisers

ANNUAL REVIEW : 1974-75

(April-March)

(With estimates for 1975-76)



THE FERTILISER ASSOCIATION OF INDIA

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PREFACE

This is the 17th edition of the **Annual Review of Production and Consumption of Fertilisers** brought out annually by the Fertiliser Association of India. This issue:

1. contains a review of actual performance both of production and consumption during 1974-75;
2. discusses the performance during the five-year period 1970-71 to 1974-75; and
3. indicates the likely trend of production and consumption for 1975-76.

The projections of fertiliser production and consumption for 1975-76 presented here have been made by the FAI after a careful study of the current demand, production capacity and supply situation.

As in the previous two years, the actual consumption figures for the latest year 1974-75 (Feb./Jan.) are based on the deliberations of the Zonal Conferences held in January/February 1975. Consequently, the data are tentative. The finally accepted consumption figures will be incorporated in the next issue of **Fertiliser Statistics 1974-75** and the **Annual Review 1975-76**. From the tentative figures presently available for 1974-75, it will be noticed that the overall consumption level of fertilisers deteriorated as compared to the previous year despite easy availability. This was due to various factors. The FAI, therefore, undertook a study to identify the major factors responsible for this deterioration and quantify their impact State by State. This has been elaborated to a considerable extent in this Review.

The lead period between supply planning and actual supply has been increased to two months by the Government.

Readers will have to take note of this while making comparison with the first two years of the period under review.

This issue of the Review provides for the first time seasonwise consumption figures broken down by States for all the five years under review together with percentage increase or decrease in nutrient consumption over the corresponding previous seasons. This has facilitated more comprehensive analysis of the situation.

The review period being the past five years (1970-71 to 1974-75), it covers the last four years of the Fourth Five Year Plan and first year of the Fifth Five Year Plan, viz., 1974-75.

(iv)

An attempt has been made here to present a comparison of the situation in our country vis-a-vis some leading countries of the world both in the matter of production and consumption of fertilisers.

Information presented here has been obtained from various agencies. Department of Agriculture in the Ministry of Agriculture and Irrigation has, as usual, furnished us the data on Pool despatches to various States. Manufacturers have supplied actual production and factory despatches data Statewise. Data on seasonwise consumption have been drawn from the proceedings of the half-yearly Zonal Conferences on Fertilisers. Help received from these and other sources is gratefully acknowledged.

The Association would welcome suggestions from readers for further improvement of the **Annual Review**.

New Delhi
August 5, 1975

SATYA NAND
Executive Director
The Fertiliser Association of India

Note: The finally accepted actual consumption figures for the year 1974-75 based on the deliberations of the July 1975 round of Zonal Conferences are since in hand and these reflect a very depressing picture. The consumption now recorded is considerably less than that anticipated at the time of the January/February 1975 Zonal Conferences and discussed in this Review. There is now a drop in consumption in N and K₂O and the drop in P₂O₅ consumption is far more. The data discussed in this Review and that of just available from the July 1975 Zonal Conferences are compared below:

Nutrient	Based on July 75 Zonal Conferences		Discussed in the Review	
	Consumption ('000 tonnes)	± % over previous year	Consumption ('000 tonnes)	+ % over previous year
N	1774	— 3.0	1838	+ 0.5
P ₂ O ₅	478	—26.5	538	—17.3
K ₂ O	339	— 5.8	370	+ 2.8
Total	2591	— 8.7	2746	— 3.3

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SUMMARY

I. Production of Fertilisers

Nitrogenous

The installed capacity of nitrogenous fertiliser plants as on 1-4-75 stood at 2.204 million tonnes of nitrogen, an increase of 13 per cent compared to the previous year. This increase was contributed by the new IFFCO plants at Kalol and Kandla and the expansion of SCI's Kota plant.

Production during the year went up to 1.186 million tonnes compared to 1.050 in 1973-74, an increase of 13 per cent.

The overall capacity utilisation for nitrogenous fertilisers was 60 per cent during 1974-75, recording an improvement over the previous year.

Production in most of the plants was affected during the year mainly due to factors like power cuts, fluctuations in voltage, teething problems inherent during start up of new units, breakdowns in some of the good units, labour unrest, quality of raw materials, etc.

Six new plants and expansion of other two are expected to be commissioned during 1975-76. Capacity is expected to rise to 2.980 million tonnes of nitrogen and the production during 1975-76 is expected to be 1.721 million tonnes of nitrogen.

Phosphatic

The installed capacity of phosphatic fertiliser plants as on 1-4-75 was 0.706 million tonnes of P_2O_5 , an increase of 22 per cent over the capacity in the previous year. This increase was due to the commissioning of IFFCO plant at Kandla.

Production during 1974-75 was 0.331 million tonnes of P_2O_5 compared to 0.325 million tonnes during the previous year.

The overall capacity utilisation during 1974-75 was 58 per cent compared to 61 per cent during the previous year. The fall was mainly due to non-availability of imported phosphoric acid on which are placed three of the large capacity phosphatic fertiliser plants. Nevertheless, some of the superphosphate and complex fertiliser plants worked to full capacity.

During the year under review, complex fertilisers continued to be more dominant than single nutrient phosphatic fertilisers. Their share during 1974-75 was 59 per cent compared to 40 per cent for superphosphate, a situation similar to last year.

Three new phosphatic fertiliser plants and expansion in one of the existing plants are expected to come on stream during 1975-76 bringing

the total capacity to 1.034 million tonnes of P_2O_5 . Production during 1975-76 is expected to be around 0.456 million tonnes of P_2O_5 .

Potassic

Indigenous production of potash continued to be nil during 1974-75 and the entire requirement of the country was met through imports.

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 on a commercial scale in 1947. The fertiliser industry received a fillip in the early 50's with the dawn of the development era in the country and since then it has developed into a major factor in India's economic growth. Although some progress was made during 1951-61, the major thrust to the development of the fertiliser industry took place during the decade 1961-71. This process was accelerated with the major shift in Government fertiliser policy in 1965 which was aimed at attracting fresh investment. Table 2 gives in a chronological order the commercial production of the diverse forms of fertilisers in the country.

A consolidated list of fertiliser plants in production along with their capacity by end-products and zones is given in Appendix I(b). Installed capacity of nitrogenous and phosphatic fertilisers, as on 1-4-75 was 2.204 million tonnes of N and 0.706 million tonnes of P_2O_5 . This is expected to rise to 2.980 and 1.034 million tonnes of N and P_2O_5 respectively, by 1-4-76.

Conclusion

During the year under review there has been a slight improvement in the production of fertilisers although the capacity utilisation was lower compared to the previous year. The reasons for low productivity have been identified and corrective measures taken by the industry. There is an urgent necessity to improve the productivity of the manufacturing units. During 1975-76, domestic production of nitrogenous and phosphatic fertilisers is expected to improve and thus help in reducing the gap between demand and indigenous supply.

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 3.3 per cent compared to the previous year. The consumption

of N and K₂O no doubt recorded a marginal increase of 0.5 and 2.8 per cent respectively, but their normal rate of growth should have been many-fold. The drop was thus contributed entirely by P₂O₅ (17.2 per cent).

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 frame-work 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 and allocated to the FAI members for the purpose of the study as follows:

<i>Region</i>	<i>State</i>	<i>Conducted by</i>
South	Tamil Nadu and Karnataka	Shaw Wallace
	Kerala	FACT
	Andhra Pradesh	E.I.D.-Parry
West	Maharashtra	Zuari Agro Chemicals
	Gujarat	GSFC
	Madhya Pradesh	Dharamsi Morarji
North	Punjab and Haryana	Shriram Chemicals
	Uttar Pradesh	Indian Explosives
East	West Bengal and Bihar	FCI
	Orissa	Rallis India

Reports have been received so far from 11 States, i.e., Andhra Pradesh, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, U.P. and West Bengal. The remaining two reports on Punjab and Haryana are yet awaited.

The study reports clearly indicate 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

The Statewise impact as indicated by the study is summarised below:

1. *Andhra Pradesh* : Most dominant factor was "Physical Controls" followed by credit constraints, price hike, and other factors.

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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.

The Statewise impact as indicated by the study is summarised below:

1. *Andhra Pradesh* : Most dominant factor was "Physical Controls" followed by credit constraints, price hike, and other factors.

2. Bihar	Most dominant factor was "Physical Controls" followed by price hike, lack of timely supply, other factors and credit constraints.
3. Gujarat	Most dominant factor was "Drought" followed by price hike, credit constraints and physical controls.
4. Karnataka	Most dominant factor was "Physical Controls" followed by price hike and credit constraints.
5. Kerala	Most dominant factor was "Price Hike" followed by non-availability of fertilisers in time, credit constraints and physical controls.
6. Madhya Pradesh	Most dominant factor was "Physical Controls" followed by drought, credit constraints and price hike.
7. Maharashtra	Most dominant factor was "Physical Controls" followed by price hike, credit constraints, other factors and drought.
8. Orissa	Most dominant factor was "Physical Controls" followed by drought, floods and price hike.
9. Tamil Nadu	Most dominant factor was "Drought", followed by physical controls, produce price, price hike.
10. Uttar Pradesh	Most dominant factor was "Drought", followed by physical controls, credit constraints and price hike.
11. West Bengal	Most dominant factor was "Price Hike" followed by physical controls, lack of timely supply, credit constraints and others.

Since aberrant weather is a factor beyond our control, it may be useful to compare the impact of the remaining factors only in the context of consideration of remedial measures. The position would emerge as follows:

Most dominant factor	States
1. Physical controls	Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu and Uttar Pradesh.
2. Price hike	Gujarat, Kerala and West Bengal.
3. Credit constraints	Not the most significant factor in any State, but took second place in Andhra Pradesh, Gujarat, Madhya Pradesh and Uttar Pradesh.

It is obvious from the study that the bulk of the consumption in the country was subjected to the most dominant influence of physical controls. The rest of the consumption was subjected to the most dominant influence of price hike and credit constraints. It has, however, not been possible with the data available from the study reports to give any quantitative weightage to individual factors. The fact, however, remains that the combined effect of the three factors listed above, namely, physical controls, price hike and credit constraints, caused the havoc on the consumption pattern.

The impact of each constraint is explained below:

1. *Aberrant weather*

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

They prevented the smooth flow of fertiliser to the farmer. These man-made constraints inhibited fertiliser 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 far too long despite easy availability of materials. Though most of the States have by now done away with these controls, some irritants are unfortunately still continuing.

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 no 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 fertiliser. 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 availability was affected 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 not able to stock fertiliser in advance but he was not even able to buy the usual quantity on credit.

The year 1974-75 has thus been unusually depressing. The potential demand, however, is undoubtedly high. Consumption is likely to pick up once the constraints on fertiliser use are removed. The easier and quicker movement of fertiliser immediately after the withdrawal of physical constraints in some States is a pointer in this direction.

It is axiomatic that the sharp declining trend in fertiliser offtake needs to be reversed immediately to sustain the projected agricultural growth in the country. Efforts are afoot both at the Industry and Government levels to rectify the position. Greater promotional efforts are necessary to widen the base of fertiliser use and higher dosages commensurate with economic return to the farmer.

Balance in fertiliser use

The welcome trend, in the interest of balanced fertilisation, upto 1973-74 of N share in the total NPK consumption dropping and P₂O₅ share increasing each year of the review period reversed in 1974-75. The N share went up from 64.4 per cent in 1973-74 to 67.1 per cent in 1974-75. The P₂O₅ share dropped from 22.9 to 19.6 per cent. The K₂O share, however, continued to increase. It went up from 12.7 per cent in 1973-74 to 13.3 per cent in 1974-75. Reversal in the trend was due to further deterioration in the resources of the farmer because of sharp hike in fertiliser prices.

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 39 to 42 per cent in kharif and 61 to 58 per cent in rabi.

Nitrogen

Nitrogen consumption went up to 1,838 thousand tonnes in 1974-75 recording only a marginal increase of 0.5 per cent over the previous year. This dropped the overall increase during the 5-year review period upto 1974-75 to 23.5 per cent from 34.8 per cent recorded upto 1973-74. The reason for this was the continuing sharp decline in the rate of growth of consumption over the last three years besides the low base year consumption figure of 1,360 thousand tonnes for the last year's review compared to 1,487 thousand tonnes for the current review.

The marginal growth of only 0.5 per cent in consumption during 1974-75 was due to a variety of factors discussed earlier in the chapter. The combined impact of these was to nullify all that was achieved over the years by the increasing awareness amongst farmers of the benefits of fertiliser responsive HYV crops, multi-cropping, 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 potential demand continues to be high and with the removal of constraints to fertiliser use the consumption should pick up sharply. The consumption during 1975-76 is estimated at 2,175 thousand tonnes (against the Government's target of 2,500) reflecting an increase of 18.3 per cent over the consumption during 1974-75. The rate of growth is likely to be even faster in the subsequent years.

The trend towards improving balance between various nutrients received a setback in 1974-75. Beginning with 68.3 per cent in 1970-71, the percentage share of N in the total fertiliser consumption dropped to 64.4 per cent in 1973-74. In 1974-75 it rose to 67.1 per cent. The farmer's preference to use N compared to P_2O_5 and K_2O on account of the sharp hike in fertiliser prices and non-availability of nitrogenous intermediates to mixing units, which could promote balanced fertilisation most effectively, were the main reasons for this deterioration. The deteriorating balance, however, needs to be reversed. Promotional effort 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 slumped very sharply during 1974-75 to 538 thousand tonnes (650 thousand tonnes for the previous year) thereby recording a drop of 17.3 per cent over the previous year. This level of consumption was even lower than that recorded way back in 1971-72. The overall growth during the review period also dropped from 50.9 per cent recorded in the last year's review to 16.5 per cent. 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 upon the farmer's overall resources for the purchase of fertilisers, the availability of nitrogenous intermediates to the superphosphate manufacturers and above all the price of P_2O_5 nutrient.

The P_2O_5 prices have been rising at frequent intervals over the last two years because of the increase in the international prices of the raw materials like rock phosphate and sulphur and the import price of the finished product itself. 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 first meet his full requirements of N which showed him visible results in a short time and he purchased P_2O_5 only with his balance resources, if any still left over. The materialwise analysis shows that the maximum drop in terms of P_2O_5 consumption compared to the previous year was in DAP (17.48 thousand tonnes), the bulk of which is imported, despite an increase of 28.1 per cent in its imports. The drop was presumably because of the late arrival of imports. This was followed by superphosphate with the drop in P_2O_5 consumption of 16.32 thousand tonnes compared to the previous year.

Preference for P_2O_5 through DAP, however, continues and in the event of its increased availability through imports it will find much

easier market compared to the indigenous source of P_2O_5 , particularly single superphosphate. It must, therefore, be ensured that imports of DAP are not made at the cost of indigenous production of P_2O_5 sources.

The preference for P_2O_5 through DAP is mainly because of its price which is more or less in line with that of N, high nutrient material and availability of N alongside P_2O_5 .

Superphosphate continued to be the primary indigenous phosphatic fertiliser though its contribution to total P_2O_5 consumption gradually decreased from 36.4 per cent in 1970-71 to 24.4 per cent in 1975-76. The reason for this drop in share was the swing away from the straight phosphates to complex fertilisers mainly because of the latter's many comparative advantages—commercial, technical and of convenience. This trend is likely to continue because of the increasing demand and commissioning of new plants to produce complex fertilisers even if domestic superphosphate plants achieve better capacity utilisation.

A new chapter opened in the product pattern in 1960-61 with the commissioning of plants for manufacturing complex fertilisers in the country. Availability of domestic complex fertilisers and mixtures in the country has helped in creating awareness among farmers of the benefits of balanced fertilisation but on account of the sharp hike in fertiliser prices during the year 1974-75, the concept of balanced fertilisation suffered badly. Much greater promotional efforts will have to be put in to motivate farmers to use larger quantities of P_2O_5 .

The seasonwise consumption ranged between 42-44 per cent in kharif and 56-58 per cent in rabi during the four years of the five-year review period. It was only in 1972-73 that the consumption in kharif and rabi was 40 and 60 per cent respectively. Compared to N, kharif consumed more of P_2O_5 by about 2 per cent. Correspondingly P_2O_5 consumption in rabi was lower by about 2 per cent compared to N consumption.

The sharp decline in P_2O_5 consumption during 1974-75 is, however, disturbing. This trend needs to be reversed to ensure much needed balance in fertiliser use. The primary source of indigenous phosphatic material being superphosphate, every effort needs to be made to promote its consumption. Since single superphosphate will sell only when it has the support of N, regular release of straight N to single superphosphate manufacturers and marketers will have to be ensured. They would either sell the N material as such to support the sale of single superphosphate or prepare mixtures tailor-made to suit specific requirements.

Re-energising of idling capacity of granulation and other mixture manufacturing units by release on a regular basis of adequate quantities of straight nitrogenous intermediates to them should also help in increasing P_2O_5 consumption.

Price of P_2O_5 from single superphosphate being high compared to most other indigenous sources and imported material, abolition of excise duty on single superphosphate should also partially remedy the situation.

Single superphosphate manufacturers will need to rationalise and strengthen their marketing organisations and undertake more intensive promotional measures for their product, if they are to successfully meet the challenges of the dynamic marketing situation. This will necessitate the development on the right lines of their staff at all levels through intensive training programmes.

Above all, an all out effort both by the Government and the industry to promote balanced fertilisation is called for.

Potash

The consumption during 1974-75 was 370 thousand tonnes recording an increase of 2.8 per cent over the previous year. But for the massive increase in consumption in Maharashtra by about 42,000 tonnes (102.4 per cent) in 1974-75 compared to the previous year presumably on account of marked increase in consumption on HYV cotton, sugarcane and other cash crops, there would have been a sharp decline in K_2O consumption. The overall increase during the review period was 59.2 per cent compared to about 72 per cent recorded in the previous year's review. This drop despite the marginal increase in the overall consumption during the year 1974-75 was due to the much lower consumption (209 thousand tonnes) during the base year 1969-70 for the last year's review. The base year consumption for the current review was 228 thousand tonnes.

With the anticipated increase in consumption of both N and P_2O_5 , K_2O is not likely to lag behind and may record a consumption of 400 thousand tonnes during 1975-76.

III. Zonewise Analysis of Consumption

The South Zone continued to lead all other zones in the consumption of P_2O_5 and K_2O during the entire period under review and of N during 1970-71, 1971-72, 1973-74 and 1974-75. It was only in 1972-73 that the Central Zone took a lead over the South Zone in N consumption.

The share of the South Zone with regard to N and P_2O_5 consumption increased by 3.7 and 3.6 per cent respectively in 1974-75 compared to the previous year but declined for K_2O by 3.4 per cent.

The zonewise status in the order of consumption remained unchanged in 1974-75 compared to the previous year in N and P_2O_5 and in the case of K_2O , West Zone took the lead over the Central Zone.

Table 14 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 and P_2O_5 during the review period. Its share of all India consumption in these two nutrients also improved in 1974-75 compared to the previous year by 1.0 and 0.7 per cent respectively.

In the case of K_2O , however, U.P. was the largest consuming State in 1970-71. Tamil Nadu took over the lead in 1971-72 and retained it upto 1973-74. In 1974-75, Maharashtra registered a record consumption of 83,000 tonnes and jumped to the first position. The share of Maharashtra doubled in 1974-75 compared to the previous year.

The Statewise status in the order of consumption underwent several changes in 1974-75 compared to the previous year in all the nutrients. Table 15 gives the ranking of the first top 10 States in terms of fertiliser consumption nutrientwise during the review period.

V. Highest Rate of Growth of Consumption Zonewise and Statewise

The table on page 12 indicates the highest rate of growth recorded Zonewise and Statewise over the review period and in 1974-75 compared to 1973-74. There are two sets of figures in respect of Statewise growth. One set termed States (All India) gives the position in relation to all the States in India. The other set termed States (amongst the first top 10 in consumption) gives the information in relation to only 10 top relevant nutrient consuming States in India.

VI. Plant Nutrients Consumption per Hectare and Its Ratio

Consumption of plant nutrients (N+ P_2O_5 + K_2O) per hectare of agricultural land registered a sizeable annual increase until 1971-72. During 1972-73 and 1973-74, the increases were only marginal. A shortfall in the total availability of fertilisers was responsible for the low increase in the consumption rate. The situation worsened in 1974-75 when for the first time the consumption rate dropped by 0.5 kg/ha compared to the previous year despite easy availability of fertilisers. A number of factors like aberrant weather in many parts of the country, cumbersome physical controls at State levels, sharp increase in fertiliser prices, inadequate credit availability, etc., contributed to a drop in total fertiliser consumption in the year under review. The situation is likely to improve during 1975-76

Highest growth rate : Zonewise and Statewise

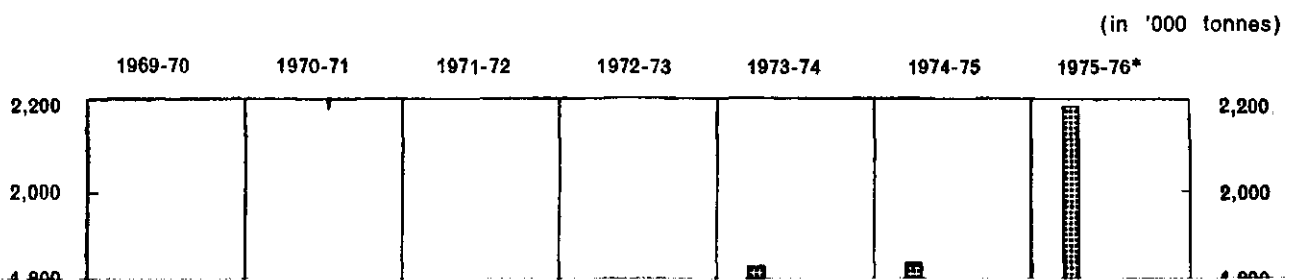
	N	P ₂ O ₅	K ₂ O	Total
1. Over the Review Period (1970-71 to 1974-75)				
(a) Zone	East	North	West	North
Percentage of growth	33.3	75.6	128.6	38.4
(b) State	Himachal Pradesh	Punjab	Orissa	Himachal Pradesh
(All India)	Pradesh			Pradesh
Percentage of growth	133.3	93.5	200	100
(c) State	West Bengal	West Bengal	Punjab	West Bengal
(Amongst the first top ten in consumption)	Bengal	Bengal		Bengal
Percentage of growth	59.6	83.3	142.8	61.6
2. In 1974-75 compared to 1973-74				
(a) Zone	South	East	West	East
Percentage of growth	12.6	4.2	52.7	5.1
(b) State	Himachal Pradesh	West Bengal	Maha-rashtra	Himachal Pradesh
(All India)	Pradesh	Bengal	rashtra	Pradesh
Percentage of growth	75.0	22.2	102.4	57.1
(c) State	Andhra Pradesh	West Bengal	Maha-rashtra	Andhra Pradesh
(Amongst the first top ten in consumption)	Pradesh	Bengal	rashtra	Pradesh
Percentage of growth	51.1	22.2	102.4	28.8

when consumption is estimated at 17.5 kg/ha, an increase of 2.6 kg/ha over the previous year.

There is considerable disparity in consumption level between different Zones and States of the country. The North Zone leads all the Zones with a consumption of 29.31 kg/ha (N + P₂O₅ + K₂O). The South Zone continues to rank second with a consumption of 24.48 kg/ha followed by West Zone (13.49 kg/ha), Central Zone (9.31 kg/ha) and East Zone (8.68 kg/ha). Compared to the last year the level of consumption has dropped marginally in the North, West and Central Zones. However, there have been marginal increases in the South and East Zones. The reasons for disparities in the consumption levels in the Zones and States are discussed.

During the years 1971-72 to 1973-74, marginal improvements were observed in the ratios of N:P:K consumption over 1970-71. However, during 1974-75 the setback in phosphate consumption contributed to widening the gap between N and P₂O₅ consumption and the ratio attained (5.0:1.5:1.0) was almost the same as that prevailed in 1970-71. From the point of view of balanced use of NPK fertilisers, West Zone ranks first with a ratio of 2.6:1.0:1.0, followed by South (3.76:1.33:1.0), Central (8.22:2.0:1.0), East (4.79:1.22:1.0) and North (14.59:3.36:1). Nutrient-wise imbalance in different Zones has been described and the Zonewise promotional and marketing efforts needed indicated.

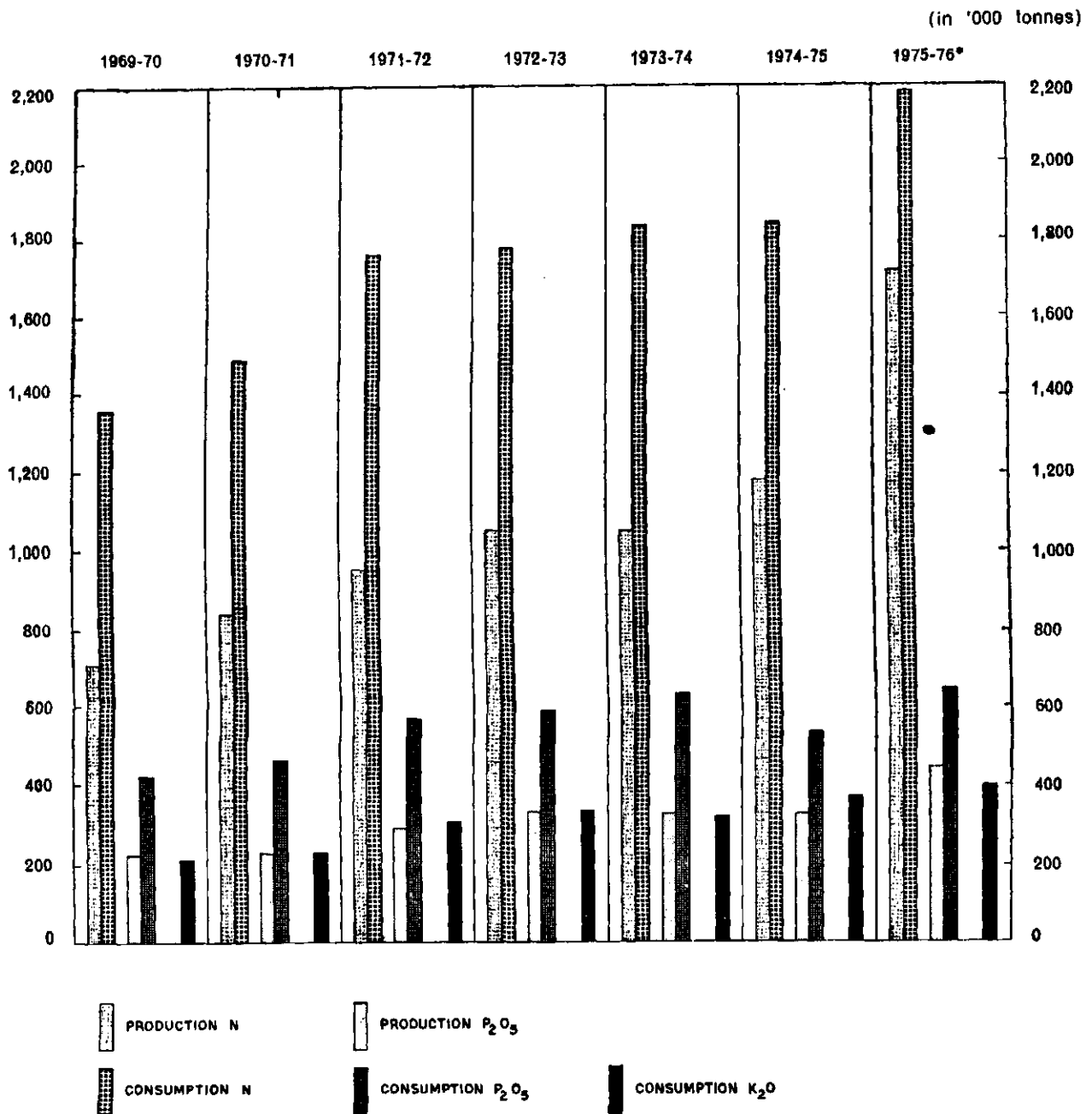
**PRODUCTION AND CONSUMPTION OF N, P₂O₅ AND K₂O IN INDIA
DURING 1969-70 TO 1975-76*
(April-March)**



Note: Potassic fertilisers are not produced in the country.

* Estimated.

**PRODUCTION AND CONSUMPTION OF N, P₂O₅ AND K₂O IN INDIA
DURING 1969-70 TO 1975-76*
(April-March)**

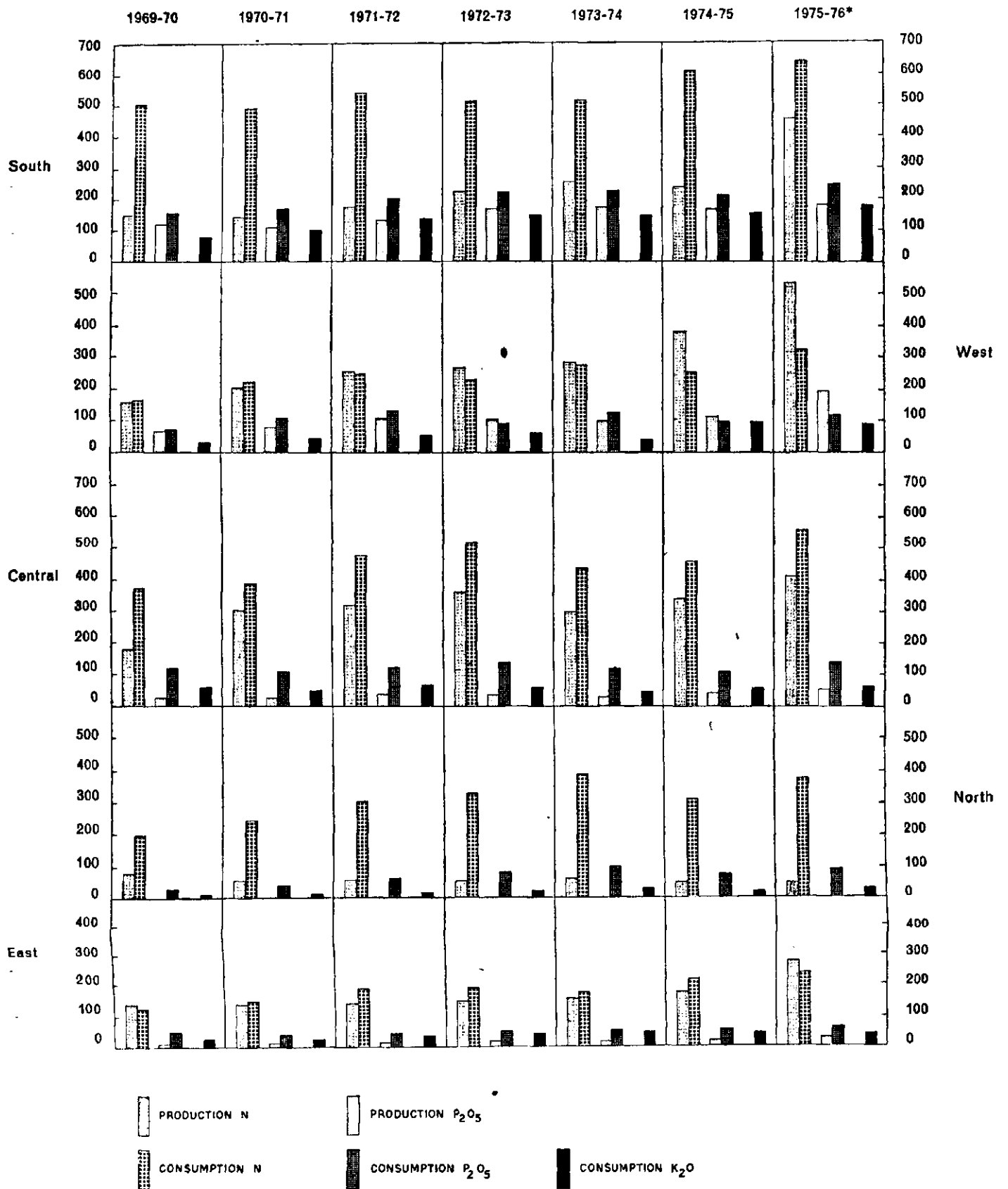


Note: Potassic fertilisers are not produced in the country.

* Estimated.

**REGIONWISE PRODUCTION AND CONSUMPTION OF N, P₂O₅ AND K₂O
DURING 1969-70 TO 1975-76*
(April-March)**

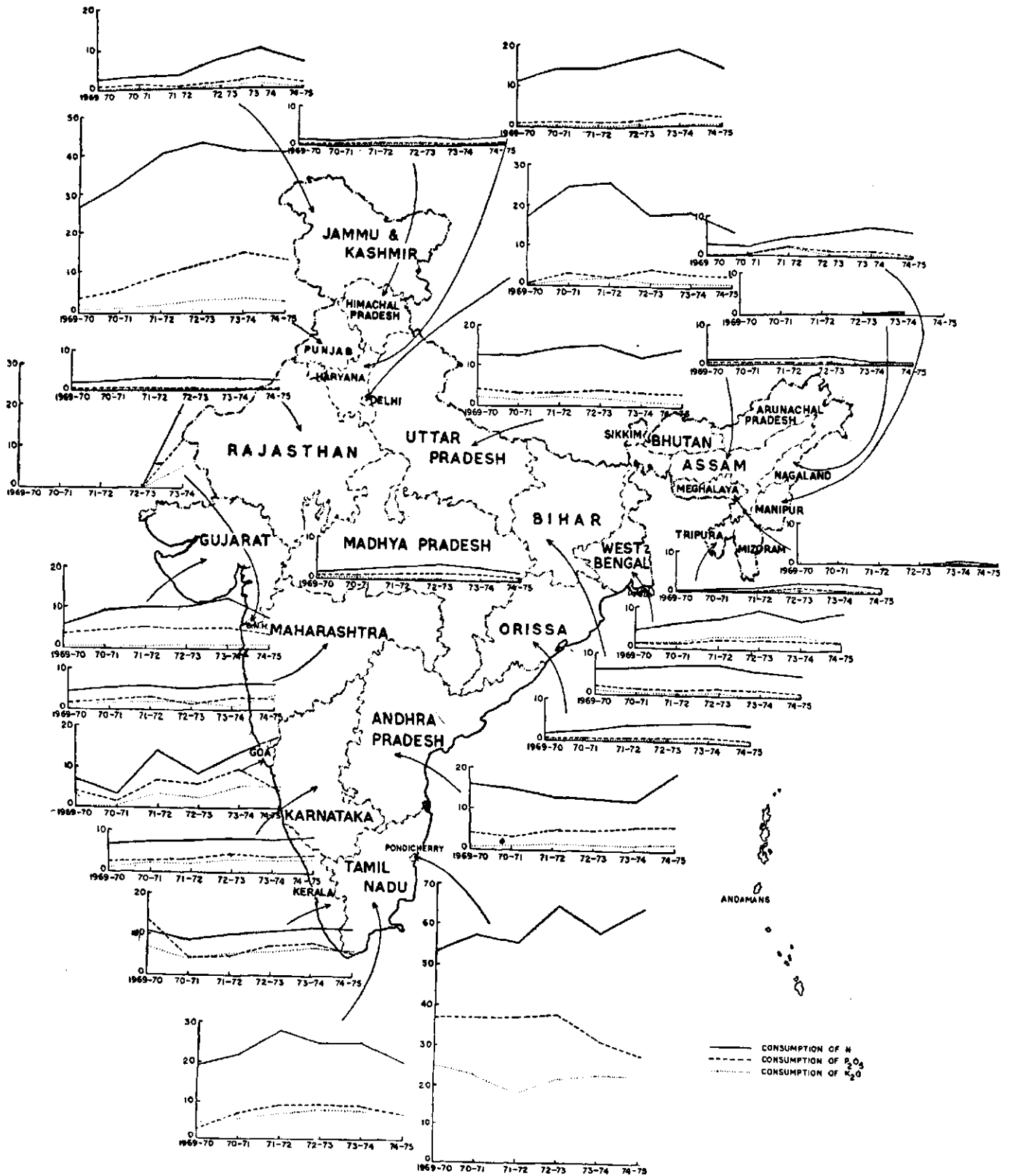
('000 tonnes)



Note: Potassic fertilisers are not produced in the country.

* Estimated.

**STATEWISE PLANTFOOD CONSUMPTION PER HECTARE OF AGRICULTURAL LAND (in kgs)
(1969-70 to 1974-75)**



ALL-INDIA

Year	N	P ₂ O ₅	K ₂ O	Total
1969-70	7.53	2.33	1.66	11.02
1970-71	8.04	2.50	1.24	11.78
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	9.95	2.91	2.00	14.86

Note: For 1969-70 and 1970-71 agricultural and consumption data refer to the same year, thereafter latest agricultural data for 1970-71 is the divisor for the years from 1971-72 to 1974-75.

**DETAILS OF PRODUCTION
AND
CONSUMPTION**

CHAPTER I

PRODUCTION OF FERTILISERS

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

Installed capacity of the fertiliser units in production in the country as on 1-4-75 was 2.204 million tonnes of nitrogen and 0.706 million tonnes of P_2O_5 . During the latter part of 1974-75, IFFCO plants at Kalol and Kandla went into production and the expansion programme of Shriram Chemical Industries, Kota was completed. Their contribution towards production during the year was, however, small.

Production during 1974-75 was 1.186 million tonnes of nitrogen (1.050 million tonnes during 1973-74) and 0.331 million tonnes of P_2O_5 (0.325 million tonnes during 1973-74). The overall capacity utilisation during the year was 60 per cent for nitrogen production (56 per cent during 1973-74) and 58 per cent for P_2O_5 (61 per cent during 1973-74). The low capacity utilisation during the current year was mainly due to:

- (a) Production from Durgapur and Cochin plants had not stabilised in consonance with their capacity; IFFCO and SCI-Expansion were effective only during the latter part of the year;
- (b) Power cuts ranging between 15 and 75 per cent in various States;
- (c) Violent fluctuations and frequent shutdowns of power supply; and
- (d) Major plant breakdowns in three of the large and efficient units during the year i.e. GSFC—Baroda, MFL—Madras, CFL—Vizag.

Tabulated below are the latest available figures of production of nitrogenous fertilisers in countries where production is higher than in India:

Major nitrogenous fertiliser producers

Country	(Figures in million tonnes)		
	1971-72	1972-73	1973-74
USA	8.21	8.41	9.15
USSR	6.05	6.55	7.24
Japan	2.13	2.45	2.08
China (Mainland)	1.65	2.03	2.73
France	1.40	1.47	1.69
West Germany	1.32	1.47	1.47
Poland	1.08	1.15	1.37
Netherland	1.04	1.18	1.21
Italy	1.03	1.04	1.11
India	0.95	1.05	1.05
World	35.11	38.09	40.75

It may be seen that nine countries produce more of nitrogen than India. However, during 1975-76 the production of nitrogen in India may reach 1.72 million tonnes which will improve further the country's position amongst nitrogenous fertiliser producing countries in the world. The position with regard to phosphatic fertilisers is not at all satisfactory as a large number of countries produce more phosphatic fertilisers than India does.

