

**Production and Consumption of Fertilisers**  
**Annual Review : 1973-74**

*(April-March)*

**(with estimates for 1974-75)**



**The Fertiliser Association of India**  
**Near Jawaharlal Nehru University**  
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## PREFACE

The 16th edition of the *Annual Review of Production and Consumption of Fertilisers* has been prepared by the Fertiliser Association of India with a view to :

- (i) reporting actual performance both of production and consumption front during the year 1973-74;
- (ii) presenting a comparative study of the performance during the 5-year period 1969-70 to 1973-74; and
- (iii) indicating the likely trend for 1974-75.

The consumption figures for 1973-74 for the period February 1973/January 1974 were compiled rather earlier this year (in January/February 1974) by the Central and State Governments. Consequently, the data are tentative. Firm figures would be available only at the next round of meetings (Zonal Conferences) expected to be held in July/August 1974. These will be incorporated in the next issue of *Fertiliser Statistics 1973-74* and the Annual Review. But due to acute shortage of fertilisers during the year under study, actuals are not expected to vary very significantly from the provisional figures reported here. Based on this assumption, the data have been analysed giving due weightage to the obvious shortcoming. The lead period between supply planning and actual supply has been increased to two months by the Government. Readers will have to keep this reservation in view when making a comparison with previous years.

Our review-period being the past five years, this Review analyses the position during the period covering the years 1969-70 to 1973-74 which also synchronises with the Fourth Five Year Plan period (1969-70 to 1973-74).

An attempt has been made here to present a comparative picture as to how our country is placed in relation to some leading countries of the world both in the matter of production and consumption of fertilisers.

The projections of both production and consumption for 1974-75 have been made after a careful examination of the current situation.

(iv)

Particularly, in the case of consumption, two sets of estimates have been presented i.e. an upper and a lower range because of an uncertainty about availability both from domestic production and imports.

(million tonnes)

<i>Consumption</i>	<i>N</i>	<i>P<sub>2</sub>O<sub>5</sub></i>	<i>K<sub>2</sub>O</i>
Upper range	2.610	.935	.460
Lower range	2.00	.700	.360

The upper range represents a situation of plenty and the lower range a situation of scarcity. The actual consumption will be somewhere in between depending upon total availability. Information contained herein has been collected from various sources. Department of Agriculture, Government of India has, as usual, supplied valuable data on Pool despatches. Manufacturers have furnished actual production and factory despatches to individual States. Data on consumption has been drawn from the proceedings of the half-yearly Zonal Conferences on Fertilisers. Help received from these sources is gratefully acknowledged.

We shall look forward to receiving suggestions from readers for further improvement of the Annual Review.

New Delhi  
May 31, 1974

SATYA NAND  
Executive Director  
The Fertiliser Association of India

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## INTRODUCTION

Marketing of fertilisers in India has passed through varying stages of Government control. Until September 1966, Central Fertiliser Pool procured and distributed the entire indigenous production of straight nitrogenous and all imported fertilisers. Indigenous manufacturers of ammonium chloride, superphosphates and complex fertilisers were, however, permitted to market their production on their own.

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

The main objective of the revised liberalised policy was to facilitate availability of fertilisers to farmers by widening the base of distribution through a network of private distribution channels supplementing the existing cooperative network. Also, competition was expected to provide better services to the consumers. The last but not least, was the Government's desire to attract fresh private investment into the industry.

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

Particulars	1966-67		1973-74	
	N	P <sub>2</sub> O <sub>5</sub>	N	P <sub>2</sub> O <sub>5</sub>
Installed capacity ('000 tonnes)*	632	319	1,944	531
Increase in capacity (percentage)	—	—	208	66
Consumption ('000 tonnes)*	839	249	1,835	634
Increase in consumption (percentage)	—	—	119	155
Number of dealer outlets*	60,000		86,000	
Increase (percentage)	—		43	

\* As on April 1, 1974.

(x)

It will be seen from Tables 7a, 8a and 9a that the consumption increased only marginally in 1972-73 (3 per cent) and 1973-74 (3 per cent). This was entirely due to acute shortage of fertilisers. Our additional requirements over and above domestic production are met through imports which were not forthcoming due to non-availability of exportable surplus in the world market and oil/energy crisis. Today, availability is the only constraint on consumption. A close look at requirements agreed at Zonal Conferences and actual availability shows that there was a shortfall to the extent of 20 per cent in 1972-73 and 28 per cent in 1973-74. Compared to the lowered consumption targets for 1973-74 fixed in January 1970 at 5.5 million tonnes (3.2 N; 1.4  $P_2O_5$  and 0.9  $K_2O$ ), the actual realisation was not more than 50 per cent.

Situation internally and in the international market appears to indicate that we will have to live with these shortages for many years. Under normal conditions, when availability in the international market is easy, the gap between demand and domestic production or a setback in indigenous production can be made up through imports even at short notice. This is not so any longer. Unfortunately, due to power cuts—particularly in 1972-73 and 1973-74—labour unrest, etc. in the plants in production and teething troubles in new plants, domestic production in 1973-74 did not register any increase over 1972-73. There was thus a break in the pattern of the earlier years of the Plan when there had been a continuous increase in annual production on an average of 100 thousand tonnes of N and 22 thousand tonnes of  $P_2O_5$  (vide Table 5). Nor were additional imports feasible due to tight situation in the world market and high prices. These acted as a drag on consumption. It is, therefore, apparent that the only viable long term strategy to meet our increasing demand of fertilisers is optimising indigenous production. Meanwhile, we will have to make do with limited availability and a continuing unfulfilled demand.

At the same time we cannot let this shortfall adversely affect our targeted foodgrains production. It is, therefore, necessary to optimise the benefits of fertiliser use by getting the maximum agricultural production from the limited availability by following the path of "least fertiliser consumption for maximum return per unit of nutrient inputs". This will involve a complete reorientation in our research and development, promotional efforts and marketing strategy.

In the past two years, shortages have already hampered our numerous agricultural development programmes like HYVP, M.C.P., etc. and in particular, extension services, Intensive Fertiliser Promotion Programme, Small Farmers Development Agency, Marginal Farmers and Agricultural Labourers Programme and Rural Works. Despite this situation, the

Government Extension Agencies and the indigenous producers have carried out intensive and extensive promotional efforts to create awareness among farmers about the need for the efficient use of fertilisers under limited availability. The number of dealer outlets increased, though at a much slower pace, from 81,000 in 1971-72 to 86,000 in 1973-74 with a view to better serve the farmers in the remote areas. There was continued attempt to reduce the imbalances between N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O, success varied from state to state (vide Table 14).

To ensure equitable distribution of limited quantity of available fertilisers, the Government of India invoked the provisions of the Essential Commodities Act in July 1972 making it obligatory for producers to distribute agreed quantities in each state. A ban was imposed on inter-state movement of fertiliser without prior permission of the central/state Government, to ensure that fertiliser allotted to a state was used therein and not diverted to another one. It also requisitioned, effective 1st July 1972, 30 per cent of indigenous production of ammonium sulphate for a period of six months for distribution through Central Fertiliser Pool for certain priority users. The movement of fertilisers by rail has been rationalised through periodic discussions between the railways, the Ministry of Agriculture and the industry to ensure that railways could give necessary priority to fertiliser movement through optimum utilisation of the available railway capacity. Statutory control on selling prices of urea, ammonium sulphate, calcium ammonium nitrate and the informal control on ex-factory price of superphosphate continued during the period under review. The prices of straight nitrogenous fertilisers were increased marginally in October 1973 because of the increase in the price of naphtha. Price of superphosphate had to be revised upwards substantially due to the sharp rise in the import price and freight hike of the two essential raw materials — rock and sulphur — needed to manufacture superphosphate.

*Notes on presentation*

Tables in the Review following the text contain data covering all the three aspects of the industry viz., production, distribution and consumption. Tables have been drawn from the Statewise/materialwise production and distribution statistics contained in the Appendices. Consumption and distribution statistics cover indigenous as well as imported materials.

As in the past, the Review analyses data for the previous five-year period, i.e., 1969-70 to 1973-74 with projections for 1974-75\*. The five-

\* For Districtwise presentation, see *Fertiliser News*, September 1972, May 1973 and July 1973.

year data is presented Statewise/nutrientwise in the relevant tables. The nutrientwise distribution figures are similarly presented. A comparison of nutrientwise distribution and consumption tables represents change in inventories.

Estimates for 1974-75 are based on past trends duly moderated to take cognizance of anticipated developments.

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

Data on distribution has been obtained from the domestic manufacturers and the Pool. The consumption figures are drawn from the proceedings of the half-yearly Zonal Conferences held by the Central Ministry of Agriculture. Materialwise breakup of consumption is not readily available. Factors affecting consumption of fertilisers in different states have been analysed in depth in the chapter on "Consumption of Fertilisers".

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

Except for the consumption figures for the years 1972-73 and 1973-74 all other production, consumption and distribution figures are on April/March basis. The consumption figures for 1972-73 and 1973-74, however, relate to February/January period.

Wherever Statewise consumption figures are not available, region-wise figures are provided.

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

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

## SUMMARY

### I. Production of Fertilisers

#### *Nitrogenous*

The installed capacity for nitrogenous fertilisers increased by 32 per cent during 1973-74 compared to the previous year. As on 1.4.74 it stood at 1.944 million tonnes of nitrogen. Production, however, did not improve. Production trend in most of the plants was disappointing during 1973-74. The overall capacity utilisation for nitrogenous fertilisers deteriorated sharply from 71 per cent during 1972-73 to 57 per cent during 1973-74. The lower capacity utilisation was mainly due to factors like power cuts, fluctuations in voltage, teething problems on startup of new units, labour unrest, shortage of raw materials, etc.

Six new plants and expansion of another two are likely to be commissioned during 1974-75. Capacity during 1974-75 is expected to rise to 2.766 million tonnes and production during 1974-75 is estimated to reach 1.53 million tonnes of N.

#### *Phosphatic*

The installed capacity of phosphatic fertiliser plants as on 1.4.74 was 0.531 million tonnes. Production during the year 1973-74 decreased from 0.330 million tonnes to 0.325 million tonnes, and the capacity utilisation from 66 to 61 per cent primarily for the same reasons as for N. Nevertheless, some of the superphosphate plants worked at much higher than the licensed capacity and some of the complex fertiliser plants worked to full capacity.

During the year under review, complex fertilisers have become more dominant than single nutrient phosphatic fertilisers and their share during 1973-74 was 61 per cent compared to 38 per cent of superphosphate.

Production during 1974-75 is expected to be around 0.420 million tonnes of  $P_2O_5$ .

#### *Potassic*

Indigenous production of potash continued to be nil during 1973-74 and all requirements were 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 fillip in the early fifties with the dawn of development era in the country and has since then 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 industry took place during the decade 1961-71 with a major shift in Government fertiliser policy 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.

The consolidated list of fertiliser plants in production along with their capacity by end-products and zonewise is given in Appendix I(b). The installed capacity of nitrogenous and phosphatic fertilisers, as on 1.4.1974 was 1.944 million tonnes of N and 0.531 million tonnes of  $P_2O_5$ . This is expected to rise by 1.4.1975 to 2.766 and 0.830 million tonnes of N and  $P_2O_5$  respectively.