A. FORMS IN WHICH FERTILISERS ARE PRODUCED

A panoramic view of the development of the fertiliser industry in India is presented in Appendix I(a). A variety of nitrogenous, phosphatic and complex fertilisers are produced. These include urea, ammonium sulphate, ammonium sulphate nitrate, calcium ammonium nitrate, ammonium chloride, single superphosphate (16 per cent water soluble P_2O_5), triple superphosphate (45 per cent P_2O_5), ammonium phosphate sulphate (16-20-0), diammonium phosphate (18-46-0), nitrophosphate (15-15-15), urea ammonium phosphate (28-28-0, 14-35-14) and a variety of NPK fertilisers (17-17-17, 14-28-14, 10-26-26, 12-32-16). Of the various NPK fertilisers, 10-26-26 and 12-32-16 were manufactured for the first time in the country by IFFCO at Kaudla during 1974-75.

Nitrogenous fertilisers

Production of straight nitrogenous fertilisers based on synthetic ammonia was started for the first time in India by Mysore Chemicals & Fertilisers Ltd., Belagula, Mysore during 1943 using electrolysis of water for production of hydrogen. Small quantities of byproduct ammonium sulphate from cokeoven gas was already being produced in the steel plants in West Bengal and Bihar before 1943. 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 production of ammonium sulphate on a large scale commenced in 1951 at Sindri.

During 1951-61, four new straight nitrogenous fertilisers were introduced—ammonium sulphate nitrate and urea at Sindri, calcium ammonium nitrate at Nangal (February 1961), ammonium chloride at New Central Jute Mills, Varanasi in 1959 and at FACT Phase-I in 1960. Production of urea commenced for the first time in India at FCI, Sindri during 1959.

During 1961-71, there was considerable growth of fertiliser industry in the country. Phase II and Phase III of FACT were completed during the decade. FCI-Trombay, FCI-Gorakhpur, FCI-Namrup, Neyveli Lignite Corporation-Neyveli, Hindustan Steel-Rourkela, EID-Parry-Ennore, Gujarat State Fertilizers Co. Baroda, Coromandel Fertilisers—Vizag., IEL—Kanpur and SCI—Kota went into production.

Incidentally, 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 grown into a giant organisation, managing a substantial fertiliser capacity in the public sector.

During 1971-72 to 1974-75, Phase IV of FACT was completed. Besides, Madras Fertilizers Ltd.—Madras, Zuari Agro Chemicals—Goa, Cochin Unit of FACT, FCI—Durgapur, IFFCO at Kalol and Kandla and the expansion of SCI plant at Kota went into production.

During 1974-75, Zuari Agro Chemicals' production stabilised and the performance of the Cochin Unit of FACT improved, its production touching 50 per cent of the installed capacity. Capacity utilisation is still low though FCI—Durgapur Unit has yet to overcome its troubles. Though IFFCO plant at Kalol was started up in the latter half of 1974-75, the production of ammonia and urea were stabilised during the year and the performance was satisfactory. Similarly, the expansion of Shriram Chemical Industries Unit at Kota is complete and the plant is expected to achieve rated capacity during 1975-76.

By 1-4-75, the total capacity of nitrogen had risen to 2.204 million tonnes.

Production of nitrogenous and phosphatic fertilisers during the last five years is shown in Table 5, along with the estimates for production for 1975-76. It may be seen that the production of nitrogenous fertilisers has gone up from 0.338 million tonnes during 1970-71 to 1.186 million tonnes during 1974-75, an increase of 42 per cent. The production of phosphatic fertilisers has increased from 0.228 million tonnes during 1970-71 to 0.331 million tonnes during 1974-75, an increase of 45 per cent.

Out of the total installed capacity of 2.204 million tonnes of nitrogen by 1-4-1975 around 1.5 million tonnes of nitrogen capacity was in the form of urea. Thus 68 per cent of the existing capacity was in the form of urea.

The production of nitrogenous and complex fertilisers during the last five years is shown in Table 4a. Out of the total production of 1.186 million tonnes of nitrogen during 1974-75, urea production from 14 urea producing units, contributed 0.8 million tonnes of nitrogen, accounting for 68 per cent of the total production. Thus, urea continued to play a dominant role in the production of nitrogenous fertiliser industry 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 the resultant saving in the cost of packaging, storage and distribution. The two new units which went into production during 1974-75 namely, IFFCO at Kalol and SCI Expansion at Kota had contributed to the improvement in the production of urea.

The overall capacity utilisation of urea plants in India was 53 per cent, almost the same as last year. The low productivity is mainly due

to poor capacity utilisation of Cochin and Durgapur plants and that new plants namely, IFFCO at Kalol and SCI expansion at Kota having yet to achieve optimum production rate for reasons already mentioned.

Next in importance to urea was ammonium sulphate which contributed 10 per cent of total nitrogen production compared to 11 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 byproduct. The overall capacity utilisation was about 62 per cent compared to 61 per cent of the previous year, a marginal improvement in productivity during the year. The low productivity was due to non-availability of good quality raw materials and the obsolescence of some of the plants.

Calcium ammonium nitrate was produced by two plants and its share to the total nitrogen production was about 9 per cent compared to 10 per cent during 1973-74. The overall capacity utilisation has been about 51 per cent compared to 52 per cent during 1973-74. The low capacity utilisation is due to non-availability of power for one of the plants and insufficient supply of gas for the other. Both the plants do perform very well whenever sufficient quantity of raw materials is made available to them.

Ammonium sulphate nitrate and ammonium chloride were produced in small quantities and their combined share in the total nitrogen production was less than 1 per cent compared to 1.4 per cent during 1973-74.

Phosphatic fertilisers

The first fertiliser to be manufactured in the country was single superphosphate in 1906 using bones 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 materials. Currently, there are 30 single superphosphate manufacturing units having a total installed capacity of 227,000 tonnes of P₂O₅ 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 went into production at Alwaye. It was during the next decade, namely, 1961-71 many other complex fertilisers were produced in the country. EID-Parry at Madras also commenced production of the ammonium phosphate sulphate during 1963. Production of various grades of nitrophosphates commenced at the FCI-Trombay unit in 1965, of diammonium phosphate at GSFC at Baroda in 1967 and urea ammonium phosphate at Coromandel Fertilisers, Visakhapatnam in 1968. Various NPK complex fertilisers were produced by Madras Fertilizers Ltd., since 1971. During 1974, IFFCO plant at Kandla commenced production of 10-26-26 and 12-32-16.

The total licensed capacity of phosphatic fertilisers as on 1-4-75 was 0.706 million tonnes of P_2O_5 .

The production of phosphatic fertilisers during the last five years is shown in Table 4b. The total production during 1974-75 was 0.331 million tonnes of P_2O_5 compared to 0.325 million tonnes during 1973-74, a marginal increase.

The overall productivity during 1974-75 was 58 per cent compared to 61 per cent in the previous year. The low productivity during 1974-75 was due to the difficulties in importing phosphoric acid for the three plants which are based on it. The Zuari Agro Chemicals plant at Goa could just barely produce phosphatic fertiliser and only a very small quantity of phosphatic fertiliser could be produced at the IFFCO plant at Kandla. The production of Madras Fertilizers also suffered on account of inadequate availability of phosphoric acid. In addition, plants of GSFC, MFL and CFL had prolonged shutdowns, arising from serious breakdowns.

The two straight phosphatic fertilisers produced in the country were single superphosphate and triple superphosphate besides a small quantity of Pelofos containing 18 per cent available P_2O_5 . Single superphosphate is produced in 30 units (Table 2) in the country and the production during the year was almost the same as in previous year.

Out of a total production of 331,000 tonnes P_2O_5 during 1974-75, the share of single superphosphate was 40 per cent compared to 38 per cent during the previous year.

The overall capacity utilisation in superphosphate industry during 1974-75 was 58 per cent compared to 57 per cent in the previous year. The low performance was due to a variety of reasons, the main reason being drastic power cut in many States and low offtake of the product caused by many factors like high prices, lack of linked nitrogen, etc.

There is only one triple superphosphate plant in the country whose production was the same as in the previous year. The contribution of triple superphosphate and Pelofos to the total production of P_2O_5 in the country was hardly 1 per cent.

Complex fertilisers

A variety of complex fertilisers are being produced in the country, namely, ammonium phosphate sulphate, nitrophosphate, diammonium phosphate, urea ammonium phosphate and several grades of NP & NPK fertilisers. Their share in the production of P_2O_5 during 1974-75 was 59 per cent compared to 61 per cent in the previous year.

Ammonium phosphate sulphate was produced in two units. Its production improved by about 15 per cent compared to the previous year. The overall capacity utilisation was about 65 per cent compared to 56 per cent during the previous year. Its share in the production of P_2O_5 was about 9 per cent compared to 8 per cent in the previous year.

Only one grade of nitrophosphate, namely, 15-15-15 was produced during 1974-75. Its production was almost the same as in the previous year. The overall capacity utilisation during the year was 88 per cent, which was the same as in the previous year. While its share in the nitrogen production was only 2 per cent, its share in the P_2O_5 production was about 10 per cent, same as in the previous year.

Diammonium phosphate was produced by one manufacturing unit and its production during 1974-75 was about 12 per cent more than in the previous year. The overall capacity utilisation during the year was 62 per cent compared to 56 per cent in the previous year. It would have been even higher but for a prolonged shutdown for major repairs. Its share in nitrogen production was 1 per cent and its share in the P_2O_5 production was about 9 per cent, the same as in the previous year.

Urea ammonium phosphate grades of 28-28-0 and 14-35-14 were produced by one manufacturing unit. Their production came down by 21 per cent compared to the previous year as the plant had to be shut down due to a major breakdown. The overall capacity utilisation was 80 per cent during the year, the same as in the previous year. While its contribution to the total production of nitrogen was about 3 per cent, its share in the production of P_2O_5 was about 18 per cent, almost the same as in the previous year.

A variety of NPK fertilisers were produced during the year as seen in Tables 4a and 4b. For the first time, the grades 10-26-26 and 12-32-16 were produced. The grades 17-17-17, 14-28-14 and 14-35-14 were also produced in almost the same quantities as in the previous year. Larger quantities could have been produced but for a major plant breakdown and shortage of phosphoric acid. While their contribution to the total production of nitrogen was above 4 per cent, their share in the P_2O_5 production was about 20 per cent, the same as in the previous year.

B. STATEWISE PRODUCTION

The factorywise, productwise licenced capacity of various fertilisers as on 1-4-75 is given in Appendix I(b). The Statewise and materialwise production figures for the five years ending 1974-75 are given in Appendices II, III(a), III(b) and IV and the corresponding nutrient production are given in Table 5.

Nitrogenous fertilisers

It may be seen from Table 5 that out of the production of 1.186 million tonnes of nitrogen during 1974-75, a third of it was produced in the West Zone and almost a similar amount in the Central Zone.

In the West Zone, the production was mainly from units located in Maharashtra (FCI-Trombay), Gujarat (GSFC-Baroda) and Goa (Zuari). IFFCO at Kalol has also contributed towards its production though on a small scale since it went into production at the end of the year 1974.

In the Central Zone, the maximum production was in Uttar Pradesh where two large nitrogenous fertiliser plants namely IEL—Kanpur and FCI—Corakhpur and a small one namely, New Central Jute Mills—Varanasi are located. This was followed by Rajasthan (from SCI plant at Kota). The contribution from HSL plant at Bilai in M.P. was small being based on cokeoven gas.

In the South Zone, FACT—Alwaye and FACT—Cochin in Kerala, EID-Parry—Madras, NLC—Neyveli and MFL—Madras in Tamil Nadu and Coromandel Fertilisers—Vizag in A.P. have contributed to the production during 1974-75. The FACT plant at Alwaye, FACT plant at Cochin and NLC plant at Neyveli are working at a low capacity due to a variety of reasons—obsolescence in the Alwaye plant, technical problems in the Cochin and Neyveli plants. There is no fertiliser plant under production in the Karnataka State yet but the Mangalore Chemicals and Fertilizers Ltd. is nearing completion and is expected to go into production during 1975-76.

In the East Zone, the 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 worked satisfactorily during the year; FCI—Sindri's productivity is low due to non-availability of good quality raw material and obsolescence of plant and equipment; HSL—Rourkela's performance has been low due to insufficiency of gas and FCI—Durgapur is facing many technical problems.

In the North Zone, there is only one fertiliser plant namely, FCI—Nangal where the capacity utilisation during 1974-75 has been low due to shortage of electric power. The plant is in excellent condition and whenever sufficient power was made available, it had worked to 100 per cent capacity.

Appendix II 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 fourteen units spread all over India except North Zone. About 44 per cent of urea is produced in the Central Zone and about 38 per cent in the West 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. Only one unit namely, New Central Jute Mills—Varanasi in U.P., manufactures fertiliser grade ammonium chloride.

Phosphatic and complex fertilisers

The installed capacity of phosphatic and complex fertilisers product-wise and Statewise is presented in Appendix I(b) and the production in Appendices III(a), III(b) and IV. Production in terms of nutrients during the five years ending 1974-75 is presented in Table 5.

The overall production of phosphatic fertilisers during 1974-75 is almost the same as in the previous year. Fifty per cent of the production of phosphates is in South Zone where besides four large complex fertiliser units, a large number of single superphosphate units are located. Most of the superphosphate in the regions is produced in Tamil Nadu, Andhra Pradesh and Kerala. Although there is no nitrogenous fertiliser unit in Karnataka State, yet the State has two single superphosphate plants which were closed during 1974-75.

In the West Zone, the complex and superphosphate units in Gujarat and Maharashtra performed satisfactorily. Zuari plant at Goa, with an installed capacity of 42,000 tonnes of P_2O_5 almost remained idle during 1974-75 due to non-availability of phosphoric acid.

In the Central Zone, the contribution is only by four superphosphate units in the absence of any complex fertiliser manufacturing unit therein.

In the North Zone, there is no superphosphate or complex fertiliser plant and hence, production of phosphatic fertiliser is nil.

In East Zone also, phosphatic fertiliser production is only as single superphosphate. There are two superphosphate plants in West Bengal and one each in Bihar and Assam. In Orissa, there is neither complex fertiliser plant nor single superphosphate plant but a unit is producing citrate soluble phosphatic fertiliser under the name Pelofos, which operated during 1974-75.

Only one triple superphosphate plant exists in India—located in Maharashtra in West Zone. Two more units, one in Sindri—Bihar and another in Khetri—Rajasthan, are expected to go into production during 1975-76.

Among the complex fertilisers produced in the country (Appendix IV), ammonium phosphate sulphate is produced by two units, one each in Kerala and Tamil Nadu. Nitrophosphate is produced by FCI-Trombay in Maharashtra in West Zone. Only one grade 15-15-15 was produced in 1974-75 and the Trombay unit has performed exceedingly well during the year. Urea ammonium phosphate is produced by Coromandel Fertilisers at Visakhapatnam, in A.P. in South Zone. Two grades 28-28-0 and 14-35-14 were produced during 1974-75. The performance of the plant was satisfactory. A beginning was also made by Zuari, Goa by manufacturing this fertiliser in the West Zone. Diammonium phosphate was produced by GSFC-Baroda in the West Zone. Amongst the NPK fertilisers, 17-17-17 and 14-28-14 were produced by Madras Fertilizers—Manali in South Zone and the production was satisfactory.

Two new grades of NPK fertilisers namely, 10-26-26 and 12-32-16 were produced for the first time by IFFCO at Kandla in Gujarat in the West Zone. The plant could not be operated to full capacity as import of phosphoric acid was inadequate.

C. PRODUCTION OF FERTILISERS DURING 1975-76

The anticipated consumption of N, P₂O₅ and K₂O during 1975-76 has been estimated at 2.175, 0.660 and 0.400 million tonnes respectively vide Tables 7a, 8a and 9a. Against this requirement, the capacity of plants existing in the country as on 1-4-75 was 2.204 million tonnes of N and 0.706 million tonnes of P₂O₅. This includes IFFCO plants at Kalol and Kandla and the expansion of Kota plant.

During 1975-76, production should increase considerably at Kalol plant of IFFCO where start-up problems have been overcome.

Production in the FACT—Cochin plant is expected to marginally improve during 1975-76. The FCI—Durgapur continues to face considerable technical difficulties and corrective measures are being taken to rectify the technical deficiencies. Nevertheless, it is not likely to improve its performance during 1975-76.

Production of complex fertilisers at Zuari—Goa, IFFCO—Kandla and MEL—Manali will depend entirely upon the availability of imported phosphoric acid.

Besides, during 1975-76 five new plants namely SPIC—Tuticorin, MCFL—Mangalore, FCI—Barauni, FCI—Namrup expansion and Hindustan Copper—Khetri, are expected to go into production. Besides, the expansion programme of FCI—Gorakhpur, Coromandel—Vizag and rationalisation scheme of FCI—Sindri are also expected to go into production during 1975-76. The additional capacity expected to be created during 1975-76 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 ₂ O ₅	
1.	SPIC, Tuticorin	258,000	51,000	Urea by June 1975 and phosphatics by December 1975
2.	MCFL, Mangalore	160,000	—	September 1975
3.	FCI—Barauni	152,000	—	December 1975
4.	FCI—Namrup (exp.)	152,000	—	December 1975
5.	FCI—Gorakhpur (exp.)	51,000	—	December 1975
6.	FCI—Sindri (rationalisation)	—	156,000	December 1975
7.	CFL—Vizag (exp.)	3,000	31,000	September 1975
8.	HCL—Khetri	—	90,000	October 1975
	Total	776,000	323,000	

Thus, a substantial capacity will be added during 1975-76. A number of new grades of NP and NPK complex fertilisers are expected to be manufactured during the year. The SPIC plant at Tuticorin, which had gone into production in June 1975, has the largest urea plant in operation in the world. The phosphatic fertiliser plant, which will produce DAP and NPK fertilisers is expected to go into commercial production by December 1975. The Mangalore Chemicals & Fertilizers, which will be producing urea, is expected to commence production during September 1975. FCI—Barauni and FCI—Namrup expansion, identical plants with urea production capacity of 1,000 tonnes per day, are expected to go into production by the end of 1975. The FCI unit at Corakhpur will have a substantial expansion coming into operation by December 1975. FCI—Sindri has a rationalisation programme in which phosphoric acid will be produced by the wet process, which will be used for the production of triple superphosphate. The byproduct gypsum will be used in place of currently used natural gypsum for the production of ammonium sulphate by Merseberg Process. It is expected to go into commercial production by the end of the year. The expansion programme of the Coromandel is primarily for increasing the production of phosphoric acid and complex fertilisers. It is expected to go into production in September 1975. The Hindustan Copper Plant at Khetri will be using the smelter gases to produce sulphuric acid. The sulphuric acid will be used for the production of phosphoric acid by the conventional wet process and the phosphoric acid will be used for the production of triple superphosphate. The plant and equipment have been completed during 1974-75 and trial runs have been started. Commercial production is expected during October 1975.

Thus by the end of 1975-76, the total capacity of nitrogenous fertiliser is expected to be 2.980 million tonnes of nitrogen and 1.034 million tonnes of P_2O_5 . The production during 1975-76 is estimated to be (vide Table 5) 1.721 million tonnes of N and 0.456 million tonnes of P_2O_5 . The increase in production over the previous year, and more particularly of N is gratifying. This includes the stabilised production from the existing plants and the anticipated production from the eight projects mentioned in the above table.

When the anticipated production is compared with the expected consumption, there still appears to be a gap of 0.454 million tonnes of nitrogen and 0.204 million tonnes of P_2O_5 which will have to be filled by imports. Besides, the country will have to import 0.4 million tonnes of K_2O which is not indigenously produced.

CHAPTER II

CONSUMPTION OF FERTILISERS

A. FORMS IN WHICH FERTILISERS ARE USED

Various forms of fertilisers that were consumed in India during the review period are listed in Table 6. Figures given therein represent quantities distributed and not actually consumed because materialwise consumption data is not available. For the sake of uniformity, however, these figures have been referred to as consumption figures in the review covered by this chapter.

There was a slight shift in the trend of switch-over to higher analysis straight and complex fertilisers during 1974-75. This was due to comparatively larger imports than in the previous year of lower analysis material at a time when international availability of higher nutrient materials was perhaps difficult. This situation no longer exists and the reversion to the normal trend of increased use of higher analysis material in line with the world-wide experience has already taken place and will continue.

Nitrogen

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

There was, however, a drop in consumption of some materials and increase in others during 1974-75 compared to the previous year. Whereas the total increase in terms of N was about 272 thousand tonnes, the drop was not more than 47 thousand tonnes largely conditioned by the availability of the respective materials (imported or indigenous). The table on next page gives the position materialwise.

Sixty-eight per cent of the increase was contributed by urea alone. The other important contributors were imported materials i.e. CAN (26 per cent N) (10.6 per cent), NPK complex (8.3 per cent) and ammonium sulphate (8 per cent).

The drop on the other hand was mainly contributed by imported ammonium nitrophosphate (20-20-0) (29.1 per cent); indigenous UAP (28-28-0) (23.4 per cent); imported DAP (18-46-0) (14.7 per cent); indigenous nitrophosphate (15-15-15) (9.6 per cent) and indigenous NPK (14-28-14) (7.5 per cent).

*Increase/decrease in consumption - materialwise
(1974-75 over 1973-74)*

		('000 tonnes)		
		Material	N (percentage share)	
Increase				
1. Ammonium sulphate	(Imported)	+ 108	21.84 (8.0)	
	(Indigenous)	+ 22	4.53 (1.7)	
2. Urea	(Imported)	+ 159	73.10 (26.8)	
	(Indigenous)	+ 245	112.70 (41.4)	
3. CAN (26% N)	(Imported)	+ 112	29.12 (10.6)	
4. Ammonium chloride		+ 16	4.00 (1.5)	
5. Ammonium phosphate sulphate	} (16-20-0) (20-20-0) (Indigenous)	+ 16	2.56 (0.9)	
6. NPK (15-15-15)	(Imported)	+ 150	22.50 (8.3)	
7. NPK (10-26-26)	(Indigenous)	+ 5	0.50 (0.2)	
8. NPK (12-32-16)	(-do-)	+ 13	1.56 (0.6)	
Total			272.45 (100.0)	
Decrease				
9. DAP	(Imported)	- 38	6.84 (14.7)	
10. Nitrophosphate (Suphala)	(15-15-15) (Indigenous)	30	4.50 (9.6)	
11. Ammonium nitrophosphate	(20-20-0) (Imported)	- 68	13.60 (29.1)	
12. Urea ammonium phosphate	(28-28-0) (Indigenous)	- 39	10.92 (23.4)	
13. NPK (17-17-17)		- 10	1.70 (3.6)	
	(14-28-14)	25	3.50 (7.5)	
	(14-35-14) (Indigenous)	- 3	1.26 (2.8)	
14. Calcium ammonium nitrate (25%N)	(Indigenous)	- 8	2.00 (4.3)	
15. Ammonium sulphate nitrate (26%N)	(Indigenous)	- 9	2.34 (5.0)	
Total			46.66 (100.0)	

Urea (46 per cent N)

The contribution of urea as a source of N continued to increase during the entire review period. It rose from 59.7 per cent in 1970-71 to 67 per cent in 1974-75. This trend is likely to continue. Urea has become the most popular and the main source of N because of the advantage arising from its high analysis. Its popularity is bound to further increase with more urea plants likely to go on stream within the next two to three years.

CAN (25 per cent and 26 per cent N)

CAN is a popular and important source of N in certain areas. But its share dropped from 10.9 per cent in 1970-71 to 9.7 per cent in 1973-74 due to better availability of high analysis fertilisers. There was, however, increase of 0.3 per cent in its contribution to total N consumption during 1974-75 compared to the previous year because of higher imports.

Absolute consumption of CAN increased from 560 thousand tonnes to 703 thousand tonnes during the review period. This increase of 143 thousand tonnes is composed of 66 per cent increase in indigenous availability and 34 per cent of imports. Compared to the previous year, the indigenous availability during 1974-75 dropped by 8 thousand tonnes and imports increased by 112 thousand tonnes.

Ammonium sulphate (20.6 per cent N)

The contribution of ammonium sulphate to the total N consumption dropped from 16.5 per cent in 1970-71 to 8.6 per cent in 1974-75. Absolute consumption dropped from 1044 thousand tonnes to 757 thousand tonnes. This drop was primarily due to reduced imports. Compared to the previous year, however, the share of ammonium sulphate in total N consumption increased by 0.6 per cent in 1974-75 mainly due to higher imports, the highest in the last five years.

Even though ammonium sulphate is popular in certain areas in the country, its share as a source of N will drop again due to its limited indigenous production and reduced imports. Indigenous availability is not likely to improve much barring a small quantity as a by-product in GSEFC Caprolactum plant and FCI, Sindri, expansion.

Diammonium phosphate (18-46-0)

It is another popular form of fertiliser which supplies phosphates in addition to nitrogen. Its consumption is, however, conditioned by its availability. There being only one domestic producer of DAP, its contribution depends on the quantum of imports.

The contribution of DAP to total N consumption increased from 2.3 per cent in 1970-71 to 4.5 per cent in 1973-74. It, however, dropped to 3.5 per cent during 1974-75, despite better imports compared to the previous year. Late import arrivals were perhaps responsible for this decline.

Other forms

The trend towards preference for complex fertilisers because of the accepted need for balanced fertilisation and ease of application suffered during 1974-75, because of their high prices and reported preference of the farmer for straight nitrogenous fertiliser on account of limitation of his resources and quicker visible results of their application. Combined contribution of all the complex and NPK fertilisers to total N consumption dropped from 17.4 per cent in 1973-74 to 14.2 per cent in 1974-75. Contribution of NPK grades alone increased from 3.4 to 4 per cent despite drop in indigenous production due to serious break-downs in some of the major manufacturing units during 1974-75. Higher imports of NPK 15-15-15 during 1974-75 compared to the previous year were mainly responsible for this 0.6 per cent increase in the contribution.

Once the consumption pattern stabilises and the farmer has the access to additional credit the earlier trend towards preference for complex fertilisers should revive.

Phosphates

As is evident from Table 6, seven fertiliser materials continued to be the main sources of P_2O_5 in the country. Out of these, there was a slight improvement (from 74.6 per cent in 1973-74 to 75.6 per cent in 1974-75) in the contribution of complex and NPK fertilisers to total P_2O_5 consumption primarily due to increased consumption by 150,000 tonnes of imported NPK 15-15-15. The contribution of superphosphate, the only straight phosphatic fertiliser, correspondingly dropped from 25.4 to 24.4 per cent.

The Table on next page gives the materialwise increase/decrease in P_2O_5 consumption during 1974-75 compared to the previous year.

It is evident that the maximum decrease was recorded in the case of DAP followed by superphosphate, ANP 20-20-0 (imported), UAP 28-28-0 (indigenous), NPK (14-28-14) (indigenous), nitrophosphate 15-15-15 (indigenous), NPK 14-35-14 (indigenous) and NPK 17-17-17 (indigenous). The maximum increase on the other hand was recorded in the case of NPK 15-15-15 (imported) followed by NPK 12-32-16—a new grade introduced by IFFCO during the year—APS 16-20-0 and 20-20-0 (indigenous) and NPK 20-26-26—another new grade introduced by IFFCO during the year. The pattern of consumption was largely the function of availability.

Superphosphate

The share contributed by superphosphate to total P_2O_5 consumption dropped from 36.4 per cent in 1970-71 to 24.3 per cent in 1972-73,

*Increase/decrease in consumption—materialwise
(1974-75 over 1973-74)*

('000 tonnes)

	Material	P ₂ O ₅ (percentage share)
Increase		
1. Ammonium phosphate sulphate (16-20-0) (20-20-0) (Indigenous)	+ 16	3.20 (10.3)
2. NPK (15-15-15) (Indigenous)	+ 150	22.50 (72.2)
3. NPK (10-26-26) (12-32-16) (Indigenous)	+ 5 + 13	1.30 (4.2) 4.16 (13.3)
(No distribution in 1973-74)		
Total		31.16 (100.00)
Decrease		
1. Superphosphate	- 102	16.32 (21.8)
2. Diammonium phosphate (Imported)	- 38	17.48 (23.5)
3. Nitrophosphates (15-15-15) (Indigenous)	- 30	4.50 (6.0)
4. Ammonium nitrate phosphate (20-20-20) (Imported)	- 68	13.60 (18.2)
5. Urea ammonium phosphate (28-28-0) (Indigenous)	- 39	10.92 (14.6)
6. NPK (17-17-17) (14-28-14) (14-35-14) (Indigenous)	- 10 - 25 - 9	1.70 (2.3) 7.00 (9.4) 3.15 (4.2)
Total		74.67 (100.00)

clearly indicating a shift away from the low to high analysis fertilisers. This trend reversed in 1973-74 due to limited imports of NPK grades and the superphosphate contribution increased to 25.4 per cent. The trend reversed again in 1974-75 and the contribution of superphosphate dropped to 24.4 per cent due mainly to a substantial increase in the imports of NPK 15-15-15. This trend is likely to continue. The contribution of superphosphate to the total P₂O₅ consumption is thus dependent

largely on NPK availability, particularly of imported material because of its much lower nutrient price compared to indigenous complex and NPK materials. This trend is likely to continue. Whereas this trend towards high analysis material is desirable in the overall interest of economy, in packaging, warehousing, transportation, etc., to the extent that this trend is fostered through the use of imported material, it runs counter to the national interest of maximum utilisation of indigenous manufacturing capacity and of reducing outflow of scarce foreign exchange.

The indigenous P_2O_5 capacity of 708 thousand tonnes per annum on 1-4-75 is estimated to produce 460 thousand tonnes of P_2O_5 during 1975-76. This can meet about 70 per cent of the estimated consumption during 1975-76. Availability of P_2O_5 through imports during 1975-76 should not, therefore, exceed 200 thousand tonnes, i.e. just enough to fill the gap between estimated consumption and indigenous production during 1975-76. If the actual imports are of larger quantities, as it is anticipated to be, the surplus availability through imports should be retained in buffer stocks so that the flow of indigenous availability is not inhibited. Nutrient price of the imported P_2O_5 also needs to be brought at par with that of indigenous material to ensure the latter's uninterrupted flow to the farmer.

The P_2O_5 production through superphosphate alone during 1975-76 is expected to be 138 thousand tonnes. Since this is a low analysis (16 per cent w.s. P_2O_5) material, it will require not only adequate N support but also perhaps price subsidy to enable its regular acceptance by the farmer. Given this support, the capacity utilisation of superphosphate units can be considerably improved, resulting in saving in foreign exchange outflow.

Diammonium phosphate (DAP)

The consumption of DAP is largely conditioned by its availability. Its contribution to P_2O_5 consumption rose from 23.2 per cent in 1970-71 to 37.0 per cent in 1972-73. It dropped to 34.2 per cent in 1973-74 due to comparatively lesser imports. It, however, dropped further to 31.0 per cent in 1974-75 despite higher imports, presumably because of late arrival of imports which had yet to move into the market. Due to the anticipated increase in production of indigenous NPK complex fertilisers in 1975-76, the share of DAP to total P_2O_5 consumption is likely to decrease sharply.

Urea ammonium phosphate (UAP)

The contribution of UAP to total P_2O_5 dropped from 13.2 per cent in 1970-71 to 7.6 per cent in 1974-75 due perhaps to increased availability of NPK complex fertilisers. The sharp decline in contribution from 15 per cent in 1971-72 to 9.9 per cent in 1972-73 was due to increased availability of NPK complex fertilisers from MFL which went into production towards the end of 1971 and also from 'Coromandel'. The drop of 1.3 per cent in 1974-75 compared to the previous year was apparently due to breakdown in Coromandel unit during the year. It is likely to improve its contribution by about 1.2 per cent in 1975-76.

Nitrophosphates

The contribution of nitrophosphates has been fluctuating over the review period. Beginning with a contribution to total P_2O_5 consumption of 10.8 per cent in 1970-71, it dropped to 8.6 and 7.3 per cent in the two subsequent years, respectively. It rose to 12.9 per cent in 1973-74 and dropped again to 10.6 per cent in 1974-75, a level even lower than that achieved in 1970-71. There was, however, a consistent growth in its absolute consumption in terms of material up to 1973-74 recording an increase of 24 per cent compared to the 1970-71 level. The drop in absolute consumption by 30 thousand tonnes during 1974-75 compared to the previous year reduced the growth over the review period to 9.5 per cent.

The contribution of nitrophosphate to total P_2O_5 consumption is also likely to increase by about 1 per cent in 1975-76. The increase in absolute terms may be around 60,000 tonnes.

NPK complexes

There was a consistent growth in line with the trend for preference for higher analysis material in the contribution of NPK grades to the total P_2O_5 consumption from 1970-71 to 1972-73. It rose from 10.7 to 16.7 per cent during this period, but it dropped to 13.1 per cent in 1973-74 due to limited imports of NPK 15-15-15. The trend for higher analysis material revived again in 1974-75 and their P_2O_5 contribution increased to 17.6 per cent. The substantially higher imports of NPK 15-15-15 compared to the previous year and commissioning of IFFCO complex plant were the main contributing causes. This position is likely to improve during 1975-76 with the improved availability from IFFCO and stabilisation of Zuari complex plant.

The contribution of APS to the P_2O_5 consumption fluctuated between 3.7 to 5.8 per cent during the review period. Its contribution is not likely to improve.

Potash

Potash is used primarily in two forms—as muriate of potash 60 per cent K_2O (MOP) for direct application or as an NPK mixture and through NPK complex fertilisers. The contribution of direct application of MOP to the total K_2O consumption dropped continuously for two years from 68.8 per cent in 1970-71 to 65.6 per cent in 1971-72 and 64.5 per cent in 1972-73. The position changed sharply in 1973-74 when the contribution increased (by 10.5 per cent) for the first time during the review period and recorded the highest ever share of 75 per cent. This was due mainly to the drop in the overall NPK complex fertiliser availability arising from low imports and intensive promotional efforts in several areas by IPL for split application of MOP. This increase was, however, short-lived and the position reversed once again in 1974-75 with the share of straight MOP to total K_2O consumption dropping by 12.5 per cent to 62.5 per cent. In absolute terms also, the consumption of MOP dropped from 476 thousand tonnes in 1973-74 to 327 thousand tonnes in 1974-75—the level even lower than that attained in 1972-73. This reversion was primarily caused because of about seven-fold increase in 1974-75 in the import of NPK complex fertilisers compared to the previous year. The contribution of imported NPK complex fertilisers thus increased from 0.9 per cent in 1973-74 to 8.2 per cent in 1974-75.

The contribution of MOP is likely to increase by 1.3 per cent again in 1975-76 due mainly to the drop in the share of indigenous NPK complex fertilisers by 2.1 per cent.

The contribution of K_2O consumption through MOP dropped by 6.3 per cent over the review period though the absolute consumption of MOP increased by 101 thousand tonnes. This drop in contribution was due to the increase in consumption of NPK complex fertilisers from 212 thousand tonnes in 1970-71 to 320 thousand tonnes in 1974-75.

The contribution of indigenously produced NPK complex fertilisers to the total K_2O consumption consistently rose from 15.3 per cent in 1970-71 to 26.3 per cent in 1972-73, dropped to 23.1 per cent in 1973-74 and rose again to 28.3 per cent in 1974-75. The trend is likely to reverse again in 1975-76 with the share dropping by 2.1 per cent to 26.2 per cent. The development of new complex grades by IFFCO and also possibly by MFL without K_2O nutrient are expected to cause this reversal.

The contribution of imported NPK complex fertilisers to total K_2O consumption increased from 12.3 per cent in 1970-71 to 17.3 per cent

in 1971-72, dropped continuously during the subsequent two years to 3.6 and 0.9 per cent respectively and rose sharply to 8.2 per cent in 1974-75. The contribution is likely to marginally increase in 1975-76. The consumption in absolute terms increased from 162 thousand tonnes in 1970-71 to 172 thousand tonnes in 1974-75 recording a growth of 6.1 per cent.

The sulphate of potash, another source of potash, is consumed mainly by virginia tobacco in India. The total quantity consumed in 1974-75 was 6,000 tonnes. This was 57.1 per cent lower than that consumed in the first year of the review period, i.e., 1970-71 and 25 per cent lower than the previous year. Its contribution to total K_2O consumption also reduced from 3.6 per cent in 1970-71 to 1 per cent in 1974-75. This pattern is likely to continue.

B. CONSUMPTION OF FERTILISERS BY STATES

After two years of extremely limited availability during 1972-73 and 1973-74, when the rate of growth of consumption had declined to 2.6 per cent and 5.2 per cent respectively as against the average rate of growth of about 20 per cent during the previous years, the country witnessed a situation of easy availability during 1974-75. This should have normally resulted in a big upsurge in consumption but a variety of marketing constraints, indicated earlier, caused a drop in consumption for the first time after many years of growth. The drop was 3.3 per cent compared to the previous years. The impact of each factor on fertiliser offtake varied from State to State but in the country as a whole the most dominating factor, besides aberrant weather which was in any case beyond our control, was "physical controls" followed closely by "sharp hike in fertiliser prices", "credit" and "other factors like lack of timely availability". The performance in 1974-75 was very poor compared even to the depressed anticipated rate of growth of about 14 per cent in the year. This presents an extremely discouraging picture in the context of the country's continued aim of sharply increasing its agricultural production through accelerated increase in fertiliser use to meet the ever growing requirement of its ever growing population.

The average rate of growth of consumption which stood at about 9 per cent over the five-year review period ended 1973-74, dropped to about 5 per cent during the review period ended 1974-75.

There, however, exists a tremendous potential for fertiliser use in the country and given adequate availability and complete marketing freedom, consumption is bound to rise sharply. Availability appears to be adequate now. But due to various other constraints, the growth in consumption during 1975-76 may not be more than 17.8 per cent.

The year-wise, season-wise, region-wise, State-wise and nutrient-wise details of consumption are given in Tables 7a, 8a, and 9a. Nutrient-wise and year-wise All-India position during the review period is briefly given in the first table on next page.

Trend of Nutrientwise All-India Consumption

As indicated in the second table on the next page, the percentage share of N to the total consumption of NPK has been gradually reducing and that of P_2O_5 and K_2O gradually increasing upto 1973-74. Beginning with 68.3 per cent in 1970-71, the share of N dropped to 64.4 per cent in 1973-74. The share of P_2O_5 and K_2O increased from 21.2 per cent to

Fertiliser consumption nutrientwise (1970-71 to 1975-76)

Fertiliser	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
N -- Quantity ('000 tonnes)	1,487	1,760	1,779	1,829	1,838	2,175
--%+ over Previous year	9.3	18.4	1.1	2.8	0.5	18.3
P ₂ O ₅ -- Quantity ('000 tonnes)	462	564	587	650	538	680
--%+ over Previous year	10.0	22.1	4.1	10.7	-17.2	22.7
K ₂ O -- Quantity ('000 tonnes)	228	304	332	360	370	400
--%+ over Previous year	9.1	33.3	9.2	8.4	2.8	8.1
N+P ₂ O ₅ +K ₂ O -- Quantity ('000 tonnes)	2,177	2,628	2,698	2,839	2,746	3,235
--%+ over previous year	9.5	20.8	2.6	5.2	-3.3	17.8

* Estimated.

22.9 per cent and from 10.5 per cent to 12.7 per cent respectively over the same period. This was an index of the growing realisation of the benefits of balanced fertilisation.

The consumption trend of N and P₂O₅, however, reversed in 1974-75. The percentage share of N increased to 67.1 and that of P₂O₅ dropped to 19.6. The share of K₂O continued to increase and reached a level of 13.3 per cent. The main contributory factors for the reversal in trend in N and P₂O₅ were the sharp hike in fertiliser prices during 1974-75 and the limited resources of the farmer. The farmer appeared to have preferred to use the available resources for purchase of N alone and thought of P₂O₅ and K₂O only if any money was left over.

Percentage share of N, P and K to total consumption

Nutrient	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
N	68.3	67.0	65.9	64.4	67.1	67.2
P ₂ O ₅	21.2	21.5	21.8	22.9	19.6	20.4
K ₂ O	10.5	11.5	12.3	12.7	13.3	12.4
	100.0	100.0	100.0	100.0	100.0	100.0

* Estimated.

The trend in consumption during 1975-76 is not likely to be materially different. The share of N may remain unchanged and that of P_2O_5 may improve marginally at the cost of K_2O .

There is, therefore, a dire necessity for the balance in fertiliser use to be improved speedily in the interest of increasing agricultural production. A well planned promotional strategy specially directed at balanced fertilisation needs to be constantly beamed at the farmer. For this purpose a coordinated effort of the Government and the Industry only can ensure effectiveness.

NITROGEN

The review period commenced in 1970-71 with the rate of growth in consumption of 9.3 per cent. This was the second year of adjustment in consumption after a sharp increase in consumption of 42 per cent in 1968-69 on account of a large-scale adoption of HYV programmes. The increase in consumption of 18.4 per cent during 1971-72 compared to the previous year showed a welcome upswing in the growth rate. Then followed two years of limited fertiliser availability. A lot of demand remained unsatiated. And the rate of growth, which was conditioned by availability alone, slumped to 1.1 and 2.8 per cent respectively. The situation worsened in 1974-75 and despite easy fertiliser availability, the rate of growth in consumption dropped to mere 0.5 per cent. A number of factors listed in the summary chapter were responsible for this declining trend. This trend is not only required to be arrested but also reversed to sustain our much needed agricultural production programmes.

The potential demand of the country is, however, very high and given proper environment, devoid of any marketing constraints, there can be 30 to 35 per cent increase in consumption during 1975-76 compared to the previous year. In view of the likely situation, the rate of growth during 1975-76 is anticipated to be about 18 per cent. In absolute terms, it will mean an increase in N consumption by 337,000 tonnes, i.e., from 1,838,000 tonnes in 1974-75 to 2,175,000 tonnes in 1975-76.

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 with a consumption of 582 thousand tonnes. Andhra Pradesh in the South alone more than compensated for the loss in consumption in Tamil Nadu. Increase in consumption in Karnataka added to the lead. The North and West Zones continued to retain the third and fourth positions with the consumption levels of 314 and 252 thousand tonnes respectively. East Zone remained the lowest consumer with 196 thousand tonnes.

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. The Central, North and East Zones continued to show increase in consumption upto 1972-73. The North Zone showed an increase even in 1973-74. The South and West Zones recorded increase in consumption by 0.9 and 25.8 per cent respectively during 1973-74 compared to the previous year after the decline in consumption during 1972-73. In 1974-75, however, the East and South Zones showed increases in consumption of 10.7 and 12.6 per cent respectively and the Central, North and West Zones recorded drops of 3.6, 9.5 and 12.5 per cent respectively compared to the previous year.

The highest increase in consumption of 33.3 per cent over the review period was recorded by East Zone. This was followed by North, Central, South and West Zones with the increase of 29.2, 18.9, 17.8 and 15.6 per cent respectively.

The increase in consumption in 1974-75 compared to the previous year was recorded by South and East Zones only. All other Zones recorded drops.

Percentage increase in consumption of N

Region	± over previous year						1974-75 over 1970-71	1975-76*
	1970-71	1971-72	1972-73	1973-74	1974-75			
South	(-)2.8	9.7	(-)5.6	0.9	12.6	17.8	9.9	
West	38.0	13.3	(-)7.3	25.8	(-)12.5	15.6	27.0	
Central	1.9	24.2	7.7	(-)7.8	(-)3.6	18.9	22.3	
North	22.7	25.9	8.2	4.8	(-)9.5	29.2	21.0	
East	15.7	27.2	2.1	(-)7.3	10.7	33.3	19.9	
All India	9.3	18.4	1.1	2.8	0.5	23.6	18.3	

* Estimated.

Note: Based on Table 7a.

Analysing the position seasonwise, all the Zones except the West Zone recorded a decline in consumption during kharif 1974. The West Zone recorded a marginal increase of five thousand tonnes compared to the previous year. It was the substantial increase in rabi consumption that enabled South and East Zones to record increases in consumption during the year as a whole. In all other Zones, rabi 1974-75 consumption dropped compared to rabi 1973-74.

The fertiliser consumption seasonwise varied from zone to zone. Whereas the West Zone, on an average, consumed more fertiliser during kharif compared to rabi, the consumption pattern in other zones showed higher consumption during rabi. Out of these latter States, South and East Zones showed a consumption of about 41 to 45 per cent during kharif and in the Central and North Zones, it was limited only to about 30 to 35 per cent. The All India average of kharif consumption was around 40 per cent. The balance of the consumption in each case was in rabi.

The general drop in consumption during rabi 1974-75 in most of the States was due to the factors listed earlier in the chapter. The increase in the South Zone despite severe drought in Tamil Nadu was due to substantial increase in the recorded consumption in Andhra Pradesh from 170 thousand tonnes in 1973-74 to 257 thousand tonnes in 1974-75. The emphasis is on the recorded consumption because it was the first time in 1974-75 after many years that there was a reasonable flow of fertiliser material into Andhra Pradesh out of ECA allocations. In the past, some of the demand was met out of the unauthorised movement into A.P. from the neighbouring States which remained unrecorded. The consumption in Andhra Pradesh would have been even higher if there were no constraints. In Karnataka, the consumption increased both in kharif and rabi by six thousand tonnes in each season.

The pattern of relative consumption zonewise of N is likely to remain unchanged during 1975-76.

Comparative share

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

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

The longest period of continuous increase recorded by any zone was four years and this was achieved by the North Zone from 1970-71 (16.3 per cent) to 1973-74 (19.0 per cent). This was followed by the

C. PRODUCTION OF FERTILISERS DURING 1975-76

The anticipated consumption of N, P₂O₅ and K₂O during 1975-76 has been estimated at 2.175, 0.600 and 0.400 million tonnes respectively vide Tables 7a, 8a and 9a. Against this requirement, the capacity of plants existing in the country as on 1-4-75 was 2.204 million tonnes of N and 0.706 million tonnes of P₂O₅. This includes IFFCO plants at Kalol and Kandla and the expansion of Kota plant.

During 1975-76, production should increase considerably at Kalol plant of IFFCO where start-up problems have been overcome.

Production in the FCI—Cochin plant is expected to marginally improve during 1975-76. The FCI—Durgapur continues to face considerable technical difficulties and corrective measures are being taken to rectify the technical deficiencies. Nevertheless, it is not likely to improve its performance during 1975-76.

Production of complex fertilisers at Zuabi—Goa, IFFCO—Kandla and MFL—Manali will depend entirely upon the availability of imported phosphoric acid.

Besides, during 1975-76 five new plants namely SPIC—Tuticorin, MCFL—Mangalore, FCI—Barauni, FCI—Namrup expansion and Hindustan Copper—Khetri, are expected to go into production. Besides, the expansion programme of FCI—Gorakhpur, Coromandel—Vizag and rationalisation scheme of FCI—Sindri are also expected to go into production during 1975-76. The additional capacity expected to be created during 1975-76 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 ₂ O ₅	
1.	SPIC, Tuticorin	258,000	51,000	Urea by June 1975 and phosphatics by December 1975
2.	MCFL, Mangalore	160,000	—	September 1975
3.	FCI—Barauni	152,000	—	December 1975
4.	FCI—Namrup (exp.)	152,000	—	December 1975
5.	FCI—Gorakhpur (exp.)	51,000	—	December 1975
6.	FCI—Sindri (rationalisation)	—	156,000	December 1975
7.	CFL—Vizag (exp.)	3,000	31,000	September 1975
8.	HCL—Khetri	—	90,000	October 1975
	Total	776,000	323,000	

Thus, a substantial capacity will be added during 1975-76. A number of new grades of NP and NPK complex fertilisers are expected to be manufactured during the year. The SPIC plant at Tuticorin, which had gone into production in June 1975, has the largest urea plant in operation in the world. The phosphatic fertiliser plant, which will produce DAP and NPK fertilisers is expected to go into commercial production by December 1975. The Mangalore Chemicals & Fertilizers, which will be producing urea, is expected to commence production during September 1975. FCI—Barauni and FCI—Namrup expansion, identical plants with urea production capacity of 1,000 tonnes per day, are expected to go into production by the end of 1975. The FCI unit at Gorakhpur will have a substantial expansion coming into operation by December 1975. FCI—Sindri has a rationalisation programme in which phosphoric acid will be produced by the wet process, which will be used for the production of triple superphosphate. The byproduct gypsum will be used in place of currently used natural gypsum for the production of ammonium sulphate by Merseberg Process. It is expected to go into commercial production by the end of the year. The expansion programme of the Coromandel is primarily for increasing the production of phosphoric acid and complex fertilisers. It is expected to go into production in September 1975. The Hindustan Copper Plant at Khetri will be using the smelter gases to produce sulphuric acid. The sulphuric acid will be used for the production of phosphoric acid by the conventional wet process and the phosphoric acid will be used for the production of triple superphosphate. The plant and equipment have been completed during 1974-75 and trial runs have been started. Commercial production is expected during October 1975.

Thus by the end of 1975-76, the total capacity of nitrogenous fertiliser is expected to be 2.980 million tonnes of nitrogen and 1.034 million tonnes of P_2O_5 . The production during 1975-76 is estimated to be (vide Table 5) 1.721 million tonnes of N and 0.456 million tonnes of P_2O_5 . The increase in production over the previous year, and more particularly of N is gratifying. This includes the stabilised production from the existing plants and the anticipated production from the eight projects mentioned in the above table.

When the anticipated production is compared with the expected consumption, there still appears to be a gap of 0.454 million tonnes of nitrogen and 0.204 million tonnes of P_2O_5 , which will have to be filled by imports. Besides, the country will have to import 0.4 million tonnes of K_2O which is not indigenously produced.

CHAPTER II

CONSUMPTION OF FERTILISERS

A. FORMS IN WHICH FERTILISERS ARE USED

Various forms of fertilisers that were consumed in India during the review period are listed in Table 6. Figures given therein represent quantities distributed and not actually consumed because materialwise consumption data is not available. For the sake of uniformity, however, these figures have been referred to as consumption figures in the review covered by this chapter.

There was a slight shift in the trend of switch-over to higher analysis straight and complex fertilisers during 1974-75. This was due to comparatively larger imports than in the previous year of lower analysis material at a time when international availability of higher nutrient materials was perhaps difficult. This situation no longer exists and the reversion to the normal trend of increased use of higher analysis material in line with the world-wide experience has already taken place and will continue.

Nitrogen

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

There was, however, a drop in consumption of some materials and increase in others during 1974-75 compared to the previous year. Whereas the total increase in terms of N was about 272 thousand tonnes, the drop was not more than 47 thousand tonnes largely conditioned by the availability of the respective materials (imported or indigenous). The table on next page gives the position materialwise.

Sixty-eight per cent of the increase was contributed by urea alone. The other important contributors were imported materials i.e. CAN (26 per cent N) (10.6 per cent), NPK complex (8.3 per cent) and ammonium sulphate (8 per cent).

The drop on the other hand was mainly contributed by imported ammonium nitrophosphate (20-20-0) (29.1 per cent); indigenous UAP (28-28-0) (23.4 per cent); imported DAP (18-46-0) (14.7 per cent); indigenous nitrophosphate (15-15-15) (9.6 per cent) and indigenous NPK (14-28-14) (7.5 per cent).

*Increase/decrease in consumption materialwise
(1974-75 over 1973-74)*

		('000 tonnes)		
		Material	N (percentage share)	
Increase				
1. Ammonium sulphate	(Imported)	+ 108	21.84 (8.0)	
	(Indigenous)	+ 22	4.53 (1.7)	
2. Urea	(Imported)	+ 159	73.10 (26.8)	
	(Indigenous)	+ 245	112.70 (41.4)	
3. CAN (26% N)	(Imported)	+ 112	29.12 (10.6)	
4. Ammonium chloride		+ 16	4.00 (1.5)	
5. Ammonium phosphate sulphate	} (Indigenous)	+ 16	2.56 (0.9)	
				(16-20-0)
				(20-20-0)
6. NPK (15-15-15)	(Imported)	+ 150	22.50 (8.3)	
7. NPK (10-26-26)	(Indigenous)	+ 5	0.50 (0.2)	
8. NPK (12-32-16)	(do-)	+ 13	1.56 (0.6)	
Total			272.45 (100.0)	
Decrease				
9. DAP	(Imported)	- 38	6.84 (14.7)	
10. Nitrophosphate	(15-15-15) (Suphaia) (Indigenous)	30	4.50 (9.6)	
11. Ammonium nitrophosphate	(20-20-0) (Imported)	- 68	13.60 (29.1)	
12. Urea ammonium phosphate	(28-28-0) (Indigenous)	39	10.92 (23.4)	
13. NPK (11-17-17)		- 10	1.70 (3.6)	
	(14-28-14)	- 25	3.50 (7.5)	
	(14-35-14) (Indigenous)	9	1.26 (2.8)	
14. Calcium ammonium nitrate (25%N)	(Indigenous)	- 8	2.00 (4.3)	
15. Ammonium sulphate nitrate (26%N)	(Indigenous)	9	2.34 (5.0)	
Total			46.66 (100.0)	

Urea (46 per cent N)

The contribution of urea as a source of N continued to increase during the entire review period. It rose from 39.7 per cent in 1970-71 to 67 per cent in 1974-75. This trend is likely to continue. Urea has become the most popular and the main source of N because of the advantage arising from its high analysis. Its popularity is bound to further increase with more urea plants likely to go on stream within the next two to three years.

CAN (25 per cent and 26 per cent N)

CAN is another popular and important source of N in certain areas. But its share dropped from 10.9 per cent in 1970-71 to 9.7 per cent in 1973-74 due to better availability of high analysis fertilisers. There was, however, increase of 0.3 per cent in its contribution to total N consumption during 1974-75 compared to the previous year because of higher imports.

Absolute consumption of CAN increased from 560 thousand tonnes to 703 thousand tonnes during the review period. This increase of 143 thousand tonnes is composed of 66 per cent increase in indigenous availability and 34 per cent of imports. Compared to the previous year, the indigenous availability during 1974-75 dropped by 8 thousand tonnes and imports increased by 112 thousand tonnes.

Ammonium sulphate (20.6 per cent N)

The contribution of ammonium sulphate to the total N consumption dropped from 16.5 per cent in 1970-71 to 8.6 per cent in 1974-75. Absolute consumption dropped from 1044 thousand tonnes to 757 thousand tonnes. This drop was primarily due to reduced imports. Compared to the previous year, however, the share of ammonium sulphate in total N consumption increased by 0.6 per cent in 1974-75 mainly due to higher imports, the highest in the last five years.

Even though ammonium sulphate is popular in certain areas in the country, its share as a source of N will drop again due to its limited indigenous production and reduced imports. Indigenous availability is not likely to improve much barring a small quantity as a by-product in GSFC Caprolactum plant and FCI, Sindri, expansion.

Diammonium phosphate (18-46-0)

It is another popular form of fertiliser which supplies phosphates in addition to nitrogen. Its consumption is, however, conditioned by its availability. There being only one domestic producer of DAP, its contribution depends on the quantum of imports.

The contribution of DAP to total N consumption increased from 23 per cent in 1970-71 to 4.5 per cent in 1973-74. It, however, dropped to 3.5 per cent during 1974-75, despite better imports compared to the previous year. Late import arrivals were perhaps responsible for this decline.

Other forms

The trend towards preference for complex fertilisers because of the accepted need for balanced fertilisation and ease of application suffered during 1974-75, because of their high prices and reported preference of the farmer for straight nitrogenous fertiliser on account of limitation of his resources and quicker visible results of their application. Combined contribution of all the complex and NPK fertilisers to total N consumption dropped from 17.4 per cent in 1973-74 to 14.2 per cent in 1974-75. Contribution of NPK grades alone increased from 3.4 to 4 per cent despite drop in indigenous production due to serious breakdowns in some of the major manufacturing units during 1974-75. Higher imports of NPK 15-15-15 during 1974-75 compared to the previous year were mainly responsible for this 0.6 per cent increase in the contribution.

Once the consumption pattern stabilises and the farmer has the access to additional credit the earlier trend towards preference for complex fertilisers should revive.

Phosphates

As is evident from Table 6, seven fertiliser materials continued to be the main sources of P_2O_5 in the country. Out of these, there was a slight improvement (from 74.6 per cent in 1973-74 to 75.6 per cent in 1974-75) in the contribution of complex and NPK fertilisers to total P_2O_5 consumption primarily due to increased consumption by 150,000 tonnes of imported NPK 15-15-15. The contribution of superphosphate, the only straight phosphatic fertiliser, correspondingly dropped from 25.4 to 24.4 per cent.

The Table on next page gives the materialwise increase/decrease in P_2O_5 consumption during 1974-75 compared to the previous year.

It is evident that the maximum decrease was recorded in the case of DAP followed by superphosphate, ANP 20-20-0 (imported), UAP 28-28-0 (indigenous), NPK (14-28-14) (indigenous), nitrophosphate 15-15-15 (indigenous), NPK 14-35-14 (indigenous) and NPK 17-17-17 (indigenous). The maximum increase on the other hand was recorded in the case of NPK 15-15-15 (imported) followed by NPK 12-32-16—a new grade introduced by IFFCO during the year—APS 16-20-0 and 20-20-0 (indigenous) and NPK 20-26-26—another new grade introduced by IFFCO during the year. The pattern of consumption was largely the function of availability.

Superphosphate

The share contributed by superphosphate to total P_2O_5 consumption dropped from 36.4 per cent in 1970-71 to 24.3 per cent in 1972-73.

*Increase/decrease in consumption—materialwise
(1974-75 over 1973-74)*

('000 tonnes)		
	Material	P. ₂ O ₅ (percentage share)
Increase		
1. Ammonium phosphate sulphate (16-20-0) (20-20-0) (Indigenous)	+ 16	3.20 (10.3)
2. NPK (15-15-15) (Indigenous)	+150	22.50 (72.2)
3. NPK (10-26-26) (12-32-16) (Indigenous)	+ 5 + 13	1.30 (4.2) 4.16 (13.3)
(No distribution in 1973-74)		
Total		31.16 (100.00)
Decrease		
1. Superphosphate	—102	16.32 (21.8)
2. Diammonium phosphate (Imported)	— 38	17.48 (23.5)
3. Nitrophosphates (15-15-15) (Indigenous)	— 30	4.50 (6.0)
4. Ammonium nitrate phosphate (20-20-20) (Imported)	— 68	13.60 (18.2)
5. Urea ammonium phosphate (28-28-0) (Indigenous)	— 39	10.92 (14.6)
6. NPK (17-17-17) (14-28-14) (14-35-14) (Indigenous)	— 10 — 25 — 9	1.70 (2.3) 7.00 (9.4) 3.15 (4.2)
Total		74.67 (100.00)

clearly indicating a shift away from the low to high analysis fertilisers. This trend reversed in 1973-74 due to limited imports of NPK grades and the superphosphate contribution increased to 25.4 per cent. The trend reversed again in 1974-75 and the contribution of superphosphate dropped to 24.4 per cent due mainly to a substantial increase in the imports of NPK 15-15-15. This trend is likely to continue. The contribution of superphosphate to the total P₂O₅ consumption is thus dependent

largely on NPK availability, particularly of imported material because of its much lower nutrient price compared to indigenous complex and NPK materials. This trend is likely to continue. Whereas this trend towards high analysis material is desirable in the overall interest of economy, in packaging, warehousing, transportation, etc., to the extent that this trend is fostered through the use of imported material, it runs counter to the national interest of maximum utilisation of indigenous manufacturing capacity and of reducing outflow of scarce foreign exchange.

The indigenous P_2O_5 capacity of 708 thousand tonnes per annum on 1-4-75 is estimated to produce 100 thousand tonnes of P_2O_5 during 1975-76. This can meet about 70 per cent of the estimated consumption during 1975-76. Availability of P_2O_5 through imports during 1975-76 should not, therefore, exceed 200 thousand tonnes, i.e. just enough to fill the gap between estimated consumption and indigenous production during 1975-76. If the actual imports are of larger quantities, as it is anticipated to be, the surplus availability through imports should be retained in buffer stocks so that the flow of indigenous availability is not inhibited. Nutrient price of the imported P_2O_5 also needs to be brought at par with that of indigenous material to ensure the latter's uninterrupted flow to the farmer.

The P_2O_5 production through superphosphate alone during 1975-76 is expected to be 138 thousand tonnes. Since this is a low analysis (16 per cent w.s. P_2O_5) material, it will require not only adequate N support but also perhaps price subsidy to enable its regular acceptance by the farmer. Given this support, the capacity utilisation of superphosphate units can be considerably improved, resulting in saving in foreign exchange outflow.

Diammonium phosphate (DAP).

The consumption of DAP is largely conditioned by its availability. Its contribution to P_2O_5 consumption rose from 23.2 per cent in 1970-71 to 37.0 per cent in 1972-73. It dropped to 34.2 per cent in 1973-74 due to comparatively lesser imports. It, however, dropped further to 31.0 per cent in 1974-75 despite higher imports, presumably because of late arrival of imports which had yet to move into the market. Due to the anticipated increase in production of indigenous NPK complex fertilisers in 1975-76, the share of DAP to total P_2O_5 consumption is likely to decrease sharply.

Urea ammonium phosphate (UAP)

The contribution of UAP to total P_2O_5 dropped from 13.2 per cent in 1970-71 to 7.6 per cent in 1974-75 due perhaps to increased availability of NPK complex fertilisers. The sharp decline in contribution from 15 per cent in 1971-72 to 9.9 per cent in 1972-73 was due to increased availability of NPK complex fertilisers from MFL which went into production towards the end of 1971 and also from Coromandel. The drop of 1.3 per cent in 1974-75 compared to the previous year was apparently due to breakdown in Coromandel unit during the year. It is likely to improve its contribution by about 1.2 per cent in 1975-76.

Nitrophosphates

The contribution of nitrophosphates has been fluctuating over the review period. Beginning with a contribution to total P_2O_5 consumption of 10.8 per cent in 1970-71, it dropped to 8.6 and 7.3 per cent in the two subsequent years, respectively. It rose to 12.9 per cent in 1973-74 and dropped again to 10.6 per cent in 1974-75, a level even lower than that achieved in 1970-71. There was, however, a consistent growth in its absolute consumption in terms of material up to 1973-74 recording an increase of 24 per cent compared to the 1970-71 level. The drop in absolute consumption by 30 thousand tonnes during 1974-75 compared to the previous year reduced the growth over the review period to 9.5 per cent.

The contribution of nitrophosphate to total P_2O_5 consumption is also likely to increase by about 1 per cent in 1975-76. The increase in absolute terms may be around 60,000 tonnes.

NPK complexes

There was a consistent growth in line with the trend for preference for higher analysis material in the contribution of NPK grades to the total P_2O_5 consumption from 1970-71 to 1972-73. It rose from 10.7 to 16.7 per cent during this period, but it dropped to 13.1 per cent in 1973-74 due to limited imports of NPK 15-15-15. The trend for higher analysis material revived again in 1974-75 and their P_2O_5 contribution increased to 17.6 per cent. The substantially higher imports of NPK 15-15-15 compared to the previous year and commissioning of IFFCO complex plant were the main contributing causes. This position is likely to improve during 1975-76 with the improved availability from IFFCO and stabilisation of Zuari complex plant.

The contribution of APS to the P_2O_5 consumption fluctuated between 3.7 to 5.8 per cent during the review period. Its contribution is not likely to improve.

Potash

Potash is used primarily in two forms—as muriate of potash 60 per cent K_2O (MOP) for direct application or as an NPK mixture and through NPK complex fertilisers. The contribution of direct application of MOP to the total K_2O consumption dropped continuously for two years from 68.8 per cent in 1970-71 to 65.6 per cent in 1971-72 and 64.5 per cent in 1972-73. The position changed sharply in 1973-74 when the contribution increased (by 10.5 per cent) for the first time during the review period and recorded the highest ever share of 75 per cent. This was due mainly to the drop in the overall NPK complex fertiliser availability arising from low imports and intensive promotional efforts in several areas by IPL for split application of MOP. This increase was, however, short-lived and the position reversed once again in 1974-75 with the share of straight MOP to total K_2O consumption dropping by 12.5 per cent to 62.5 per cent. In absolute terms also, the consumption of MOP dropped from 476 thousand tonnes in 1973-74 to 327 thousand tonnes in 1974-75—the level even lower than that attained in 1972-73. This reversion was primarily caused because of about seven-fold increase in 1974-75 in the import of NPK complex fertilisers compared to the previous year. The contribution of imported NPK complex fertilisers thus increased from 0.9 per cent in 1973-74 to 8.2 per cent in 1974-75.

The contribution of MOP is likely to increase by 1.3 per cent again in 1975-76 due mainly to the drop in the share of indigenous NPK complex fertilisers by 2.1 per cent.

The contribution of K_2O consumption through MOP dropped by 6.3 per cent over the review period though the absolute consumption of MOP increased by 101 thousand tonnes. This drop in contribution was due to the increase in consumption of NPK complex fertilisers from 212 thousand tonnes in 1970-71 to 320 thousand tonnes in 1974-75.

The contribution of indigenously produced NPK complex fertilisers to the total K_2O consumption consistently rose from 15.3 per cent in 1970-71 to 26.3 per cent in 1972-73, dropped to 23.1 per cent in 1973-74 and rose again to 28.3 per cent in 1974-75. The trend is likely to reverse again in 1975-76 with the share dropping by 2.1 per cent to 26.2 per cent. The development of new complex grades by IFFCO and also possibly by MFL without K_2O nutrient are expected to cause this reversal.

The contribution of imported NPK complex fertilisers to total K_2O consumption increased from 12.3 per cent in 1970-71 to 17.3 per cent

in 1971-72, dropped continuously during the subsequent two years to 8.6 and 0.9 per cent respectively and rose sharply to 8.2 per cent in 1974-75. The contribution is likely to marginally increase in 1975-76. The consumption in absolute terms increased from 162 thousand tonnes in 1970-71 to 172 thousand tonnes in 1974-75 recording a growth of 6.1 per cent.

The sulphate of potash, another source of potash, is consumed mainly by virginia tobacco in India. The total quantity consumed in 1974-75 was 6,000 tonnes. This was 57.1 per cent lower than that consumed in the first year of the review period, i.e., 1970-71 and 25 per cent lower than the previous year. Its contribution to total K_2O consumption also reduced from 3.6 per cent in 1970-71 to 1 per cent in 1974-75. This pattern is likely to continue.

R CONSUMPTION OF FERTILISERS BY STATES

After two years of extremely limited availability during 1972-73 and 1973-74, when the rate of growth of consumption had declined to 2.6 per cent and 5.2 per cent respectively as against the average rate of growth of about 20 per cent during the previous years, the country witnessed a situation of easy availability during 1974-75. This should have normally resulted in a big upsurge in consumption but a variety of marketing constraints, indicated earlier, caused a drop in consumption for the first time after many years of growth. The drop was 5.3 per cent compared to the previous years. The impact of each factor on fertiliser offtake varied from State to State but in the country as a whole the most dominating factor, besides aberrant weather which was in any case beyond our control, was "physical controls" followed closely by "sharp hike in fertiliser prices", "credit" and "other factors like lack of timely availability". The performance in 1974-75 was very poor compared even to the depressed anticipated rate of growth of about 14 per cent in the year. This presents an extremely discouraging picture in the context of the country's continued aim of sharply increasing its agricultural production through accelerated increase in fertiliser use to meet the ever growing requirement of its ever growing population.

The average rate of growth of consumption which stood at about 9 per cent over the five-year review period ended 1973-74, dropped to about 5 per cent during the review period ended 1974-75.

There, however, exists a tremendous potential for fertiliser use in the country and given adequate availability and complete marketing freedom, consumption is bound to rise sharply. Availability appears to be adequate now. But due to various other constraints, the growth in consumption during 1975-76 may not be more than 17.8 per cent.

The year-wise, season-wise, region-wise, State-wise and nutrient-wise details of consumption are given in Tables 7a, 8a, and 9a. Nutrient-wise and year-wise All-India position during the review period is briefly given in the first table on next page.

Trend of Nutrientwise All-India Consumption

As indicated in the second table on the next page, the percentage share of N to the total consumption of NPK has been gradually reducing and that of P₂O₅ and K₂O gradually increasing upto 1973-74. Beginning with 68.3 per cent in 1970-71, the share of N dropped to 64.4 per cent in 1973-74. The share of P₂O₅ and K₂O increased from 21.2 per cent to

Fertiliser consumption nutrientwise (1970-71 to 1975-76)

Fertiliser	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
N — Quantity (‘000 tonnes)	1,487	1,760	1,779	1,829	1,838	2,175
—% + over Previous year	9.3	18.4	1.1	2.8	0.5	18.3
P ₂ O ₅ —Quantity (‘000 tonnes)	462	564	587	650	538	660
—% + over Previous year	10.0	22.1	4.1	10.7	- 17.2	22.7
K ₂ O —Quantity (‘000 tonnes)	228	304	332	360	370	400
—% + over Previous year	9.1	33.3	9.2	8.4	2.8	8.1
N + P ₂ O ₅ + K ₂ O —Quantity (‘000 tonnes)	2,177	2,628	2,698	2,839	2,746	3,235
—% + over previous year	9.5	20.8	2.6	5.2	- 3.3	17.8

* Estimated.

22.9 per cent and from 10.5 per cent to 12.7 per cent respectively over the same period. This was an index of the growing realisation of the benefits of balanced fertilisation.

The consumption trend of N and P₂O₅, however, reversed in 1974-75. The percentage share of N increased to 67.1 and that of P₂O₅ dropped to 19.6. The share of K₂O continued to increase and reached a level of 13.3 per cent. The main contributory factors for the reversal in trend in N and P₂O₅ were the sharp hike in fertiliser prices during 1974-75 and the limited resources of the farmer. The farmer appeared to have preferred to use the available resources for purchase of N alone and thought of P₂O₅ and K₂O only if any money was left over.

Percentage share of N, P and K to total consumption

Nutrient	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
N	68.3	67.0	65.9	64.4	67.1	67.2
P ₂ O ₅	21.2	21.5	21.8	22.9	19.6	20.4
K ₂ O	10.5	11.5	12.3	12.7	13.3	12.4
	100.0	100.0	100.0	100.0	100.0	100.0

* Estimated.

The trend in consumption during 1975-76 is not likely to be materially different. The share of N may remain unchanged and that of P_2O_5 may improve marginally at the cost of K_2O .

There is, therefore, a dire necessity for the balance in fertiliser use to be improved speedily in the interest of increasing agricultural production. A well planned promotional strategy specially directed at balanced fertilisation needs to be constantly beamed at the farmer. For this purpose a coordinated effort of the Government and the Industry only can ensure effectiveness.

NITROGEN

The review period commenced in 1970-71 with the rate of growth in consumption of 9.3 per cent. This was the second year of adjustment in consumption after a sharp increase in consumption of 42 per cent in 1968-69 on account of a large-scale adoption of HYV programmes. The increase in consumption of 18.4 per cent during 1971-72 compared to the previous year showed a welcome upswing in the growth rate. Then followed two years of limited fertiliser availability. A lot of demand remained unsatiated. And the rate of growth, which was conditioned by availability alone, slumped to 1.1 and 2.8 per cent respectively. The situation worsened in 1974-75 and despite easy fertiliser availability, the rate of growth in consumption dropped to mere 0.5 per cent. A number of factors listed in the summary chapter were responsible for this declining trend. This trend is not only required to be arrested but also reversed to sustain our much needed agricultural production programmes.

The potential demand of the country is, however, very high and given proper environment, devoid of any marketing constraints, there can be 30 to 35 per cent increase in consumption during 1975-76 compared to the previous year. In view of the likely situation, the rate of growth during 1975-76 is anticipated to be about 18 per cent. In absolute terms, it will mean an increase in N consumption by 337,000 tonnes, i.e., from 1,838,000 tonnes in 1974-75 to 2,175,000 tonnes in 1975-76.

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 with a consumption of 582 thousand tonnes. Andhra Pradesh in the South alone more than compensated for the loss in consumption in Tamil Nadu. Increase in consumption in Karnataka added to the lead. The North and West Zones continued to retain the third and fourth positions with the consumption levels of 314 and 252 thousand tonnes respectively. East Zone remained the lowest consumer with 196 thousand tonnes.

Actual consumption

The rate of growth or consumption varied from zone to zone and within each zone from year to year during the review period. The Central, North and East Zones continued to show increase in consumption upto 1972-73. The North Zone showed an increase even in 1973-74. The South and West Zones recorded increase in consumption by 0.9 and 25.8 per cent respectively during 1973-74 compared to the previous year after the decline in consumption during 1972-73. In 1974-75, however, the East and South Zones showed increases in consumption of 10.7 and 12.6 per cent respectively and the Central, North and West Zones recorded drops of 3.6, 9.5 and 12.5 per cent respectively compared to the previous year.

The highest increase in consumption of 33.3 per cent over the review period was recorded by East Zone. This was followed by North, Central, South and West Zones with the increase of 29.2, 18.9, 17.8 and 15.6 per cent respectively.

The increase in consumption in 1974-75 compared to the previous year was recorded by South and East Zones only. All other Zones recorded drops.

Percentage increase in consumption of N

Region	± over previous year						
	1970-71	1971-72	1972-73	1973-74	1974-75	1974-75 over 1970-71	1975-76*
South	(-)2.8	9.7	(-)5.6	0.9	12.6	17.8	9.9
West	38.0	13.3	(-)7.3	25.8	(-)12.5	15.6	27.0
Central	1.9	24.2	7.7	(-)7.8	(-)3.6	18.9	22.3
North	22.7	25.9	8.2	4.8	(-)9.5	29.2	21.0
East	15.7	27.2	2.1	(-)7.3	10.7	33.3	19.9
All India	9.3	18.4	1.1	2.8	0.5	23.6	18.3

* Estimated.

Note: Based on Table 7a.

Analysing the position seasonwise, all the Zones except the West Zone recorded a decline in consumption during kharif 1974. The West Zone recorded a marginal increase of five thousand tonnes compared to the previous year. It was the substantial increase in rabi consumption that enabled South and East Zones to record increases in consumption during the year as a whole. In all other Zones, rabi 1974-75 consumption dropped compared to rabi 1973-74.

The fertiliser consumption seasonwise varied from zone to zone. Whereas the West Zone, on an average, consumed more fertiliser during kharif compared to rabi, the consumption pattern in other zones showed higher consumption during rabi. Out of these latter States, South and East Zones showed a consumption of about 41 to 45 per cent during kharif and in the Central and North Zones, it was limited only to about 30 to 35 per cent. The All India average of kharif consumption was around 40 per cent. The balance of the consumption in each case was in rabi.

The general drop in consumption during rabi 1974-75 in most of the States was due to the factors listed earlier in the chapter. The increase in the South Zone despite severe drought in Tamil Nadu was due to substantial increase in the recorded consumption in Andhra Pradesh from 170 thousand tonnes in 1973-74 to 257 thousand tonnes in 1974-75. The emphasis is on the recorded consumption because it was the first time in 1974-75 after many years that there was a reasonable flow of fertiliser material into Andhra Pradesh out of ECA allocations. In the past, some of the demand was met out of the unauthorised movement into A.P. from the neighbouring States which remained unrecorded. The consumption in Andhra Pradesh would have been even higher if there were no constraints. In Karnataka, the consumption increased both in kharif and rabi by six thousand tonnes in each season.

The pattern of relative consumption zonewise of N is likely to remain unchanged during 1975-76.

Comparative share

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

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

The longest period of continuous increase recorded by any zone was four years and this was achieved by the North Zone from 1970-71 (16.3 per cent) to 1973-74 (19.0 per cent). This was followed by the

Zonewise percentage share of consumption of N

(per cent)

Zone	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	33.2	30.8	28.8	29.0	32.7	29.4
West	14.7	14.0	12.9	15.7	13.7	14.7
Central	25.9	27.2	29.0	26.0	24.9	25.7
North	16.3	17.4	18.6	19.0	17.1	17.5
East	9.9	10.6	10.7	10.3	11.6	10.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

* Estimated.

Central and East Zones which recorded the continuous increase from 1970-71 to 1972-73 from 25.9 to 29.0 per cent in the case of Central Zone and 9.9 to 10.7 per cent in the case of East Zone. The shares of South and West Zones, on the other hand, continuously dropped from 1970-71 to 1972-73 from 33.2 per cent to 28.8 per cent in the former case and from 14.7 to 12.9 in the latter.

In 1973-74, the share of the South, West and North Zones increased to 29.0, 15.7 and 18.9 per cent respectively. The shares of Central and East Zones dropped to 26.0 and 10.4 per cent respectively. The South and East Zones maintained the increase during 1974-75 and recorded shares of 32.7 and 11.7 per cent respectively. The shares of West, Central and North Zones dropped to 13.7, 24.9 and 17.0 per cent respectively.

The shares of South and East Zones which recorded increases during 1974-75 are likely to drop in 1975-76. The rest of the zones whose shares declined in 1974-75 are likely to show improvements in 1975-76.

South Zone

Due to a drop in consumption during 1972-73 and only a marginal increase in 1973-74 compared to the corresponding previous years, the overall increase during the period 1970-71 to 1973-74 was limited to 4.8 per cent. Limited availability, particularly during kharif 1973, inhibited consumption to the level of 517 thousand tonnes in 1973-74. The consumption increased to 582 thousand tonnes in 1974-75 and this brought up the overall increase during the review period to 17.8 per cent. Substantial increases in consumption in A.P. and Karnataka (51 and 21 per cent respectively) due to easier fertiliser availability enabled South Zone to record a growth of 12.6 per cent in 1974-75. The increase

would have been much more had there been no drought in Tamil Nadu where the consumption dropped by 22 per cent.

The growth in consumption is likely to stabilise at about 10 per cent during 1975-76.

West Zone

The highest level of growth of 38 per cent was recorded in the first year of the review period, i.e., 1970-71. The growth rate dropped to 13.3 per cent during 1971-72 followed in 1972-73 by a drop in consumption compared to the previous year. This drop was the first one after many years. The fertiliser availability comparatively improved during 1973-74 and this coupled with better weather conditions during the year resulted in a growth of consumption of 25.8 per cent in 1973-74. This improved the growth from 5 per cent achieved during 1970-71 to 1972-73 to 32.1 per cent over the period 1970-71 to 1973-74. However, due to the severe drought in Gujarat during 1974-75 coupled with the constraints in fertiliser use listed earlier in the summary chapter the consumption dropped (12.5 per cent) once again below the previous year's level and the overall growth during the review period decreased to 15.6 per cent.

The demand is, however, buoyant and with the free availability of fertiliser, normal weather conditions and the removal of major constraints to fertiliser consumption, the consumption during 1975-76 is likely to increase by 27 per cent over the previous year.

Central Zone

Beginning the review period with a marginal growth rate of 1.9 per cent in 1970-71, the Central Zone achieved the highest increase in the growth rate of 24.2 per cent in 1971-72. It dropped to 7.7 per cent by a drop (7.8 per cent) in consumption below the previous year's level, for the first time after many years, due primarily to limited availability, particularly in the rabi season. There was easier product availability during 1974-75 but due to the combined effect of the many constraints to the fertiliser use listed earlier in the summary chapter, the consumption once again dropped (3.6 per cent) compared to the previous year. This drop in consumption during the two consecutive years brought down the rate of growth over the review period from 33.7 per cent recorded upto 1972-73 to 18.9 per cent upto 1974-75. The rate of growth in 1972-73 due to limited fertiliser availability. This was followed growth achieved upto 1973-74 was 23.3 per cent.