### *Conclusion*

During the year under review, there has been a deterioration in the production and capacity utilisation compared to the previous year primarily due to power cuts and labour unrest. There is an urgent necessity to improve productivity. With the improved performance, domestic production of nitrogenous and phosphatic fertilisers is expected to improve. However, the demand has also been rising and the gap between demand and indigenous production was and will continue to be bridged by imports.

## **II. Consumption of Fertilisers**

The extremely limited availability of fertiliser during 1973-74 continued to depress the rate of growth of consumption for yet another year. Since the consumption in 1973-74 was dictated entirely by the level of availability, the growth of 3.2 per cent recorded during the year reflected no particular trend.

### *Nitrogen*

Consumption of nitrogen went up to 1,835 thousand tonnes in 1973-74 recording an increase of only 3.2 per cent over the previous year. The overall increase during the five-year review period was 34.8 per cent, 22.2

per cent lower than that recorded in the last year's review. This drop was on account of a much lower base figure of 1,131 thousand tonnes in 1968-69 for the last year's review compared to 1,360 thousand tonnes for the current review.

The extremely low growth of 3.2 per cent in consumption was due to limited availability of fertilisers in 1973-74. The farmers have no doubt become increasingly aware of the benefits of fertiliser-responsive HYV crops, multiple cropping, etc. through IADP, IAAP, extension and promotional programmes of both the government and the Industry and the scientific marketing of fertilisers by the Industry. But, for maximum results to accrue through such an awareness, adequate availability of fertilisers to all consumers is an essential prerequisite. This was not the case. Since the demand continues to be buoyant and it is only the consumption which has slumped, particularly during the last two years, because of inadequate availability of the product, the future prospects are encouraging. The consumption during 1974-75 can increase by 42.2 per cent over the previous year to 2,610 thousand tonnes. Limitations of actual availability during 1974-75, however, may pull it down to 2 million tonnes, i.e., an increase of 9 per cent over the previous year.

The share of urea in the total application of N gradually rose from 57.9 per cent in 1969-70 to 65 per cent in 1973-74 mainly because of the preference for it due to obvious advantages of high analysis fertiliser. This trend is likely to continue.

The share of N in the total fertiliser application during 1969-70 was 67 per cent. This dropped to a little less than 66 per cent during 1973-74 resulting in a slightly improved balance between various nutrients. Balanced fertilisation would have received additional fillip and the overall availability of fertilisers would have also improved considerably, had better capacity utilisation of superphosphate plants been achieved. The balance would also considerably improve if the idle capacity of granulation units in the country is fully utilised. This would be possible only if State Governments release to them adequate quantity of nitrogenous material.

#### *Phosphates*

The consumption of  $P_2O_5$  during 1973-74 was 634 thousand tonnes i.e., an increase of 8 per cent over the previous year. The overall increase during the review period was 50.2 per cent. The growth rate followed the same pattern as that of N.

Superphosphate continued to be the primary phosphatic fertiliser, though its contribution to total  $P_2O_5$  gradually decreased from 46.6 per

cent in 1969-70 to 20.4 per cent in 1973-74. The reason for this drop in share was the swing away from straight phosphates to complex fertilisers partly because of the latter's many comparative advantages—commercial, technical and of course convenience. Another reason was the inability of many domestic producers of SSP to run their plants at higher levels combined with lack of adequate promotional efforts by some of them. This trend is likely to continue even if domestic superphosphate plants achieve better capacity utilisation because of increasing demand and commissioning of new plants to produce complex fertilisers.

A new chapter opened in the product pattern with the commissioning of plants for manufacturing complex fertilisers in the country. Availability of domestic complex fertilisers and mixtures has helped in creating awareness among farmers of the benefits of balanced fertilisation. Greater promotional efforts may, however, have to be put in to motivate farmers to use larger quantity of  $P_2O_5$ .

#### *Potash*

The consumption in 1973-74, as tabled in Zonal conferences, was 314 thousands tonnes, i.e., a drop of 5.4 per cent over the previous year. The overall increase during the review period was 50.2 per cent compared to 113 per cent recorded in the last year's review. Based on the figures provided by Indian Potash Limited however, consumption was 368 thousand tonnes, i.e., an increase of 11 per cent over 1972-73.

The source of  $K_2O$  through complex fertilisers gradually increased from 12.6 per cent in 1969-70 to 21.9 per cent in 1973-74 indicating a diminishing importance of straight muriate of potash as a fertiliser for direct application. The shift in favour of NPK was apparent because of their obvious advantage, economic or otherwise.

### **III. Zonewise Analysis of Consumption**

South zone continued to lead all other zones in the consumption of N,  $P_2O_5$  and  $K_2O$  during the review period, despite a slight setback in N consumption in 1972-73.

Imbalance continued to exist between production and consumption in all the zones. Pronounced deficit of N existed in South, North and Central zones and of  $P_2O_5$  in North and Central zones. West zone alone was surplus in N. No zone was surplus in  $P_2O_5$ . Shortfall in each zone was met through inter-zonal movement as well as from imports.

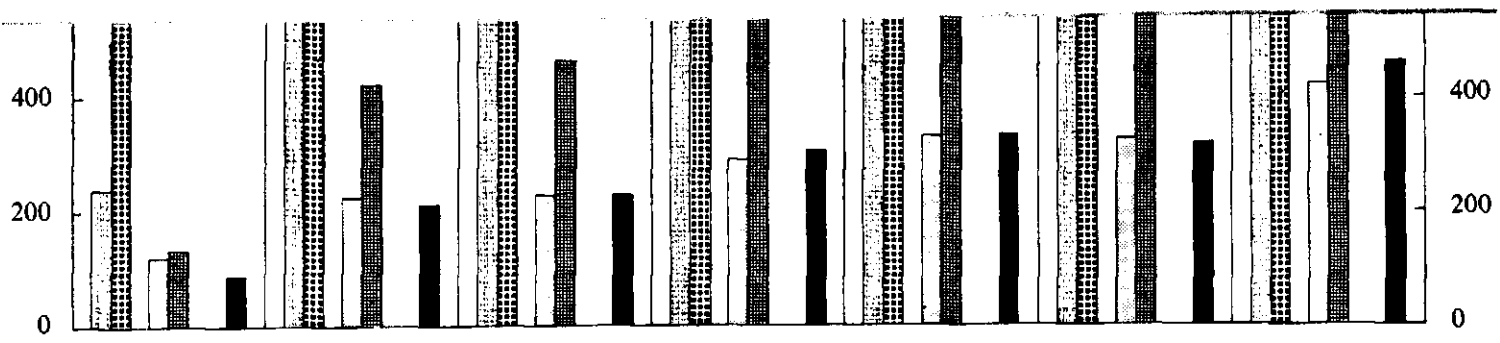


#### IV. Plant Nutrients Consumption Per Hectare and its Ratio

Consumption of plant nutrients ( $N+P_2O_5+K_2O$ ) per hectare of agricultural land registered a sizeable annual increase until 1971-72. The increase in consumption thereafter has been only marginal. The actual consumption in 1973-74 at 15.1 kg/ha is much lower than the estimate of 19.0 kg/ha. The acute shortage of fertilisers during the year under review was the primary constraint on the growth of fertiliser use. The consumption during 1974-75 under adequate supply situation is estimated at 22.1 kg/ha and 16.9 kg/ha under constrained supply.

There is considerable disparity in consumption level between different Zones and States of the Country. North Zone leads all the Zones with consumption of 37.59 kg/ha ( $N+P_2O_5+K_2O$ ). The South Zone continues to rank second with consumption of 23.15 kg/ha followed by West Zone (13.84 kg/ha), Central Zone (9.06 kg/ha) and East Zone (8.07 kg/ha). There has been a marginal increase in plant nutrients consumption in all the Zones except in Central and East Zones where it has dropped during the year under review over the preceding year. The reasons for disparities in the consumption levels in the Zones and States are described.

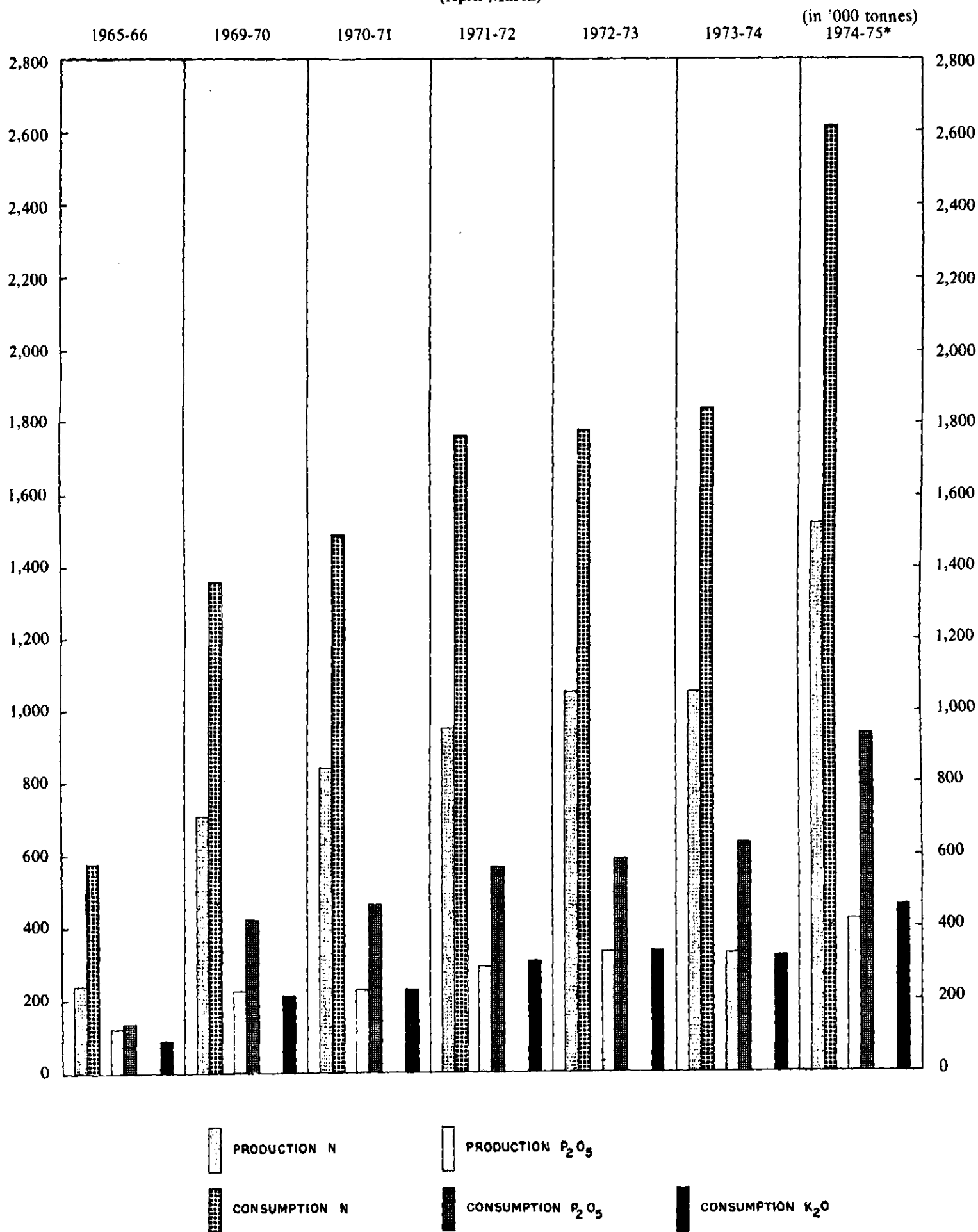
There has not been any significant change in the ratios of N:P:K consumption in the country during the last few years. From the point of view of balanced use of N:P:K fertilisers South continued to rank first among the Zones during 1973-74 also with a ratio of 3.49 : 1.53 : 1, followed by West (6.61 : 3.05 : 1), East (3.95 : 1.15 : 1), Central (9.17 : 2.55 : 1) and North (13.55 : 3.6 : 1). The ratios in South, West and East are comparatively better balanced and nearer to the targeted ratio of 4:2:1 (N:P:K) than in the remaining Zones i.e., Central and North. In the latter the ratios are even below the all-India average which in itself is below the desired ratio of 4:2:1. Nutrientwise imbalance in different Zones has been described with an indication of Zonewise promotional and marketing efforts called for.