The buoyancy of demand is, however, likely to assert itself with the freer product availability and comparatively fewer constraints to marketing in 1974-75 and the consumption is likely to increase by 22.3 per cent over the previous year's level.

North Zone

The consumption showed an increasing trend during 1970-71 and 1971-72 with the rate of growth of 22.7 and 25.9 per cent respectively. Then came the era of limited product availability and the rate of growth continued to drop in the two subsequent years to 8.2 and 4.8 per cent respectively. The downward trend further deteriorated in 1974-75 despite easier product availability and the consumption dropped (9.5 per cent) for the first time below the previous year's level. The reasons for this deterioration were not different from those indicated in other zones. This brought down the overall rate of growth from 97.9 per cent recorded last year for the period 1969-70 to 1973-74 to 29.2 per cent in 1974-75 for the review period 1970-71 to 1974-75.

The declining trend will reverse in 1975-76 and with the freer marketing conditions, the consumption is likely to increase by 21 per cent.

East Zone

Here again the consumption showed an increasing trend with the rate of growth of 15.7 and 27.2 per cent during 1970-71 and 1971-72 respectively. This was followed by a drop in the rate of growth to 2.1 per cent during 1972-73 due to limited product availability. The fertiliser scarcity continued during 1973-74, particularly due to poor despatches in rabi, and the zone recorded a drop (7.3 per cent) in consumption for the first time below the previous year's level. The product availability eased in 1974-75 and despite marketing constraints the consumption increased by 10.7 per cent compared to the previous year.

The increase in consumption during 1974-75 was recorded by only two zones in the country, namely, South and East Zones. The increase in East Zone improved the overall rate of growth of the East Zone during the review period from 36.5 per cent recorded in the last year's review (1969-70 to 1973-74) to 33.3 per cent in 1974-75 (1970-71 to 1974-75).

The increasing trend is likely to continue through 1975-76 and the consumption is envisaged to rise by about 20 per cent over the previous year.

Statewise Consumption

South Zone

Andhra Pradesh: The consumption dropped continuously from 207 thousand tonnes in 1970-71 to 170 thousand tonnes in 1973-74—a drop of 18 per cent. Whereas there was no product availability constraint in the first two years of the review period the consumption in the two subsequent years, 1972-73 and 1973-74, was dictated by product availability, which was extremely limited.

It has been reported that the actual consumption in the State during the two years of limited product availability was much more than the officially recorded consumption. Additional availability is supposed to represent unauthorised movements into the State from the neighbouring States. The consumption, in fact, would have been even more had constraints like cumbersome physical controls and inadequate credit not curbed offtake in the State during 1974-75.

Seasonwise, about 92 per cent of the total increase in consumption during 1974-75 compared to the previous year was in rabi. Kharif accounted for only the remaining 8 per cent of the increase.

The exceptionally high increase in the N consumption of 51.1 per cent in 1974-75 over the previous year was due to the fresh demand for fertiliser in the newly irrigated cropped area in the Nagarjunasagar Command area.

Also, official allocations during the year were much higher than in the past which supplemented unofficial movement which was not recorded against the State offtake in the past.

Andhra Pradesh was one of the eight States in India which recorded an improvement in consumption during 1974-75 compared to the previous year. This enabled the State to improve its rank in the order of N consumption Statewise from the fourth in 1973-74 to the second position in 1974-75.

Kerala: Beginning the review period with a consumption of 26 thousand tonnes in 1970-71, it steadily increased to 35 thousand tonnes in 1973-74 thereby recording an overall increase of 34 per cent during the four years of the review period. The consumption, however, dropped (5.8 per cent) in 1974-75 for the first time during the review period below the previous year's level and reduced the overall growth during the full review period to 2.7 per cent. The total drop in consumption during 1974-75 was in rabi due to sharp hike in fertiliser prices effective June 1974 and inadequate distribution and production credit availability.

Kerala retained the fourteenth position in the order of N consumption Statewise during 1974-75.

Karnataka: There was a steady increase in consumption during the review period. It rose from 93 thousand tonnes in 1970-71 to 130 thousand tonnes in 1974-75 recording an overall rate of growth of 40 per cent. The increase in consumption of 20.4 per cent during 1974-75 compared to the previous year was the highest during the review period. Karnataka was another State which recorded an increase in consumption during 1974-75 compared to the previous year. The consumption 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.

Karnataka stood sixth in the order of N consumption Statewise during 1974-75 as against the seventh position in 1973-74.

Tamil Nadu: The consumption showed an increasing trend during the first two years of the review period and it rose from 165 thousand tonnes in 1970-71 to 214 thousand tonnes in 1972-73 due primarily to drought and limited fertiliser availability. There being no drought in 1973-74, the consumption increased by 6 per cent to 202 thousand tonnes though the rise was low on account of fertiliser shortages. Drought again hit the State seriously during 1974-75 and this along with the other marketing constraints like physical controls, low price of the produce and the sharp hike in fertiliser prices pulled down the consumption by 21.8 per cent to 158 thousand tonnes. This level of consumption was even lower than that recorded in 1970-71, the first year of the review period.

Tamil Nadu stood fifth in the order of N consumption Statewise during 1974-75 compared to the third position in 1973-74.

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

West Zone

Gujarat: The review period began in 1970-71 with the exceptionally high rate of growth of 63.1 per cent compared to the previous year. The rate of growth dropped to 8.5 per cent during 1971-72. The growth was suddenly arrested in 1972-73 due primarily to drought conditions both in kharif and rabi seasons and also because of limited fertiliser availability and the consumption dropped marginally (0.9 per cent) compared to the previous year. 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 four years reached a level of 31 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 June 1974, inadequate credit availability and physical controls brought the consumption down from 139 thousand tonnes in 1973-74 to 90 thousand tonnes in 1974-75—a drop of 35.3 per cent. The impact on fertiliser consumption was the highest in rabi. It dropped by 47 per cent in rabi and 20 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 1970-71 level, the first year of the review period.

Gujarat stood seventh in the order of N consumption Statewise during 1974-75 compared to the sixth position in 1973-74.

Maharashtra: Here again, the increasing trend of 20.7 and 17.1 per cent in consumption was recorded during the first two years of the review period compared to the corresponding two previous years. Seasonwise, the increase of 40.4 per cent in consumption during kharif 1970 was followed by a drop of 6.1 per cent during kharif 1971 compared to the corresponding previous season. The reverse was the case in rabi. Rabi 1970-71 recorded a decrease in consumption of 2.8 per cent and rabi 1971-72 improved the position by 51.1 per cent above the previous year's rabi level. These contradictory trends could to some extent be due to statistical anomalies. This was followed in 1972-73 by an overall drop in consumption by 12.3 per cent due to severe drought and limited fertiliser availability. The consumption dropped, however, in rabi season only. Kharif recorded an increase of 3.2 per cent. The consumption again picked up in 1973-74 due to adequate rain, comparatively 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 the consumption increased by 8.2 per cent compared to 1973-74. The increase (19.7 per cent) was recorded only in kharif. Rabi consumption dropped by 2.9 per cent compared to the corresponding seasons in the previous year. The increase in kharif is due to favourable weather, larger area under HYV crops and higher consumption in crops like sugarcane, banana, etc. The consumption would have been higher even during rabi if the marketing constraints like physical controls, fertiliser price hike and inadequate credit avail-

ability did not curb offtake. The overall rate of growth in consumption during the review period was 43 per cent.

Maharashtra was one of the eight States in the country which recorded increase in consumption during 1974-75 compared to the previous year. Maharashtra stood fourth in the order of consumption Statewise during 1974-75—an improvement from the fifth position in 1973-74.

Other States: The very low consumption in other States does not warrant any special comments.

Central Zone

Madhya Pradesh: The consumption during 1970-71 and 1971-72 maintained a very high rate of growth of 50.0 and 54.9 per cent respectively compared to the corresponding previous years. The rate of growth dropped to 16.4 per cent in 1972-73 though even at this level it was the highest achieved by any major consuming State in the country in that year because of the limited fertiliser availability. The trend was totally reversed in 1973-74 with a drop in consumption, for the first time during the review period, by 5.5 per cent below the previous year's level despite favourable climate and larger land coverage under HYV crops. Acute shortage of fertiliser, particularly for kharif crops, caused this setback. The position deteriorated further during 1974-75 with the drop in consumption by another 43.7 per cent compared to the previous year. The factors responsible for the decline in consumption during 1974-75 were the usual ones, i.e., physical controls followed closely by drought in some parts of the State, inadequacy of credit and sharp hike in fertiliser prices. The level of consumption in 1974-75 at 49 thousand tonnes was even lower than that recorded in 1970-71, the first year of the period under review, by about 4 per cent.

Madhya Pradesh stood twelfth in the order of N consumption Statewise during 1974-75 compared to the ninth position in 1973-74.

Rajasthan: Barring a drop in consumption by 4 per cent during 1972-73 compared to the previous year due to limited fertiliser availability and severe drought, the State maintained a steady growth in consumption during the review period. Though conditions of limited product availability existed even in 1973-74, yet better despatches to the State during the rabi season helped it increase its consumption by 16.7 per cent compared to the previous year.

The consumption over the review period rose from 41 thousand tonnes in 1970-71 to 58 thousand tonnes in 1974-75 recording thereby an increase in the rate of growth of about 42 per cent.

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 four years reached a level of 31 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 June 1974, inadequate credit availability and physical controls brought the consumption down from 139 thousand tonnes in 1973-74 to 90 thousand tonnes in 1974-75—a drop of 35.3 per cent. The impact on fertiliser consumption was the highest in rabi. It dropped by 47 per cent in rabi and 20 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 1970-71 level, the first year of the review period.

Gujarat stood seventh in the order of N consumption Statewise during 1974-75 compared to the sixth position in 1973-74.

Maharashtra: Here again, the increasing trend of 20.7 and 17.1 per cent in consumption was recorded during the first two years of the review period compared to the corresponding two previous years. Seasonwise, the increase of 40.4 per cent in consumption during kharif 1970 was followed by a drop of 6.1 per cent during kharif 1971 compared to the corresponding previous season. The reverse was the case in rabi. Rabi 1970-71 recorded a decrease in consumption of 2.8 per cent and rabi 1971-72 improved the position by 51.1 per cent above the previous year's rabi level. These contradictory trends could to some extent be due to statistical anomalies. This was followed in 1972-73 by an overall drop in consumption by 12.3 per cent due to severe drought and limited fertiliser availability. The consumption dropped, however, in rabi season only. Kharif recorded an increase of 3.2 per cent. The consumption again picked up in 1973-74 due to adequate rain, comparatively 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 the consumption increased by 8.2 per cent compared to 1973-74. The increase (19.7 per cent) was recorded only in kharif. Rabi consumption dropped by 2.9 per cent compared to the corresponding seasons in the previous year. The increase in kharif is due to favourable weather, larger area under HYV crops and higher consumption in crops like sugarcane, banana, etc. The consumption would have been higher even during rabi if the marketing constraints like physical controls, fertiliser price hike and inadequate credit avail-

ability did not curb offtake. The overall rate of growth in consumption during the review period was 43 per cent.

Maharashtra was one of the eight States in the country which recorded increase in consumption during 1974-75 compared to the previous year. Maharashtra stood fourth in the order of consumption Statewise during 1974-75—an improvement from the fifth position in 1973-74.

Other States: The very low consumption in other States does not warrant any special comments.

Central Zone

Madhya Pradesh: The consumption during 1970-71 and 1971-72 maintained a very high rate of growth of 50.0 and 54.9 per cent respectively compared to the corresponding previous years. The rate of growth dropped to 16.4 per cent in 1972-73 though even at this level it was the highest achieved by any major consuming State in the country in that year because of the limited fertiliser availability. The trend was totally reversed in 1973-74 with a drop in consumption, for the first time during the review period, by 5.5 per cent below the previous year's level despite favourable climate and larger land coverage under HYV crops. Acute shortage of fertiliser, particularly for kharif crops, caused this setback. The position deteriorated further during 1974-75 with the drop in consumption by another 43.7 per cent compared to the previous year. The factors responsible for the decline in consumption during 1974-75 were the usual ones, i.e., physical controls followed closely by drought in some parts of the State, inadequacy of credit and sharp hike in fertiliser prices. The level of consumption in 1974-75 at 49 thousand tonnes was even lower than that recorded in 1970-71, the first year of the period under review, by about 4 per cent.

Madhya Pradesh stood twelfth in the order of N consumption Statewise during 1974-75 compared to the ninth position in 1973-74.

Rajasthan: Barring a drop in consumption by 4 per cent during 1972-73 compared to the previous year due to limited fertiliser availability and severe drought, the State maintained a steady growth in consumption during the review period. Though conditions of limited product availability existed even in 1973-74, yet better despatches to the State during the rabi season helped it increase its consumption by 16.7 per cent compared to the previous year.

The consumption over the review period rose from 41 thousand tonnes in 1970-71 to 58 thousand tonnes in 1974-75 recording thereby an increase in the rate of growth of about 42 per cent.

Rajasthan was one of the eight States in the country which recorded an increase in consumption (3.6 per cent) during 1974-75 over the previous year despite several factors constraining the consumption.

Rajasthan was eleventh in the order of N consumption Statewise during 1974-75, i.e., the same as in 1973-74.

Uttar Pradesh: The drop in consumption of 4.9 per cent in 1970-71 was followed by an increase of 18.7 per cent compared to the corresponding previous years. The rate of growth declined to 7.8 per cent in 1972-73 due to limited fertiliser availability. The continued acute shortage of fertiliser at most of the consuming centres in the State during the main cropping seasons resulted in a further drop in consumption of 11.8 per cent in 1973-74. The trend reversed in 1974-75 and the consumption increased by 6.1 per cent compared to the previous year. The rate of growth in 1974-75 would have been much higher had there been no drought in the State and the factors like physical controls, inadequate credit availability and sharp hike in price had not adversely affected consumption.

U.P. was one of the eight States in India which recorded an increase in consumption during 1974-75 compared to the previous year.

The overall rate of growth during the review period was 17 per cent.

U.P. continued to be the highest nitrogen consuming State in the country with a consumption of 349 thousand tonnes. Its share in the all-India consumption, however, increased from 18 per cent in 1973-74 to 19 per cent in 1974-75.

Other States: The consumption is too low to call for any special comments.

North Zone

Haryana: The State recorded a consistent growth in consumption from 61 thousand tonnes in 1970-71 to 94 thousand tonnes in 1973-74 despite limited fertiliser availability during 1972-73 and 1973-74. The increase by 13.7 and 13.3 per cent in 1972-73 and 1973-74 respectively was very encouraging. The position, however, deteriorated both in kharif and rabi in 1974-75 due to drought in the main paddy belt and excessive rains in bajra tract, lack of power for irrigation, high fertiliser prices and inadequate credit availability and the consumption declined by 25.5 per cent compared to the previous year.

The overall increase of 54 per cent achieved upto 1973-74 due to better irrigation facilities, increased acreage under HYV crops, State Government's incentive schemes, dropped to 15 per cent in 1974-75.

Haryana was tenth in the order of N consumption Statewise in the country during 1974-75 compared to the eighth position in 1973-74.

Punjab: Here again the consumption recorded a steady growth from 175 thousand tonnes in 1970-71 to 237 thousand tonnes in 1973-74. The rate of growth in the first two years at 19.0 and 28.6 per cent respectively was much higher than that recorded in the subsequent two years at 4.4 and 8.5 per cent respectively. The slowing down in growth rate during the latter two years, 1972-73 and 1973-74, was due to limited fertiliser availability. The position, however, deteriorated in 1974-75 despite easier fertiliser availability and the consumption recorded a drop of 10 per cent compared to the previous year—the first drop during the entire review period. This brought down the rate of consumption of 35.4 per cent recorded up to 1973-74 to 30.3 per cent in 1974-75.

The drop in consumption was entirely in kharif 1974. Rabi 1974-75 on the other hand recorded an increase in consumption of 6 thousand tonnes or 3.5 per cent compared to the previous year. The drop in kharif is attributed to a steep rise in fertiliser prices, failure of monsoon and acute shortage of power in the State. The consumption in rabi was also subdued due to an initial setback in sowing because of low soil moisture, high fertiliser prices and decline in wheat area in some of the canal irrigated districts because of low prices of produce.

Punjab ranked fourth in the order of N consumption Statewise in the country during 1974-75. It held second position in 1973-74. The main contributory factors for the high fertiliser consumption in the State are the large area under assured irrigation, extensive area under HYV crops and multiple cropping.

Jammu & Kashmir: The consumption was static at 4 thousand tonnes during the first two years of the review period. It increased by 100 per cent in 1972-73 compared to the previous year on account of better awareness amongst the farmers of the utility of fertiliser use. The increasing trend continued through 1973-74 and the consumption increased from 8 thousand tonnes in 1972-73 to 10 thousand tonnes in 1973-74 recording a rate of growth of 25 per cent. Due to price hike in 1974-75, the consumption dropped (by 10 per cent) for the first time compared to the previous year during the review period. The entire drop in consumption was in rabi. This also reduced the overall rate of growth in consumption from 150 per cent achieved in four years upto 1973-74 to 125 per cent.

J. & K. is the only State in the country where the consumption during kharif (at 67 per cent during 1974-75) was consistently higher

than the consumption during rabi (33 per cent) over 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.

Himachal Pradesh: The consumption increased from 3 thousand tonnes in 1970-71 to 7 thousand tonnes in 1974-75 thereby recording an overall rate of growth during the review period of 133 per cent. The consumption in 1974-75 increased by 75 per cent compared to the previous year. Himachal Pradesh was one of the eight States in India which recorded an increase in consumption during 1974-75.

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

East Zone

Assam: The consumption remained stationary at 5 thousand tonnes during the first two years of the review period. It increased by 40 per cent to 7 thousand tonnes in 1972-73 and this was followed by a drop in consumption during 1973-74 and 1974-75 by 29 and 60 per cent respectively. Floods, uncertainty of production and high fertiliser prices were the main contributory causes for the sharp decline in consumption. The consumption in general is low in Assam because of high soil fertility on account of silt deposit through floods and transportation bottlenecks.

Bihar: There was a consistent growth in consumption from 75 thousand tonnes in 1970-71 to 89 thousand tonnes in 1972-73 mainly because of the increase in areas under HYV wheat, improvements in the marketing and credit arrangements and introduction of crop loans. The rate of growth, however, varied from 7.1 per cent in 1970-71 to 17.3 per cent in 1971-72, to 1.1 per cent in 1972-73. The drop in the rate of growth in 1972-73 was mainly due to limited fertiliser availability. The position deteriorated in 1973-74 due to fertiliser shortages, particularly in rabi, and the consumption dropped (by 21.3 per cent) for the first time during the review period. The trend reversed in 1974-75 and despite the 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 consumption increased by 14.3 per cent to 80 thousand tonnes. Seasonwise, whereas the consumption dropped by 7.9 per cent during kharif, it increased by 40.6 per cent during rabi. Large scale campaign on rabi production by the State Government increased the acreage under HYV wheat and growing intermediary crops like sweet potato and leguminous crops in the so far fallow lands helped increase the consumption in rabi. The consumption would have recorded a higher rate of growth if there were no marketing constraints.

The overall rate of growth during the review period was only 7 per cent. The sharp decline in consumption during 1973-74 pulled down the overall growth. Bihar was one of the eight States which recorded an increase in consumption in 1974-75 compared to the previous year. This enabled the State to improve its rank in the order of N consumption Statewise from the tenth in 1973-74 to the eighth in 1974-75.

Orissa: The consumption showed a continuous growth upto 1973-74, but it declined for the first time during the review period during 1974-75 compared to the previous year by 18.2 per cent to 36 thousand tonnes. The highest rate of growth of 85 per cent during the review period was recorded in 1971-72. The limited fertiliser availability, however, brought down the rate of growth to 10.8 and 7.3 per cent during 1972-73 and 1973-74 respectively. The drop in 1974-75 was due to physical controls, drought and floods, fertiliser price hike and fall in paddy area.

The overall rate of growth in consumption of 120 per cent from 1970-71 to 1973-74 dropped to 80 per cent over the full review period. Orissa retained thirteenth position in the order of N consumption Statewise during 1974-75.

West Bengal: The increasing trend in consumption was maintained during 1970-71 and 1971-72 with the rate of growth of 38.2 and 19.1 per cent respectively due primarily to the extension of area under the HYV wheat and rice. This was followed by a drop in consumption by 7.1 per cent to 52 thousand tonnes in 1972-73 due to limited fertiliser availability. Though the fertiliser shortages continued through 1973-74, yet on account of better despatches for kharif the consumption in kharif increased by 80.0 per cent compared to the previous year's kharif. Rabi 1973-74 recorded a drop in consumption by 27 per cent but the year ended with an increase in overall consumption by 3.8 per cent to 54 thousand tonnes. The increasing trend continued through 1974-75 and there was an increase in consumption compared to the previous year by 38.9 per cent to 75 thousand tonnes. More favourable weather, withdrawal of physical controls, increased fertiliser availability and increased areas under HYV summer paddy were mainly responsible for the increase in consumption during 1974-75. This also increased the overall growth of 15 per cent recorded upto 1973-74 to 60 per cent over the full review period.

West Bengal was one of the eight States in India which recorded an increase in N consumption during 1974-75. This enabled the State to improve its rank in the order of N consumption Statewise from the twelfth in 1973-74 to the ninth position in 1974-75.

Other States: The consumption is too low to warrant any special comments.

PHOSPHATES

The growth rate of P_2O_5 consumption followed nearly the same pattern as that of N during the first four years of the review period, i.e. 1970-71 to 1973-74. Beginning with an increase in consumption during 1970-71 of 10.0 per cent compared to the previous year, it more than doubled to 22.1 per cent during the subsequent year. The year 1972-73 recorded a sharp decline of 4.1 per cent due to drought in many parts of the country and poor availability of fertiliser materials. The consumption rose again in 1973-74 and recorded an increase of 10.7 per cent compared to the previous year due to comparatively better weather and improved product availability. The overall increase in consumption during the first four years of the review period was 40.7 per cent (compared with 23 per cent for N). During the year 1974-75, however, the consumption of P_2O_5 declined by 17.2 per cent compared to the previous year for the first time during the review period. This brought down the overall growth in consumption during the review period to 16.4 per cent (against 23.6 per cent for N).

The reasons for this sharp decline in consumption during 1974-75 were no different than those responsible for limiting the N growth to mere 0.5 per cent except that their impact on P_2O_5 was more severe because of its much higher nutrient price and importance next only to N in the judgment of the farmer. Briefly, they were aberrant weather, physical controls on distribution, sharp hike in fertiliser prices, inadequate availability of distribution and production credit, etc. The P_2O_5 was purchased by the farmer only if his limited resources permitted after meeting his requirement of N. This has accentuated the imbalance in the use of fertiliser. This trend cannot be allowed to be continued as its cumulative effect, after a couple of seasons, will reduce the response even to N and make the use of nitrogen also economically less attractive along with the resultant adverse impact on agricultural production. The remedy lies in an allout attempt towards balanced fertilisation and also making P_2O_5 use economically viable.

To achieve balanced fertilisation will demand a very high rate of growth in P_2O_5 consumption during 1975-76 and subsequent years. Apart from making the farmer realise its benefits, P_2O_5 must be made available at an economic price. All this is not likely to be achieved immediately and in view of the situation that is likely to prevail during 1975-76, the maximum rate of growth that may be feasible is around 22 per cent. In

absolute terms, it will mean an increase in P_2O_5 consumption by 122,000 tonnes, i.e. from 538 thousand tonnes to 660 thousand tonnes.

Zonewise Consumption

Comparative shareout

The comparative share of P_2O_5 consumption zonewise during the review period is given in the table below:

Zonewise percentage share of consumption of P_2O_5

(per cent)

Zone	1970-71	1971-72	1972-73	1973-74	1974-75
South	35.9	36.2	38.0	35.2	38.8
West	22.8	22.9	15.6	20.6	17.8
Central	24.0	22.3	24.5	22.3	20.6
North	8.9	11.2	13.8	14.5	13.4
East	8.4	7.4	8.1	7.4	9.4
Total	100.0	100.0	100.0	100.0	100.0

The South Zone remained the highest consumer of P_2O_5 throughout the review period. Barring a decline during 1973-74 only, its zonewise share also continued to increase during the review period. It increased from 35.9 per cent in 1970-71 to 38.8 per cent in 1974-75. The second position was maintained by the Central Zone during the review period except during 1971-72 when it was beaten by the West Zone. Its share, however, fluctuated during the review period and starting with 24.0 per cent in 1970-71 it dropped to 20.6 per cent during 1974-75. The West Zone remained the third largest consumer during the review period except in 1971-72 when it rose to the second position. The share of West Zone also fluctuated and beginning with 22.8 per cent in 1970-71, it dropped to 17.8 per cent in 1974-75. The North and the East Zones remained fourth and fifth in terms of consumption throughout the review period. As regards the zonewise share, whereas that of the North Zone improved from 8.9 per cent in 1970-71 to 14.5 per cent in 1973-74 and dropped only in 1974-75 to 13.4 per cent, the share of the East Zone dropped and increased in alternate years but recorded an overall increase from 8.4 per cent in 1970-71 to 9.4 per cent in 1974-75.

Actual consumption

The growth rate of consumption zonewise during the review period as well as the estimated growth during 1975-76 are shown in the table below:

Percentage increase in consumption of P₂O₅

Region	= over previous year					1974-75 over 1970-71	1975-76*
	1970-71	1971-72	1972-73	1973-74	1974-75		
South	5.0	22.9	9.3	0.9	(-) 8.4	24.1	18.8
West	50.0	23.8	(-) 29.2	45.7	(-) 28.4	(-) 8.6	25.0
Central	(-) 7.5	13.5	14.3	0.7	(-) 23.4	—	26.1
North	51.9	53.7	28.6	16.0	(-) 23.4	75.6	25.0
East	(-) 13.6	10.5	14.3	—	4.2	31.6	20.0
All India	10.0	22.1	4.1	10.7	(-) 17.2	16.5	22.7

Note: Based on Table 8a.

*Estimated.

In terms of increase in consumption during the review period, the North Zone recorded the highest growth of 75.6 per cent. This was followed by East and South Zones with the growth of 35.6 and 24.1 per cent respectively. The Central Zone recorded no increase and the West Zone showed a decline of 8.6 per cent. The consumption of P₂O₅ in the West Zone was cyclic depending mainly upon the weather conditions prevailing during the year. A year of high consumption was followed by a drop in consumption. Beginning with a consumption of 105 thousand tonnes in 1970-71, it rose to 130 thousand tonnes in 1971-72, dropped to 92 thousand tonnes in 1972-73, rose again to 134 thousand tonnes in 1973-74 and dropped again to 96 thousand tonnes in 1974-75. In all other zones, the consumption increased upto 1973-74. It was only in 1974-75, that the South, Central and North Zones showed a decline in consumption for the first time during the review period. The East Zone was the only zone which recorded an increase in consumption even during 1974-75.

As indicated earlier, there is likely to be an overall increase in P₂O₅ consumption of 22.7 per cent during 1975-76. This increase may be reflected in all the zones at varying rates depending upon the extent of drop in consumption during 1974-75. The West, Central and North Zones are likely to record an increase around 25 to 26 per cent. The increase in South and East Zones may be around 19 to 20 per cent.

The pattern of P₂O₅ consumption seasonwise varied from zone to zone. The all-India picture, however, reflected a share of about 42 to 44 per cent in kharif and the balance 56 to 58 per cent in rabi.

South Zone

The reason for the South Zone continuing to remain the largest consumer is largely historical because of the sustained promotional efforts of the superphosphate industry and mixture manufacturers which were first established in this zone. It was for this reason also that while all other major consuming zones like West, Central and North recorded a drop of more than 20 per cent in P_2O_5 consumption during 1974-75 compared to the previous year, decrease in the South Zone was only 8.4 per cent and that too in a year of severe drought in Tamil Nadu. This enabled the South Zone to improve its share from 35.2 per cent in 1973-74 to 38.8 per cent in 1974-75.

The growth rate during the review period was very uneven. Beginning with an increase in consumption of 5.0 per cent in 1970-71 compared to the previous year, it rose to 22.9 per cent in 1971-72; it dropped to 9.3 and 0.9 per cent in the subsequent two years respectively and thereby resulted in an overall increase during the first four years of the review period of 35.5 per cent. The year 1974-75 witnessed a decline (8.4 per cent) in consumption for the first time and the overall increase recorded during the review period was 24.1 per cent.

The consumption of P_2O_5 during the first two years of the review period was higher in kharif (around 54 per cent) and lower in rabi (around 46 per cent). The position reversed in 1972-73 and the kharif consumption dropped to about 49 per cent and the rabi consumption increased to about 51 per cent. The consumption in 1973-74 was about 50 per cent in each season. The consumption trend in 1974-75 indicated a share of 49 per cent in kharif and 51 per cent in rabi. This trend is likely to continue.

West Zone

The West Zone on the other hand started with an increase in consumption of 50 per cent in 1970-71 compared to the previous year, but the growth rate dropped to 23.8 per cent in 1971-72. The declining trend continued during 1972-73 due to severe drought in Maharashtra and Gujarat and the consumption dropped by 29.2 per cent compared to the previous year. Favourable weather and improved product availability in 1973-74 resulted in a sharp increase of 45.7 per cent in consumption compared to the previous year. This was followed by a severe drought in Gujarat in 1974-75 and this coupled with the other factors discussed earlier in the chapter resulted in a drop in consumption again by 28.4 per cent. The sharp decline in consumption during 1974-75 resulted in an overall decline in consumption during the review period of 8.6 per cent.

The overall growth in consumption in the first four years of the review period of 27.6 per cent was thus nullified.

The share of seasonwise consumption varied from year to year during the review period. It varied from 56 to 68 per cent in kharif and 32 to 44 per cent in rabi except in 1971-72 when the kharif consumption dropped to 48.5 per cent and the rabi consumption increased to 51.5 per cent. The overall trend of higher consumption in kharif is likely to continue.

Central Zone

An erratic consumption behaviour prevailed during the review period. Beginning with a drop in consumption of 7.5 per cent in 1970-71 compared to the previous year, it recorded a uniform increase in consumption (13.5 and 14.3 per cent respectively) during the subsequent two years. The growth rate dropped to a meagre 0.7 per cent in 1973-74 due to poor despatches to the zone during rabi. This was followed by a decline in consumption of 23.4 per cent during 1974-75 despite easy product availability. The reasons for this sharp decline have already been discussed earlier in the chapter.

After recording an overall increase in consumption of 30.7 per cent during the first four years of the review period, the consumption in 1974-75 dropped to the level recorded in 1970-71, the first year of the review period.

Sharewise, the Central Zone retained the second position over the review period except in 1971-72 when the West Zone overtook it by a small margin.

The consumption in rabi far exceeded that in kharif through the review period. The kharif consumption generally ranged from 30 to 32 per cent and rabi accounted for the balance of 68 to 70 per cent. The year 1972-73 was an unusual year when the share of kharif consumption dropped to 22.2 per cent and the rabi consumption increased to 77.8 per cent. The overall trend of higher consumption (68 to 70 per cent) in rabi is likely to continue.

North Zone

Like the West Zone, North Zone also commenced the review period with a bang—a high rate of growth of 51.9 per cent in 1970-71 compared to the previous year. But contrary to the West Zone, it continued to maintain the high rate of growth (53.7 per cent) even during 1971-72. The growth rates dropped to 28.6 and 16.0 per cent respectively during the two subsequent years due to limited supporting N availability.

The position should have improved in 1974-75 with the easier fertiliser availability, but on account of the reasons listed earlier in the chapter the consumption in fact dropped by 23.4 per cent, compared to the previous year.

The overall rate of growth during the first four years of the review period of 130 per cent was the highest recorded by any zone. This growth rate, however, dropped to 75.6 per cent over the entire review period because of the happenings during 1974-75, though even at this level it registered the highest growth. Nevertheless, the consumption of P_2O_5 in the North Zone continued to be low in proportion to the large N consumption. This serious imbalance in the fertiliser use needs to be corrected urgently.

The share of P_2O_5 consumption in kharif gradually increased from 14.7 per cent in 1970-71 to 25.5 per cent in 1973-74. It, however, dropped to 20.8 per cent in 1974-75. The increasing trend is likely to recur in 1975-76, with a share of 27.8 per cent in kharif. The consumption in rabi correspondingly dropped from 1970-71 to 1973-74. It rose for a year in 1974-75 but is likely to drop again in 1975-76.

East Zone

The zone recorded a drop in consumption compared to the previous year only in the first year of the review period, i.e., 13.6 per cent in 1970-71. A steady growth rate of 10.5 and 14.3 per cent was recorded during 1971-72 and 1972-73, respectively. The level of consumption remained unchanged in 1973-74 and the year 1974-75 again witnessed an increase of 4.2 per cent. This is the only zone which has recorded an increase in consumption during 1974-75.

East Zone continued to remain the lowest consumer of P_2O_5 throughout the review period.

The share of consumption in kharif decreased from 34.2 per cent in 1970-71 to 31.3 per cent in 1972-73, suddenly rose to 50 per cent in 1973-74 and dropped to 40 per cent in 1974-75. The consumption in 1975-76 is likely to be around 42 per cent. The consumption in rabi correspondingly increased from 65.8 per cent in 1970-71 to 68.7 per cent in 1972-73. It dropped to 50 per cent in 1973-74 and increased again to 60 per cent in 1974-75. The rabi consumption in 1975-76 is likely to be around 58 per cent.

Statewise Consumption

South

Andhra Pradesh: The consumption pattern in the State was cyclic during the review period. Beginning with a drop in consumption of 6.3

per cent in 1970-71 compared to the previous year, it recorded an increase of 25.4 per cent in 1971-72, dropped again in 1972-73 by 2.7 per cent, increased again in 1973-74 by 13.9 per cent and showed yet another drop of 9.8 per cent in 1974-75.

The consumption is likely to pick up again in 1975-76.

The reasons for the drop in consumption during 1974-75 despite easy product availability were no different than those indicated earlier in the chapter.

The overall increase in consumption during the review period was 25.4 per cent.

Andhra Pradesh continued to remain the second largest P_2O_5 consuming State in the country in 1974-75 for the second year in succession.

The pattern of consumption seasonwise changed from 71.2 per cent in kharif 1970-71 to 43.2 per cent in kharif 1974-75. The rabi consumption correspondingly increased from 28.8 per cent in 1970-71 to 56.8 per cent in 1974-75.

Karnataka: The consumption gradually increased from 37 thousand tonnes in 1970-71 to 56 thousand tonnes in 1972-73. It dropped by 14.3 per cent to 48 thousand tonnes in 1973-74 and increased again by 12.5 per cent to 54 thousand tonnes in 1974-75. Karnataka and West Bengal were the only two States in India which recorded an increase in consumption during 1974-75.

The reasons for the sharp increase in consumption of 13.5 and 33.3 per cent during 1971-72 and 1972-73 were the aggressive marketing and extension work to promote NPK fertilisers. These high increases could not be sustained in 1973-74 and the consumption dropped by 14.3 per cent.

The overall increase in consumption during the review period was 46 per cent.

The State retained its sixth position in terms of Statewise consumption for another year in 1974-75.

The pattern of consumption seasonwise varied from year to year. The consumption was higher in rabi during 1970-71, 1972-73 and 1974-75 and in the years 1971-72 and 1973-74, the consumption was higher in kharif. The percentage of consumption in rabi 1974-75 was 51.8 per cent. This trend is likely to continue.

Kerala: The consumption here gradually increased from 14 thousand tonnes in 1970-71 to 23 thousand tonnes in 1973-74 thereby recording

an overall increase during the first four years of the review period of 64.3 per cent. It, however, dropped by 21.7 per cent to 18 thousand tonnes during 1974-75 due mainly to the high P_2O_5 prices and reduced the overall growth during the full review period to 28.6 per cent.

The State ranked eighth in position in terms of Statewise consumption in 1973-74 but dropped to the tenth position in 1974-75.

The consumption during the two seasons, kharif and rabi, was by and large, divided equally during the review period. The only erratic year was 1972-73 when the share of rabi consumption rose to 59.1 per cent and the kharif consumption dropped to 40.9 per cent.

Tamil Nadu: After maintaining an annual growth rate of about 29 and 31 per cent during the first two years of the review period respectively, namely, 1970-71 and 1971-72, compared to the previous years the consumption remained stationary for the subsequent two years at 71 thousand tonnes. This static situation dictated mainly by N and P_2O_5 availability was discouraging specially in the context of intensive promotional efforts made by the industry in the zone for balanced fertilisation and awareness on the part of the farmers in the zone of the benefits of using standard mixtures and complex fertilisers.

The consumption in 1974-75, however, dropped by 18.3 per cent compared to the previous year to 58 thousand tonnes due mainly to drought in the State. The other factors were high P_2O_5 prices, cumbersome physical controls in distribution and inadequate availability of production and distribution credit.

The overall increase in consumption during the first four years of the review period was 31.5 per cent but due to the sharp decline in consumption during 1974-75, it dropped to a mere 7.4 per cent during the full review period.

The State lost its fourth position, in terms of Statewise P_2O_5 consumption in 1973-74, to Punjab in 1974-75 and dropped to the fifth position.

The consumption seasonwise varied from year to year. It was higher in the rabi season during 1970-71, 1971-72 and 1973-74 and higher in the kharif season during 1972-73 and 1974-75. The seasonwise pattern in 1974-75 recorded a consumption of 57 per cent in kharif and 43 per cent in rabi. This trend is likely to continue.

Pondicherry: The consumption is too low to warrant any comments.

West Zone

Gujarat: In 1970-71 and 1971-72, consumption registered a steady increase of 36 and 15 per cent respectively. This was followed in 1972-73 by a drop in consumption of 11.5 per cent due to drought. The position improved in 1973-74 with an increase in consumption of 11.1 per cent. This was followed in 1974-75 by a sharp decline in consumption of 41.7 per cent due again primarily to severe drought. The other reasons listed earlier in the chapter contributed to the decline.

The State, however, holds good potential for P_2O_5 consumption because of sizeable area under groundnut and pulses and the consumption is likely to increase sharply in 1975-76 provided the weather is favourable.

The State dropped from the fifth position in terms of Statewise consumption in 1973-74 to the seventh position in 1974-75 due to sharp decline in the latter year.

The consumption in 1974-75 was more or less level with that recorded in the base year (1970-71) or the review period. There was, therefore, no overall growth in consumption.

The general pattern of seasonwise consumption indicated 56 to 58 per cent consumption in kharif and the balance 42 to 44 per cent in rabi. This pattern is likely to continue.

Maharashtra: The State maintained a high rate of growth during the first two years of the review period and registered an increase of 67.7 and 30.8 per cent during 1970-71 and 1971-72 respectively. The 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 by a year of fair weather and product availability also improved. The position was, therefore, commendably retrieved in 1973-74 with a record rate of growth in consumption of 97.3 per cent compared to the previous year.

The consumption dropped once again in 1974-75 by 16.4 per cent due to the factors listed earlier in the chapter. This brought down the overall growth of 40.4 per cent achieved during the first four years of the review period upto 1973-74 to 17.3 per cent during the full review period.

The State continued to remain the third largest P_2O_5 consuming State in the country in 1974-75 for the second year in succession.

Barring 1973-74 when the State consumption in rabi was slightly higher than in kharif, the general pattern of consumption indicated much higher consumption in kharif compared to rabi. The consumption in

kharif and rabi during 1974-75 was around 62 and 38 per cent respectively. This pattern is likely to continue.

Other States: No comments are warranted because of their very low consumption.

Central Zone

Madhya Pradesh: The review period began in 1970-71 with a high growth in consumption of 66.7 per cent slowed down to 36, 14.7 and 12.8 per cent during the years 1971-72, 1972-73 and 1973-74 respectively. There was thus a steady growth in consumption over the first four years of the review period resulting in an overall increase of 76 per cent. The growth during this period was mainly due to active promotional work done by the State extension agencies and the industry.

The consumption dropped (about 41 per cent) for the first time during the review period in 1974-75 compared to the previous year due to the reasons listed earlier in the chapter. This reduced the overall growth in consumption during the review period to a meagre four per cent.

The State retained its eighth position in terms of Statewise consumption for another year in succession in 1974-75.

The seasonwise pattern showed higher consumption in kharif in the first two years of the review period. It changed over to higher consumption in rabi during the remaining three years of the review period. This pattern is likely to continue.

Rajasthan: The consumption rose by 22.2 per cent in 1970-71 and 45.5 per cent due to extensive promotional efforts by the State Government and the industry. The position reversed in 1972-73 on account of unfavourable climatic conditions and the consumption dropped sharply by 56.2 per cent. The sharp decline was followed by a sharp increase in 1973-74 of 100 per cent compared to the previous year. The various factors listed earlier in the chapter which inhibited fertiliser use dropped the consumption in 1974-75 by 35.7 per cent.

The massive drops in consumption in 1972-73 and again in 1974-75 brought the level of consumption (9 thousand tonnes) even lower than that recorded in the base year (11 thousand tonnes).

The State retained its 13th position in terms of Statewise P_2O_5 consumption for another year in succession in 1974-75.

The consumption in rabi remained much higher than in kharif throughout the review period. The pattern in 1974-75 indicated 78 and

22 per cent consumption in rabi and kharif respectively. This pattern is likely to continue.

Uttar Pradesh: The review period began with a drop in consumption of 23.5 per cent in 1970-71. After a marginal increase of 1.3 per cent in 1971-72, the consumption rose sharply in 1972-73 by 27.6 per cent despite unfavourable climatic conditions. In absolute terms, the consumption increased from 75 thousand tonnes in 1970-71 to 97 thousand tonnes in 1972-73 registering an increase of about 30 per cent. The position deteriorated in the subsequent two years and the consumption dropped by 10.3 and 12.6 per cent during 1973-74 and 1974-75 respectively compared to the previous years. This brought down the overall increase during the review period to a meagre 1.3 per cent.

Despite drops in consumption in 1970-71, 1973-74 and 1974-75, U.P. remained the largest P_2O_5 consuming State in the country during the review period.

The seasonwise pattern indicated a very high consumption in rabi compared to kharif. The percentage of consumption during the rabi and kharif in 1974-75 was 75 and 25 respectively. This pattern is likely to continue.

Delhi: Its very low offtake does not call for any special comments.

North Zone

Haryana: The review period began with an increase in consumption of 40 per cent in 1970-71 compared to the previous year. The consumption remained stationary in 1971-72 and picked up again in 1972-73 with an increase of 14.3 per cent. This was followed by a record 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 to correct the balance in fertiliser use brought about this development. The overall increase in consumption during the first four years of the review period thus reached a level of 143 per cent.

The situation, however, deteriorated in 1974-75 due to drought in some parts of the State coupled with the other factors already mentioned and the consumption dropped (53 per cent) for the first time during the review period compared to the previous year. The overall increase during the entire review period slumped to 14.3 per cent.

The ranking the State in terms of Statewise consumption dropped from the 11th in 1973-74 to 14th in 1974-75.

The pattern of seasonwise consumption began in 1970-71 with a ratio of 1 in kharif to 7 in rabi and gradually changed over in 1974-75

to 1 in kharif to 2 in rabi. The 1974-75 pattern is likely to continue.

Himachal Pradesh: The consumption remained static at 2 thousand tonnes during each of the year of the review period though the first year of the review period viz., 1970-71, recorded a growth rate of 50 per cent due primarily to Indo-German Agricultural Development Programme, IADP and other promotional measures adopted by State Government.

The pattern of consumption seasonwise remained 50 per cent in each season during the review period.

Jammu & Kashmir: After remaining stationary at 1,000 tonnes during 1970-71 and 1971-72, the consumption increased by 100 per cent to 2,000 tonnes in 1972-73. It reached 3,000 tonnes during 1973-74, the highest level of consumption during the review period. The position deteriorated in 1974-75 and the consumption dropped (66.7 per cent) for the first time in the review period compared to the previous year bringing the level of consumption at par with that prevailing in 1970-71.

The consumption, by and large, was equally divided between kharif and rabi.

Punjab: After maintaining a consistently high rate of growth of 47.6, 70.9 and 30.2 per cent during the years 1970-71, 1971-72 and 1972-73, it dropped to only 5.8 per cent in 1973-74 due mainly to the limited product availability. The position deteriorated further in 1974-75 with the high price of P_2O_5 nutrient and inadequate credit availability and the consumption dropped (17.8 per cent) for the first time during the review period. The overall increase in consumption of about 135.5 per cent achieved during the first four years of the review period upto 1973-74 dropped to 93.5 per cent during the entire review period upto 1974-75.

The State dropped from the third position achieved in 1973-74 in terms of Statewise consumption to the fourth position in 1974-75.

Bulk of the consumption was in rabi. Starting in 1970-71 with a consumption of about 10 per cent in kharif and 90 per cent in rabi, the seasonwise share in 1974-75 was about 17 per cent in kharif and 83 per cent in rabi. This trend is likely to continue.

Chandigarh: Its very low consumption does not warrant any special comments.

East Zone

Assam: The consumption in the State during the first three years of the review period remained at 2,000 tonnes each year. It dropped to

less than 500 tonnes in each of the subsequent two years. Uncertainty of agricultural production on account of frequent floods, very small area under HYV crops, high transportation costs and good fertility of soil due to silt deposit by floods contributed to the low fertiliser offtake in the State.

Bihar: The review period began with a drop in consumption of 33.3 per cent in 1970-71 compared to the previous year. The deteriorating trend continued in 1971-72 registering a further drop of 22.2 per cent. The position reversed in 1972-73 and the consumption increased by 35.7 per cent compared to the previous year. This was followed again by a drop in consumption of 15.8 per cent in 1973-74 mainly because of inadequate supporting N availability. The level of consumption continued to remain stationary in 1974-75 at 16 thousand tonnes. This level of consumption was 11.1 per cent lower than even the base year (1970-71) consumption of 18 thousand tonnes. The consumption would have increased in 1974-75 had the floods and drought in some parts of the State in kharif, physical controls on distribution and high P_2O_5 prices not inhibited the use.

The State improved in Statewise position in terms of P_2O_5 consumption from the 12th in 1973-74 to the 11th in 1974-75.

Barring 1973-74 when the consumption in kharif was more than in rabi, the bulk of the consumption during the review period was in rabi. The consumption in kharif and rabi 1974-75 was about 38 and 62 per cent respectively. This trend is likely to continue.

Orissa: There was a consistent growth in consumption during the first four years of the review period with the resultant overall increase in consumption of 100 per cent. This was followed by a drop in consumption of 8.3 per cent in 1974-75 due mainly to the stringent physical controls on distribution, drought and floods in some parts of the State and the high P_2O_5 nutrient price. The overall increase in consumption over the full review period dropped to 83.3 per cent.

However, in view of lesser rate of drop in consumption in 1974-75 compared to the other major consuming States, Orissa improved its rank in terms of Statewise consumption from the 14th in 1973-74 to the 12th in 1974-75.

The consumption seasonwise was erratic. Beginning, however, with a 50 per cent consumption in each season in 1970-71, the corresponding percentage in 1974-75 was 27 and 73 during kharif and rabi respectively. The 1974-75 pattern is likely to continue.

West Bengal: There was a steady growth in consumption during the review period except in 1972-73 when it dropped by 5.9 per cent

compared to the previous year. West Bengal along with Karnataka were the only two States which recorded an increase in consumption in 1974-75.

The increase of 22.2 per cent in 1974-75 compared to the previous year was due to withdrawal of cumbersome physical controls on distribution well in time before the kharif consumption season and the promotional activities of the major marketers.

In absolute terms, the consumption increased from 12 thousand tonnes in 1970-71 to 22 thousand tonnes in 1974-75 thereby recording an overall increase during the review period of 83.3 per cent.

The State improved its position in terms of P_2O_5 statewide consumption from the tenth in 1973-74 to the ninth in 1974-75.

The gap between the kharif and rabi consumption gradually decreased over the review period. The consumption in kharif and rabi in 1970-71 was 33 and 67 per cent respectively. The kharif consumption increased to 44 per cent in 1974-75 and the rabi consumption correspondingly dropped to 56 per cent. This pattern is likely to continue.

Other States: The consumption in the other States is too low to warrant any special comments.

POTASH

There was consistent growth in its consumption during the review period though the rate of growth varied from year to year. Beginning with a rate of growth of 9.1 per cent in 1970-71, it increased to 33.3 per cent in 1971-72 and dropped to 9.2 and 8.4 per cent in 1972-73 and 1973-74 respectively. The position deteriorated further in 1974-75 when the rate of growth dropped sharply to 2.8 per cent. This sharp decline in consumption was due mainly to limited increase in N consumption, a steep drop in consumption of P_2O_5 and the importance of K next only to N and P_2O_5 in the scale of judgement of the farmer. The recommendation of some of the agricultural universities to use potash only if indicated by the soil analysis was also an inhibiting factor.

The declining trend in potash consumption will create imbalance in fertiliser use with the resultant adverse effect on soil fertility in future particularly in areas under intensive cultivation. The question of potash use, therefore, needs to be reviewed afresh by the authorities concerned to ensure that there is no setback to agricultural production at a later date due to lack of potash in the soil.

The overall increase in consumption during the review period was 62.2 per cent. In absolute terms the consumption increased from 228 thousand tonnes in 1970-71 to 370 thousand tonnes in 1974-75.

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						
	1970-71	1971-72	1972-73	1973-74	1974-75	1974-75 over 1970-71	1975-76*
South	12.0	35.0	9.6	9.5	-4.3	55.0	9.7
West	35.5	21.4	15.7	6.8	74.5	128.5	-6.2
Central	-13.6	31.4	-10.5	6.7	-13.5	9.8	16.0
North	25.0	60.0	37.5	36.4	-26.7	120.0	26.4
East	-10.7	40.0	20.0	14.3	-14.6	64.0	9.8
All India	9.1	33.3	9.2	8.4	2.8	62.2	8.1

Note: Based on Table 9a.

* Estimated.

There was no set pattern in zonewise consumption except that South, West and North zones recorded consistent increases in consumption during the first three years of the review period. South and West Zones continued to record increases even during the fourth year (1973-74). But during 1974-75 all zones except West Zone recorded a drop in consumption. The position is likely to reverse in 1975-76 when all zones except West Zone are likely to record increases.

Comparative shareout

The comparative share of K_2O consumption zonewise during the review period is given in the table below:

Zonewise percentage share of consumption of K_2O

Zone	1970-71	1971-72	1972-73	1973-74	1974-75
South	43.9	44.4	44.7	45.1	41.9
West	18.4	16.8	17.9	15.4	25.9
Central	22.4	22.0	18.1	17.8	15.1
North	4.4	5.3	6.6	8.3	5.9
East	10.9	11.5	12.7	13.4	11.2
Total	100.0	100.0	100.0	100.0	100.0

Only the West Zone recorded an increase (10.5 per cent) in its share of the zonewise consumption and became the second largest consuming zone in 1974-75. Share of other zones dropped.

The South Zone continued to retain its traditional leadership in 1974-75 in the use of K_2O despite a drop in its share of 3.2 per cent compared to the previous year. The Central Zone dropped from the second position in 1973-74 to the third position in 1974-75. The drop in the share of Central Zone in 1974-75 compared to the previous year was 2.7 per cent. The Eastern Zone retained its fourth position despite a drop of 2.2 per cent in share compared to 1973-74. The North Zone continued to remain the lowest consumer in 1974-75 and its share also dropped by 2.4 per cent.

South Zone

South Zone remained the largest K_2O consumer throughout the review period despite the overall drop in its share. There was in fact a consistent increase in its share from 43.9 per cent in 1970-71 to 45.1 per cent in 1973-74, the share dropped back to 41.9 per cent on account mainly of drought in the zone during 1974-75.

The traditionally high K_2O consumption in the South 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 four years of the review period resulted in an overall growth of 62 per cent. The trend reversed in 1974-75 and the consumption dropped by 4.3 per cent. This reduced the overall growth during the review period to 55 per cent. The consumption is likely to increase by 9.7 per cent in 1975-76.

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 zonewise was recorded during the review period. The share of 18.4 per cent in 1970-71 dropped to 16.8 per cent in 1971-72, rose to 17.9 per cent in 1972-73, dropped again to 15.4 per cent in 1973-74 and rose once again, very sharply this time, to 25.9 per cent in 1974-75.

The overall increase in the share during the review period was 7.5 per cent.

After a consistent growth in consumption of 40.5 per cent during the first three years of the review period, the consumption dropped by 6.8 per cent. This was followed by a very sharp increase in consumption of about 75 per cent in 1974-75 and the overall growth during the review period increased to 128 per cent. This enabled the West Zone to march ahead of Central Zone to become the second largest consuming zone in the country. West Zone may not be able to sustain this high level of consumption in 1975-76 but even with a likely drop in consumption of 5 to 6 per cent it will still retain its second position.

Barring 1970-71, when the consumption in rabi was more than that in kharif, the pattern of consumption during the rest of the review period showed higher consumption in kharif. The pattern in 1974-75 indicated about 63 per cent consumption in kharif and the balance in rabi. This pattern is likely to continue.

Central Zone

The share of Central Zone dropped continuously from 22.4 per cent in 1970-71 to 15.1 per cent in 1974-75 recording an overall drop of 7.3 per cent. The zone, however, retained its second position in terms of zonewise consumption upto 1973-74 and gave way to the West Zone in 1974-75 to drop to the third position.

The review period began in 1970-71 with a drop in consumption of 13.6 per cent compared to the previous year. This was followed in 1971-72 by an increase in consumption of 31.4 per cent. The trend reversed once again in 1972-73 with a drop in consumption of 10.5 per cent. The year 1973-74 witnessed a growth of 6.7 per cent and this was followed by another drop of 13.5 per cent in 1974-75, bringing the consumption to 56 thousand tonnes, only 5 thousand tonnes more than that recorded in the base year (1970-71). The overall growth in consumption during the review period was thus only 9.8 per cent.

The consumption in 1975-76 is likely to increase by 16 per cent to 65 thousand tonnes. The zone is thus likely to retain its third position.

The pattern of seasonwise consumption indicated bulk of consumption during rabi. This pattern is likely to continue.

North Zone

The share increased consistently from 4.4 per cent in 1970-71 to 5.3 per cent in 1973-74. It dropped to 5.9 per cent in 1974-75. The zone, however, continued to be the lowest consuming zone throughout the review period.

The continuous growth in consumption of 25, 60, 37.5 and 36.4 per cent per annum in the first four years of the review period resulted in an overall increase of 200 per cent and raised the level of consumption from 10 to 30 thousand tonnes. The fifth and the last year of the review period recorded a drop in consumption by 26.7 per cent to 22 thousand tonnes. This reduced the overall growth to 120 per cent.

The trend is likely to reverse in 1975-76 with an increase in consumption of 36.4 per cent.

The bulk of the consumption in the North Zone during the review period was in rabi. This pattern is likely to continue.

East Zone

Here again the share continued to increase during the first four years of the review period. Starting from 10.9 per cent in 1970-71, it reached 13.4 per cent in 1973-74. The following year recorded a drop in the share to 11.2 per cent. It, however, continued to remain the fourth largest consuming zone throughout the review period.

The consumption increased consistently in the East Zone also during the first four years of the review period and recorded an overall growth of 92 per cent. This was followed by a drop in consumption of 14.6 per cent in 1974-75 and the overall growth reduced to 64 per cent. In absolute terms the consumption increased from 25 thousand tonnes in 1970-71 to 41 thousand tonnes in 1974-75.

The consumption is likely to increase by 9.8 per cent to 45 thousand tonnes in 1975-76.

Bulk of the consumption in the East Zone during the review period was in rabi. This pattern is unlikely to change.

Statewise Consumption

South Zone

Andhra Pradesh: The consumption in the State has been uneven. During the first year of the review period the consumption increased by 30.8 per cent compared to the previous year. This was followed in 1971-72 by another sharp increase of 58.8 per cent. The trend changed in 1972-73 with a drop in consumption of 11.1 per cent due to drought and political instability in the State. The position revived in 1973-74 recording an increase in consumption of 20.8 per cent. This trend continued through 1974-75 with a further increase of 6.9 per cent. Andhra Pradesh was one of the four States in India which recorded an increase in consumption during 1974-75 compared to the previous year.

The overall increase in consumption during the review period was 82.4 per cent.

The State continued to maintain its fifth position in terms of State-wise consumption during the review period.

The seasonwise consumption varied from year to year during the review period. However, barring 1972-73, when the consumption in kharif was more than in rabi, the pattern indicated higher consumption in rabi. The consumption in rabi and kharif during 1974-75 was 52 and 48 per cent respectively. This trend is likely to continue.

Karnataka: The review period began in 1970-71 with a sharp increase in consumption of 85.7 per cent compared to the previous year. The growth rate dropped to 7.7 per cent in 1971-72 and picked up again in 1972-73 with an increase in consumption of 39.3 per cent. The consumption remained stationary in 1973-74 and picked up again in 1974-75 by 25.6 per cent. Karnataka recorded the second largest increase in consumption amongst the States during 1974-75.

The overall increase in consumption during the review period was 88.4 per cent.

Karnataka continued to remain the fourth largest K₂O consuming State during the first four years of the review period but jumped to the third position in 1974-75.

It was only in 1971-72 that the consumption in kharif exceeded that in rabi. In other years of the review period, rabi consumption was more than kharif consumption. The percentage of consumption during kharif and rabi in 1974-75 was 47 and 53 per cent respectively. This pattern is unlikely to change.

Kerala: The sharp drop in consumption of 27.3 per cent in 1970-71 compared to the previous year was followed in the subsequent three years by a consistent growth in consumption of 12.5, 5.6 and 31.6 per cent respectively. This brought up the overall increase in consumption during the first four years of the review period to 56.3 per cent. Due, however, to the high fertiliser prices in general and according low priority to the K₂O use, next only to N and P₂O₅, the consumption dropped in 1974-75 by 12.0 per cent compared to the previous year and reduced the overall increase during the entire review period to 37.5 per cent. In absolute terms the consumption of 16 thousand tonnes in 1970-71 increased only to 22 thousand tonnes in 1974-75.

Beginning with the sixth position in 1970-71 in terms of K₂O consumption Statewise it went down to the seventh position in 1971-72 and maintained this position during 1972-73 and 1973-74. It recaptured its sixth position in 1974-75.

In the first year of the review period the consumption was 50 per cent in each season. The kharif consumption increased to 61 per cent in the following year. The consumption in rabi was higher than in kharif during the last three years of the review period. This trend is likely to continue.

Tamil Nadu: Here again, there was a consistent growth in consumption during the first four years of the review period and the level of consumption increased from 40 thousand tonnes in 1970-71 to 68 thousand tonnes in 1973-74—an overall growth of 70 per cent. Due, however, to the severe drought in the State during 1974-75 and the drop in N consumption there was a drop in K_2O consumption by 23.5 per cent. This brought the overall growth during the review period down to 30 per cent.

Tamil Nadu was the second largest K_2O consuming State in India during the first year (1970-71) of the review period. It became the largest consumer in 1971-72 and retained this distinction during the two subsequent years. It, however, lost the first position to Maharashtra in 1974-75 to revert to the second position.

The seasonwise consumption was erratic. It was 50 per cent in each season during 1970-71. Kharif recorded higher than rabi consumption during the subsequent two years. The position reversed in 1973-74 and the rabi consumption exceeded that of kharif. The pattern reversed once again in 1974-75 and the consumption in kharif was more than in rabi. This pattern is likely to continue.

Other States: No comments are warranted in view of their low consumption.

West Zone

Gujarat: A consistent growth in consumption from 6 thousand tonnes to 13 thousand tonnes during the first four years of the review period resulted in an overall growth of 116.7 per cent. The consumption remained stationary at 13 thousand tonnes during 1974-75 and the overall growth remained unchanged at 116.7 per cent. Compared to the heavy decline in consumption of N and P_2O_5 during 1974-75 due to severe drought in the State, the performance in K_2O is commendable.

Gujarat maintained its ninth position in terms of Statewise consumption during the years 1971-72, 1972-73 and 1973-74 but dropped to the tenth position in 1974-75.

The bulk of the consumption in the State has been during rabi. This pattern is likely to continue.

Maharashtra: After a consistent growth in consumption from 36 thousand tonnes to 48 thousand tonnes during the first three years of the review period the consumption dropped by 14.6 per cent to 41 thousand tonnes in 1973-74. This was followed in 1974-75 by the highest increase of 102.4 per cent recorded by any State during the last three years and the consumption increased to 83 thousand tonnes. This improved the third position maintained by the State in terms of consumption during the first four years of the review period to the first and Maharashtra became the largest K₂O consuming State in 1974-75. The sharp increase in consumption during 1974-75 is attributed to larger consumption in cash crops like sugarcane.

The overall growth in consumption during the review period was 130.6 per cent.

The seasonwise consumption has been erratic. The consumption in rabi was higher than in kharif in the first year, lower in the second and third years, higher again in the fourth year and lower once again in the fifth and the last year of the review period. The pattern of 1974-75 is likely to continue.

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

Central Zone

Madhya Pradesh: The consumption continued to show consistent growth during the first four years of the review period. It rose from four thousand tonnes in 1970-71 to nine thousand tonnes in 1973-74 recording an overall growth of 125 per cent. The trend reversed in 1974-75 due to the reasons listed earlier in the chapter and the consumption dropped by 22.2 per cent. This reduced the overall growth during the review period to 75 per cent.

The absolute consumption of seven thousand tonnes in 1974-75 was very low. Persistent promotional efforts are needed to improve the situation.

The consumption in rabi was by and large twice than in kharif during the review period. This pattern is likely to continue.

Rajasthan: The maximum consumption recorded during any year of the review period was five thousand tonnes in 1971-72 when the consumption increased by 150 per cent compared to the previous year. It dropped by 40 per cent to three thousand tonnes in 1972-73, increased by 33.3 per cent to four thousand tonnes in 1973-74 and dropped again by 50 per cent to two thousand tonnes in 1974-75. The level of P₂O₅

consumption in the State is extremely low and urgent steps need to be taken both by the government and the industry to promote its use.

No growth in consumption was recorded during the review period.

Uttar Pradesh: The review period began in 1970-71 with a drop in consumption of 18.2 per cent compared to the previous year. This was followed in 1971-72 by an increase in consumption of 24.4 per cent. The consumption dropped again in 1972-73 by 12.5 per cent. The position reversed in 1973-74 when consumption increased by 2.0 per cent. The consumption dropped once again in 1974-75 by 6.0 per cent. With these fluctuations in consumption, the overall growth recorded over the review period was only 4.4 per cent despite the State being a high K_2O consuming area.

U.P. was the largest K_2O consuming State in 1970-71; it dropped to the second position in 1971-72, retained the second position during 1972-73 and 1973-74, and dropped further down to the fourth position in 1974-75. Intensive promotional efforts both by the Industry and the Government would be needed to promote K_2O use in the State for balanced fertilisation.

The bulk of K_2O consumption was in rabi during the review period. The consumption in kharif was around 20 to 25 per cent. This pattern is likely to continue.

Other States: The consumption is too low to call for any special comments.

North Zone

Haryana: The consumption ranged between 2 and 4 thousand tonnes during the review period. This is an extremely low consumption compared to N consumption. A sustained programme to promote K_2O consumption is needed.

Punjab: The State recorded a consistent growth in consumption during the first four years of the review period. The consumption of seven thousand tonnes in 1970-71 increased to 23 thousand tonnes in 1973-74 recording an overall growth of 228.5 per cent. The consumption, however, dropped by 26.1 per cent to seventeen thousand tonnes in 1974-75 and brought down the overall growth during the review period to 142.8 per cent.

The reasons for this drop were the lowest priority accorded by the farmer to the K_2O use compared to N and P_2O_5 and the general reluctance to use K_2O because of the recommendation of the Punjab Agricul-

tural University to use K_2O only if the soil tests indicate. The consumption at 17 thousand tonnes in 1974-75 is too low compared to N consumption of 228 thousand tonnes. The gross imbalance in fertiliser use is likely to adversely affect the soil fertility over a period of time.

The State continued to maintain its 8th position in terms of K_2O consumption Statewise during the review period.

The bulk of K_2O consumption was in rabi and this pattern is likely to continue.

Other States: The consumption in Himachal Pradesh, J & K, Delhi and Chandigarh is too small to call for any comments.

East Zone

Bihar: The consumption remained stationary at 7 thousand tonnes during the first two years of the review period. It increased by 57.1 per cent to 11 thousand tonnes in 1972-73 and continued to be at this level during 1973-74. The State recorded a further increase in consumption of 18.2 per cent to 13 thousand tonnes in 1974-75. Bihar was amongst the four States in India which recorded an increase in consumption during 1974-75. Sustained promotional efforts helped improve the situation. The demand potential in the State is, however, large and continued promotional efforts can produce accelerated increase in consumption.

The overall increase in consumption during the review period was 85 per cent.

The State held the 8th position in terms of Statewise consumption in 1970-71, dropped to the 9th position in 1971-72, maintained the 9th position in 1972-73, dropped further to the 10th position in 1973-74 and regained the 9th position in 1974-75.

The consumption was higher in rabi during the last four years of the review period. It was only in 1970-71 that the consumption in kharif was higher than in rabi. The percentage of consumption during rabi and kharif was 62 and 38 respectively in 1974-75. This pattern is likely to continue.

Orissa: A consistent increase in consumption from 2 thousand tonnes in 1970-71 to 7 thousand tonnes in 1973-74 recorded an overall increase of 250 per cent. The trend changed in 1974-75 and the consumption dropped by 14 per cent to 6 thousand tonnes. This reduced the overall growth during the review period to 200 per cent.

The set pattern of higher consumption in rabi compared to kharif is likely to continue.

West Bengal: Sustained promotional efforts resulted in a consistent increase in consumption from 14 thousand tonnes in 1970-71 to 27 thousand tonnes in 1973-74 recording an overall increase of about 93 per cent. The trend reversed in 1974-75 and the consumption dropped by 22.2 per cent to 21 thousand tonnes reducing thereby the overall growth also to 50 per cent.

The review period began in 1970-71 with the State holding the 7th position in terms of Statewise consumption. It rose to the 6th position in 1971-72 and retained it during the two subsequent years. It dropped again to the 7th position in 1974-75.

The consumption in rabi was consistently much higher compared to kharif during the review period. The percentage of consumption during rabi and kharif in 1974-75 was 71 and 29 respectively. This pattern is likely to continue.

Other States: The consumption in other States is small and does not warrant any special comments.

C. CONSUMPTION COMPARISON WITH OTHER COUNTRIES 1973-74

India lost its sixth position in terms of total fertiliser consumption to West Germany in 1973-74 and became the seventh largest fertiliser consuming country in the world.

The position nutrientwise was no different in the case of N and K_2O . India lost its fourth position in N consumption to France and went down to the fifth position. In K_2O it dropped from the eleventh to the twelfth position giving way to Hungary. It, however, maintained its tenth position in terms of P_2O_5 consumption.

Countrywise ranking in fertiliser consumption 1973-74

Ranking	N	P_2O_5	K_2O	N+ P_2O_5 + K_2O
1.	U. S. A. (8,277.0)	U. S. A. (4,600.0)	U. S. A. (4,613.6)	U. S. A. (17,490.6)
2.	U. S. S. R. (6,256.0)	U. S. S. R. (2,699.0)	U. S. S. R. (3,605.0)	U. S. S. R. (12,560.0)
3.	China (3,815.0)	France (2,147.1)	France (1,832.6)	France (5,812.7)
4.	France (1,833.0)	China (1,389.7)	Poland (1,413.3)	China (5,732.5)
5.	India (1,829.1)	Australia (1,170.6)	West Germany (1,163.3)	Poland (3,329.7)
6.		West Germany (916.7)	East Germany (658.3)	West Germany (3,180.8)
7.		Poland (847.2)	Czechoslovakia (576.0)	India (2,838.9)
8.		Japan (792.9)	China (527.6)	
9.		Brazil (725.0)	Brazil (523.3)	
10.		India (649.9)	United Kingdom (442.0)	
11.			Hungary (387.3)	
12.			India (359.9)	
World total	38,765.8	24,239.0	20,662.8	83,667.6

Figures denote consumption in '000 tonnes.

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 decline in consumption because of aberrant weather and limited fertiliser availability. The position nutrientwise was slightly different. Whereas N followed the pattern to total fertiliser consumption, the share of P_2O_5 increased by 0.1 to 2.7 per cent in 1973-74 compared to the previous year. In the case of K_2O , the share increased gradually from 1.4 per cent in 1970-71 to 1.8 per cent in 1972-73. It dropped in 1973-74 to 1.7 per cent.

The share nutrientwise remained the highest in the case of N during the period 1970-71 to 1973-74. In 1973-74 it was 4.7 per cent compared to 2.7 of P_2O_5 and 1.7 of K_2O . Whereas the share of N in 1973-74 was the same as in 1970-71, the shares of P_2O_5 and K_2O increased by 0.4 and 0.3 per cent respectively over this period.

*Countrywise annual growth rate of fertiliser consumption
(N+P₂O₅+K₂O) (1970-71 to 1973-74)*

Country	(percentage)			
	1970-71	1971-72	1972-73	1973-74
India	9.4	20.8	2.6	5.2
Egypt	(-) 0.5	15.4	12.0	9.4
Philippines	11.4	(-) 8.5	(-) 2.5	22.2
Japan	(-) 5.0	(-) 10.0	7.1	(-) 18.5
Korea, Republic of	5.4	11.5	(-) 2.5	16.9
The Netherlands	5.7	(-) 7.7	0.5	2.5
U. S. S. R.	17.0	20.9	9.9	9.6
U. S. A.	5.8	1.9	3.5	7.1
Canada	6.6	10.0	16.7	16.5
China, Mainland	19.6	15.4	11.8	17.5
Australia	11.5	0.7	25.5	28.4
France	10.2	6.6	9.0	8.5
West Germany	5.6	2.1	(-) 1.8	(-) 1.8
Italy	8.7	8.4	6.3	(-) 8.2
Developing Countries	11.8	14.7	17.8	9.8
Developed Countries	7.5	7.1	3.0	6.8
World	8.5	7.7	6.6	8.3

The rate of growth in consumption in India, compared to the previous year, rose from 9.4 per cent in 1970-71 to 20.8 per cent in 1971-72; it dropped to 2.6 per cent in 1972-73 and increased again to 5.2 per cent in 1973-74. Aberrant weather and limited availability of fertiliser were mainly responsible for the low rate of growth recorded during 1972-73 and 1973-74. The slight improvement in the rate of growth in India in 1973-74 compared to the previous year was in line with the world trend which recorded a growth of 8.3 per cent in 1973-74 as against 6.6 per cent in 1972-73.

A consistently high rate of growth in consumption over the 1970-71 to 1973-74 period was recorded by China, Mainland. It was followed closely by USSR and Australia. Australia also recorded the highest rate of growth during the two consecutive years, 1972-73 and 1973-74.

The table on countrywise annual growth rate of fertiliser consumption given on the previous page will be of interest.

CHAPTER III

PLANT NUTRIENTS CONSUMPTION PER HECTARE AND ITS RATIO

A. PLANT NUTRIENTS CONSUMPTION

Data on consumption of plant nutrients (N+P₂O₅+K₂O) per hectare of agricultural land in the country for five years (1970-71 to 1974-75) and estimates for 1975-76 are presented in Table 10.

Consumption of plant nutrients per unit of agricultural land registered a sizable annual increase until 1971-72. The increase thereafter has been only marginal, 0.4 kg/ha in 1972-73 and 0.5 kg/ha in 1973-74 over the previous years. A shortfall in the total availability of fertilisers during the two years, 1972-73 and 1973-74 was responsible for the low increase in the consumption rate. The situation worsened in 1974-75 when for the first time the consumption rate dropped by 0.5 kg/ha compared to the previous year despite easy availability of fertilisers. The actual consumption in 1974-75 at 14.9 kg/ha is much lower than the figure of 22.1 kg/ha estimated under a situation of adequate supply or even 16.9 under constraint supply. A number of factors like aberrant weather in many parts of the country, cumbersome physical controls at State levels, sharp increase in fertiliser and other agricultural input prices, inadequate credit availability, etc., contributed to a drop in total fertiliser consumption in the year under review.

The situation is likely to improve during 1975-76 when consumption is estimated at 17.5 kg/ha.

India ranks perhaps the lowest in consumption of plant nutrients per unit area amongst the agriculturally developed countries of the world, and so is our productivity per unit area of land. This is partially because of averaging, even though rates of application by adopters also are no doubt low. Hardly 15 to 20 per cent of the land receives fertilisers which compare very unfavourably with other developed countries. Consequently the average consumption figure automatically drops sharply when calculated on the basis of total agricultural land of which about 80 per cent does not receive any fertilisers. Nevertheless, the higher rate of consumption in other countries is a measure of the leeway that we have yet to make. It is evident that to attain self-sufficiency in food, which is one of the prime objectives of the Fifth Five Year Plan, consumption of plant nutrients both horizontally and vertically has to be stepped up for which the potential is there. All efforts need to be made to remove constraints which inhibit fertiliser consumption.

There is considerable disparity in consumption of plant nutrients per hectare of agricultural land between different zones and States of the country (Table 11 and Illustration III).

Zonewise consumption figures followed a trend similar to that of last year (1973-74) i.e., highest consumption in the North Zone followed by South, West, Central and East Zones. Consumption levels in the North and South Zones are way ahead of the other zones—and more particularly the East and Central Zones where the level is about a third of the former. Compared to the last year the level of consumption in the year under review has dropped marginally in the North, West and Central Zones. However, there have been marginal increases in the South and East Zones.

North Zone

North Zone comprising States of Haryana, Himachal Pradesh, Jammu and Kashmir and Punjab leads all other zones and within it Punjab ranks first. Comparatively large acreage under assured irrigation and extensive areas under HYVs and multiple cropping are the main contributory factors for higher fertiliser consumption.

This zone leads in respect of nitrogen consumption (22.57 kg/ha) and occupies the second and third positions in respect of phosphate (5.19 kg/ha) and potash (1.55 kg/ha). During the previous year the phosphate consumption was highest in this zone and in respect of potash, it occupied the second position.

Consumption of NPK during 1974-75 has dropped by about 3, 5 and 7 kg/ha in Jammu & Kashmir, Punjab and Haryana, respectively over 1973-74. However, in Himachal Pradesh there was an increase of about 2 kg/ha.

In Punjab during 1974-75 there was a drop in N, P₂O₅ and K₂O consumption over the previous year. The drop in N and P₂O₅ consumption during kharif 1974 was mainly attributed to steep rise in fertiliser prices, delayed monsoon and acute shortage of power in the State. During rabi season consumption of P₂O₅ and K₂O dropped sizably with a marginal increase in N. The drop in P₂O₅ and K₂O consumption has happened primarily due to initial setback in rabi sowing because of low soil moisture and uncertainty of irrigation water and a very much sharp price rise in the case of P₂O₅. Coupled with these the initial shortage in the availability of phosphatic fertilisers during the rabi season and the caution of the Department of Agriculture in using potash only in deficient areas based on soil test instead of blanket application resulted in the drop of P₂O₅ and K₂O consumption levels.

In Haryana a substantial drop in N, P₂O₅ and K₂O consumption resulted primarily from delayed monsoon and lack of rains in the main raddy belt of Karnal and Kurukshetra districts and excessive rains in the bajra tract i.e., Mahendergarh, Bhiwani, Gurgaon and parts of Hissar and Rohtak districts. Setback in rabi sowing was due to unfavourable water supply situation i.e., paucity of soil moisture during sowing and lack of power and consequently uncertainty of irrigation water.

The low initial soil moisture during rabi sowing affected badly the application of basal doses especially of P₂O₅ and K₂O. Switching over from wheat to cultivation of less fertiliser requiring crops like gram, barley and oilseeds and partially or fully withdrawing application of fertilisers to bajra crop due to the hike in fertiliser prices were some of the other main contributory factors.

South Zone

South Zone comprising States of Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Union Territory of Pondicherry continues to rank second amongst the zones. Cultivation of HYV rice and effective promotional work by the industry explain the relatively high level of fertiliser consumption.

This zone leads all other zones in both phosphate and potash consumption though there has been a marginal drop in P₂O₅ and K₂O consumption over the previous year.

Pondicherry recorded highest consumption of NPK (109.26 kg/ha) not only within the zone but also within the country, followed by T.N. (34.26 kg/ha), A.P. (24.63 kg/ha), Kerala (23.63 kg/ha) and Karnataka (18.16 kg/ha).

Pattern of consumption within the zone was rather inconsistent. Consumption of N increased substantially over the previous year in Pondicherry, A.P. and Karnataka and dropped substantially (by about 5 kg/ha) in T.N. and marginally in Kerala. Consumption of P₂O₅ dropped in all the States except in Karnataka where it has increased by about 0.4 kg/ha. Potash consumption increased marginally in A.P. and Karnataka. It dropped by about 1 kg/ha in Kerala and 2 kg/ha in T.N. and remained more or less same in Pondicherry.

In T.N., the decline in N consumption was of a higher magnitude in kharif than in rabi. This has happened due to the failure of monsoon and consequent drought which led to a decline in cropped area in both the seasons substantially (by about 25 per cent) and a reduction in fertiliser application on two accounts—a smaller area was fertilised and dosages were reduced.

Secondly, the decline has been due to the physical controls exercised by reducing the quota for each farmer to half of the nitrogen requirement of the crops in the context of poor availability of fertilisers.

The decline in P_2O_5 and K_2O consumption has been more in rabi than in kharif. Decline in cropped area and high prices have resulted in this drop in consumption.

In the State of A.P., N consumption increased substantially and that of K_2O increased only marginally. In spite of a decline in the kharif cropped area by 6.3 lakh hectares due to failure of monsoon in some parts during 1974-75 as compared to the previous year, the overall level of consumption of N was fairly satisfactory mainly due to a substantial rise in consumption during rabi season. Adequate availability of fertilisers in the State coupled with the increase in irrigated cropped area in Nagarjunasagar Command area contributed to this increase in consumption. The decline in P_2O_5 consumption may be due to the decrease in the area of crops requiring more of phosphate e.g. groundnut. The rate of increase in the prices of mixtures, superphosphate and complexes might have also affected the consumption of P_2O_5 .