PRODUCTION N      PRODUCTION P<sub>2</sub>O<sub>5</sub>  
 CONSUMPTION N      CONSUMPTION P<sub>2</sub>O<sub>5</sub>      CONSUMPTION K<sub>2</sub>O

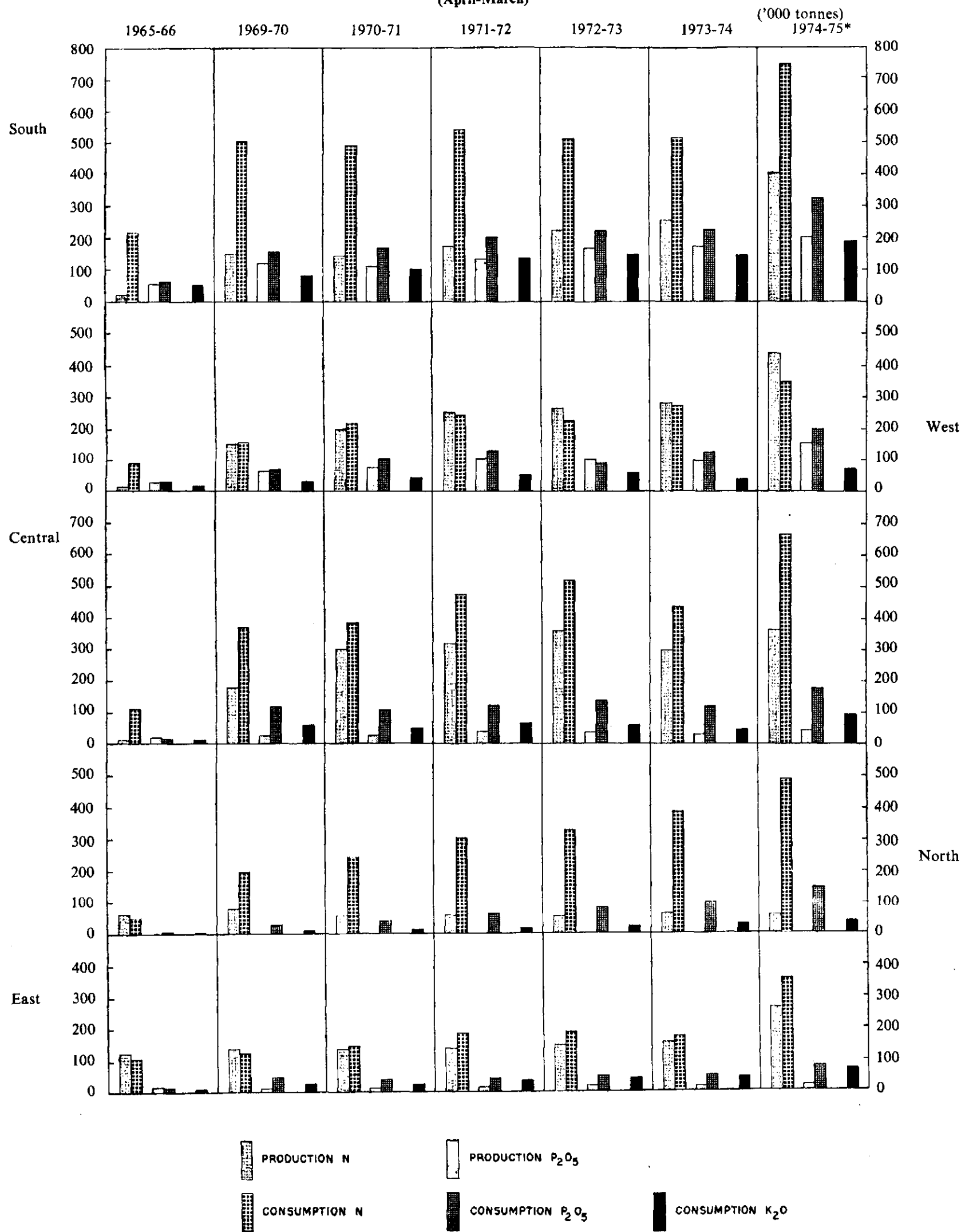
Note : Potassic fertilisers are not produced in the country.  
 \* Estimated.

**PRODUCTION AND CONSUMPTION OF N, P<sub>2</sub>O<sub>5</sub> AND K<sub>2</sub>O IN INDIA  
DURING 1965-66 AND 1969-70 TO 1974-75\***  
(April-March)



Note : Potassic fertilisers are not produced in the country.  
\* Estimated.

**REGIONWISE PRODUCTION AND CONSUMPTION OF N, P<sub>2</sub>O<sub>5</sub> AND K<sub>2</sub>O  
DURING 1965-66 AND 1969-70 TO 1974-75\*  
(April-March)**



Note : Potassic fertilisers are not produced in the country.  
\* Estimated.

**STATEWISE PLANTFOOD CONSUMPTION PER HECTARE OF AGRICULTURAL LAND (in kgs)  
(1969-70 to 1973-74)**



**ALL-INDIA**

Year	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total
1969-70	7.53	2.33	1.16	11.02
1970-71	8.40	2.61	1.29	12.30
1971-72	9.73	3.13	1.67	14.53
1972-73	9.85	3.25	1.84	14.94
1973-74	9.93	3.43	1.70	15.06

Note : Upto 1969-70 agricultural and consumption data refer to the same year, thereafter latest agricultural data for 1969-70 is the divisor for 1970-71, 1971-72 and 1972-73 consumption figures.

**DETAILS OF PRODUCTION  
AND  
CONSUMPTION**

## CHAPTER I

### PRODUCTION OF FERTILISERS

India produces nitrogenous, phosphatic and NPK complex fertilisers. In the absence of any commercial sources for manufacturing potassic fertilisers, the entire requirement of potassic fertilisers is imported.

The total installed capacity of units in production in the country on 1.4.1974 was 1.944 million tonnes of nitrogen and 0.531 million tonnes of  $P_2O_5$ . Three nitrogenous fertiliser units went into production during 1973-74, but their contribution towards production was small and certainly not commensurate with the additional capacity. There has been a certain amount of revamping of superphosphate capacity too.

Production during the same period was 1.050 million tonnes of nitrogen (1.051 million tonnes during 1972-73) and 0.325 million tonnes of  $P_2O_5$  (0.330 million tonnes during 1972-73). The overall capacity utilisation was 57% for nitrogen production as against 71% during 1972-73 and 61% in  $P_2O_5$  production as against 66% during 1972-73. The lower capacity utilisation during the current year was mainly due to :

- (a) production from the three new plants not having stabilised in consonance with their capacity;
- (b) power cuts ranging between 15-50% in various States;
- (c) violent fluctuation and frequent shutdown of power supply;
- (d) labour unrest in many plants;
- (e) an occasional shortage of raw materials;
- (f) a major plant breakdown of one of the units; and
- (g) floods in one of the States necessitating a prolonged shutdown of one of the large plants.

Although production figures for nitrogen in other countries are not available for 1973-74, the following figures of production of nitrogen in

countries producing more than India for 1971-72 and 1972-73 are given below :

*Major nitrogenous fertiliser producers*

(Figures in million tonnes)

Country	1971-72	1972-73
USA	8.21	8.41
USSR	6.05	6.55
Japan	2.13	2.45
China (Mainland)	1.65	2.03
France	1.40	1.47
West Germany	1.32	1.47
Poland	1.08	1.15
Netherland	1.04	1.18
Italy	1.03	1.04
<b>India</b>	<b>0.95</b>	<b>1.05</b>
<b>World</b>	<b>35.11</b>	<b>38.09</b>

During 1974-75, the production of nitrogen in India may reach 1.53 million tonnes, which will improve further the country's position amongst the nitrogenous fertiliser producing countries in the world.

The position with regard to the phosphatic fertilisers is not at all satisfactory. Seventeen countries produce more phosphatic fertilisers than India does.

**(A) Forms in which Fertilisers are Produced**

A panoramic view of the development of 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, calcium ammonium nitrate, ammonium sulphate nitrate, ammonium chloride, single superphosphate (16%  $P_2O_5$ ), triple superphosphate (45%  $P_2O_5$ ), ammonium phosphate sulphate (16-20-0), diammonium phosphate (18-46-0), urea ammonium phosphate (28-28-0, 14-35-14), nitrophosphate (15-15-15) and NPK fertilisers (17-17-17 and 14-28-14). Of these, NPK fertilisers, 17-17-17, 14-35-14 and 14-28-14, were manufactured for the first time during 1971-72.

*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, and ammonium chloride at New Central Jute Mills, Varanasi in 1959 and calcium ammonium nitrate at Nangal in February 1961. 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 1961-71, there was considerable growth of fertiliser industry in the country. Phases II and 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-Vizag., IEL-Kanpur, and Shriram Chemical Industries-Kota went into production.

During 1971-72 to 1973-74 Madras Fertilizers Ltd.,-Madras, Zuari Agrochemicals-Goa, Cochin Unit of Fertilizers and Chemicals Travancore Ltd. and Durgapur Unit of Fertilizer Corporation of India Ltd. went into commercial production.

By 1-4-1974, the total capacity of nitrogen had risen to 1.944 million tonnes.

Production of nitrogenous and phosphatic fertilisers during the last five years is shown in Table 5, along with the estimates for 1974-75. It may be seen that the production of nitrogenous fertilisers has gone up from 705,000 tonnes during 1969-70 to 1,050,000 tonnes during 1973-74, an increase of 49%,  $P_2O_5$  production has increased from 225,000 tonnes during 1969-70 to 325,000 tonnes during 1973-74, an increase of 44%.

During 1973-74, Durgapur, Cochin and Goa plants went into operation. Durgapur plant continued to suffer from many disabilities and production has not yet stabilised. Most of the problems of the Cochin unit were solved towards the end of the year. Production has stabilised at 50% of the capacity. Though the Goa plant faced a serious technical problem, it was rectified promptly and the unit has quickly stabilised its production. During the last three months of the year the plant was working over 90% capacity.

Total production of nitrogenous fertilisers during 1973-74 was 1.050 million tonnes of nitrogen. Of this 62% was contributed by 13 units producing urea (Table 4). Such a high proportion in the form of urea is not surprising as the trend in the fertiliser industry is to produce fertilisers of higher nutrient content, because of the resultant saving in cost of packing, storage and distribution. Though three new units producing urea went into production during the year, there has been a marginal fall in its production compared to 1972-73. This shortfall is due primarily to: (a) production not having stabilised in the three new units, (b) power cuts in various States. On account of these factors, the overall capacity utilisation of the urea plants was only 54% compared to 79% of last year.

Next in importance to urea was ammonium sulphate which contributed only 11.2% of total nitrogen production compared to 10.8% during the previous year. Ammonium sulphate was produced in five large units and a small quantity was produced in six cokeoven plants. The overall capacity utilisation was 61% compared to 58% of the previous year. Though there is a marginal improvement in capacity utilisation.

The production of phosphatic fertilisers during the last five years is shown in Table 4. There has been no increase in production during 1973-74 compared to previous year. It is of interest to notice that though  $P_2O_5$  through superphosphate played a dominant role during 1969-70 contributing about 44 per cent in the total production, its share during 1973-74 has come down to about 38 per cent, the rest being contributed by complex fertilisers. Contribution of superphosphate in terms of  $P_2O_5$  is likely to continue to diminish.

The two straight phosphatic fertilisers being currently produced are single superphosphate and triple superphosphate, besides a small quantity of citrate soluble phosphatic fertiliser—single superphosphate is produced by 30 units (Table 2) in the country. Production during the year registered a fall of 2 per cent over the previous year. Out of the production of 325 thousand tonnes of  $P_2O_5$  during 1973-74, the share of single superphosphate was about 38 per cent, the same as previous year. The overall capacity utilisation in superphosphate industry during 1973-74 was 57% compared to 63% in the previous year. The low performance was due to variety of reasons, the main reason being drastic power cut in many States.

There is only one triple superphosphate plant in the country whose production dropped during the year and its contribution to the total production of  $P_2O_5$  was negligible.

#### *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 NPK fertilisers. Their share in the production of  $P_2O_5$  during 1973-74 remained unchanged at 61 per cent.

Ammonium phosphate sulphate was produced in two units. Its production has improved by 11 per cent over the previous year, and the overall capacity utilisation was about 56 per cent compared to 44 per cent of previous year. Its share in the total nitrogen production is less than 2 per cent, while in  $P_2O_5$  production it is about 7.7 per cent.

Only one grade of nitrophosphate, namely, 15-15-15, was produced by one unit in the country, and its production dropped by about 7 per cent over the previous year. The overall utilisation of capacity during the year, at over 119 per cent, is due to technological improvements and better management of the plant. While its share in the nitrogen production is only about 3 per cent, its share in the  $P_2O_5$  production is about 9.8 per cent.

Diammonium phosphate is produced by one manufacturing unit and its production has dropped by 13 per cent compared to the previous year. This was due to a major breakdown in the plant and severe floods in Gujarat which necessitated a plant shutdown for a total period of three months. Its share in nitrogen and  $P_2O_5$  production is 1 and 8.6 per cent, respectively.

Urea ammonium phosphate grades of 28-28-0 and 14-35-14 were produced by one manufacturing unit. The production has gone up by 3% compared to the previous year. The overall capacity utilisation was about 80 per cent compared to 85 per cent of previous year. While its contribution to the total production of nitrogen was only 5 per cent, its share in the  $P_2O_5$  production was over 18 per cent. With the introduction of urea ammonium phosphate of grade 14-35-14 in 1971-72, urea ammonium phosphate of grade 22-22-11 was discontinued from that year.

Madras Fertilizers Ltd. went into commercial production in October 1971 and produced NPK complex fertilisers, 17-17-17 and 14-28-14, during the year under review. The production was lower by 6 per cent compared to the previous year primarily due to difficulty in procuring adequate quantity of imported phosphoric acid. Its share in nitrogen production was less than 5 per cent, but its share in  $P_2O_5$  production was 16 per cent.

It may be seen from Table 4 that the role of complex fertilisers in the nitrogenous and phosphatic fertilisers production has been improving and their share in the total production of  $P_2O_5$  was 61%. It is expected that complexes will form a major part of phosphatic fertilisers in the coming years.

**(B) Statewise Production**

The factorywise, productwise licenced capacity of various fertilisers, as on 1st April 1974 is given in Appedix I (b). The statewise and materialwise production figures for five years ending 1973-74 are given in Appendices II, III and IV, and the corresponding nutrients for nitrogenous and phosphatic fertilisers are given in Table 5.

*Nitrogenous Fertilisers*

It may be seen from Table 5 that out of a production of 1.050 million tonnes of nitrogen during 1973-74 a third of it was produced in Central Zone and an equal proportion in the West Zone, as in the previous year. In the Central Zone, maximum production was in Uttar Pradesh where two large nitrogenous fertiliser plants, namely, IEL-Kanpur and FCI-Gorakhpur, and a small one, namely, New Central Jute Mills—Varanasi are located. The factory of Shriram Chemical Industries at Kota is another large sized unit in the Central Zone. In the West Zone, the production was mainly from the units located in Maharashtra (FCI-Trombay) and Gujarat (GSFC), one plant in each State. There was a small production of nitrogenous fertilisers in Goa (Zuari) during 1973-74.

In the South Zone Coromandel Fertilisers in Andhra Pradesh, FACT-Always in Kerala, Neyveli Lignite Corporation, EID-Parry and Madras Fertilisers in Tamil Nadu have contributed to the production during 1973-74. The FACT and the Neyveli plants are working to a low capacity due to a variety of reasons—the main problem in Neyveli is the shortage of lignite. The Madras Fertilizer went into commercial production in October 1971. Once its production stabilised its performance has been satisfactory. Cochin plant of FACT was commissioned during 1973-74. Production during the year was less but has now stabilised at about 50% of capacity. There is no nitrogenous fertiliser unit in Mysore State, except the Mangalore Chemicals under erection and is expected to go into production during 1974-75.

In the East Zone, the FCI-Namrup in Assam, FCI-Sindri in Bihar, HSL-Rourkela in Orissa and few cokeoven plants in West Bengal have contributed to the production of nitrogenous fertilisers in the region. Many of these units have been working to low capacity for a variety of reasons. FCI plant at Durgapur was commissioned during 1973-74 but the production is negligible.

The only plant in the North Zone is FCI-Nangal where capacity utilisation is directly linked to the availability of power from the Bhakra system.

Productwise (Appendix II), over 50 per cent of ammonium sulphate is produced in East Zone, most of it from FCI-Sindri, and the rest in Western and Southern Zones. Only a small quantity is produced by one unit in Madhya Pradesh. Ammonium sulphate nitrate is produced only at Sindri. Urea is manufactured by thirteen units spread all over India except North Zone. About 45 per cent of urea is produced in the Central Zone, and 33 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, New Central Jute Mills Co. Ltd., Varanasi (U.P.), in the Central Zone manufactures ammonium chloride.

#### *Phosphatic and Complex Fertilisers*

The installed capacity of phosphatic and complex fertilisers productwise and statewise is presented in Appendices I (b), III and IV. Production in terms of nutrients during the five years, Zonewise and Statewise, is presented in Table 5.

The overall production of phosphatic fertilisers during 1973-74 is almost the same as in the previous year. About 55 per cent of the production of phosphates is in the South Zone where, besides four large complex fertiliser units, a large number of single superphosphate units are located. Although there is no nitrogen production in Mysore State, two single superphosphate plants exist in the State but their contribution is negligible.

In the West Zone, the complex and superphosphate units, in Gujarat and Maharashtra, have performed satisfactorily. Although there is no production of phosphatic fertilisers in Goa at present, the Zuari Agrochemicals Ltd., has a capacity to produce phosphates. Actual production will depend upon the availability of imported phosphoric acid.

In the Central Zone, the contribution is only by four superphosphate units as there is no complex fertiliser manufacturing unit in the Zone.

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

In the East Zone also, phosphatic fertiliser production is only as single superphosphate. Two units in West Bengal operated satisfactorily. Contribution by a unit each in Assam and Bihar was negligible. In Orissa, neither a superphosphate nor a complex fertiliser unit existed in

the past; but a small plant to produce a product called Pelofos containing 18% citrate soluble product went into production during 1973-74.

Amongst the complex fertilisers (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 the West Zone. The grade produced during 1973-74 was 15-15-15, although many other grades can be produced. The complex unit at Trombay performed exceedingly well during the year. GSFC-Baroda produced DAP, 18-46-0. Urea ammonium phosphate of grades 28-28-0, and 14-35-14, were produced at Coromandel's plant in Andhra Pradesh in Southern Zone and the plant has performed well during the year. Madras Fertilizers Ltd. started its production during October 1971 producing 17-17-17 and 14-28-14 in Tamil Nadu in Southern Zone, and has stabilised its production during the year under review.

**(C) Production of Fertilisers During 1974-75**

The anticipated consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O during 1974-75 has been estimated at 2.61, 0.94 and 0.26 million tonnes respectively vide Tables 7(a), 8(a) and 9(a). Against this requirement, the capacity of plants existing in the country as on 1.4.74 is 1.944 million tonnes of N and 0.531 million tonnes of P<sub>2</sub>O<sub>5</sub>. This includes the four plants which have gone into production during the year, namely FACT-Cochin, FCI-Durgapur, Zuari-Goa and Orissa Fertilisers. The Goa plant has stabilised its production and worked well during the latter part of the year. However, its P<sub>2</sub>O<sub>5</sub> capacity of 42,000 tonnes is idle, as it is unable at present to get any phosphoric acid in the international market. Production in Cochin unit has been at about 50 per cent of capacity, and will stabilise its production during 1974-75. Durgapur has yet to perform at a consistent level. It is expected to get over its problems and go into regular production during 1974-75. The Orissa Chemicals and Fertilisers at Rourkela is only a phosphatic fertiliser unit which produces a product containing 18 per cent citrate soluble P<sub>2</sub>O<sub>5</sub> of which 5 per cent is water solubles.