The consumption of all the three nutrients has increased substantially in Karnataka. There has been no change in the cropping pattern in the State; however, the easy availability of fertilisers compared to the gross requirements and the promotional efforts are mainly responsible for this increase.

In Kerala, there has been a decline in consumption of all the three nutrients. This is attributed to price hike and inadequate distribution credit.

West Zone

This zone continues to rank third in consumption of NPK per hectare despite the fact that only about 10 per cent of the area is irrigated and the rest is totally dependent on South West monsoon.

There has been a decline in the overall consumption of NPK (by 1.4 kg/ha) over the previous year. While consumption of N and P_2O_5 decreased that of K_2O increased by about 0.9 kg/ha. Consumption of NPK in this zone is slightly lower than the all-India average.

Within the zone, consumption of NPK increased marginally over the previous year in Maharashtra and Goa and decreased substantially in Gujarat (by about 7 kg/ha) and Dadra, Nagar Haveli (31 kg/ha). Consumption of N increased marginally in Maharashtra and substantially

(by 7 kg/ha) in Goa and decreased substantially in Gujarat (4.4 kg/ha) and Dadra, Nagar Haveli (16 kg/ha) over the previous year. Consumption of P_2O_5 decreased substantially in all the States. The consumption of K_2O increased substantially in Maharashtra, decreased in Dadra, Nagar Haveli and more or less remained same in Gujarat and Goa.

In Gujarat the consumption of N declined primarily due to the prevailing drought conditions throughout the State during the kharif season. The impact of drought in Saurashtra region (Bhavnagar, Jamnagar, Junagadh, Amreli, Rajkot, Surendranagar and Kutch districts) was particularly very severe as drought conditions prevailed in the region for the third successive year. In this region the area under groundnut declined by 3-4 lakh hectares. In North Gujarat the rainfall was only about 25 per cent of the normal. In South Gujarat (Broach, Surat, Bulsar and Dang districts) low rainfall has brought a shift in cropping pattern and the farmers have gone for low water and fertiliser consuming crops like jowar. Also, the farmers have curtailed the per hectare doses of fertilisers. In central Gujarat, Panchmahal district was the worst affected on account of drought conditions. Besides drought and low rainfall, physical control, price rise, credit constraints, etc., had affected the N consumption. Due to failure of monsoon, the area under cultivation during the rabi season went down in North Gujarat. Though the physical controls were withdrawn during rabi, other factors mentioned above affected the rabi N consumption also. Phosphate consumption also declined substantially both in rabi and kharif seasons due to the same reasons as for N. Decline in groundnut area, a major phosphate consuming crop, especially in the Saurashtra region and the use of a lower dose in this crop due to price hike resulted in a decline of overall P_2O_5 consumption.

Unlike Gujarat, the State of Maharashtra did not suffer from extensive drought conditions. The rainfall was fairly good. Also, the State has substantial area (in the canal irrigated districts of Kolhapur, Jalgaon and Poona) under cash crops like sugarcane, banana, etc. which consume large quantities of fertilisers as compared to other crops. High yielding varieties were also grown on an extensive area (19.5 lakh hectares). All these explain the higher consumption of N during kharif. In the rabi season the State experienced a marginal setback in N consumption. Overall consumption of P_2O_5 in the State was lower. There was a marginal increase in consumption during kharif but a marked decrease in rabi. Due to high price of P_2O_5 , farmers curtailed the dose and showed a distinct preference in the use of N over P_2O_5 . Potash consumption increased by 2 kg/ha in the State. Potash is not only used through complex

and granulated fertiliser mixtures but also as a straight fertiliser particularly in sugarcane cultivation.

Central Zone

The Central zone comprising Madhya Pradesh, U.P., Rajasthan and Delhi continues to rank fourth in plant nutrients consumption. The average consumption is considerably lower (by 5.5 kg/ha) than the all-India average.

Consumption of all the three nutrients dropped, though marginally, in the period under review over the previous year. Consumption of N has been very low compared to South and North zones and almost at par with that of West and East zones. Phosphate consumption in this zone also has been very low as compared to other zones except that it is slightly higher than that in East zone. Potash consumption has been the lowest in the zone.

The States of M.P. and Rajasthan have so far attained a very low level of NPK consumption. This may be due to averaging for the whole State in which considerable areas of a vast State are arid lands growing fodder crops which are rarely fertilised or are monocropped areas. Poor communication system which hinders promotional efforts and distribution of fertilisers, also contributes to this low level of consumption.

Within this zone P_2O_5 and K_2O consumption has dropped marginally in all the States over the previous year (except that in Delhi where it is at par). Consumption of N marginally increased in U.P. and Rajasthan, but dropped in M.P. and dropped heavily in Delhi (by about 10 kg/ha).

The decline in NPK consumption in the State of M.P. may be attributed to widespread drought during the kharif season, physical controls, price-hike, credit constraint, ban on inter-district movement of fertilisers, etc.

In the State of U.P., N consumption increased marginally both in kharif and rabi seasons thereby increasing the total consumption of NPK over the previous year. However, P_2O_5 and K_2O consumption decreased marginally. Most of the districts in the western and central regions were affected by drought whereas in eastern region some of the districts not only had drought but also floods. In Eastern districts NPK consumption dropped to the tune of 10-15 per cent. In some districts of western U.P. (Bulandshahr, Bijnor, Meerut and Badaun) consumption of N increased by about 30 per cent. Districts of Bareilly, Rampur, Agra and Etah

recorded a drop of about 35 per cent. Most of the districts in central U.P. showed an upward trend in consumption but in Farrukhabad and Barabanki, two of the most agriculturally important districts, the consumption of N and P_2O_5 declined. The marginal increase in N consumption witnessed may be due to the fact that the farmers could purchase fertilisers at old prices even after the price rise and stock them for use in kharif season.

The selective buying by the farmer affected the sale of P_2O_5 and K_2O . Also, due to prevailing drought and the consequent poor harvest in the kharif, farmers' purchasing power for fertiliser was reduced in the subsequent rabi. This also led to the selective use of N in certain crops e.g. sugarcane. Other factors like physical controls, inadequate credit, etc., also affected adversely the consumption of NPK.

Consumption of N increased marginally in Rajasthan. This increase has been attributed mainly to additional flow of water from Pong Dam into Rajasthan Canal network, energising of 10,000 tubewells in the State and sowing in an additional area of 25,000 hectares in the Chambal and Rajasthan Canal command areas. However, there was a marginal drop in the consumption of N in kharif season due to non-availability of nitrogenous fertilisers in some of the districts at the peak consumption period. Also, failure of rains in Jodhpur division, a major bajra growing area and in Udaipur division, maize and jowar growing area, led to a drop in foodgrain area by about 20 lakh hectares. Due to high prices of fertilisers the farmers made selective use of N which resulted in an increase in N consumption and a lower P_2O_5 and K_2O consumption. Besides, the State Department of Agriculture recommended application of only N and P_2O_5 which affected K_2O consumption.

East Zone

The East zone comprising the Union Territories of Manipur, Tripura, Nagaland and Meghalaya and four States viz., Assam, Bihar, Orissa and West Bengal recorded the lowest level of NPK consumption per hectare (8.68 kg/ha) which is almost half of the all-India average.

Such a low level of consumption is anomalous in a region with nearly 25 per cent of area under irrigation and with good to heavy rainfall. Consumption figures of the plantation crop like tea have not been taken into account which probably has led to a somewhat lower overall figure.

Floods, drought and cyclonic storms in Orissa; floods in West Bengal and Assam; poor promotional activities; problems of fertiliser movement;

low growth of HYVP; and non-availability of fertilisers and seeds in time are some of the reasons for the generally very low level of NPK consumption in this zone.

In the year under review there has been a marginal increase in the total NPK consumption (0.4 kg/ha) over the previous year. Consumption of N and P_2O_5 has increased but that of K_2O has dropped. Within this zone, West Bengal recorded the highest consumption (15.31 kg/ha) and Assam the lowest (0.91 kg/ha).

In West Bengal, both N and P_2O_5 consumption increased, but there was a drop in K_2O consumption. Promotional activities of the major marketer in the area was one contributory cause. During kharif 1974, consumption of N, P_2O_5 and K_2O increased by about 22, 52 and 97 per cent respectively over the corresponding period in previous year. This was mainly due to more favourable weather condition, withdrawal of physical controls imposed by the State making the fertiliser availability easy, increased availability due to diversion of stock from Orissa and diversion of a part of the jute areas to HYV summer paddy resulting in more consumption of NPK. However, in rabi season there has been a substantial drop in K_2O consumption and a marginal drop in P_2O_5 over the corresponding period in previous year. This was due to the reimposition of restriction at the time of potato and wheat sowing which restricted the use of P_2O_5 and K_2O as basal application. However, with the subsequent relaxation of controls, N could be freely used for top-dressing, so that N consumption did not suffer to that extent. In fact consumption of N increased by about 56 per cent.

Consumption of all the nutrients (NPK) in Bihar increased over the previous year and the overall consumption was higher by 1 kg/ha. In kharif, consumption of K_2O increased but that of N and P_2O_5 dropped. However, in rabi season there was a substantial increase in N and P_2O_5 consumption and marginal increase in K_2O . Floods in north Bihar, erratic rainfall and drought in other parts and sudden price rise in fertilisers made the farmers hesitant to use fertilisers during the kharif season. Increase in potash consumption was obviously due to sustained promotional activities without any hindrance by way of controls. During rabi season higher consumption of fertilisers resulted from easy availability of fertilisers, large-scale campaign on rabi production by the State Government, increased acreage under HYV wheat and growing intermediary crop like sweet potato, leguminous crops in certain areas instead of leaving it fallow.

Consumption of all the three nutrients (NPK) dropped over the previous year in Assam, Orissa, Manipur and Tripura. However, in Meghalaya N and P_2O_5 consumption level remained similar to that of the previous year but consumption of K_2O dropped thereby lowering the total NPK consumption. Erratic and inadequate rainfall, physical controls and fall in paddy area were responsible for lower consumption in Orissa. In Assam occurrence of floods and lack of promotional efforts contributed to the drop in consumption level.

B. RATIO OF PLANT NUTRIENTS CONSUMPTION

Data on consumption ratio of different plant nutrients (N:P:K) in the country for the last five years (1970-71 to 1974-75) and estimates for 1975-76 are presented in Table 12.

A perusal of the data reveals that there has not been any significant change in the ratios of N:P:K consumption in the country despite growing awareness of the need for balanced use of fertilisers for the HYV's which remove all the nutrients in relatively higher quantities. Indian soils are becoming deficient in one or the other nutrient elements due to increased cultivation of HYV's and increased cropping intensity. Realising the soil fertility depletion due to these agricultural developments, a realistic ratio of 4:2:1 (N:P:K) was envisaged by the end of Fourth Plan period. However, the ratio actually attained was 5.1:1.8:1.

During the years 1971-72 and 1972-73 marginal improvements were observed in the ratios of nutrients consumption over 1970-71. In the year 1973-74 the disparity in the use of N with that of P_2O_5 and K_2O reduced further. Growing consciousness of balanced use of fertilisers due to the promotional efforts of the Government and fertiliser industry, compulsory stocking of phosphatic and potassic fertilisers along with nitrogenous fertilisers by the dealers, increasing domestic production of NPK complex and mixed fertilisers and limited availability of nitrogenous fertilisers for direct application were the primary contributing factors. However, in the year under review (1974-75) the ratio attained was 5.0:1.5:1, which is almost the same as that prevailed in 1970-71. The relative consumption of phosphate, however, had a setback—an unfortunate development. Aberrant weather, high price of fertilisers, particularly that of P_2O_5 , inadequate credit availability, etc., have contributed to widening the gap between N and P_2O_5 consumption. Present indications are that in 1975-76 the nutrients consumption ratio will not materially change (Table 12).

In the maintenance of soil fertility and maximisation of agricultural production, balanced fertilisation holds the key. Besides the imbalance in the use of N, P_2O_5 and K_2O , deficiencies of micro and secondary nutrients like zinc, manganese, sulphur, etc., are being noticed in many areas especially where HYV's are being grown intensively. Deficiency of these nutrients is also beginning to limit yields. Vigorous efforts aimed at promoting balanced use of plant nutrients (including secondary and micro nutrients) based on soil test so as to arrest soil fertility depletion and increase agricultural productivity on a sustained basis are called for in remedying the situation.

Within the country, the ratios of N:P:K consumption vary widely from zone to zone and State to State. These depend upon 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. The zonewise and Statewise consumption ratios are presented in Table 13.

From the point of view of balanced use of N:P:K fertilisers West zone ranks first in the year under review with a ratio of 2.6:1.0:1.0, followed by South (3.76:1.33:1.0), Central (8.22:2.0:1.0), East (4.79:1.22:1.0) and North (14.59:3.36:1). In the previous year, South zone ranked first, followed by West, East, Central and North zones.

A critical analysis indicates that the pattern of consumption in the West zone is fairly well balanced and that proportionate to nitrogen, phosphate use is slightly low in South zone and substantially low in Central, North and East zones. Similarly potash consumption is marginally low in South and East zones and substantially low in North and Central zones. Part of the reason may be the agro-climatic conditions and the cropping patterns in the respective zones. Nevertheless, promotional and marketing efforts will have to be intensified for greater use of phosphate in Central, North and East zones and Potash in North and Central zones.

The consumption ratios in the States of Kerala, Karnataka, Tamil Nadu, Pondicherry, Maharashtra, Goa, Himachal Pradesh, Orissa and West Bengal are fairly well balanced. The ratios are below the all-India average in all other States. The imbalance in consumption continued in an acute form in the States of Manipur (23:2:1), Haryana (30.39:3.57:1), Assam (5.75:0.63:1), Rajasthan (26.55:4.27:1), Punjab (13.41:3.53:1), U.P. (7.42:1.63:1), J. & K. (17.0:2.8:1), Andhra Pradesh (8.21:2.37:1) and Delhi (14:4:1). These are then the areas where corrective action needs to be taken.

TABLES
(on April-March Basis)

Table 1

*Percentage increase in production, distribution and consumption of
N, P₂O₅ and K₂O (1970-71 to 1975-76)*

Nutrient	Percentage increase over previous year					1975-76*
	1970-71	1971-72	1972-73	1973-74	1974-75	
Production¹						
Nitrogen	18.9	12.9	11.1	(-) 0.5	13.0	45.1
Phosphate	1.3	27.2	13.8	(-) 1.5	18.0	37.8
(N + P ₂ O ₅)	14.6	5.6	11.7	(-) 0.7	10.3	43.5
Distribution²						
Nitrogen	26.0	27.1	4.4	(-) 7.9	14.2	26.5
Phosphate	30.2	54.5	11.5	(-) 1.3	(-) 8.9	45.3
Potash	47.0	29.9	21.9	26.2	(-) 19.0	26.5
(N + P ₂ O ₅ + K ₂ O)	28.7	32.1	7.7	(-) 1.5	3.9	30.0
Consumption³						
Nitrogen	9.3	18.4	1.0	2.8	0.5	18.3
Phosphate	10.0	22.3	4.1	10.6	(-) 17.3	22.7
Potash	9.0	33.3	9.2	8.2	(+) 2.8	8.1
(N + P ₂ O ₅ + K ₂ O)	9.5	20.8	2.6	5.2	(-) 3.3	17.8

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

*Year under estimation.

¹For details, see Table 5.

²For details, see Tables 7 (b), 8 (b) and 9 (b).

³For regionwise and seasonwise details, see Tables 7 (a), 8 (a) and 9 (a).

Table 2

Chronology of fertiliser manufacture

Approx. year of first manufacture	Fertiliser material manufactured	Factory which first manufactured	Total no. of units operating (as on 1-4-1975)
(i) 1906	Single superphosphate	E.I.D. - Parry Ltd. Ranipet	30
(ii) 1906	Fertiliser mixtures		661
(iii)	Ammonium sulphate		11
1933	(a) As a by-product of steel industry	(a) Tata Iron & Steel Co. Ltd., Jamshedpur	7
1941	(b) Using sulphuric acid	(b) Mysore Chemicals & Fertilisers Ltd., Belagula	1
1947	(c) Using gypsum as a raw material	(c) FACT, Alwaye	4*
(iv) 1959	Ammonium sulphate nitrate	FCI Ltd., Sindri	1
	Urea	FCI Ltd., Sindri	14
	Ammonium chloride (Agricultural)	New Central Jute Mills Co. Ltd., Varanasi	1
(v) 1960	Ammonium phosphate	FACT, Alwaye	2
(vi) 1961	Calcium ammonium nitrate	FCI Ltd., Nangal	2
(vii) 1965	Nitrophosphate	FCI Ltd., Trombay	1
(viii) 1967	Diammonium phosphate	Gujarat State Fertilisers Co. Ltd., Baroda	1
(ix) 1968	Triple superphosphate	Dharamsi Morarji Chemical Co. Ltd., Ambernath	1
	Urea ammonium phosphate	Coromandel Fertilisers Ltd., Vizag	2
	NPK complex fertilisers	FCI Ltd., Trombay	4

- Note:**
1. Granulation of superphosphate and manufacture of granulated fertiliser mixtures were started by M/s. Phosphate Co. Ltd., Rishra and M/s. Bharat Fertiliser Industries Ltd., Bombay, respectively.
 2. Units manufacturing more than one end-product are correspondingly accounted for more than once in the last column given above. [See also Appendix 1 (b).]
- * One factory is using both sulphuric acid and gypsum for the manufacture of ammonium sulphate.

Table 4a

Forms in which fertilisers are produced

Kind of fertiliser	Grade	Production ('000 tonnes)						Percentage \pm increase over previous year					
		1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*	1971-72	1972-73	1973-74	1974-75	1975-76*	1970-71 to 1974-75
Ammonium sulphate	(20.6% N)	638 (15.6)	582 (12.7)	554 (10.1)	574 (11.2)	583 (10.1)	595 (7.1)	(-18.9)	(-5.5)	3.6	1.6	2.0	8.6
Ammonium sulphate nitrate	(26% N)	42 (1.3)	30 (0.8)	58 (1.4)	48 (1.1)	27 (0.6)	30 (0.5)	(-28.6)	93.3	(-17.3)	(-43.7)	11.1	(-35.7)
Urea	(46% N)	1,096 (60.1)	1,237 (60.1)	1,413 (61.1)	1,408 (61.8)	1,734 (67.4)	2,790 (74.6)	12.9	14.0	(-) 0.1	23.2	60.9	58.2
Calcium ammonium nitrate	(25% N)	315 (9.4)	412 (10.9)	412 (9.8)	431 (10.3)	406 (8.6)	380 (5.5)	(-30.8)	—	4.6	(-5.8)	(-6.5)	28.9
Ammonium chloride	(25% N)	22 (0.7)	18 (0.5)	14 (0.4)	14 (0.3)	10 (0.2)	14 (0.2)	(-18.2)	22.2	—	(-28.6)	40.0	(-54.5)
Ammonium phosphate sulphate	(16-20-0) (20-20-0)	88 — (1.7)	103 — (1.7)	94 3 (1.5)	105 20 (1.5)	120 24 (2.1)	118 25 (1.4)	17.0	(-5.9)	28.9	15.2	(-0.7)	63.6
Nitrophosphate	(15-15-15)	139 ¹ (3.0)	200 ¹ (4.2)	240 (3.4)	213 (3.0)	211 (2.7)	220 (1.9)	43.9	20.0	(-11.3)	(-0.9)	4.3	51.8
Diammonium phosphate	(18-46-0)	55 (1.2)	50 (1.0)	69 (1.1)	60 (1.0)	67 (1.0)	65 (0.7)	(-9.1)	38.0	(-13.0)	11.7	(-3.0)	21.8
Urea ammonium phosphate	(28-28-0) (20-20-0)	160 60 (6.8)	195 36 (6.6)	175 17 (4.9)	172 — (4.6)	137 — (3.2)	225 — (3.6)	5.0	(-4.4)	(-11.5)	(-20.3)	64.2	(-37.7)
NPK complex fertilisers	(17-17-17) (18-27-3) (14-28-14) (14-35-14) (10-26-26) (12-32-16) (18-18-18)	— — — 7 ² — — — (0.2)	55 5 13 37 ² — — — (1.5)	242 — 44 28 — — — (4.9)	209 — 59 37 — — — (4.7)	226 — 34 28 14 16 — (4.1)	200 — 30 40 170 110 20 (4.5)	—	340.0	(-13.6)	8.1	(-11.5)	—
								—	228.0	34.0	(-42.4)	(-11.8)	—
								—	833.0	32.1	(-24.3)	42.9	300.0
								—	—	—	—	1,114.3	—
								—	—	—	—	587.5	—
								—	—	—	—	—	—
Total N		838 (100.0)	946 (100.0)	1,055 (100.0)	1,050 (100.0)	1,186 (100.0)	1,721 (100.0)	12.9	11.1	(-) 0.4	13.0	45.1	41.5

Note: *Estimated.

¹Of different grades, break-up of which is given in Appendix IV.

²Of grade (22-22-11).

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

Table 4b

Forms in which fertilisers are produced

Kind of fertiliser	Grade	Production ('000 tonnes)						Percentage \pm increase over previous year					
		1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*	1971-72	1972-73	1973-74	1974-75	1975-76*	1970-71 to 1974-75
Superphosphate	(16% w.s. P ₂ O ₅)	613 (43.0)	773 (42.7)	789 (38.1)	773 (38.2)	819 (39.6)	864 (30.3)	26.1	2.0	(-) 2.2	5.9	5.5	33.6
Higher grade of superphosphate		8 (0.6)	3 (0.2)	— (-)	10 ¹ (0.6)	12 ¹ (0.4)	15 ¹ (0.6)	62.5	—	—	20.0	25.0	50.0
Triple superphosphate	(45% w.s. P ₂ O ₅)	6 (1.2)	8 (0.6)	5 (0.5)	3 (0.3)	3 (0.7)	47 (4.6)	33.3	(-)37.5	(-)40.0	—	1,466.7	(-)50.0
Ammonium phosphate sulphate	(16-20-0) (20-20-0)	88 — (7.9)	103 — (7.2)	94 3 (5.8)	105 20 (7.7)	120 24 (8.7)	118 25 (6.3)	17.0	(-)5.9	28.9	15.2	(-) 0.7	63.6
Nitrophosphate	(15-15-15)	139 ² (10.5)	200 ² (13.7)	240 (10.9)	213 (9.8)	211 (9.6)	220 (7.2)	43.9	20.0	(-)11.3	(-) 0.9	4.3	51.8
Diammonium phosphate	(18-46-0)	55 (11.1)	50 (7.8)	69 (9.7)	60 (8.6)	67 (9.3)	65 (6.6)	(-)9.1	38.0	(-)13.0	11.7	(-)3.0	21.8
Urea ammonium phosphate	(28-28-0) (20-20-0)	160 60 (25.0)	195 36 (21.3)	175 17 (15.8)	172 — (14.8)	137 — (11.6)	225 — (13.8)	5.0	(-)4.4	(-)11.5	20.3	64.2	(-)37.7
NPK complex fertilisers	(17-17-17) (18-27-3) (14-28-14) (14-35-14) (10-26-26) (12-32-16) (18-18-18)	— — — 7 ³ — — —	55 5 13 37 ³ — — —	242 — 44 28 — — —	209 — 59 37 — — —	226 — 34 28 14 16 —	200 — 30 40 170 110 20 (30.6)	— — — — — — —	340.0 — 228.0 833.0 — — —	(-)13.6 — 34.0 32.1 — — —	8.1 — (-)42.4 (-)24.3 — — —	(-)11.5 — (-)11.8 (-)42.9 1,114.3 587.5 —	— — — 300.0 — — —
Total P₂O₅		228 (100.0)	290 (100.0)	330 (100.0)	325 (100.0)	331 (100.0)	456 (100.0)	27.2	13.8	(-) 1.5	1.8	37.8	45.2

Note: *Estimated.

¹"Pelofos" (18% available P₂O₅ containing 5% w.s. P₂O₅).²Of different grades, break-up of which is given in Appendix IV.³Of grade (22-22-11).

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

Table 5

Production of fertilisers in States (nitrogen & phosphates)

('000 tonnes)

Zone/State	Nitrogen (N)						Phosphates (P ₂ O ₅)					
	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	146	174	225	253	232	453	111	134	170	175	165	180
Andhra Pradesh	75	65	59	54	47		67	74	71	72	60	
Kerala	30	36	29	50	75		16	15	14	22	22	
Karnataka	—	—	—	—	—		a	1	1	a	—	
Tamil Nadu	41	73	137	149	111		28	44	64	81	82	
West	201	253	264	282	376	540	80	104	104	100	110	195
Gujarat	147	184	203	161	183		34	39	42	38	51	
Maharashtra	54	69	61	56	58		46	65	62	62	59	
Goa	—	—	—	65	135		—	—	—	—	a	
Central	300	321	363	298	360	409	27	40	39	33	38	53
Madhya Pradesh	6	5	6	5	6		9	14	11	10	14	
Rajasthan	114	107	127	110	86		8	8	8	4	7	
Uttar Pradesh	180	209	230	183	268		2	5	5	5	6	
Delhi	—	—	—	—	—		8	13	15	14	12	
North	55	57	54	62	40	45	—	—	—	—	—	—
Punjab	55	57	54	62	40		—	—	—	—	—	
East	136	141	148	155	178	274	10	12	17	17	18	28
Assam	28	30	34	36	40		2	1	—	—	—	
Bihar	77	56	59	61	56		1	2	2	1	2	
Orissa	25	50	51	48	64		—	—	—	2	2	
West Bengal	6	5	4	10	18		7	9	15	14	15	
All - India	838	946	1,055	1,050	1,186	1,721	228	290	330	325	331	456

* Estimated.

a Less than 500 tonnes.

Table 6a

Forms in which fertilisers are consumed : Sources of N

Kind of fertiliser	Grade	Distribution ('000 tonnes)						Percentage ± over previous year					
		1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*	1971-72	1972-73	1973-74	1974-75	1974-75 over 1970-71	1975-76*
Ammonium sulphate	(20.6 % N)	1044 (16.5)	877 (10.9)	774 (9.3)	629 (8.0)	757 (8.6)	750 (6.6)	(-) 16.0	11.7	(-) 18.7	20.3	(-) 27.5	(-) 0.9
Calcium ammonium nitrate	(25 % N) (26 % N)	319 241 (0.9)	412 323 (11.9)	417 297 (10.4)	421 178 (9.4)	413 290 (9.7)	380 250 (6.9)	31.3	(-) 2.9	(-) 16.1	17.4	25.5	3.8
Urea	(46 % N)	1701 (59.7)	2234 (61.8)	2424 (64.2)	2280 (65.0)	2684 (67.1)	3500 (69.1)	31.3	8.5	(-) 6.0	17.7	57.8	30.4
Ammonium sulphate nitrate	(26 % N)	70 (1.4)	44 (0.7)	56 (0.8)	50 (0.8)	41 (0.6)	40 (0.4)	(-) 37.2	27.3	(-) 10.7	(-) 18.0	(-) 41.4	2.5
Ammonium chloride	(25 % N)	27 (0.5)	20 (0.3)	14 (0.2)	14 (0.2)	30 (0.4)	45 (0.5)	(-) 26.0	(-) 30.0	Nil	114.3	11.1	50.0
Ammonium phosphate sulphate	(16-20-0) (20-20-0)	86 2 (1.0)	101 36 (1.4)	99 2 (0.9)	103 22 (1.3)	117 24 (1.3)	120 25 (1.0)	55.7	(-) 26.3	23.8	12.8	60.2	2.8
Diammonium phosphate	(18-46-0)	156 (2.3)	344 (3.7)	429 (4.4)	401 (4.5)	363 (3.5)	400 (3.1)	120.5	24.7	(-) 20.3	(-) 9.5	131.2	10.1
Nitrophosphate		168 (2.3)	206 (2.4)	211;36 (2.3)	214;190 (4.3)	184;122 (2.8)	230;235 (3.5)	22.6	19.9	63.6	(-) 24.3	82.1	52.0
Mono-ammonium phosphate	(11-55-0)	— (-)	— (-)	12 (0.1)	9 (0.1)	— (-)	100 (1.0)	—	—	(-) 25.0	—	—	—
Urea ammonium phosphate	(28-28-0) (20-20-0)	142 5 (3.7)	226 42 (4.3)	175 20 (3.1)	173 (3.0)	134 (2.0)	225 (2.7)	84.8	(-) 27.3	(-) 11.3	(-) 22.5	(-) 5.6	67.9
NPK complex fertilisers	(15-15-15)@ (17-17-17) (18-27-3) (14-28-14) (10-26-26) (14-35-14) (12-32-16) (18-18-18)	162 — — — — 40@@ — — (1.7)	296 45 3 12 — 6@@ — (3.3)	178 238 — 44 — 26 — (4.3)	22 221 — 59 — 39 — (3.4)	172 211 — 34 5 30 13 (4.0)	250 210 — 30 170 40 110 20 (5.2)	79.2	34.3	(-) 29.9	36.4	130.2	78.5
Total N		1310 (100.0)	1665 (100.0)	1739 (100.0)	1613 (100.0)	1842 (100.0)	2330 (100.0)	27.1	4.4	(-) 7.9	14.2	40.6	26.5

Note: * Estimated.

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

@@ Of 22-22-11.

— Ammonium nitrate phosphate (20-20-0).

— Ammonium nitrate phosphate (26-14-0).

Table 6b

Forms in which fertilisers are consumed: Sources of P₂O₅

Kind of fertiliser	Grade	Distribution ('000 tonnes)						Percentage ± over previous year					
		1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*	1971-72	1972-73	1973-74	1974-75	1974-75 over 1970-71	1975-76*
Superphosphate	(16% w.s. P ₂ O ₅)	684	750	794	835	733	800	9.6	5.9	5.2	(- 12.2	7.2	9.1
'Pelofos'		—	—	—	9	9	15	—	—	—	Nil	—	66.7
Triple superphosphate	(45 % w.s. P ₂ O ₅)	8 (36.4)	7 (25.7)	4 (24.3)	5 (25.4)	3 (24.4)	50 (21.5)	(-) 12.5	(-) 42.9	25.0	(-) 40.0	(-) 62.5	1566.7
Ammonium phosphate sulphate	(16-20-0) (20-20-0)	86 2 (5.7)	101 36 (5.7)	99 2 (3.7)	103 22 (4.6)	117 24 (5.8)	120 25 (4.1)	55.7	(-) 26.3	23.8	12.8	60.2	2.8
Diammonium phosphate	(18-46-0)	1.6 (23.2)	344 (33.0)	429 (37.0)	401 (34.2)	363 (34.0)	400 (25.8)	120.5	24.7	(-) 20.3	(-) 9.5	131.2	10.1
Nitrophosphate		168 (10.8)	206 (8.6)	211;36 (7.3)	214;190 (12.9)	184;122 (10.8)	230;235 (11.4)	22.6	19.9	63.6	(- 24.3	82.1	52.0
Mono-ammonium phosphate	(11-55-0) (28-28-0)	— (-)	— (-)	12 (1.1)	9 (0.9)	— (-)	100 (3.4)	—	—	(-) 25.0	—	—	—
Urea ammonium phosphate	(20-20-0)	142 5 (13.2)	226 42 (15.0)	175 20 (9.9)	173 — (8.9)	134 — (7.6)	225 — (8.8)	84.8	(-) 27.3	(-) 11.3	(-) 22.5	(-) 5.6	67.9
NPK complex fertilisers	(15-15-15)@ (17-17-17) (18-27-3) (14-28-14) (14-35-14) (10-26-26) (12-32-16) (18-18-18)	162 — — — 40@@ — — (10.7)	296 45 3 12 6@@ — — (12.0)	178 238 — 44 26 — — (16.7)	22 221 — 54 39 — — (13.1)	172 211 — 34 30 5 13 (17.6)	250 210 — 30 40 20 170 110 (25.0)	79.2	34.3	(-) 2.99	36.4	130.2	78.5
Total P₂O₅		310 (100.0)	479 (100.0)	434 (100.0)	541 (100.0)	492 (100.0)	715 (100.0)	54.5	11.5	(-) 3.8	(-) 9.0	58.7	45.3

Note: * Estimated.

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

@@ Of 22-22-11.

- - Ammonium nitrate phosphate (20-20-0).
- - - Ammonium nitrate phosphate (26-14-0).

Table 6c

Forms in which fertilisers are consumed: Sources of K₂O

Kind of fertiliser	Grade	Distribution ('000 tonnes)						Percentage \pm over previous year					
		1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*	1971-72	1972-73	1973-74	1974-75	1974-75 over 1970-71	1975-76*
1. Muriate of potash (60% K ₂ O) (straight use)		226 (68.8)	281 (65.6)	335 (64.5)	476 (75.0)	327 (62.5)	425 (63.8)	24.3	19.2	42.1	(-)31.3	44.7	30.0
2. Muriate of potash (60% K ₂ O) (used as intermediate for complex fertilisers)		50 (15.3)	70 (16.5)	137 (26.3)	147 (23.1)	148 (28.3)	175 (26.2)	40.0	95.7	7.3	0.7	196.0	11.2
3. Sulphate of potash (50% K ₂ O) (straight use)		14 (3.6)	3 (0.6)	4 (0.6)	8 (1.0)	6 (1.0)	5 (0.6)	(-)78.6	33.3	100.0	(-)25.0	(-)57.2	(-)16.7
4. NPK complex fertilisers (imported)		162 (12.3)	296 (17.3)	178 (8.6)	22 (0.9)	172 (8.2)	250 (9.4)	82.7	(-)39.1	(-)87.6	681.8	6.1	45.3
Total K₂O		197 (100.0)	256 (100.0)	312 (100.0)	381 (100.0)	314 (100.0)	400 (100.0)	29.9	21.9	22.1	(-)17.6	59.3	27.4

Note: * Estimated.

Table 7a

Seasonwise consumption of Nitrogen (N) by States and their percentage increase (1970-71 to 1975-76) (Concluded)

Zone/State	1970-71			1971-72			1972-73 ^φ			1973-74 ^φ			1974-75 ^φ @			1975-76*		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
South	-11.9	+8.6	-2.8	+11.3	+8.3	+9.7	-11.3	-0.3	-5.6	+13.2	-8.8	+0.9	-5.1	+30.0	-12.6	+8.6	+10.9	+9.9
Andhra Pradesh	-20.3	-3.7	-12.7	-1.0	-9.5	-5.3	-20.8	+4.2	-8.7	+12.5	-19.2	-5.1	+7.8	+100.0	+51.1			
Karnataka	-19.4	-12.5	-13.3	-2.0	+13.9	+5.4	-2.1	+20.4	+9.1	+16.7	-11.9	+0.9	+10.7	+30.8	+20.4			
Kerala	-14.3	+72.0	+6.9	+33.3	+7.1	+19.2	-25.0	+40.0	+6.5	+25.0	-4.8	+6.0		-10.0	-5.8			
Tamil Nadu	+16.1	+8.7	-11.5	+36.9	+25.7	+29.7	-4.5	-16.0	-11.2	+10.6	+2.9	+6.3	-27.7	-16.7	-21.8			
West	+25.3	+53.5	+38.0	+5.5	+21.1	+13.3	+7.8	-20.5	-7.3	+8.9	+45.7	+25.8	+3.0	-26.1	-12.5	+7.9	+50.4	+27.0
Gujarat	+5.0	+156.0	+63.1	+23.8	-1.6	+8.5	+13.5	-12.7	-0.9	-1.7	+47.3	+21.9	-19.0	-46.9	-35.3			
Maharashtra	+40.4	-2.8	+20.7	-6.1	+51.1	+17.1	+3.2	-26.5	-12.3	+18.8	+42.0	+28.9	-19.7	-2.9	+8.2			
Central	+0.7	+4.4	+1.9	+24.3	+24.1	+24.2	-13.6	+21.1	+7.7	+6.3	-14.0	-7.9	-4.8	-3.0	-3.6	+36.6	+14.5	+22.3
Madhya Pradesh	+70.6	+29.4	+50.0	+41.4	+72.7	+54.9	-17.1	-52.6	+16.4	-17.7	+1.7	-5.5	-32.2	-47.5	-43.7			
Rajasthan		+58.8	+32.3	+28.6	+18.5	+22.0	-16.7	+3.1	-4.0	+26.7	+12.1	+16.7	-10.5	+10.8	+3.6			
Uttar Pradesh	-9.6	-2.1	-4.9	+19.2	+18.7	+18.9	-11.3	+18.4	+7.8	+10.0	-21.0	-11.8	+3.3	+7.7	+6.1			
North	+33.3	+18.4	+22.7	+27.6	+25.1	+25.9	+14.4	+5.3	+8.2	+19.8	-2.8	+4.8	-23.3	-1.8	-9.5	+27.5	+17.9	+21.0
Haryana	+58.3	+27.3	+35.6	+15.8	+21.4	+19.7	+36.4	+3.9	+13.7	+30.0	+3.8	+13.3	-41.1	-14.6	-25.5			
Himachal Pradesh		+50.0	+33.3	+100.0		+33.3		+50.0	+25.0		-33.3	-20.0	+50.0	+100.0	+75.0			
Jammu & Kashmir		+50.0	+33.3				+66.7	+200.0	+100.0	+20.0	+33.3	+25.0		-25.0	-10.0			
Punjab	+29.3	+15.1	+19.0	+32.1	+27.0	+28.6	+5.7	+3.9	+4.4	+14.9	-5.6	+8.5	-17.6	+3.9	-3.8			
East	-4.5	+38.3	+15.7	+29.7	+25.3	+27.2	-26.5	+25.3	+2.1	+50.8	-34.4	-7.3	-6.5	+30.6	+10.7	+16.3	+21.6	+19.9
Assam	-37.3	+200.0	+25.0				+100.0		+40.0	-75.0	+33.3	-28.6		-75.0	-60.0			
Bihar	+3.2	+10.3	+7.1	+12.5	+20.9	+17.3	-30.5	+23.1	+1.1	+52.0	-50.0	-21.3	-7.9	+40.6	+14.3			
Orissa	+12.5	+18.2	+11.1	+142.8	+53.8	+85.0	-11.8	+30.0	+10.8	+60.0	-23.1	+7.3	-37.5	+5.0	-18.2			
West Bengal	-8.0	+200.0	+38.2	+17.4	+20.8	+19.1	-44.5	+27.8	-7.1	+80.0	-27.0	+3.8	+22.2	+55.6	+38.9			
All India	+1.5	+15.8	+9.3	+17.0	+19.3	+18.4	-7.2	+7.0	+1.1	+15.2	-7.3	+2.8	-4.0	+6.4	+0.5	+17.9	+18.7	+18.3

N.A. Not available.

^φ For 12 months (February/January).

@ It includes Kharif 1974 actuals and Rabi 1974-75 estimates presumably for December 1974 and January 1975.

* FAI estimates.

£ Less than 500 tonnes.

- Note :**
1. Figures have been rounded off to the nearest thousand tonne.
 2. Percentages are derived based on data given on page T-11.
 3. Due to marginal change in consumption of Union Territories, percentage change is not worked out.