During 1974-75, five large capacity plants and expansion in two plants as detailed below are expected to go into production :

No.	Name of project	Capacity in tonnes		Likely date of commercial production
		N	P <sub>2</sub> O <sub>5</sub>	
<i>Large capacity plants 1974-75</i>				
1.	IFFCO, Kalol-Kandla	215,000	127,000	Ammonia in July 74, NPK Fertilisers in August 74 and urea in October 74
2.	SPIC, Tuticorin	258,000	51,000	Urea by Aug. 74 and complex fertilisers during 1975-76
3.	FCI, Barauni	152,000	—	January 75
4.	FCI, Namrup	152,000	—	January 75
5.	HCL, Khetri	—	90,000	December 74
<i>Expansion</i>				
6.	SCI, Kota	42,000	—	July 74
7.	CFL, Vizag	3,000	31,000	February/March 75
<b>Total</b>		<b>822,000</b>	<b>299,000</b>	

Thus a substantial capacity will be added during 1974-75. The IFFCO plant will produce ammonia and urea at Kalol, and NPK fertilisers at Kandla using urea and ammonia from the Kalol plant with imported phosphoric acid. It will produce three new grades of N:P:K fertilisers, namely 10 : 26 : 26, 12 : 32 : 16 and 14 : 36 : 12 having a  $P_2O_5$  :  $K_2O$  ratios of 1 : 1, 2 : 1 and 3 : 1 respectively. The ammonia plant is expected to go into production in July 1974 and the urea plant in October 1974. The SPIC plant at Tuticorin has the largest urea plant (1,600 tonnes per day) in the country. In the first phase, the urea plant will go into production and the  $P_2O_5$  will be taken up in the second phase, possibly during 1975-76. Mechanical completion of urea plant has been announced and commercial production is expected to commence in August 1974. Barauni and Namrup units of FCI are identical to the Durgapur unit and are designed to produce 600 tpd of ammonia and 1,000 tpd of urea. They are expected to go into production early in 1975. The Khetri plant of Hindustan Copper Ltd. (HCL) will produce triple superphosphate based on sulphuric acid from its copper smelter. Granulated triple superphosphate containing 45 per cent water soluble  $P_2O_5$  is expected to be produced by the end of 1974-75. The expansion of Kota plant of Shriram Chemical Industries is expected to be completed in June and commercial production will start in July 1974. After expansion, the capacity of the plant will be 600 tpd of ammonia and 100 tpd of urea. The Coromandel Fertiliser's plant at Visakhapatnam, when expansion is completed, will have an additional capacity of 31,000 tonnes of  $P_2O_5$  and 3,000 tonnes of N.

Thus by the end of 1974-75, the total capacity of nitrogenous fertilisers is expected to be 2.766 and 0.830 million tonnes of nitrogen and  $P_2O_5$  respectively. The production is expected to be 1.53 million tonnes of nitrogen and 0.42 million tonnes of  $P_2O_5$  (Table 5). On the face of it, the capacity utilisation appears to be very low. This is not necessarily correct since most of the new units are expected to go into production during the latter part of the year 1974-75. Some of them may have teething troubles during the initial stages of commercial production. Real boost in production from these plant will come in 1975-76.

Domestic production during 1974-75, if there are no external constraints, is likely to be 1.53 million tonnes of N and 0.42 million tonnes of  $P_2O_5$ . This will include higher production from the units which went on stream during 1973-74. When the anticipated production is vis-a-vis expected consumption, there is a wide gap of 1.08 million tonnes of nitrogen and 0.52 million tonnes of  $P_2O_5$  which will have to be filled by imports. Besides, country will need to import 0.45 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 used in India during the Review period are listed in Table 6\*.

The trend of switch over to higher analysis straight and complex fertilisers continued in line with the world wide experience.

#### *Nitrogen*

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

#### *Urea*

The contribution of urea as a source of N continued to increase during the entire review period. It rose from 57.9 per cent in 1969-70 to 65 per cent in 1973-74. This trend is likely to continue. Urea has become the most popular and main source of N because of the advantages arising from its high analysis. Its popularity is bound to further increase with more urea plants likely to go on stream within the next 2 to 3 years.

#### *CAN*

CAN is another popular and important source of N in certain areas. But its share dropped from 12.4 per cent in 1969-70 to 9.4 per cent in 1973-74 due to better availability of high analysis fertiliser. The drop in contribution of 1 per cent in 1973-74 was due to its comparatively smaller imports than in the previous year.

Absolute consumption, however, increased from 513 thousand tonnes to 599 thousand tonnes despite drop in indigenous availability from 447

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\* Figures given in Table 6 represent quantities distributed and not actually consumed because the 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.

thousand to 421 thousand tonnes during the review period. Increase in the imports of CAN 26 per cent from 65 thousand tonnes in 1969-70 to 78 thousand tonnes in 1973-74 accounted for the overall increase in CAN availability.

*Ammonium Sulphate (20.6% N)*

The contribution of ammonium sulphate of total N consumption dropped from 19.2 per cent in 1969-70 to 8 per cent in 1973-74. The absolute consumption has dropped from 969 thousand tonnes to 629 thousand tonnes. This drop was primarily due to reduced imports.

Even though ammonium sulphate is popular in certain areas in the country, its share as a source of N will continue to drop further due to its limited indigenous production and reduced imports. Indigenous availability is not likely to improve much because the only additional availability will be a small quantity as a co-product in GSFC (Caprolactum plant) and FCI Sindri (expansion).

*Di-Ammonium Phosphate (DAP)*

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

The contribution of DAP to total N consumption increased from 1.6 per cent in 1969-70 to 4.5 per cent in 1973-74. The contribution is likely to decrease next year on account of the poor import prospects.

*Other Forms*

Rise in contribution of nitrophosphates, urea, ammonium phosphate and NPK complex fertilisers to total N consumption from 6.3 per cent in 1969-70 to 10.7 per cent in 1973-74 was indicative of the trend towards preference for complex fertilisers because of the accepted need for balanced fertilisation, ease of application and lower cost per tonne of nutrient.

The contribution of NPK complex fertilisers recorded a drop of 6.9 per cent in 1973-74 over the previous year due to substantially lesser imports during the year. The contribution is likely to improve next year with the additional availability from MFL and coming on stream of IFFCO plant of Kandla.

*Phosphates*

Here again, the trend was towards complex fertilisers instead of

straight phosphates. There were 7 main sources of  $P_2O_5$  in the country of which superphosphate (16%  $P_2O_5$ ) supplies only  $P_2O_5$  whereas others like DAP, nitrophosphates, ammonium phosphate and NPK complex provide  $P_2O_5$  with N and in many cases  $K_2O$  also.

The drop in the share contributed by superphosphate to total  $P_2O_5$  consumption from 46.6 per cent in 1969-70 to 25.4 per cent in 1973-74 is indicative of the shift away from low to high analysis fertilisers. There was, however, a consistent growth in its absolute consumption recording an increase of 24 per cent during the review period due to increased domestic production. Consumption in 1973-74 was 5 per cent higher than in the previous year. The level of consumption of 1973-74 is likely to be maintained in 1974-75, if not improve depending upon capacity utilisation.

The consumption of DAP, as mentioned above, is largely conditioned by its availability. Its contribution to  $P_2O_5$  consumption rose from 17 per cent in 1969-70 to 34.2 per cent in 1973-74.

The contribution of urea ammonium phosphate to total  $P_2O_5$  dropped from 17 per cent in 1969-70 to 8.9 per cent in 1973-74 due primarily 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 the increased availability of NPK complex fertilisers from MFL which went into production towards the end of 1971. With the commissioning of NPK Zuari plant the share of urea ammonium phosphate is likely to rise again.

Nitrophosphates and NPK complex fertilisers which contributed 10.9 per cent in 1969-70 increased their share to 26 per cent in 1973-74. The commissioning of MFL, efforts of FCI to popularise the use of their nitrophosphate and seeding programme of IFFCO were the main contributory causes. The contribution of NPK complex fertilisers dropped from 4.3 per cent in 1972-73 to 3.4 per cent in 1973-74 due to lesser imports during 1973-74. This position is likely to improve substantially from 1974-75 onwards with the commissioning of IFFCO and SPIC plants.

The contribution of ammonium phosphate sulphate to the  $P_2O_5$  consumption in the country dropped from 8.5 per cent in 1969-70 to 4.6 per cent in 1973-74. Its contribution is not likely to improve.

#### *Potash*

Potash is used primarily in two forms—as muriate of potash 60%  $K_2O$  (MOP) for direct application or as a NPK mixture and through NPK complex fertilisers. The contribution of direct application of MOP to the

total  $K_2O$  consumption increased for the first time during the review period in 1973-74 by nearly 13 per cent over the previous year. 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. Over the review-period, however, the share of MOP for direct application dropped by about 9 per cent, though the absolute quantity for this purpose rose from 191 thousand to 506 thousand tonnes of material. This drop was because of the increase in consumption of NPK complex fertilisers from 122 thousand tonnes in 1969-70 to 555 thousand tonnes in 1973-74. The consumption of NPK complex fertilisers had in fact reached a level of 700 thousand tonnes in 1972-73, but in view of the drop in imports during 1973-74 of about 87 per cent over the previous year, the consumption in 1973-74 was limited to 555 thousand tonnes.

The contribution of indigenously produced NPK complex fertilisers to the total  $K_2O$  consumption dropped from 26.3 per cent in 1972-73 to 21.1 per cent in 1973-74 despite an increase in consumption in absolute terms of complexes from 521 thousand tonnes in 1972-73 to 533 thousand tonnes in 1973-74. This was due to a correspondingly much higher overall increase of more than 36 per cent in consumption of MOP over the same period.

Sulphate of potash, another source of potash, was consumed mainly by plantations in India. The total quantity was around 8 thousand tonnes during 1973-74, an increase of 100 per cent over the previous year.

**(B) Consumption of Fertilisers by States**

The present availability remained extremely limited for yet another year and the rate growth of consumption continued to be low. The rate of growth of 2.6 per cent during 1972-73 was followed by 3 per cent during 1973-74 which was a function of the marginal total increase in availability of fertiliser (N+P+K) from 2,697 thousand tonnes in 1972-73 to 2,783 thousand tonnes in 1973-74. This performance was very poor compared to the anticipated rate of growth of about 27 per cent. This presents an extremely discouraging picture in the context of the country's avowed aim to sharply increase its agricultural production to meet the ever growing requirement of ever increasing population.

The average rate of growth of consumption which stood at 12 per cent per annum over the five-year period ended 1972-73 dropped to 8 per cent per annum with the period ended 1973-74.

There, however, exists a tremendous potential for fertiliser use in the country and given adequate availability, consumption could increase by 43 per cent during 1974-75. The availability will, however, continue to be limited even during 1974-75 though the magnitude of the gap between availability and consumption may decrease. Current assessment of indigenous availability and likely imports should be able to sustain an increase in consumption of 13.5 per cent during 1974-75.

The year-wise, region-wise, State-wise and nutrient-wise details of consumption are given in table 7 (a), 8 (a), and 9 (a). Nutrientwise and yearwise All-India position is briefly as follows:

Fertilisers	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
N —Quantity ('000 tonnes)	1,360	1,487	1,760	1,778	1,835	2,610
—% ± over previous year	20.2	9.3	18.4	1.0	3.2	42.2
P <sub>2</sub> O <sub>5</sub> —Quantity ('000 tonnes)	419	461	564	587	634	935
—% ± over previous year	7.7	10.0	22.3	4.1	8.0	47.5
K <sub>2</sub> O —Quantity ('000 tonnes)	209	228	304	332	314	460
—% ± over previous year	35.7	9.0	33.3	9.2	-5.4	46.5
N+P <sub>2</sub> O <sub>5</sub> +K <sub>2</sub> O Quantity ('000 tonnes)	1,988	21,76	2,628	2,697	2,783	4,005
—% ± over previous year	18.8	9.5	20.8	2.6	3.2	43.9

\* Estimated. @ For districtwise presentation, see *Fertiliser News*, September 1972, May 1973 and June 1973.