Table 7b

Distribution of Nitrogen (N) by States

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	365	375	439	472	453	595	715
Andhra Pradesh	209	102	129	170	155	285	
Kerala	53	9	17	28	32	33	
Karnataka	29	32	74	82	85	114	
Tamil Nadu	59	75	111	174	161	148	
Pondicherry	a	a	1	3	2	2	
U.P.A.S.I.	6	8	5	8	5	a	
Coffee Board	6	5	8	8	7	8	
Rubber Board	2	2	—	—	5	a	
Cardamom Board	—	a	—	a	a	—	
Tea Board	—	—	—	—	—	3	
West	156	166	259	228	248	229	345
Gujarat	71	110	148	116	128	99	
Maharashtra	84	56	44	111	118	128	
Goa	1	a	—	a	2	2	
Dadra, Nagar Haveli	a	a	—	a	a	a	
Central	198	269	390	468	442	457	565
Madhya Pradesh	47	50	66	85	74	86	
Rajasthan	21	33	43	51	58	50	
Uttar Pradesh	127	183	276	329	309	319	
Delhi	3	3	5	3	1	2	
North	182	198	273	319	274	295	380
Haryana	43	50	70	81	78	64	
Himachal Pradesh	3	4	4	3	3	6	
Jammu & Kashmir	1	—	4	15	7	7	
Punjab	135	144	196	220	185	217	
Chandigarh	—	—	—	a	1	1	
East	113	149	187	196	193	265	325
Assam	15	15	17	18	6	5	
Bihar	32	59	50	74	69	105	
Orissa	18	19	25	41	40	40	
West Bengal	44	38	35	54	55	84	
Manipur	a	a	—	1	a	2	
Tripura	a	a	—	1	1	1	
Nagaland	1	a	—	—	a	a	
Mizoram	—	—	—	a	—	a	
Andamans	a	a	—	—	—	a	
Tea N.E. India	3	a	3	6	20	23	
Meghalaya	—	—	—	1	1	2	
Total	1,015	1,257	1,548	1,684	1,609	1,842	2,330
Others	25	53	120	54	4	—	—
All India	1,040	1,310	1,668	1,738	1,613	1,842	2,330

* Estimated. a Less than 500 tonnes.

Table 7b

Distribution of Nitrogen (N) by States

('000 tonnes)							
Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	365	375	439	472	453	595	715
Andhra Pradesh	209	102	129	170	155	285	
Kerala	53	9	17	28	32	33	
Karnataka	29	32	74	82	85	114	
Tamil Nadu	59	75	111	174	161	148	
Pondicherry	a	a	1	3	2	2	
U.P.A.S.I.	6	8	5	8	5	a	
Coffee Board	6	5	8	8	7	8	
Rubber Board	2	2	—	—	5	a	
Cardamom Board	—	a	—	a	a	—	
Tea Board	—	—	—	—	—	3	
West	156	166	259	228	248	229	345
Gujarat	71	110	148	116	128	99	
Maharashtra	84	56	44	111	118	128	
Goa	1	a	—	a	2	2	
Dadra, Nagar Haveli	a	a	—	a	a	a	
Central	198	269	390	468	442	457	565
Madhya Pradesh	47	50	66	85	74	86	
Rajasthan	21	33	43	51	58	50	
Uttar Pradesh	127	183	276	329	309	319	
Delhi	3	3	5	3	1	2	
North	182	198	273	319	274	295	380
Haryana	43	50	70	81	78	64	
Himachal Pradesh	3	4	4	3	3	6	
Jammu & Kashmir	1	—	4	15	7	7	
Punjab	135	144	196	220	185	217	
Chandigarh	—	—	—	a	1	1	
East	113	149	187	196	193	265	325
Assam	15	15	17	18	6	5	
Bihar	32	59	50	74	69	105	
Orissa	18	19	25	41	40	40	
West Bengal	44	38	35	54	55	84	
Manipur	a	a	—	1	a	2	
Tripura	a	a	—	1	1	1	
Nagaland	1	a	—	—	a	a	
Mizoram	—	—	—	a	—	a	
Andamans	a	a	—	—	—	a	
Tea N.E. India	3	a	3	6	20	23	
Meghalaya	—	—	—	1	1	2	
Total	1,015	1,257	1,548	1,684	1,609	1,842	2,330
Others	25	53	120	54	4	—	—
All India	1,040	1,310	1,668	1,738	1,613	1,842	2,330

* Estimated. a Less than 500 tonnes.

Table 8a

Seasonwise consumption of Phosphates (P₂O₅) by States and their percentage increase (Concluded)
(1970-71 to 1975-76)

Zone/State	1970-71			1971-72			1972-73 ^φ			1973-74 ^φ			1974-75 ^{φ@}			1975-76*		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
South	+ 1.1	+ 10.1	+ 5.0	+ 23.3	+ 22.2	+ 22.9	- 1.8	+ 22.6	+ 9.3	+ 3.7	- 0.9	+ 0.9	- 10.6	- 6.2	- 8.4	+ 18.8	- 17.9	+ 18.8
Andhra Pradesh	—	- 19.0	- 6.3	—	+ 88.2	+ 25.4	- 16.7	+ 15.6	- 2.7	+ 20.0	+ 8.1	+ 13.9	- 23.8	+ 5.0	- 9.8			
Karnataka	- 11.1	+ 61.5	+ 19.4	+ 75.0	- 33.3	+ 13.5	- 14.3	+ 128.6	+ 33.3	+ 4.2	- 25.0	- 14.3	+ 4.0	- 16.7	+ 12.5			
Kerala	- 36.4	- 22.2	- 30.0	+ 28.6	—	+ 14.3	—	+ 85.7	+ 37.5	+ 33.3	- 15.4	+ 4.5	- 25.0	- 18.2	- 21.7			
Tamil Nadu	+ 43.8	+ 24.0	+ 28.6	+ 34.9	+ 29.0	+ 31.5	+ 29.0	- 22.5	—	- 17.5	- 22.6	—	—	- 31.6	- 18.3			
West	+ 47.5	+ 53.3	+ 50.0	+ 6.8	+ 43.5	+ 23.8	- 4.8	- 51.5	- 29.2	+ 18.3	+ 96.9	+ 45.7	- 8.5	- 50.8	- 28.4	+ 7.7	+ 61.3	+ 25.0
Gujarat	+ 31.8	+ 41.7	+ 35.9	- 6.9	+ 41.7	+ 15.1	+ 29.6	- 44.1	- 11.5	- 2.9	- 36.8	+ 11.1	- 20.5	- 69.2	- 41.7			
Maharashtra	+ 66.7	+ 69.2	+ 67.7	+ 20.0	+ 45.5	+ 30.8	- 30.6	- 62.5	- 45.6	+ 44.0	- 208.3	+ 97.3	+ 5.6	- 37.8	- 16.4			
Central	—	- 10.7	- 7.5	+ 11.1	+ 14.7	+ 13.5	- 20.0	+ 30.2	+ 14.3	+ 37.5	- 9.8	+ 0.7	- 25.0	- 21.8	- 23.4	+ 36.4	+ 20.3	+ 26.1
Madhya Pradesh	+ 66.7	+ 66.7	+ 66.7	+ 26.7	+ 50.0	+ 36.0	- 10.5	- 46.7	+ 14.7	+ 5.9	+ 18.2	+ 12.8	- 38.9	- 42.3	- 40.9			
Rajasthan	- 25.0	+ 60.0	+ 22.2	+ 100.0	+ 25.0	+ 45.5	- 66.7	- 50.0	- 56.2	+ 200.0	- 60.0	- 100.0	- 50.0	- 12.5	- 35.7			
Uttar Pradesh	- 25.0	- 22.0	- 23.5	- 16.7	+ 7.0	+ 1.3	- 13.3	+ 37.7	+ 27.6	+ 53.8	- 20.2	- 10.3	- 5.0	- 15.0	- 12.6			
North	+ 20.0	+ 52.2	+ 51.9	+ 66.7	+ 51.4	+ 5.87	+ 50.0	+ 24.5	+ 28.6	+ 60.0	+ 6.0	+ 16.0	- 37.5	- 18.6	- 23.1	+ 66.7	+ 14.0	+ 25.0
Haryana	—	+ 50.0	+ 40.0	—	—	—	+ 100.0	—	+ 14.3	+ 250.0	- 66.7	+ 112.5	- 57.1	- 40.0	- 53.0			
Himachal Pradesh	+ 50.0	+ 50.0	+ 50.0	—	—	—	—	—	—	—	—	—	—	—	—			
Jammu & Kashmir	+ 50.0	—	—	—	—	—	+ 100.0	+ 100.0	+ 100.0	+ 100.0	—	+ 50.0	- 50.0	—	- 66.7			
Punjab	—	+ 55.5	+ 47.6	+ 166.7	+ 60.7	+ 70.9	+ 50.0	+ 26.7	+ 30.2	+ 25.0	+ 1.8	+ 5.8	- 33.3	- 13.8	- 17.8			
East	- 27.8	- 3.8	- 13.6	+ 7.7	+ 12.0	+ 10.5	+ 7.1	- 21.4	+ 14.3	+ 60.0	- 24.2	—	- 16.7	+ 20.0	+ 4.2	+ 25.0	+ 16.7	+ 20.0
Assam	—	—	—	—	—	—	—	—	—	+ 50.0	- 50.0	- 50.0	—	—	—			
Bihar	+ 37.5	- 27.8	- 30.0	+ 20.0	- 38.5	- 22.2	—	+ 62.5	+ 35.7	+ 50.0	- 46.2	- 15.8	- 33.3	- 42.9	—			
Orissa	+ 50.0	—	+ 23.3	—	+ 66.7	+ 33.3	—	+ 40.0	+ 25.0	+ 133.3	- 28.6	+ 20.0	- 57.1	- 60.0	- 8.3			
West Bengal	- 42.9	+ 100.0	+ 9.1	—	+ 62.5	+ 41.7	—	- 7.7	- 5.9	+ 110.0	—	+ 12.5	+ 42.9	—	+ 22.2			
All India	+ 8.5	+ 11.7	+ 10.0	+ 16.7	+ 26.4	+ 22.1	- 3.0	+ 9.2	+ 4.1	+ 19.0	+ 4.5	+ 10.7	- 14.5	- 18.5	- 17.2	+ 22.1	+ 23.1	+ 22.7

Note: 1. Figures have been rounded off to the nearest thousand tonne.
 2. Percentages are derived based on the data given on page T-14.
 3. Due to marginal change in consumption of Union Territories, percentage change is not worked out for them.
^φ For 12 months (February/January).

£ Less than 500 tonnes.

@ It includes Kharif actuals and Rabi estimates presumably for December 1974 and January 1975.

* FAI estimates.

N.A. Not available.

Table 8b

Distribution of Phosphates (P₂O₅) by States

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	102	73	117	183	208	204	250
Andhra Pradesh	56	21	44	72	88	87	
Kerala	8	6	7	12	15	15	
Karnataka	18	17	20	42	33	46	
Tamil Nadu	20	20	18	56	70	52	
U.P.A.S.I.	—	—	—	—	—	a	
Pondicherry	a	a	a	1	1	1	
Coffee Board	—	—	—	—	a	2	
West	56	74	123	86	110	71	125
Gujarat	31	48	83	49	53	38	
Maharashtra	25	26	16	37	57	34	
Goa	a	a	—	a	a	a	
Dadra, Nagar Haveli	—	a	—	a	a	a	
Central	35	43	83	102	96	93	145
Madhya Pradesh	14	21	31	30	35	25	
Rajasthan	6	12	10	15	11	6	
Uttar Pradesh	15	10	41	57	49	62	
Delhi	a	a	a	a	a	a	
North	16	13	60	53	64	72	110
Haryana	a	a	9	5	14	7	
Himachal Pradesh	1	a	a	a	a	a	
Jammu & Kashmir	—	—	—	1	a	2	
Punjab	15	13	51	47	50	63	
Chandigarh	—	—	—	a	—	a	
East	14	15	34	36	43	44	75
Assam	2	1	1	2	2	1	
Bihar	2	3	15	9	11	16	
Orissa	1	2	10	6	12	9	
West Bengal	9	9	8	18	17	17	
Meghalaya	—	—	—	1	a	a	
Manipur	a	—	a	a	a	a	
Tripura	a	a	a	a	1	a	
Nagaland	—	a	a	—	a	a	
Andamans	a	—	—	a	—	a	
Tea N.E. India	a	—	—	—	—	—	
Total	224	247	417	460	521	484	705
Others	11	58	65	7	9	—	—
Used in mixtures	—	—	—	67	11	8	10
All India	235	305	482	534	541	492	715

* Estimated. a Less than 500 tonnes.

Table 9b

Distribution of Potash (K₂O) by States

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	55	89	110	131	187	127	175
Andhra Pradesh	7	15	11	16	32	19	
Kerala	19	22	22	18	27	21	
Karnataka	8	15	14	16	33	22	
Tamil Nadu	21	26	50	81	94	65	
Pondicherry	—	a	a	a	1	a	
West	33	41	71	69	93	76	85
Gujarat	3	8	7	10	19	18	
Maharashtra	30	33	41	59	73	56	
Goa	a	a	a	a	1	2	
Central	16	32	35	32	48	45	60
Madhya Pradesh	1	6	7	4	5	5	
Rajasthan	2	6	1	a	5	2	
Uttar Pradesh	13	19	27	27	38	38	
Delhi	a	1	—	a	a	a	
North	12	5	8	10	24	22	35
Haryana	a	a	1	1	4	2	
Himachal Pradesh	—	a	a	a	—	a	
Jammu & Kashmir	—	—	a	a	a	—	
Punjab	12	5	7	9	20	20	
East	14	26	30	46	43	44	45
Assam	1	4	4	12	6	7	
Bihar	1	6	7	9	8	12	
Orissa	1	3	2	5	7	6	
West Bengal	10	13	17	20	21	19	
Manipur	a	a	—	a	a	a	
Tripura	a	a	—	a	a	—	
Nagaland	—	a	—	a	—	a	
Andamans	a	—	—	a	a	a	
Tea N.E. India	a	—	—	—	—	—	
Total	131	193	254	288	394	314	400
Others	3	4	2	24			
All India	134	197	256	312	394	314	400

* Estimated.

a Less than 500 tonnes.

Table 10

*All-India consumption of plant food ($N+P_2O_5+K_2O$)
per hectare of agricultural land (kg.)
(1967-68 to 1975-76)*

Year	Consumption
1967-68	6.7
1968-69	9.6
1969-70	11.4
1970-71	12.3
1971-72	14.5
1972-73	14.9
1973-74	15.4
1974-75	14.8
1975-76 (Estd.)	17.4

Table 11

*Plant food consumption in kilograms per hectare
of agricultural land (1973-74 and 1974-75)*

Zone/State	Consumption in kg. per hectare of agricultural land*							
	1973-74				1974-75			
	N	P ₂ O ₅	K ₂ O	Total	N	P ₂ O ₅	K ₂ O	Total
South	13.42	5.85	4.21	23.48	15.10	5.36	4.02	24.48
Andhra Pradesh	11.52	5.57	1.98	19.07	17.46	5.04	2.13	24.63
Karnataka	8.43	3.77	3.08	15.28	10.14	4.21	3.81	18.16
Kerala	11.22	7.31	7.92	26.45	10.80	5.85	6.98	23.63
Tamil Nadu	25.76	9.05	8.67	43.48	20.14	7.49	6.63	34.26
Pondicherry	55.56	27.78	20.37	103.71	62.96	25.93	20.37	109.26
West	8.96	4.17	1.72	14.85	7.84	3.00	2.65	13.49
Gujarat	12.50	5.43	1.18	19.11	8.10	3.12	1.20	12.42
Maharashtra	7.06	3.48	1.97	12.51	7.64	2.93	3.98	14.55
Goa	11.35	7.09	5.67	24.11	18.44	4.26	5.67	28.37
Dadra, Nagar Haveli	20.00	12.00	4.00	36.00	4.00	0.40	0.40	4.80
Central	7.07	2.16	0.95	10.18	6.82	1.66	0.83	9.31
Madhya Pradesh	3.65	1.87	0.39	5.91	2.07	1.05	0.27	3.39
Uttar Pradesh	13.39	3.53	2.04	18.96	14.21	3.11	1.91	19.23
Rajasthan	3.05	0.73	0.22	4.00	3.15	0.51	0.12	3.78
Delhi	21.18	4.24	0.85	26.27	11.86	3.39	0.85	16.10
North	24.96	6.78	2.16	33.90	22.57	5.19	1.55	29.31
Haryana	18.77	3.29	0.90	22.96	13.94	1.64	0.46	16.04
Himachal Pradesh	1.96	0.75	0.61	3.32	3.41	1.21	0.79	5.41
Jammu & Kashmir	9.18	2.61	0.90	12.69	7.65	1.26	0.45	9.36
Punjab	41.67	12.84	4.04	58.55	40.09	10.55	2.99	53.63
East	5.37	1.46	1.45	8.28	5.93	1.51	0.24	8.68
Assam	1.70	0.15	0.62	2.47	0.71	0.08	0.12	0.91
Bihar	6.15	1.40	0.95	8.50	6.97	1.43	1.10	9.50
Orissa	4.54	1.25	0.78	6.57	3.71	1.12	0.67	5.50
West Bengal	7.01	2.39	3.49	12.89	9.74	2.80	2.77	15.31
Manipur	7.07	1.42	0.47	8.96	6.60	0.47	0.24	7.31
Tripura	2.37	0.65	0.65	3.67	1.94	0.43	0.22	2.59
Nagaland	0.39	0.29	0.29	0.97	N.A.	N.A.	N.A.	N.A.
Meghalaya	0.77	0.31	0.15	1.23	0.77	0.31	0.08	1.16
All India	9.90	3.52	1.95	15.37	9.95	2.91	1.94	14.80

Note : These figures are based on consumption data given in Tables 7a, 8a and 9a and agricultural area pertains to year 1970-71.

N.A. : Not available.

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

Table 12

*All-India ratio of plant nutrients consumed
(1967-68 to 1975-76)*

Year	N	P ₂ O ₅	K ₂ O
1967-68	6.2	1.8	1
1968-69	7.3	2.5	1
1969-70	6.5	2.0	1
1970-71	6.5	2.0	1
1971-72	5.8	1.9	1
1972-73	5.4	1.8	1
1973-74	5.1	1.8	1
1974-75	5.0	1.5	1
1975-76 (Est.)	5.4	1.7	1

Table 13

*Ratio of N, P₂O₅ & K₂O consumption
(1973-74 & 1974-75)*

Zone/State	1973-74			1974-75		
	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O
South	3.19	1.39	1	3.76	1.33	1
Andhra Pradesh	5.81	2.81	1	8.21	2.37	1
Kerala	1.42	0.92	1	1.55	0.84	1
Karnataka	2.73	1.22	1	2.66	1.11	1
Tamil Nadu	2.97	1.04	1	3.04	1.13	1
Pondicherry	2.73	1.36	1	3.03	1.27	1
West	5.22	2.43	1	2.61	1.00	1
Gujarat	10.57	4.60	1	6.91	2.66	1
Maharashtra	3.58	1.76	1	1.92	0.73	1
Goa	2.00	1.25	1	3.25	0.75	1
Dadra, Nagar Haveli	5.00	3.00	1	10.00	1.00	1
Central	7.47	2.28	1	8.22	2.00	1
Madhya Pradesh	9.39	4.80	1	7.71	3.94	1
Uttar Pradesh	6.56	1.73	1	7.42	1.63	1
Rajasthan	13.78	3.29	1	26.55	4.27	1
Delhi	25.00	5.00	1	14.00	4.00	1
North	11.56	3.14	1	14.59	3.36	1
Haryana	20.91	3.67	1	30.39	3.57	1
Himachal Pradesh	3.23	1.23	1	4.29	1.53	1
Jammu & Kashmir	10.20	2.90	1	17.00	2.80	1
Punjab	10.30	3.17	1	13.41	3.53	1
Chandigarh	7.00	1.00	1	N.A.	N.A.	N.A.
East	3.70	1.04	1	4.79	1.22	1
Assam	2.75	0.25	1	5.75	0.63	1
Bihar	6.49	1.48	1	6.36	1.30	1
Orissa	5.81	1.60	1	5.56	1.69	1
West Bengal	2.01	0.68	1	3.52	1.01	1
Manipur	15.00	3.00	1	28.00	2.00	1
Tripura	3.67	1.00	1	9.00	2.00	1
Nagaland	1.33	1.00	1	N.A.	N.A.	N.A.
Meghalaya	5.00	2.00	1	10.00	4.00	1
All India	5.08	1.81	1	4.98	1.46	1

Note : These figures are based on consumption data given in Tables 7a, 8a and 9a.

N.A. : Not available.

Table-14

Zonewise ranking in terms of consumption (1970-71 to 1974-75)

Rank	N					P ₂ O ₅					K ₂ O					Total (N+P ₂ O ₅ +K ₂ O)				
	1970-71	1971-72	1972-73	1973-74	1974-75	1970-71	1971-72	1972-73	1973-74	1974-75	1970-71	1971-72	1972-73	1973-74	1974-75	1970-71	1971-72	1972-73	1973-74	1974-75
1.	South (494)	South (542)	Central (515)	South (530) [29.0]	South (601) [32.7]	South (166)	South (204)	South (223)	South (227) [35.0]	South (207) [38.6]	South (100)	South (135)	South (148)	South (162) [45.3]	South (155) [41.9]	South (761)	South (881)	South (883)	South (920) [32.4]	South (964) [35.1]
2.	Central (385)	Central (478)	South (512)	Central (475) [26.0]	Central (458) [24.9]	Central (111)	West (130)	Central (144)	Central (145) [22.4]	Central (111) [20.6]	Central (51)	Central (67)	Central (60)	Central (664) [7.8]	West (96) [26.0]	Central (548)	Central (671)	Central (719)	Central (684) [24.1]	Central (625) [22.8]
3.	North (243)	North (306)	North (331)	North (347) [19.0]	North (314) [17.1]	West (105)	Central (126)	West (92)	West (134) [20.6]	West (96) [17.9]	West (42)	West (51)	West (59)	West (55) [15.3]	Central (56) [15.1]	West (365)	West (428)	North (435)	West (477) [16.8]	West (444) [16.2]
4.	West (218)	West (247)	West (229)	West (288) [15.7]	West (252) [13.7]	North (41)	North (63)	North (81)	North (94) [14.5]	North (72) [13.4]	East (25)	East (35)	East (42)	East (48) [13.3]	East (41) [11.1]	North (294)	North (385)	West (381)	North (471) [16.6]	North (408) [14.8]
5.	East (147)	East (187)	East (191)	East (189) [10.3]	East (214) [11.6]	East (38)	East (42)	East (48)	East (49) [7.5]	East (51) [9.5]	North (10)	North (16)	North (22)	North (30) [8.3]	North (22) [6.9]	East (209)	East (264)	East (280)	East (286) [10.1]	East (306) [11.1]
Total	1,487	1,760	1,779	1,829 [100]	1,838 [100]	462	564	587	650 [100]	538 [100]	228	304	332	360 [100.0]	370 [100.0]	2,177	2,628	2,699	2,839 [100.0]	2,746 [100.0]

Note: () Figures in brackets represent zonewise consumption in '000 tonnes.

[] Figures in brackets represent zonewise share vertically in percentage.

Table-15

Ranking of States according to fertiliser consumption (1970-71 to 1974-75)

Rank	N					P ₂ O ₅					K ₂ O					Total (N + P ₂ O ₅ + K ₂ O)					
	1970-71	1971-72	1972-73	1973-74	1974-75	1970-71	1971-72	1972-73	1973-74	1974-75	1970-71	1971-72	1972-73	1973-74	1974-75	1970-71	1971-72	1972-73	1973-74	1974-75	
1.	U. P. (291)	U. P. (346)	U. P. (373)	U. P. (329) [18.0]	U. P. (349) [19.0]	U. P. (75)	U. P. (76)	U. P. (99)	U. P. (87) [13.4]	U. P. (76) [14.1]	U. P. (45)	T. Nadu (61)	T. Nadu (64)	T. Nadu (68) [18.9]	Maha. (83) [22.5]	U. P. (411)	U. P. (478)	U. P. (519)	U. P. (465) [16.4]	U. P. (472) [17.2]	
2.	A. P. (207)	Punjab (225)	Punjab (235)	Punjab (237) [13.0]	A. P. (257) [13.9]	A. P. (59)	A. P. (74)	A. P. (72)	A. P. (82) [12.6]	A. P. (74) [13.8]	T. Nadu (40)	U. P. (56)	U. P. (49)	U. P. (50) [13.9]	T. Nadu (52) [14.1]	A. P. (283)	T. Nadu (346)	T. Nadu (324)	T. Nadu (341) [12.0]	A. P. (363) [13.2]	
3.	Punjab (175)	T. Nadu (214)	T. Nadu (190)	T. Nadu (202) [11.0]	Punjab (228) [12.4]	T. Nadu (54)	T. Nadu (71)	T. Nadu (71)	Punjab (73) [11.2]	Maha. (61) [11.3]	Maha. (36)	Maha. (44)	Maha. (48)	Maha. (41) [11.4]	Karna. (49) [13.3]	T. Nadu (259)	A. P. (297)	Punjab (323)	Punjab (333) [11.7]	Punjab (305) [11.1]	
4.	T. Nadu (165)	A. P. (196)	A. P. (179)	A. P. (170)	Maha. (158) [8.6]	Gujarat (53)	Maha. (67)	Gujarat (69)	Maha. (73) [11.2]	Punjab (60) [11.2]	Karna. (26)	Karna. (27)	Karna. (39)	Karna. (40) [11.1]	U. P. (47) [12.7]	Punjab (213)	Punjab (290)	A. P. (275)	A. P. (281) [9.9]	Maha. (303) [11.0]	
5.	Maha. (111)	Maha. (130)	Maha. (114)	Maha. (147)	T. Nadu (158) [8.6]	Maha. (52)	Gujarat (61)	Karna. (56)	T. Nadu (71) [10.9]	T. Nadu (59) [11.0]	A. P. (17)	A. P. (27)	A. P. (24)	A. P. (29) [8.1]	A. P. (31) [8.4]	Maha. (199)	Maha. (241)	Karna. (202)	Maha. (261) [9.2]	T. Nadu (269) [9.8]	
6.	Gujarat (106)	Gujarat (114)	Gujarat (114)	Gujarat (139) [7.6]	Karna. (130) [7.1]	Karna. (37)	Punjab (53)	Gujarat (54)	Gujarat (60) [9.2]	Karna. (54) [10.0]	Kerala (16)	W. B. (22)	W. B. (23)	W. B. (27) [4.2]	Kerala (22) [6.0]	Gujarat (164)	Gujarat (182)	Maha. (200)	Gujarat (212) [7.5]	Karna. (233) [8.5]	
7.	Karna. (93)	Karna. (98)	Karna. (107)	Karna. (108) [5.9]	Gujarat (90) [4.9]	Punjab (31)	Karna. (42)	A. P. (39)	Karna. (48) [7.4]	Gujarat (35) [6.5]	W. B. (14)	Kerala (18)	Kerala (19)	Kerala (25) [6.9]	W. B. (21) [5.7]	Karna. (156)	Karna. (167)	Gujarat (178)	Karna. (196) [6.9]	Gujarat (137) [5.0]	
8.	Bihar (75)	Bihar (88)	M. P. (93)	Haryana (94) [5.1]	Bihar (80) [4.4]	M. P. (25)	M. P. (34)	Maha. (37)	M. P. (45) [6.9]	M. P. (25) [4.6]	Bihar (7)	Punjab (12)	Punjab (18)	Punjab (23) [6.4]	Punjab (17) [4.6]	Bihar (99)	M. P. (118)	M. P. (140)	M. P. (141) [5.0]	W. B. (118) [4.3]	
9.	Haryana (61)	M. P. (79)	Bihar (89)	M. P. (87) [4.8]	W. B. (75) [4.1]	Bihar (18)	W. B. (18)	Kerala (23)	Kerala (23) [3.5]	W. B. (22) [4.1]	Punjab (7)	Gujarat (7)	Bihar (11)	Gujarat (13) [3.6]	Bihar (13) [3.5]	M. P. (81)	Bihar (108)	Bihar (119)	Haryana (115) [4.1]	Bihar (108) [3.9]	
10.	M. P. (51)	Haryana (73)	Haryana (83)	Bihar (70) [3.8]	Haryana (70) [3.8]	Kerala (14)	Raj. (16)	Bihar (19)	W. B. (18) [2.7]	Kerala (18) [3.3]	Gujarat (6)	Bihar (7)	Gujarat (11)	Bihar (11) [3.1]	Gujarat (13) [3.5]	W. B. (79)	W. B. (95)	Haryana (94)	W. B. (99) [3.5]	M. P. (81) [3.0]	
(a)	Consumption of the 10 listed States																				
	1,335	1,563	1,577	1,583	1,596	418	512	539	580	484	214	281	306	327	348	1,944	2,322	2,374	2,444	2,389	
(b)	All India consumption																				
	1,487	1,760	1,779	1,829	1,838	462	564	587	650	538	228	304	332	360	370	2,177	2,628	2,699	2,839	2,746	
(c)	Percentage share of (a) to (b)																				
	89.8	88.8	88.6	86.6	86.8	90.5	90.8	91.8	89.2	90.0	93.9	92.4	92.2	90.8	94.1	89.3	88.4	87.9	86.1	87.0	

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

APPENDICES
(on April-March basis)

End-productwise capacity installed before and during Plan periods 1906 to 1975-76 (April-March)

(tonnes of material)

Fertiliser	Grade	Before First Plan 1906-1951	I Plan 1951-52 to 1955-56	II Plan 1956-57 to 1960-61	III Plan 1961-62 to 1965-66	Annual Plans			Fourth Plan				Fifth Plan		
						1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76**
Ammonium sulphate	(20.6% N)	254,730 (6)	355,000 (1)	53,800 (2)	—	28,000 (1)	186,610 (2)	100,000 (1)	—	—	35,000*	6,600	6,600	—	—
Cumulative total		254,730 (6)	609,730 (7)	663,530 (9)	662,930 ¹ (8)	690,930 (9)	870,830 ² (10)	970,830 (11)	970,830 (11)	970,830 (11)	932,510 ³ (10)	939,110 (11)	945,710 (11)	945,710 (11)	945,710 (11)
Urea	(46% N)	—	—	23,470 (1)	253,000 (2)	—	280,500 (2)	474,320 (3)	100,000 450,000 (1)	—	210,000 (1)	—	1000,000 (3)	434,000 (1)	2003,000 (3)
Cumulative total		—	—	23,470 (1)	276,470 (3)	276,470 (3)	556,970 (5)	1031,290 (8)	1581,290 (9)	1581,290 (9)	1780,420 ⁴ (10)	1780,420 (10)	2780,420 (13)	3214,420 (14)	5229,420 (17)
Ammonium sulphate nitrate	(26% N)	—	—	121,920 (1)	121,920 (1)	121,920 (1)	121,920 (1)	121,920 (1)	121,920 (1)	121,920 (1)	50,000 ⁵ (1)	50,000 (1)	50,000 (1)	50,000 (1)	50,000 (1)
Calcium ammonium nitrate	(25% N)	—	—	380,000 (1)	297,000 (1)	—	—	—	240,000*	—	—	—	—	—	—
Cumulative total		—	—	380,000 (1)	677,000 (2)	677,000 (2)	617,000@ (2)	560,000@ (2)	800,000 (2)	800,000 (2)	800,000 (2)	800,000 (2)	800,000 (2)	800,000 (2)	800,000 (2)
Ammonium chloride	(25% N)	—	—	8,000+ (1)	17,000* 40,640	—	—	—	—	—	—	—	—	—	—
Cumulative total		—	—	8,000+ (1)	65,640 (2)	65,640 (2)	65,640 (2)	65,640 (2)	65,640 (2)	65,640 (2)	64,750 ⁶ (2)	64,750 (2)	64,750 (2)	64,750 (2)	64,750 (2)
Single superphosphate	(16% w.s. P ₂ O ₅)	492,230 (11)	—	281,060 (6)	345,440 (8)	108,530 (2)	22,500 (1)	—	—	—	—	9,000 (1)	115,990* +45,000 (1)	—	—
Cumulative total		492,230 (11)	492,230 (11)	773,290 (17)	1118,730 (25)	1227,260 (27)	1249,760 (28)	1249,760 (28)	1249,760 (28)	1249,760 (28)	1249,760 (28)	1258,760 (29)	1420,750 (30)	1420,750 (30)	1420,750 (30)
'Pelofos'	(18% P ₂ O ₅)	—	—	—	—	—	—	—	—	—	—	—	45,000 (1)	45,000 (1)	45,000 (1)
Triple superphosphate	(45% P ₂ O ₅)	—	—	—	—	—	27,000 (1)	—	—	—	—	—	—	—	547,000 (2)
Cumulative total		—	—	—	—	—	27,000 (1)	27,000 (1)	27,000 (1)	27,000 (1)	27,000 (1)	27,000 (1)	27,000 (1)	27,000 (1)	574,000 (3)

(Continued)

End-productwise capacity installed before and during Plan periods 1906 to 1975-76 (April-March) (Concluded)

(tonnes of material)

Fertiliser	Before First Plan 1906-1951	I Plan 1951-52 to 1955-56	II Plan 1956-57 to 1960-61	III Plan 1961-62 to 1965-66	Annual Plans			Fourth Plan					Fifth Plan	
					1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76**
Ammonium phosphate sulphate	—	—	16,500 (1)	118,500 51,480 (1)	—	—	—	—	46,000 ¹	—	—	—	—	—
Cumulative total	—	—	16,500 (1)	186,480 (2)	186,480 (2)	186,480 (2)	186,480 (2)	186,480 (2)	186,480 (2)	222,980 [§] (2)	222,980 (2)	222,980 (2)	222,980 (2)	222,980 (2)
Diammonium phosphate (18-46-0)	—	—	—	—	—	108,000 (1)	108,000 (1)	108,000 (1)	108,000 (1)	108,000 (1)	108,000 (1)	108,000 (1)	108,000 (1)	136,000 (2)
Nitrophosphate	—	—	—	270,000 (1)	—	180,000 [‡] (1)	180,000 (1)	180,000 (1)	180,000 (1)	180,000 (1)	180,000 (1)	180,000 (1)	180,000 (1)	180,000 (1)
Urea ammonium phosphate	—	—	—	—	—	260,000 (1)	260,000 (1)	260,000 (1)	260,000 (1)	260,000 (1)	260,000 (1)	260,000 (1)	260,000 (1)	497,500 (2)
NPK complex fertilisers	—	—	—	—	—	—	—	—	—	360,000 ² (1)	—	—	375,500 ⁵ (1)	160,000 ⁶ (1)
Cumulative total	—	—	—	—	—	—	—	—	—	360,000 ¹ (1)	360,000 (1)	360,000 (1)	735,500 ³ (2)	895,500 ^{4,5,6} (3)

Notes: * Expansion.

** Anticipated by 31-3-76.

‡ On account of change over of grade from 16-13-0 to 20-20-0. Completely switched over to 15-15-15 since 1972-73.

@ On account of change over of grade of FCI, Nangal and HSL, Rourkela from 20.5% N to 25% N.

+ Not meant for agricultural purposes.

() The figures in brackets indicate the number of manufacturing units.

§ Due to ageing of plant, the capacities of some units have been rephased.

1 One by-product A/S factory was closed down during this period.

2 One synthetic A/S factory was closed down during this period.

3 Constitutes grades 28-28-0, 20-20-0 and 14-35-14. Figure for 1975-76 takes into account the adjustments in capacity proposed in the expansion plan which is expected to be commissioned during the year.