### Trend of Nutrientwise All-India Consumption

As indicated in the table given below, the percentage share of N in the total consumption of N + P + K has been gradually reducing and that of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O gradually increasing during the review period. Beginning with 68.4 per cent in 1969-70, the share of N dropped to 65.9 per cent in 1973-74. The share of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O increased from 21.1 per cent to 22.8 per cent and 10.5 per cent to 11.5 per cent respectively over the same period. This is an index of the growing realisation of the benefits of balanced fertilisation.

This trend is likely to continue through 1974-75, tempered undoubtedly by product availability.

*Percentage share of N, P and K to total consumption*

Nutrient	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
N	68.4	68.3	67.0	65.9	65.9	65.2
P <sub>2</sub> O <sub>5</sub>	21.1	21.2	21.5	21.8	22.8	23.3
K <sub>2</sub> O	10.5	10.5	11.5	12.3	11.3	11.5
	100.0	100.0	100.0	100.0	100.0	100.0

\* Estimated

### NITROGEN

The rate of growth in consumption picked up slightly from 1.0 per cent in 1972-73 to 3.2 per cent in 1973-74. Since consumption is currently dictated entirely by the level of availability, the increase reflects no particular trend.

The large scale adoption of high yielding varieties of seeds resulted in an increase of 42 per cent in 1968-69 over the previous year. The next two years registered growths of 20 and 9 per cent indicating a period of adjustment. The consumption in 1971-72 was 18 per cent higher

than the preceding year showing a welcome up-swing in the growth rate. The position in 1972-73 was, however, very discouraging with an increase only of 1 per cent due to limited availability of fertiliser. The position in 1973-74 has been no better with the continued shortages. The picture is indeed dismal compared with the anticipated increase of about 25 per cent during 1973-74.

With the comparatively better availability of fertiliser anticipated during 1974-75, the growth rate in N consumption is likely to increase from 3.2 per cent in 1973-74 to 9 per cent in 1974-75. The consumption in 1974-75 is thus expected to be of the order of 2 million tonnes.

With free availability of fertiliser, the growth rate in 1974-75 could, however, reach a level of 42 per cent compared to the previous year. That would need 2.61 million tonnes of N nutrient.

#### *Zonewise Consumption*

Due primarily to drought conditions 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 in the South, it regained its first position with the consumption of 517 thousand tonnes. The Central zone reverted to its second position with a consumption of 438 thousand tonnes. The North and West zones followed with the consumption levels of 392 thousand tonnes and 276 thousand tonnes respectively. East zone continued to be the lowest consumer with 172 thousand tonnes in 1973-74.

The rate of growth of consumption varied from zone to zone and within each zone from year to year upto 1972-73 in the Central, North and East zones. South and West zones, however, witnessed drop in consumption; South during 1970-71 and 1972-73 and West during 1972-73. The drop in 1972-73 was due to severe drought in South and West zones.

The position in 1973-74 was somewhat different. Whereas West and North zones recorded a reasonable rate of increase of 20.5 per cent and 18.4 per cent respectively, consumption in Central and East zones dropped by 15 and 9.5 per cent respectively due largely to the comparatively lower despatches to these two zones during Rabi 1973-74. South zones also had poor availability during Rabi 1973-74, but recorded an overall marginal increase of 0.9 per cent mainly because of comparatively better despatches to the zone during Kharif 1973-74. This erratic con-

sumption behaviour was thus due mainly to the pattern of fertiliser availability during the two main cropping seasons.

*Percentage increase in consumption of N*

Region	± over previous year						
	1969-70	1970-71	1971-72	1972-73	1973-74	1973-74 over 1969-70	1974-75*
South	18.00	(-) 2.2	9.7	(-)5.5	0.9	2.5	44.1
West	3.9	38.0	12.8	(-)7.3	20.2	74.1	27.9
Central	40.2	3.2	23.4	7.7	-14.9	17.3	52.2
North	7.6	22.7	25.9	8.2	18.2	98.2	24.7
East	24.8	16.7	27.2	1.6	- 9.8	35.7	107.0
All India	20.2	9.3	18.0	1.0	3.2	34.8	42.2

Note : Based on Table 7A.

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

*Zonewise percentage share of consumption of N*

Zone	1969-70	1970-71	1971-72	1972-73	1973-74
South	37.1	33.2	30.8	28.8	29.3
West	11.6	14.7	14.0	12.9	15.0
Central	27.4	25.9	27.2	29.0	23.8
North	14.6	16.3	17.4	18.6	21.4
East	9.3	9.9	10.6	10.7	10.5
Total	100.0	100.0	100.0	100.0	100.0

Of the various zones, North zone alone recorded a continuous increase in its N share from 14.6 per cent in 1969-70 to 21.4 per cent in



1973-74. East zone followed with an increase in N share from 9.3 per cent in 1969-70 to 10.7 per cent in 1972-73, a marginal drop to 10.5 per cent in 1973-74. West zone's share rose from 11.6 per cent in 1969-70 to 14.7 per cent in 1970-71; it dropped to 14 and then 12.9 per cent in the two subsequent years and rose again to 15 per cent in 1973-74. The pattern in the Central zone was more erratic—a drop of 1.5 per cent to 25.9 in 1970-71, then a rise to 29 per cent in 1972-73 followed by a sharp drop to 23.8 in 1973-74. In the South zone alone, its share dropped continuously from 37.1 per cent in 1969-70 to 29.3 per cent in 1973-74.

#### *South Zone*

Due to the 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 review period was only 2.5 per cent. Limited availability particularly during Kharif 1973-74 inhibited consumption to the level of 517 thousand tonnes.

During the year 1974-75 additional consumption of 10 per cent is envisaged due to constraint on availability though the estimate of consumption with free availability could sustain a growth of 44 per cent.

#### *West Zone*

Beginning with 4 per cent growth in 1969-70, it reached the highest level of 38 per cent during 1970-71. The growth rate dropped to 28 per cent during 1971-72 and the year 1972-73 witnessed for the first time a drop of 7.3 per cent in consumption below the previous year's level. The fertiliser availability comparatively improved during 1973-74 and this coupled with no drought conditions during the year resulted in a rate of growth of consumption of 20.5 per cent in 1973-74. This improved the overall increase during the review period to 74.7 per cent compared to 63 per cent for the previous year's review.

The demand remains buoyant and with free availability of fertiliser, consumption during 1974-75 could rise by 28 per cent over the previous year. The current estimate of product availability, however, might result in a growth rate of 9 per cent during 1974-75.

#### *Central Zone*

The highest increase in the growth rate of 40.2 per cent was recorded in 1969-70. It dropped in 1970-71 to only 3.2 per cent, picked up in 1971-72 to a level of 23.4 per cent, dropped again to 7.7 per cent in 1972-73 and recorded a decline to minus 14.9 per cent during 1973-74.

The overall increase during the review period thus dropped from 94 per cent recorded in the last year's review to 17.3 per cent. The extremely limited fertiliser availability, particularly in the Rabi season, affected the Central zone badly reducing its growth rate from the anticipated level of plus 15 per cent to minus 15 per cent in 1973-74. As against the availability of 356 thousand tonnes in the Rabi 1972-73, the availability during the same period in 1973-74 was 270 thousand tonnes.

The estimate of consumption in the Central zone during 1974-75 on the consumption of free fertiliser availability reflects a growth rate of 52 per cent. The actual availability may, however, limit the growth rate to 10 per cent.

#### *North Zone*

The consumption continued to show an increasing trend upto 1971-72, dropped to 8 per cent in 1972-73 and picked up again to 18 per cent during 1973-74 increasing the overall rate of growth during the review period from 80 per cent recorded in the last year's review to 98 per cent. North zone was better placed with comparatively better despatches to the zone during Rabi as well as Kharif seasons.

The buoyant demand can easily result in a growth rate of 25 per cent in 1974-75. The actual availability of fertiliser may, however, limit it to only 15 per cent.

#### *East Zone*

The growth rate, after a steady increase by 24.8 per cent, 16.7 per cent, and 27.2 per cent during the period 1969-70 to 1971-72 respectively, declined sharply to 1.6 per cent during 1972-73. The position worsened in 1973-74 with a sharp decline in consumption of 9.8 per cent over the previous year. This depressed the overall increase in consumption during the review period from 137 per cent noted in the 1971-72 annual review to 25 per cent. East zone suffered because of a drop in availability of about 38 per cent during Rabi 1973-74 compared to the same period in the previous year. Poorer despatches to the zone during Rabi 1973-74 was responsible for this situation.

Estimate of consumption during 1974-75 envisages a rise of 134 per cent over the previous year though limitation of availability might restrain it at 16 per cent.

### Statewise Consumption

#### *South Zone*

*Andhra Pradesh* : The consumption dropped continuously during the review period. Beginning with a consumption of 237 thousand tonnes in 1969-70, it dropped by 27 per cent to 173 thousand tonnes in 1973-74. This is the only State in the South zone which recorded a drop (3.3 per cent) in consumption in 1973-74 over the previous year. Also apart from U.P., this is the only State where there was a drop (nearly 25 per cent) in consumption over the entire review period.

The position on the face of it appears very discouraging. It is, however, believed that a sizeable quantity finds its way to Andhra Pradesh from other States for use in the profitable cash crops.

*Kerala* : Except for the temporary set back in 1970-71, when the consumption dropped by 13 per cent over the previous year, growth rate has been steady. The overall increase in consumption during the review period was 23 per cent. The increase in 1973-74 over the previous year was 12.1 per cent. This was the highest increase recorded in any of the State in the South zone during the year.

*Karnataka* : There was a steady growth in consumption from 87 thousand tonnes in 1969-70 to 107 thousand tonnes in 1972-73. The consumption in 1973-74 showed no increase over the previous year. The overall increase in consumption during the review period was 23 per cent.

*Tamil Nadu* : After a drop by 13 per cent in 1972-73 due primarily to drought and limited availability of fertiliser, consumption picked up and recorded an increase of 3.7 per cent in 1973-74 over the previous year. The growth would have been much higher had there been no limitation of fertiliser availability. Over the entire review period consumption rose by nearly 33 per cent.

#### *West Zone*

*Gujarat* : During the review period in Gujarat, the highest growth rate in any single year was 63 per cent in 1970-71. This was preceded in 1969-70 by a drop in consumption by 3 per cent and followed by an increase in consumption by 8 per cent in 1971-72. The growth was suddenly arrested in 1972-73 on account primarily of drought conditions during both Kharif and Rabi seasons and also because of limited availability of fertiliser. The rate of increase in consumption of 21.9 per cent in 1973-74 was virtually the highest recorded among the major consuming

States in the country. Larger land coverage under HYV crops, adequate rainfall and comparatively better availability of fertiliser helped improve the situation.

Overall increase in consumption during the review period was 114 per cent.

*Maharashtra* : After registering a steady growth of 8, 21, and 17 per cent during the years 1969-70 to 1971-72 respectively, there was a drop in consumption in 1972-73 by 12 per cent. Intensive cotton and oil seeds development programme helped to stimulate demand in 1971-72 but this could not be sustained during 1972-73 due to severe drought and limited availability of fertiliser. The position improved in 1973-74 with the larger land coverage under HYV crops, adequate rainfall and comparatively better fertiliser availability and the consumption during the year of 134 thousand tonnes was higher by 17.5 per cent over the previous year. The overall increase in consumption during the review was 45 per cent.

The plans for extension of area under HYV crops including HY cotton by 35 per cent during 1974-75 are likely to boost the fertiliser requirement considerably.

#### *Central Zone*

*Madhya Pradesh* : The overall rate of growth during the five-year review period of 338 per cent recorded in the last year's annual review was the maximum registered in any State in India. The starting base of 21 thousand tonnes in 1968-69 was no doubt low; nevertheless the overall achievement was remarkable. Maintaining a steady growth in consumption, the State overtook Rajasthan in 1969-70 and in 1972-73 the consumption was twice as much as that of Rajasthan. The growth of 16 per cent in 1972-73 over the previous year was the maximum achieved in that year by any State in India. The position, however, reversed in 1973-74 with a drop in consumption by 16.3 per cent over the previous year despite the fact that the land coverage under HYV crops had increased and favourable climate prevailed during the year. Acute shortage of fertiliser particularly for Rabi crops, caused this setback.

*Rajasthan* : Maintaining a steady growth rate, the consumption increased by 61 per cent during the period 1969-70 to 1971-72. The trend, however, reversed in 1972-73 registering a drop in consumption by 4 per cent over the previous year due to limited availability of fertiliser and severe drought in the State. The position improved again in 1973-74 and consumption rose by 18.8 per cent due mainly to better despatches

to the State during Rabi season. This is the only State in Central Zone which recorded increase in consumption during the year.

The overall increase in consumption during the review period was 84 per cent.

*Uttar Pradesh* : U.P. continued to be the highest nitrogen consuming State in the country with 302 thousand tonnes, though its share in the all-India consumption dropped from 21 per cent in 1972-73 to 16 per cent in 1973-74. The acute shortage of fertiliser at most of the consuming centres in the State during the main cropping seasons resulted in a drop of 19 per cent in 1973-74. This brought the consumption level to even lower than that of 1969-70, the base year of the review period. The programmes of extension of area under HYV crops and foliar spray of urea were badly hampered.

#### *North Zone*

*Haryana* : The consumption recorded consistent growth during the review period. After achieving a rate of 36 per cent in 1970-71 over the previous year, the annual increase in consumption reduced to 19 per cent and 13 per cent respectively during 1971-72 and 1972-73. The increase by 13 and 8.4 per cent during 1972-73 and 1973-74 respectively despite the overall shortage of preferred fertiliser was encouraging.

The overall increase during the review period was 100 per cent. Better availability of fertilisers, increased acreage under HYV crops, better irrigation facilities, State Government's active interest in introduction of crop loan system and incentive schemes continued to help maintain the steady rate of growth.

*Punjab* : The consistent growth rate in consumption was maintained during the review period recording an overall growth of 94 per cent. Thanks to better availability of fertiliser, the rate of growth of 21.7 per cent in 1973-74 over the previous year was second only to that of Gujarat in the country among the major consuming States.

*Jammu & Kashmir* : The consumption increased from 3 thousand tonnes in 1969-70 to 11 thousand tonnes in 1973-74 recording an overall growth of 266 per cent. The increase in consumption in 1973-74 over the previous year was 37.5 per cent.

There was no significant development in the Himachal Pradesh and Chandigarh and their consumption levels continued to be very low.

#### *East Zone*

*Assam* : The consumption increased by 66 per cent in 1970-71

over the previous year; it remained stationary through 1971-72: increased again by 40 per cent in 1972-73 and slumped sharply by 71.4 per cent in 1973-74. The consumption of 2,000 tonnes in 1973-74 was 33 per cent less than the consumption way back in 1969-70. The consumption in general is low in Assam because of good fertility status of the soil due to silt deposits by floods and transportation bottlenecks but the sharp decline in consumption in 1973-74 was disturbing.

*Bihar* : There was a consistent, though slow, increase in consumption during the first four years of the review period resulting in the overall growth of 27 per cent. Increase in areas under HYV wheat, improvements in the marketing and credit arrangements and introduction of crop loans were some of the factors which helped growth in consumption. The position, however, reversed in 1973-74 with a sharp drop in consumption by 23.6 per cent over the previous year. This resulted in consumption dropping by 2.8 per cent—even below the level of consumption in 1969-70, the base year of the review period.

*Orissa* : The growth in consumption was continuous, though the rate of growth was uneven. After registering a growth rate of 11 per cent in 1970-71, the consumption received a big fillip during 1971-72 to record a rise of 85 per cent. The limited availability of fertiliser, however, brought down the growth rate to 8 per cent in 1972-73 and 10 per cent in 1973-74. The overall growth rate during the review period was 144 per cent.

*West Bengal* : The consumption showed a continuous growth upto 1971-72, but in 1972-73 there was a drop of 7 per cent due to limited availability of fertiliser. The consistent growth in the past was due to extension of area under the HYV wheat and rice. Though the fertiliser availability continued to be limited during 1973-74 also the consumption recorded an increase of 3.8 per cent. The overall increase during the review period was 60 per cent.

#### PHOSPHATES

The growth rate of  $P_2O_5$  consumption followed nearly the same pattern as that of N. Beginning with a rise of 7.9 per cent in 1969-70, it increased to 10 and 22.8 per cent in the subsequent two years. The year 1972-73 recorded a sharp decline to 4.1 per cent. This was the lowest recorded during the review period for the same reasons as for N, i.e., drought in many parts of the country and poor availability.

The consumption rose again in 1973-74 by 8 per cent over the previous year. This was no doubt far short of the anticipated growth of 39 per cent.

The overall increase during the five-year review period was 50.9 per cent.

The limited availability of nitrogenous and phosphatic fertiliser as well as lack of adequate promotional efforts for  $P_2O_5$  in certain parts of the country were responsible for the low rate of growth of  $P_2O_5$  consumption.

The overall availability of  $P_2O_5$  from indigenous production and imports during 1974-75 is not likely to be more than 700 thousand tonnes. This will sustain a growth rate of about 10 per cent over the previous year. With free availability of both N and  $P_2O_5$  it should, however, be possible to accomplish a growth rate of 47 per cent.

#### Zonewise Consumption

The growth of consumption zonewise in 1973-74 varied from minus 15.3 per cent in the Central zone to plus 38.0 per cent in West zone. This erratic consumption behaviour was due mainly to the pattern of 'N' and  $P_2O_5$  availability to the various zones during the two main cropping seasons.

*Percentage increase in consumption of  $P_2O_5$*

Zone	± over previous year						
	1969-70	1970-71	1971-72	1972-73	1973-74	1973-74 over 1969-70	1974-75*
South	(-)0.6	5.1	22.9	8.3	1.8	43.7	42.7
West	14.8	50.0	22.9	(-)28.7	38.0	81.4	57.5
Central	31.5	(-)8.3	13.5	14.3	(-)15.3	0.8	47.5
North	(-)34.1	51.8	53.6	28.6	28.3	285.1	44.2
East	22.2	11.0	18.4	14.3	4.2	13.6	62.0
All-India	7.9	10.0	22.8	4.1	8.0	50.9	47.5

\*Estimated.

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  $P_2O_5$*

Zone	1969-70	1970-71	1971-72	1972-73	1973-74
South	37.6	35.9	36.2	38.0	36.1
West	16.7	22.8	22.9	15.6	20.0
Central	28.8	24.0	22.3	24.5	19.3
North	6.4	8.9	11.2	13.8	16.4
East	10.5	8.4	7.4	8.1	8.2
Total	100.0	100.0	100.0	100.0	100.0

As in the case of N, North zone alone recorded consistent increase in its share during the review period. West zone no doubt recorded an overall increase in its share during the review period, but its percentage share fluctuated from year to year. South zone, more or less, maintained its share. So did East zone during the period 1970-71 to 1973-74 after a drop of 2 per cent in 1970-71 over the previous year.

As in the case of N, Central zone's share of  $P_2O_5$  dropped from 28.8 per cent in 1969-70 to 19.3 per cent in 1973-74.

#### *South Zone*

South zone continued to be the largest consumer of  $P_2O_5$  with its share ranging from 36-38 per cent of the all India consumption during the review period. The share in 1973-74 was 36.1 per cent. This long lead of South zone is largely historical because of the sustained promotional efforts of the superphosphate industry and mixture manufacturers which were first established in this zone.

The pattern of growth was, however, very uneven with wide fluctuations from year to year. A marginal increase of 4.5 per cent in 1970-71 was followed by a growth of 22.9 per cent in 1971-72, the largest during the review period. The increase dropped to 9.3 per cent in 1972-73, 1973-74 was again a lean year with a growth of only 1.8 per cent.

The overall increase in consumption during the review period was 43.7 per cent.



*West Zone*

West zone on the other hand started with an increase in consumption of 14.8 per cent in 1969-70 and continued a record increases during the two subsequent years. Severe drought in Maharashtra and Gujarat during 1972-73 resulted in a drop of consumption by 28.7 per cent. The pattern of variation in consumption of  $P_2O_5$  during the review period was in line with that of N.

West was the third largest consuming zone upto 1970-71 but it overtook Central zone during 1971-72 to become the second largest. The position changed in 1972-73 and it reverted to its third position. It retrieved its second position once again in 1973-74 by recording a growth rate of 38 per cent.

The overall growth rate recorded during the review period was 81.4 per cent.

*Central Zone*

A large increase in consumption of 31.5 per cent in 1969-70 was followed by a drop of 8.3 per cent in 1970-71 and an increase of 13.5 and 14.3 per cent respectively during 1971-72 and 1972-73. There was a drop again in 1973-74 of 15.3 per cent over the previous year.

This was the only zone which recorded a drop in consumption in 1973-74. Lower despatches to the zone during Rabi compared to the same period in the previous year were mainly responsible for this situation.

The overall increases was mere 0.8 per cent. This was the lowest increase recorded among the zones.

After leading the West zone upto 1970-71, Central zone slipped to third position in 1971-72. It regained its second position during 1972-73, leading the West zone by 52 thousand tonnes. It again reverted to its third position in 1973-74.

*North Zone*

In the North Zone also the review period began with a drop in consumption of 34.1 per cent in 1969-70. The consumption picked up considerably during the following two years by 51.8 per cent and 53.6 per cent respectively. This was followed by a more modest growth of 28.6 and 28.3 per cent respectively during 1972-73 and 1973-74.

The overall increase in growth rate of 285.1 per cent during the review period was the highest recorded by any zone.

Nevertheless, consumption of  $P_2O_5$  in North zone continued comparatively small despite the large consumption of N. There is, therefore, considerable imbalance in the consumption of various nutrients.

Low availability of  $P_2O_5$  in the soil is now beginning to limit agricultural production. Consumption is, therefore, likely to continue to grow rapidly for some time.