4 Constitutes grades 17-17-17 and 14-28-14.

5 Constitutes grades 10-26-26, 12-32-16 and 14-36-12.

6 Constitutes grades 10-26-26 and 15-15-15.

Factorywise, productwise licensed capacity of fertilisers existing as on April 1, 1975

(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%)	Ammonium phosphate sulphate 16-20-0 & 20-20-0 φ	Diammonium phosphate 18-48-0	Nitro-phosphate 20-20-0	Urea ammonium phosphate 28-28-0 & NPK Complex 17-17-17 & 14-28-14	NPK Complex 10-26-26 & 12-32-16 & 14-36-12	Super-phosphate (16% P ₂ O ₅)	Triple super-phosphate (45% P ₂ O ₅)	TOTAL	
													N	P ₂ O ₅
SOUTH	236,610	—	—	710,500	24,750	171,500 φ	—	—	360,000\$	—	526,610	—	564,190	288,830
						51,480			260,000**				(80,000)	(99,590)
Andhra Pradesh				(16,500)					(260,000)**		(166,230)		80,000	73,000
Coromandel Fertilisers Ltd., Visakhapatnam				16,500					260,000**					6,700
Hyderabad Chemicals & Fertilisers Ltd., Maula Ali											41,900			6,400
Andhra Fertilisers Ltd., Tadepalli											40,000			5,360
Andhra Sugars Ltd., Tanuku											33,530			8,130
Krishna Industrial Corp., Nidadavole											50,800			
											(44,700)		(234,000)	(43,350)
Kerala	(198,000)			(330,000)	(24,750)*	(171,500) φ							82,000	43,350
The Fertilisers & Chemicals Travancore Ltd., Alwaye	198,000				24,750*	171,500φ					44,700			
The Fertilisers & Chemicals Travancore Ltd., Cochin Unit, Ambelamedu				330,000									152,000	—
											(74,170)			(11,860)
Karnataka											33,530			5,360
Mysore Chemicals & Fertilisers Ltd., Belagula											40,640			6,500
Chamundi Chemicals & Fertilisers Ltd., Munirabad													(250,190)	(134,000)
	(38,610)			(364,000)		(51,480)			(360,000)\$		(241,510)		70,000	—
Tamil Nadu				154,000							40,000		16,190	16,700
Neyveli Lignite Corpn. Ltd., Neyveli						51,480					44,700			7,150
E.I.D.-Parry Ltd., Ennore & Ranipet	38,610													6,500
Kothari (Madras) Ltd., Ennore											40,640			6,500
Coimbatore Pioneer Fertilisers Ltd., Coimbatore											40,640			12,180
Premier Fertilisers Ltd., Cuddalore											75,530		164,000	85,000
Shaw Wallace & Co. Ltd., Avadi				210,000					360,000\$					
Madras Fertilizers Ltd., Manali							108,000	180,000	150,000**	375,500	355,820	27,000	682,000	324,080
	148,000			1,195,000			(108,000)			(375,500)	(99,530)		(431,000)	(192,000)
WEST	(148,000)			(756,000)									216,000	50,000
Gujarat							108,000							5,300
Gujarat State Fertilizers Co. Ltd., Baroda	148,000			364,000							33,530			3,700
Adarsh Chemicals & Fertilisers Ltd., Udhna											23,470			
Paushak Ltd., Baroda														

(Contd)

Factorywise, productwise licensed capacity of fertilisers existing as on April 1, 1975 (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%)	Ammonium phosphate sulphate 16-20-0 & 20-20-0 φ	Diammonium phosphate 18-46-0	Nitrophosphate 20-20-0	Urea ammonium phosphate 28-28-0 & NPK Complex 17-17-17 & 14-28-17	NPK Complex 10-26-20 & 12-32-16 & 14-36-12	Super-phosphate (16% P ₂ O ₅)	Triple super-phosphate (45% P ₂ O ₅)	TOTAL	
													N	P ₂ O ₅
Anil Starch Product Ltd., Bhavnagar	—	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
Anish Chemicals Ltd., Ahmedabad	—	—	—	—	—	—	—	—	—	—	9,000	—	—	1,440
Indian Farmers Fertiliser Cooperative Ltd., Kalol and Kandla	—	—	—	392,000	—	—	—	—	—	375,500	—	—	215,000	127,000
Maharashtra	—	—	—	(99,000)	—	—	(180,000)	—	—	—	(256,290)	(27,000)	(81,000)	(89,160)
The Fertilizer Corporation of India Ltd., Trombay	—	—	—	99,000	—	—	180,000	—	—	—	—	—	81,000	36,000
Bharat Fertiliser Ind. Ltd., Bombay	—	—	—	—	—	—	—	—	—	—	22,500	—	—	3,600
Dharamsi Morarji Chemical Co. Ltd., Ambarnath	—	—	—	—	—	—	—	—	—	—	146,320	27,000	—	35,570
Eastern Chemical Co. Ltd., Bombay	—	—	—	—	—	—	—	—	—	—	5,590	—	—	890
Western Chemical Industries, Ltd., Bombay	—	—	—	—	—	—	—	—	—	—	3,350	—	—	540
West India Chemicals Ltd., Loni-Kalbhori	—	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
Maharashtra Agro Industries Dev. Corpn., Panvel	—	—	—	—	—	—	—	—	—	—	45,000	—	—	7,200
Goa	—	—	—	(340,000)	—	—	—	—	(150,000)**	—	—	—	(170,000)	(42,000)
Zuari Agro Chemicals Ltd., Goa	—	—	—	340,000	—	—	—	—	150,000**	—	—	—	170,000	42,000
CENTRAL	32,600	—	—	953,920	40,000	—	—	—	—	—	362,960	—	448,720	58,070
Madhya Pradesh	(32,600)	—	—	—	—	—	—	—	—	—	(95,000)	—	(6,720)	(15,200)
Hindustan Steel Ltd., Bhilai	32,600	—	—	—	—	—	—	—	—	—	—	—	6,720	—
Dharamsi Morarji Chemical Co. Ltd., Kumhari	—	—	—	—	—	—	—	—	—	—	95,000	—	—	15,200
Rajasthan	—	—	—	(330,000)	—	—	—	—	—	—	(75,000)	—	(152,000)	(12,000)
Hindustan Zinc Ltd., Debari	—	—	—	—	—	—	—	—	—	—	75,000	—	—	12,000
Shriram Chemical Industries, Kota	—	—	—	330,000	—	—	—	—	—	—	—	—	152,000	—
Uttar Pradesh	—	—	—	(623,920)	(40,000)	—	—	—	—	—	(60,960)	—	(290,000)	(9,750)
The Fertilizer Corpn. of India Ltd., Gorakhpur	—	—	—	173,920	—	—	—	—	—	—	—	—	80,000	—
New Central Jute Mills Co. Ltd., Varanasi	—	—	—	—	40,000	—	—	—	—	—	—	—	10,000	—
Ralli Chemicals Ltd., Magarwara	—	—	—	—	—	—	—	—	—	—	60,960	—	—	9,750
Indian Explosives Ltd., Kanpur	—	—	—	450,000	—	—	—	—	—	—	—	—	200,000	—
Delhi	—	—	—	—	—	—	—	—	—	—	(132,000)	—	—	(21,120)
D.C.M. Chemical Works, Delhi	—	—	—	—	—	—	—	—	—	—	132,000	—	—	21,120

(Continued)

Factory, productwise licensed capacity of fertilisers existing as on April 1, 1975 (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%)	Ammonium phosphate sulphate 16-20-0 & (20-20-0) †	Diammonium phosphate 18-46-0	Nitro-phosphate 20-20-0	Urea ammonium phosphate 28-28-0 & NPK Complex 17-17-17 & 14-28-14	NPK Complex 10-26-26 & 12-32-16 & 14-36-12	Super-phosphate (16% P ₂ O ₅)	Triple super-phosphate (45% P ₂ O ₅)	TOTAL	
													N	P ₂ O ₅
NORTH	—	—	320,000	—	—	—	—	—	—	—	—	—	80,000	—
Punjab	—	—	(320,000)	—	—	—	—	—	—	—	—	—	(80,000)	—
The Fertilizer Corpn. of India Ltd., Nangal	—	—	320,000	—	—	—	—	—	—	—	—	—	80,000	—
EAST	528,700	50,000	480,000	403,000	—	—	—	—	—	—	175,360	—	429,360	35,660
Assam	(100,000)	—	—	(55,000)	—	—	—	—	—	—	(33,530)	—	(45,000)	(5,360)
The Fertilizer Corpn. of India Ltd., Namrup	100,000	—	—	55,000	—	—	—	—	—	—	—	—	45,000	—
Associated Ind. (Assam) Ltd., Chandrapur	—	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
Bihar	(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	—
Orissa	(28,200)	—	(480,000)	—	—	—	—	—	—	—	(45,000) ‡	—	(125,770)	(7,600)
Hindustan Steel Ltd., Rourkela	28,200	—	480,000	—	—	—	—	—	—	—	—	—	125,700	—
Orissa Ferts. & Chems. Ltd., Rourkela	—	—	—	—	—	—	—	—	—	—	45,000 ‡	—	—	7,600
West Bengal	(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
Phosphate Co. Ltd., Rishra	—	—	—	—	—	—	—	—	—	—	81,000	—	—	9,760
The Fertilizer Corpn. of India Ltd., Durgapur	—	—	—	330,000	—	—	—	—	—	—	—	—	152,000	—
All INDIA	945,910	50,000	800,000	3,262,420	64,750	171,500 †	108,000	180,000	410,000 **	375,500	1,420,750	27,000	2,204,270	706,640
						51,480			360,000 ‡		(45,000) ‡			

* This material is not used for agricultural purposes.

** Urea ammonium phosphate.

† Of grade 20-20-0.

‡ 'Pelofos' of grade 18% P₂O₅.

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

Production of nitrogenous fertilisers

('000 tonnes)

Fertiliser	Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
Ammonium sulphate (20.6% N)	South	120	151	117	122	102	110
	Kerala	102	131	96	104	93	
	Tamil Nadu	18	20	21	18	9	
	West	103	110	126	126	133	135
	Gujarat	103	110	126	126	133	
	Central	28	23	28	26	29	30
	Madhya Pradesh	28	23	28	26	29	
	North	—	—	—	—	—	
	East	377	298	271	300	320	320
	Assam	63	55	60	64	69	
	Bihar	289	209	188	208	221	
	Orissa	1	7	11	11	12	
West Bengal	27	27	20	17	18		
All-India	638	582	550	574	584	595	
Ammonium sulphate nitrate (26% N)	East	42	30	58	48	27	30
	Bihar	42	30	58	48	27	
	All-India	42	30	58	48	27	30
Urea (46% N)	South	106	113	173	241	221	687
	Andhra Pradesh	37	2	5	2	10	
	Kerala	—	—	—	32	86	
	Tamil Nadu	69	111	168	207	125	
	West	317	393	411	465	656	909
	Gujarat	253	332	357	270	304	
	Maharashtra	84	61	54	53	58	
	Goa	—	—	—	142	294	
	Central	627	678	771	628	763	867
	Uttar Pradesh	380	445	494	388	577	
	Rajasthan	247	233	277	240	186	

Production of nitrogenous fertilisers

('000 tonnes)

Fertiliser	Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
Urea (46% N)	North	—	—	—	—	—	—
	East	46	52	56	74	94	327
	Assam	15	40	46	49	55	
	Bihar	31	12	10	11	7	
	West Bengal	—	—	—	14	32	
	All-India	1,096	1,237	1,411	1,408	1,734	2,790
Calcium ammonium nitrate (25% N)***	North	221	226	216	247	161	180
	Punjab	221	226	216	247	161	
	East	94	186	196	184	245	200
	Orissa	94	186	196	184	245	
All-India	315	412	412	431	406	380	
Ammonium chloride (25% N)**	Central	22	18	14	14	10	14
	Uttar Pradesh	22	18	14	14	10	
	All-India	22	18	14	14	10	14

* Estimated.

** The production at FACT, Alwaye is not meant for agricultural purposes.

*** The production of CAN of 25 per cent N grade started at FCI, Nangal (Punjab) from August 1967 and at Hindustan Steel Ltd., Rourkela from December 1969.

Appendix III (a)

Production of superphosphate

('000 tonnes)

Region/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
(i) Single superphosphate (16% W.S. P₂O₅)						
South	222	235	219	235	251	254
Andhra Pradesh	53	60	54	67	76	
Kerala	30	16	20	36	23	
Karnataka	—	8	8	1	—	
Tamil Nadu	139	151	137	131	152	
West	171	218	224	242	231	246
Gujarat	55	82	65	65	70	
Maharashtra	116	136	159	177	161	
Central	168	250	243	201	235	260
Madhya Pradesh	55	86	70	59	85	
Uttar Pradesh	12	34	33	32	38	
Rajasthan	51	47	47	27	44	
Delhi	50	83	93	83	68	
North	—	—	—	—	—	—
East	52	70	103	95	102	104
Assam	4	—	—	—	—	
Bihar	4	10	11	5	10	
West Bengal	44	60	92	90	92	
All-India	613	773	789	773	819	864
(ii) Single superphosphate (18.5% 21% W.S. P₂O₅)						
East	8	3	—	—	—	—
Assam	8	3	—	—	—	
West Bengal	—	—	—	—	—	
All-India	8	3	—	—	—	—
(iii) 'Pelotas' (5% W.S. P₂O₅)						
East	—	—	—	10	12	15
Orissa	—	—	—	10	12	
All-India	—	—	—	10	12	15

* Estimated.

Appendix III (b)

Production of triple superphosphates (45% P₂O₅)

('000 tonnes)

Region/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	—	—	—	—	—	—
West	6	8	5	3	3	2
Maharashtra	6	8	5	3	3	
Central	—	—	—	—	—	25
Rajasthan	—	—	—	—	—	
North	—	—	—	—	—	—
East	—	—	—	—	—	20
Bihar	—	—	—	—	—	
All-India	6	8	5	3	3	47

* Estimated.

Appendix IV

Production of complex fertilisers

('000 tonnes)

Fertiliser	Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
Ammonium phosphate sulphate	South	—	—	—	—	120	118
	(16-20-0)	—	—	—	—	—	—
	(20-20-0)	—	—	—	—	24	25
	Kerala	—	—	—	—	—	—
	(16-20-0)	58	60	51	65	68	—
	(20-20-0)	—	—	3	20	24	—
Tamil Nadu	—	—	—	—	—	—	—
(16-20-0)	30	43	43	39	52	—	—
All-India	(16-20-0)	88	103	94	104	120	118
(20-20-0)	—	—	3	20	24	25	—
Nitrophosphate ¹	South	—	—	—	—	—	5
	Tamil Nadu	—	—	—	—	—	—
	(15-15-15)	—	—	—	—	—	—
	West	—	—	—	—	211	215
	Maharashtra	—	—	—	—	—	—
	(20-20-0)	4	—	—	—	—	—
	(15-15-15)	59	134	240	213	211	215
	(20-20-2)	56	45	—	—	—	—
	(18-18-9)	20	25	—	—	—	—
	(21-10-0)	—	—	—	—	—	—
	(15-15-7.5)	—	—	—	—	—	—
	(15-7.5-10)	—	—	—	—	—	—
(14-10.5-14)	—	—	—	—	—	—	
All-India	(15-15-15)	—	—	240	213	211	220
Urea ammonium phosphate	South	—	—	—	—	—	—
	Andhra Pradesh	—	—	—	—	—	—
	(28-28-0)	160	195	175	172	137	150
	(20-20-0)	60	36	17	—	—	—
	(14-35-14)	—	3	28	37	28	40
	(22-22-11)	7	7	—	—	—	—
	West	—	—	—	—	a	75
	Goa ²	—	—	—	—	—	—
(28-28-0)	—	—	—	—	—	75	
All-India	(28-28-0)	—	—	—	172	137	225
(14-35-14)	—	—	—	37	28	40	

Production of complex fertilisers (Concluded)

('000 tonnes)

Fertiliser	Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
Diammonium phosphate ³	South	—	—	—	—	—	5
	Tamil Nadu	—	—	—	—	—	—
	(18-46-0)	—	—	—	—	—	—
	West	—	—	—	—	67	—
	Gujarat	—	—	—	—	—	—
	(18-46-0)	55	50	69	60	67	60
(18-27-3)	—	5	—	—	—	—	
All-India	(18-46-0)	55	50	69	60	67	65
(18-27-3)	—	5	—	—	—	—	—
NPK complex fertilisers	South	—	—	—	—	—	—
	Tamil Nadu	—	—	—	—	—	—
	(17-17-17)	—	55	242	209	226	200
	(14-28-14)	—	13	44	59	34	30
	(10-26-26)	—	—	—	—	—	35
	West	—	—	—	—	—	—
	Gujarat ⁴	—	—	—	—	14	135
	(10-26-26)	—	—	—	—	16	110
	(12-32-16)	—	—	—	—	—	—
	Goa	—	—	—	—	—	20
(18-18-18)	—	—	—	—	—	—	
All-India	(17-17-17)	—	55	242	209	226	200
(14-28-14)	—	13	44	59	34	30	
(10-26-26)	—	—	—	—	14	170	
(12-32-16)	—	—	—	—	16	110	
(18-18-18)	—	—	—	—	—	20	

* Estimated.

a Less than 500 tonnes.

1 Production of nitrophosphate (16-13-0) was only upto 1967-68 and grade (20-20-0) started from August 1967. Besides these two, other grades were also produced during the year 1967-68 to 1973-74.

2 Production started in March 1975.

3 From 26th January 1969, G.S.F.C. switched over to the production of (18-46-0) grade diammonium phosphate from (20-48-0) grade.

4 Production started in November 1974.

Appendix V

Distribution of ammonium sulphate (20.6% N)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	381	350	237	173	201	200
Andhra Pradesh	125	150	78	50	62	
Kerala	16	30	36	37	37	
Karnataka	71	45	36	25	33	
Tamil Nadu	66	97	77	57	63	
Pondicherry	a	1	a	a	—	
UPASI	27	10	7	1	2	
Coffee Board	13	9	3	2	4	
Rubber Board	8	—	—	1	a	
Cardamom Board	a	—	—	a	—	
West	183	108	151	124	107	105
Gujarat	68	68	76	91	71	
Maharashtra	28	40	75	33	36	
Goa	a	—	a	a	—	
Dadra and Nagar Haveli	—	—	a	—	a	
Central	163	67	84	38	67	65
Madhya Pradesh	21	23	51	15	19	
Rajasthan	1	1	9	4	2	
Uttar Pradesh	33	43	24	18	46	
Delhi	2	a	a	a	a	
North	7	5	18	5	47	45
Haryana	a	—	2	—	5	
Himachal Pradesh	6	a	a	a	—	
Jammu & Kashmir	—	4	—	—	—	
Punjab	1	2	16	5	42	
Chandigarh	—	—	a	—	—	
East	304	275	276	289	334	335
Assam	66	60	43	3	1	
Bihar	92	88	90	131	130	
Orissa	31	28	20	26	33	
West Bengal	88	86	91	88	103	
Andamans	a	—	—	—	—	
Nagaland	a	a	a	a	—	
Meghalaya	—	—	3	3	7	
Tripura	—	—	a	—	—	
Tea (N.E. India)	a	13	29	39	60	
Total	1,038	805	766	629	757	750
Others	6	55	8	—	—	—
All-India	1,044	860	774	629	757	750

*Estimated. a Less than 500 tonnes.

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

Distribution of ammonium sulphate nitrate (26% N)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	44	35	22	5	11	10
Andhra Pradesh	34	32	19	5	11	
Karnataka	1	a	1	—	—	
Tamil Nadu	2	3	2	—	—	
Rubber Board	a	a	—	—	—	
West	11	—	3	—	—	—
Gujarat	10	—	2	—	—	
Maharashtra	1	—	1	—	—	
Central	8	6	3	13	7	6
Madhya Pradesh	1	a	a	—	1	
Uttar Pradesh	6	6	3	13	6	
Delhi	a	—	—	—	—	
North	1	—	—	—	—	—
Haryana	a	—	—	—	—	
Punjab	a	—	—	—	—	
East	6	2	28	32	23	24
Bihar	1	1	15	13	13	
Orissa	5	1	3	5	2	
West Bengal	—	a	10	14	8	
Total	70	44	56	50	41	40
Others	—	a	—	—	—	—
All-India	70	44	56	50	41	40

* Estimated.

a Less than 500 tonnes.

Distribution of urea (46% N)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	514	528	557	536	792	1,000
Andhra Pradesh	110	81	171	155	382	
Kerala	5	5	19	29	33	
Karnataka	20	49	88	120	161	
Tamil Nadu	118	164	256	202	196	
Pondicherry	1	1	5	2	3	
UPASI	a	2	10	6	—	
Coffee Board	2	1	8	11	11	
Rubber Board	a	a	—	11	1	
Cardamom Board	—	a	—	a	—	
Tea Board	—	—	—	—	5	
West	316	386	349	369	383	550
Gujarat	167	234	188	197	149	
Maharashtra	78	76	161	168	230	
Goa	—	—	a	4	4	
Dadra & Nagar Haveli	—	a	a	a	a	
Central	469	665	799	799	823	1,000
Madhya Pradesh	93	124	139	127	157	
Rajasthan	56	66	88	101	96	
Uttar Pradesh	304	473	568	569	568	
Delhi	2	2	4	2	2	
North	256	356	507	413	420	600
Haryana	71	86	125	114	98	
Himachal Pradesh	3	—	1	1	2	
Jammu & Kashmir	—	7	31	15	13	
Punjab	174	263	350	283	306	
Chandigarh	—	—	a	a	1	

Distribution of urea (46% N)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
East	145	190	182	162	266	350
Assam	3	5	19	10	9	
Bihar	80	49	86	65	127	
Orissa	5	6	15	16	20	
West Bengal	34	27	40	41	70	
Tripura	—	1	3	1	1	
Nagaland	a	—	—	—	a	
Manipur	1	—	—	1	4	
Mizoram	—	—	1	—	a	
Tea (N.E. India)	—	—	17	26	32	
Meghalaya	—	—	1	1	1	
Arunachal Pradesh	—	—	—	a	a	
Total	1,700	2,127	2,394	2,280	2,684	3,500
Others	1	107	30	a	a	—
All-India	1,701	2,234	2,424	2,280	2,684	3,500
Bangladesh	—	16	—	—	—	—

Notes: * Estimated

a Less than 500 tonnes

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

Appendix VIII (a)

Distribution of calcium ammonium nitrate (25% N)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	36	71	39	25	66	50
Andhra Pradesh	31	63	32	25	66	
Karnataka	3	—	—	—	—	
Coffee Board	2	8	7	—	—	
West	1	—	—	—	—	—
Gujarat	a	—	—	—	—	
Maharashtra	1	—	—	—	—	
Central	37	61	53	52	39	30
Madhya Pradesh	1	2	8	8	4	
Rajasthan	7	12	13	18	8	
Uttar Pradesh	25	41	29	26	27	
Delhi	4	6	3	—	—	
North	212	210	186	231	155	150
Haryana	64	72	76	79	37	
Himachal Pradesh	4	6	2	9	19	
Punjab	144	132	108	141	98	
Chandigarh	—	—	a	2	1	
East	31	70	136	113	153	150
Assam	a	—	—	—	—	
Bihar	3	2	19	15	26	
Orissa	27	63	96	79	61	
West Bengal	1	5	21	19	66	
Total	317	412	414	421	413	380
Others	2	a	3	—	a	—
All-India	319	412	417	421	413	380

Notes: * Estimated.

a Less than 500 tonnes.

Distribution of CAN (20.5% N) was discontinued from April '70.

Appendix VIII (b)

Distribution of calcium ammonium nitrate (26% N)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	22	80	94	92	117	110
Andhra Pradesh	8	29	44	17	58	
Kerala	a	2	a	2	1	
Karnataka	—	20	52	17	16	
Tamil Nadu	a	1	17	38	38	
Pondicherry	—	—	a	1	a	
Coffee Board	5	15	4	7	2	
Rubber Board	a	—	—	—	a	
UPASI	9	9	7	8	—	
Cardamom Board	—	—	a	a	—	
Tea Board	—	—	—	—	2	
West	26	a	5	13	13	20
Gujarat	8	a	a	5	11	
Maharashtra	—	—	5	8	2	
Goa	—	—	a	a	—	
Central	85	78	108	55	42	40
Madhya Pradesh	—	—	—	—	a	
Rajasthan	—	10	—	13	8	
Uttar Pradesh	84	65	108	41	34	
Delhi	1	3	—	1	a	
North	95	130	75	15	88	55
Haryana	2	36	12	2	23	
Himachal Pradesh	—	3	6	2	a	
Punjab	93	92	57	11	64	
East	13	22	15	3	31	25
Bihar	8	14	1	3	11	
Orissa	5	6	13	—	10	
W. Bengal	a	1	a	—	10	
Tripura	—	1	—	—	—	
Total	241	310	297	178	290	250
Others	—	13	—	—	—	—
All-India	241	323	297	178	290	250

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

* Estimated.

a Less than 500 tonnes.

Distribution of ammonium chloride (25% N)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	1	1	a	—	9	10
Andhra Pradesh	1	1	a	—	9	
Karnataka	a	—	—	—	—	
West	6	1	a	—	—	5
Gujarat	1	1	—	—	—	
Maharashtra	5	—	a	—	—	
Central	12	13	10	8	6	10
Madhya Pradesh	2	1	a	a	a	
Rajasthan	a	a	—	—	—	
Uttar Pradesh	9	12	10	8	6	
Delhi	a	a	—	—	—	
North	1	a	a	1	8	10
Haryana	1	a	a	1	—	
Punjab	a	—	—	—	8	
East	5	2	3	4	7	10
Bihar	2	2	3	4	7	
Orissa	a	a	—	—	—	
West Bengal	3	a	a	—	—	
Total	25	17	14	13	30	45
Others	2	3	—	1	a	—
All-India	27	20	14	14	30	45

* Estimated

a Less than 500 tonnes.

Appendix X(a)

Distribution of ammonium phosphate sulphate (16-20-0) and (20-20-0)

Zone/State	('000 tonnes)					
	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	86(1)	101	97(2)	103(21)	117(24)	120(25)
Andhra Pradesh	12(1)	8	4(a)	4(8)	8(11)	
Kerala	21	26	31	36(a)	40(3)	
Karnataka	18(a)	26	25(1)	19(3)	28(9)	
Tamil Nadu	35(a)	41	37(1)	43(10)	40(1)	
Pondicherry	a	a	(a)	1	a	
West	a	a	2	a	—	—
Maharashtra	a	a	2	a	—	—
Central	a	a	a	—	—	—
Uttar Pradesh	a	a	a	—	—	—
North	—	—	—	—	—	—
East	a	a	—	—	—	—
Bihar	a	a	—	—	—	—
West Bengal	a	a	—	—	—	—
All-India	86(1)	101	99(2)	103(21)	117(24)	120(25)

Notes: * Estimated.

a Less than 500 tonnes.

Bracketed figures are of grade (20-20-0) ammonium phosphate sulphate.

Appendix X (b)

Distribution of ammonium nitrate phosphate (20-20-0) and (26-14-0)**

Zone/State	('000 tonnes)					
	1970-71	1971-72*	1972-73	1973-74	1974-75	1975-76†
South	1	22++	—	45; 1*	40	80; 30**
Andhra Pradesh	—	—	—	27	12	
Karnataka	—	—	—	7	17	
Tamil Nadu	—	—	—	10; 1*	11	
Pondicherry	—	—	—	1	—	
West	—	2++	—	61	26	50; 20**
Gujarat	—	—	—	20	13	
Maharashtra	—	—	—	41	13	
Central	1	6	11	28	22	40; 20**
Madhya Pradesh	—	—	—	a	2	
Rajasthan	—	—	a	1	—	
Uttar Pradesh	1	6	11	25	20	
North	—	—	(12+)	8(9+)	9	15; 10**
Haryana	—	—	—	2	a	
Punjab	—	—	(12+)	6(9+)	8	
East	9	4++	14	50	26	50; 20**
Assam	—	—	—	2; a*	1	
Bihar	—	—	2	5; a*	4	
West Bengal	9	—	11	42	21	
Orissa	—	—	1	a	—	
Total	10	34	25	190; 1*	122	235; 100**
			(12+)	(9+)		
Others	—	2	11	—	—	—
All-India	10	36	36	190; 1*	122	235; 100**
			(12+)	(9+)		

Notes: † Estimated.

a Less than 500 tonnes.

* Ammonium phosphate (20-20-0).

** Ammonium nitrate phosphate (26-14-0).

(+) Mono-ammonium phosphate (11-55-0).

++ Statewise breakup is not available.

(i) Distribution of nitrophosphate (20-20-0)

Zone/State	1970-71	1971-72*
South	14, a¹	61
Andhra Pradesh	12	34
Kerala	a	—
Karnataka	1, a ¹	18
Tamil Nadu	a	9
West	45	79
Gujarat	15	79**
Maharashtra	30	—
Central	1	28
Madhya Pradesh	1	—
Uttar Pradesh	a	28
Delhi	a	—
North	—	7
Punjab	—	7
East	5	45***
Assam	a	—
West Bengal	2	—
All-India	65, a¹	220

Note: a Less than 500 tonnes

¹ of grade 20-10-0

* In the absence of gradewise breakup, entire quantity is assumed to be of grade 20-20-0

** Gujarat and Maharashtra

*** Distributed by FCI, Eastern Marketing Zone, Calcutta.

(ii) Distribution of nitrophosphate (15-15-15)

Zone/State	1970-71	1971-72 ⁺	1972-73	1973-74	1974-75	1975-76*
South	30		69	81	83	80
Andhra Pradesh	7		24	30	38	
Kerala	a		1	—	—	
Karnataka	19		40	49	35	
Tamil Nadu	4		4	—	—	
Coffee plantation	—		—	2	10	
West	25		105	117	60	100
Gujarat	5		5	5	3	
Maharashtra	20		100	112	57	
Central	2		22	15	23	30
Madhya Pradesh	1		8	10	7	
Uttar Pradesh	a		14	5	16	
Rajasthan	—		a	—	—	
North	a		1	—	—	—
Punjab	a		1	—	—	
Haryana	—		a	—	—	
Himachal Pradesh	—		a	—	—	
East	8		9	—	—	20
Assam	a		—	—	—	
Bihar	1		a	—	—	
Orissa	1		—	—	—	
West Bengal	6		9	—	—	
Total	65		206	213	183	230
Others	—		4	1	a	—
All-India	65		210	214	184	230

* Estimated.

+ In the absence of gradewise breakup, entire quantity is assumed to be of grade (20-20-0). See Appendix XI(i).

a Less than 500 tonnes

(iii) Distribution of nitrophosphate during 1970-71

Zone/State	(18-18-9)	(14-10.5-14)	(15-7.5-15)
South	4	3	a
Andhra Pradesh	3	—	—
Karnataka	a	3	a
Tamil Nadu	a	—	—
West	19	—	—
Gujarat	2	—	—
Maharashtra	17	—	—
Central	1	—	—
Madhya Pradesh	1	—	—
Uttar Pradesh	a	—	—
North	a	—	—
Punjab	a	—	—
East	a	—	—
Assam	a	—	—
Total	25	3	a

a Less than 500 tonnes.

Appendix XII

Distribution of diammonium phosphate (18-46-0)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	1	—	32	44	77	80
Andhra Pradesh	a	—	a	4	26	
Kerala	—	—	—	5	4	
Karnataka	a	—	4	a	21	
Tamil Nadu	a	—	26	35	25	
Pondicherry	—	—	1	a	a	
UPASI	—	—	—	—	a	
West	96	111	87	105	72	75
Gujarat	56	55	71	71	50	
Maharashtra	a	5	16	34	20	
Goa	a	—	a	—	1	
Dadra and Nagar Haveli	—	—	a	a	a	
Central	39	92	128	118	91	100
Madhya Pradesh	7	17	4	20	13	
Rajasthan	5	7	27	14	8	
Uttar Pradesh	19	68	97	83	69	
Delhi	—	1	a	1	a	
North	18	110	72	101	101	115
Haryana	—	16	5	26	11	
Himachal Pradesh	—	—	a	a	a	
Jammu & Kashmir	—	—	2	1	5	
Punjab	17	94	65	74	85	
Chandigarh	—	—	—	—	a	
East	2	29	20	13	22	30
Assam	—	—	a	—	—	
Bihar	—	25	8	10	16	
Orissa	—	—	—	2	4	
West Bengal	1	4	12	a	2	
Manipur	—	—	a	a	a	
Tripura	—	—	—	1	—	
Nagaland	—	—	—	a	a	
Total	156	342	339	381	363	400
Others	—	2	90	20	—	—
All-India	156	344	429	401	363	400

Notes: 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.

Appendix XIII (a)

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

('000 tonnes)					
Zone/State	1971-72	1972-73	1973-74	1974-75	1975-76*
South	45	238	221	211	210
Andhra Pradesh	6	62	31	49	
Kerala	1	14	20	10	
Karnataka	11	60	28	29	
Tamil Nadu	27	98	139	118	
Pondicherry	a	2	3	5	
West	—	—	—	—	—
Central	—	—	—	—	—
North	—	—	—	—	—
All-India	45	238	221	211	210

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

South	12	44	59	34	30
Andhra Pradesh	1	21	29	23	
Kerala	a	1	a	—	
Karnataka	1	7	11	9	
Tamil Nadu	10	15	18	2	
Pondicherry	a	a	1	—	
West	—	—	—	—	—
Central	—	—	—	—	—
North	—	—	—	—	—
East	—	—	—	—	—
All-India	12	44	59	34	30

* Estimated.

(iii) Distribution of NPK complex fertilisers (18-27-3) and (18-18-18)⁺

('000 tonnes)			
Zone/State	1971-72	1972-73	1975-76*
South	—	—	—
West	—	2	20
Maharashtra	—	2	
Central	—	—	—
North	3	—	—
Haryana	1	—	
Punjab	2	—	
East	—	—	—
All-India	3	2	20

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

Zone/State	('000 tonnes)			
	(10-26-26)		(12-32-16)	
	1974-75	1975-76*	1974-75	1975-76*
South	—	30	—	25
West	1	40	1	20
Gujarat	1		1	
Maharashtra	—		a	
Central	1	50	7	30
Madhya Pradesh	—		1	
Rajasthan	—		a	
Uttar Pradesh	1		6	
North	3	30	5	25
Haryana	1		a	
Punjab	2		5	
East	—	20	—	10
Total	5	170	13	110

* Estimated.

Appendix XIII (b)

Distribution of NPK complex fertilisers**

('000 tonnes)						
Zone/State	1970-71	1971-72†	1972-73	1973-74	1974-75	1975-76*
South	78‡	91‡	55	20	50	60
Andhra Pradesh	1	—	8	3	24	
Kerala	1	—	8	1	6	
Karnataka	1	—	24	2	17	
Tamil Nadu	1	—	15	14	3	
Pondicherry	—	—	a	—	a	
West	42‡	152‡	1	a	1	10
Gujarat	—	—	—	—	1	
Maharashtra	—	—	1	—	—	
Goa	—	—	a	a	—	
Central	35	46	19	1	67	100
Madhya Pradesh	5	5	7	1	a	
Uttar Pradesh	30	41	9	—	67	
Rajasthan	—	—	3	—	—	
North	5	—	5	—	50	70
Punjab	3	—	—	—	49	
Haryana	2	—	2	—	1	
Jammu & Kashmir	—	—	3	—	—	
East	2	1	6	a	4	10
Bihar	1	—	—	a	4	
Orissa	1	1	a	—	—	
West Bengal	—	a	6	a	a	
Nagaland	a	—	—	—	—	
Total	162	290	86	22	172	250
Others	—	6	92@	—	—	—
All-India	162	296	178	22	172	250

Notes: * Estimated.

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

a Less than 500 tonnes.

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

@ Distributed for seeding programme and others.

‡ Statewise breakup is not available.

Appendix XIV

Distribution of urea ammonium phosphate

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South						
28-28-0	57	56	114	131	98	120
20-20-0	5	18	18	—	—	—
22-22-11	28	6	—	—	—	—
14-35-14	—	—	20	29	22	25
Andhra Pradesh						
28-28-0	57	56	100	124	94	—
20-20-0	5	18	8	—	—	—
22-22-11	28	6	—	—	—	—
14-35-14	—	—	20	27	18	—
Kerala						
28-28-0	—	—	a	—	—	—
20-20-0	—	—	a	—	—	—
Karnataka						
28-28-0	—	—	7	4	2	—
20-20-0	—	—	4	—	—	—
14-35-14	—	—	—	1	2	—
Tamil Nadu						
28-28-0	—	—	7	3	2	—
20-20-0	—	—	5	—	—	—
14-35-14	—	—	—	1	2	—
West						
28-28-0	—	—	5	—	a	40
20-20-0	—	—	2	—	—	—
Gujarat						
28-28-0	—	—	a	—	—	—
Maharashtra						
28-28-0	—	—	4	—	—	—
20-20-0	—	—	2	—	—	—
Goa						
28-28-0	—	—	—	—	a	—
Central						
28-28-0	—	—	26	17	14	40
14-35-14	—	—	—	3	5	10
Madhya Pradesh						
28-28-0	—	—	20	17	14	—
14-35-14	—	—	—	3	5	—
Rajasthan						
28-28-0	—	—	a	—	—	—
Uttar Pradesh						
28-28-0	—	—	5	—	—	—

Distribution of urea ammonium phosphate

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
North						
28-28-0	—	—	2	—	—	—
Haryana						
28-28-0	—	—	1	—	—	—
Punjab						
28-28-0	—	—	1	—	—	—
East						
28-28-0	—	—	23	25	22	25
14-35-14	—	—	6	7	4	5
Bihar						
28-28-0	—	—	3	1	—	—
14-35-14	—	—	—	a	—	—
Orissa						
28-28-0	—	—	11	19	14	—
14-35-14	—	—	6	6	2	—
West Bengal						
28-28-0	—	—	9	5	8	—
14-35-14	—	—	a	1	2	—
Others†						
28-28-0	84	169	—	—	—	—
20-20-0	—	24	—	—	—	—
22-22-11	11	—	—	—	—	—
Total						
28-28-0	142	226	170	173	134	225
20-20-0	5	42	20	—	—	—
22-22-11	40	6	—	—	—	—
14-35-14	—	—	26	39	30	40

* Estimated.

a Below 500 tonnes.

† Statewise breakup is not available.

(i) Distribution of superphosphate (16% w.s. P₂O₅)

('000 tonnes)						
Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	224	210	219	231	197	220
Andhra Pradesh	90	85	85	101	78	
Kerala	9	8	9	14	11	
Karnataka	62	58	64	58	56	
Tamil Nadu	63	58	60	58	52	
Pondicherry	a	1	1	a	a	
West	186	203	170	198	138	150
Gujarat	110	121	96	98	60	
Maharashtra	76	82	74	100	77	
Goa	—	—	—	a	1	
Central	145	161	175	167	160	170
Madhya Pradesh	104	136	128	110	74	
Rajasthan	33	10	16	21	16	
Uttar Pradesh	8	15	31	36	70	
Delhi	a	a	a	a	a	
North	20	39	73	69	87	100
Haryana	1	10	10	8	8	
Himachal Pradesh	1	1	a	1	1	
Punjab	18	28	63	60	78	
East	61	70	98	101	103	110
Assam	5	6	11	8	4	
Bihar	14	21	28	32	44	
Orissa	6	6	14	18	13	
West Bengal	35	37	37	40	39	
Tripura	1	a	a	1	a	
Nagaland	a	a	a	a	—	
Manipur	—	—	a	a	—	
Meghalaya	—	—	3	2	2	
Andaman	—	—	—	—	a	
Total	636	683	730	766	685	750
Used in mixtures	47	67	64	69	49	50
All India	683	750	794	835	734	800

* Estimated.

a Less than 500 tonnes.

(ii) Distribution of 'Pelofos' (5% w.s. P₂O₅)

('000 tonnes)			
Zone/State	1973-74	1974-75	1975-76*
South	a	a	1
Andhra Pradesh	a	a	
West	a	1	1
Maharashtra	a	1	
Central	2	1	3
Madhya Pradesh	2	1	
North	—	—	—
East	6	8	10
Bihar	2	2	
Orissa	4	4	
West Bengal	—	2	
Others	—	a	—
All-India	9	10	15

* Estimated.

a Less than 500 tonnes.

Appendix XVI

Distribution of triple superphosphate (45% w.s. P₂O₅)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	1	1	1	1	a	5
Andhra Pradesh	a	a	a	a	a	
Kerala	a	—	a	a	a	
Karnataka	a	a	a	1	a	
Tamil Nadu	a	a	a	a	a	
Pondicherry	—	a	a	—	a	
West	2	2	3	1	2	5
Gujarat	a	a	1	a	2	
Maharashtra	2	2	2	1	a	
Goa	—	—	—	—	a	
Central	a	2	a	1	a	10
Madhya Pradesh	a	2	—	—	—	
Rajasthan	a	—	a	1	a	
Uttar Pradesh	a	a	a	a	a	
Delhi	—	a	a	—	—	
North	4	2	—	a	a	15
Punjab	4	2	—	a	a	
East	—	a	—	a	a	15
Assam	—	a	—	a	—	
Bihar	—	a	—	a	a	
West Bengal	—	a	—	a	a	
Orissa	—	—	—	a	a	
All-India	8	7	4	5	3	50

* Estimated.

a Less than 500 tonnes.

Appendix XVII

Distribution of muriate of potash (60% K₂O)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	112	160	212	281	196	275
Andhra Pradesh	14	16	25	46	24	
Kerala	36	37	32	48	33	
Karnataka	20	23	21	44	31	
Tamil Nadu	42	84	133	142	108	
Pondicherry	a	a	1	1	a	
West	59	81	114	148	125	140
Gujarat	12	12	16	33	30	
Maharashtra	47	69	98	114	92	
Goa	a	a	a	1	3	
Central	42	46	54	79	58	75
Madhya Pradesh	7	10	6	8	9	
Rajasthan	2	2	5	8	3	
Uttar Pradesh	32	34	43	63	46	
Delhi	1	a	a	a	a	
North	8	14	17	37	24	35
Haryana	a	1	1	7	2	
Himachal Pradesh	a	a	a	a	a	
Punjab	8	13	16	30	22	
East	40	50	75	78	72	75
Assam	6	6	20	11	11	
Bihar	10	11	16	16	19	
Orissa	4	4	8	13	9	
West Bengal	20	29	31	37	33	
Tripura	a	a	a	a	a	
Nagaland	NA	NA	a	NA	a	
Manipur	NA	a	a	a	a	
Andamans	NA	NA	NA	a	a	
Total	261	351	472	623	475	600
Others	15	—	a	—	—	—
All-India	276	351	472	623	475	600

* Estimated.

a Less than 500 tonnes.

NA Not available.

Distribution of sulphate of potash (50% K₂O)

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76*
South	12	3	3	7	5	5
Andhra Pradesh	11	2	2	5	3	
Kerala	a	a	a	a	—	
Karnataka	1	a	a	1	2	
Tamil Nadu	a	a	a	a	a	
Pondicherry	a	a	—	—	—	
West	2	a	1	1	1	—
Gujarat	1	a	a	1	a	
Maharashtra	1	a	1	a	1	
Central	—	a	a	a	a	—
Madhya Pradesh	—	—	—	a	—	
Uttar Pradesh	—	—	—	a	a	
Delhi	—	a	a	a	a	
North	—	a	a	—	—	—
Himachal Pradesh	—	a	—	—	—	
Punjab	—	—	a	—	—	
East	—	a	a	—	—	—
West Bengal	—	a	a	—	—	
All-India	14	3	4	8	6	5

Notes:

* Estimated.

a Less than 500 t