#### *East Zone*

Except for drop in consumption by 11 per cent during 1970-71, a steady growth was witnessed during the review period. The rate of growth in 1973-74 was 4.2 per cent and the overall increase in consumption during the review period was 13.6 per cent. East zone continued to be the lowest consumer of  $P_2O_5$  as for N.

### **Statewise Consumption**

#### *South*

*Andhra Pradesh* : Consumption pattern was very erratic. Consumption dropped by 20 and 7 per cent respectively during the first two years of the review period. It rose in 1971-72 by 25 per cent to be followed by a marginal drop in 1972-73 and again increased by 12.5 per cent in 1973-74. The performance during 1971-72 and 1973-74 was commendable particularly when there was a drop in N consumption during the corresponding period. This was achieved through aggressive marketing and extension work to popularise NPK complex fertilisers. The upward trend in consumption is likely to continue.

The overall increase in consumption during the review period was 28 per cent.

*Kerala* : The pattern of consumption was uneven. Here again the review period began with a drop in consumption by 20 per cent in 1969-70 followed by a further sharp drop of 66 per cent in 1970-71. Consumption started rising thereafter—a marginal increase in 1971-72 followed by 37 per cent in 1972-73 and another 9 per cent in 1973-74. The reasons for sharp increase in consumption were the same as mentioned under Andhra Pradesh.

The overall increase in consumption during the review period was 20 per cent.

*Karnataka* : Consumption rose by 25 per cent in 1970-71, dropped by 14 per cent in 1971-72 and rose again by 33 per cent during 1972-73.

The high growth of consumption in 1972-73 could not be sustained and in 1973-74 it dropped by 14.3 per cent. This resulted in the overall consumption during the review period dropping from 124 per cent, recorded in the last year's review, to 55 per cent.

*Tamil Nadu* : After maintaining a steady growth rate of 28-30 per cent during the years 1969-70 to 1971-72, consumption remained stationary at 71 thousand tonnes in 1972-73 and showed only a marginal increase of 1.4 per cent in 1973-74. This static situation dictated mainly by N & P<sub>2</sub>O<sub>5</sub> availability was discouraging specially in the context of intensive promotional efforts made by the industry in the zone for balanced fertilisation for intensive cultivation in areas of assured irrigation and awareness on the part of the farmers in the zone of the benefits of using standard mixtures and complex fertilisers.

The overall increase in consumption during the review period was 71 per cent.

#### *West Zone*

*Gujarat* : There was a steady growth in consumption in 1970-71 and 1971-72 registering an annual increase of 37 and 15 per per cent, respectively. This was followed during 1972-73 by a drop in consumption of 11 per cent due to drought. The position improved in 1973-74 with an increase in consumption by 11.1 per cent. The overall increase in consumption during the review period was 54 per cent.

The State holds good potential for P<sub>2</sub>O<sub>5</sub> consumption because of sizeable area under groundnut and pulses.

*Maharashtra* : The highest rate of growth of 70 per cent was registered during 1970-71 and the highest consumption level of 67 thousand tonnes was achieved during 1971-72. The achievement during 1971-72 was the result of promotional efforts of the industry to popularise balanced fertilisation, larger coverage under improved local varieties of maize and the assured and timely availability of P<sub>2</sub>O<sub>5</sub> in various forms.

Consumption fell back very sharply to 37 thousand tonnes in 1972-73 due to severe drought in the State. The position was commendably retrieved in 1973-74 with a record rate of growth of 75.7 per cent over the previous year. The overall increase in consumption during the review period was 117 per cent.

As explained under 'Nitrogen' the State's fertiliser requirement is likely to increase considerably with the extension of area under HYV crops during 1974-75.

### *Central Zone*

*Madhya Pradesh* : There was a steady growth in consumption over the review period resulting in an overall increase of 200 per cent. The review period began with a high growth in consumption of 79 per cent in 1970-71, but slowed down to 36, 15 and 7.7 per cent during the years 1971-72, 1972-73 and 1973-74, respectively. Adequate availability of N would have resulted in a much higher growth in  $P_2O_5$  consumption.

The growth was mainly due to active promotional work done by the State extension agency and the industry.

*Rajasthan* : Consumption rose by 38 per cent in 1970-71 and 45 per cent in 1971-72 due to extensive promotional efforts by the State Government and the industry. The position, however, reversed in 1972-73 on account of unfavourable climatic conditions and consumption dropped by 56 per cent. It picked up sharply again in 1973-74 by 71.4 per cent over the previous year.

The overall increase in consumption during the review period was, however, limited to 50 per cent because of the massive drop in 1972-73.

*Uttar Pradesh* : Consumption of  $P_2O_5$  in U.P. was the highest of all the States in the country upto 1972-73. With a drop in consumption 31 per cent in 1973-74, it went down to the 4th position, behind Punjab, Andhra Pradesh and Tamil Nadu.

The review period began with a consumption of 98 thousand tonnes, the highest of the review period. This could not be maintained during the following year when consumption dropped by 23 per cent. After a marginal increase of 1.3 per cent in 1971-72, consumption rose by 27 per cent in 1972-73 despite unfavourable climatic conditions. This brought back consumption to nearly the base figure of the review period. As mentioned earlier, the position deteriorated again in 1973-74 with the drop in consumption by 31 per cent.

### *North Zone*

*Haryana* : The sharp increase in consumption by 87.5 per cent in 1973-74 changed the P to N ratio in the State from 1 : 10 in 1972-73 to 1 : 6. The overall growth in consumption of 275 per cent during the review period was very commendable compared to N growth of only 100 per cent during the same period.

Non-availability of DAP as a source of  $P_2O_5$  was considered earlier to be one of the reasons for slower pick up in demand. Intensive promotional measures to popularise the use of superphosphate and complex fertilisers as additional source of  $P_2O_5$  appeared to have helped.

*Punjab* : Punjab recorded the highest growth rate of 305 per cent with a consistent increase in consumption during the review period. This resulted in the improvement in the P to N ratio of 1 : 7 in 1969-70 to 1 : 3 in 1973-74.

Emerging from fourth position in 1972-73, Punjab became the top most consumer of  $P_2O_5$  in the country in 1973-74 with a consumption of 85 thousand tonnes.

*Himachal Pradesh* : The consumption of  $P_2O_5$  was only 1000 tonnes in 1969-70. This was followed by 100 per cent increase in 1970-71 primarily because of the Indo-German Agricultural Development Programme, IADP and other promotional measures adopted by the State Government. The consumption remained stationary at 2000 tonnes during 1971-72 and 1972-73. The position, unfortunately, reversed in 1973-74 and the consumption dropped by 1000 tonnes to the level prevailing in 1969-70.

*Jammu & Kashmir* : The consumption remained stationary at 1000 during the period 1969-70 to 1971-72. With two increases by 100 and 50 per cent respectively during the two subsequent years, it reached the consumption level of 3000 tonnes during 1973-74.

#### *East Zone*

*Assam* : The off-take of  $P_2O_5$  was very small largely because of only a small area under cultivation for HYV crops, lack of local availability and high transport costs.

*Bihar* : The pattern of consumption was erratic. Unlike the growth of N consumption,  $P_2O_5$  consumption dropped by 33 and 22 per cent in 1970-71 and 1971-72 respectively, increased by 36 per cent in 1972-73 and dropped again by 6 per cent by 1973-74. Consumption of 18 thousand tonnes in 1973-74 was still 33 per cent less than the level prevailing in the base year (1969-70) of the review period. The drop in consumption in 1973-74 was due mainly to drop in N consumption.

*Orissa* : The consistent growth in consumption during the review period recorded an increase in the consumption of 200 per cent. This compares very favourably with the growth of N consumption of 144 per cent during the same period.

The rate of growth in 1973-74 over the previous year at 20 per cent was the highest in the East zone.

*West Bengal* : Except for a drop in consumption of 11 per cent in 1972-73, growth in consumption was consistent during the review period resulting in an overall increase of 64 per cent.

Consumption in 1973-74 increased by 12.5 per cent over the previous year.

### POTASH

The All-India consumption of  $K_2O$  during the review period went up from 209 thousand tonnes to 314 thousand tonnes recording an overall increase of 50.2 per cent. The increase recorded in the last year's review was 113 per cent. This sharp decline in the overall increase was due to a drop in consumption in 1973-74 of 5.4 per cent over the previous year.\*\* There has, however, been in the past a continuing growth in  $K_2O$  consumption during the entire review period, except for the year 1973-74, in line with N and  $P_2O_5$ . This trend is likely to continue in the coming years specially when, unlike for N and P, availability may not be much of a constraint.

#### Zonewise Consumption

The consumption pattern zonewise in 1973-74 compared to the previous year showed a wide variation from minus 28.9 per cent in West zone to plus 31.8 per cent in North zone. It remained static in South zone at 1972-73 level. Consumption dropped by 20 per cent in Central zone and increased by 4.8 per cent in East zone.

#### Percentage increase in consumption of $K_2O$

Region	± over previous year						
	1969-70	1970-71	1971-72	1972-73	1973-74	1973-74 over 1969-70	1974-75*
South	18.9	22.0	34.0	9.6	—	80.4	28.4
West	210.0	35.0	21.4	15.7	(- )28.9	35.5	66.7
Central	33.3	(- )15.0	31.4	10.5	(- )20.0	(- )20.0	98.0
North	(- )42.9	25.0	60.0	37.5	31.8	262.5	20.6
East	66.1	(- )10.7	40.0	20.0	4.8	57.1	59.0
All-India	35.7	9.1	32.9	9.2	(- )5.4	50.2	46.5

\* Estimated.

Note :—Based on table (9A).

\*\*The consumption of 314 thousand tonnes in 1973-74 was recorded by the last Zonal Conference. Since all the consumption figures in the review are based on Zonal Conference records, no change has been made in the  $K_2O$  figure. It is necessary, however, to mention that these figures are at considerable variance with the figures provided by IPL. IPL have indicated the 1973-74 figure as 368 thousand tonnes. It will be necessary to reconcile these figures in the next year's review.

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	(per cent)				
	1969-70	1970-71	1971-72	1972-73	1973-74
South	39.3	43.9	44.4	44.7	47.6
West	14.8	18.4	16.8	17.9	13.4
Central	28.7	22.4	22.0	18.1	15.3
North	3.8	4.4	5.3	6.6	9.2
East	13.4	10.9	11.5	12.7	14.5
Total	100.0	100.0	100.0	100.0	100.0

South zone, the traditional leader in the use of  $K_2O$ , maintained its lead and improved its share further by about 3 per cent in 1973-74. The share of consumption of Central zone on the other hand dropped by about 3 per cent but it also continued to maintain its second position with a share of 15.3 per cent. West zone, where share fell from 17.9 per cent in 1972-73 to 13.4 per cent in 1973-74, lost its third position to East zone with its share improving by about 2 per cent due to intensive promotional efforts in the area for the use of  $K_2O$ . North zone continued to be the lowest consumer of  $K_2O$  though it improved its share in 1973-74 by 2.6 per cent over the previous year.

#### *South Zone*

South zone was the largest consumer with 47.8 per cent of all-India consumption in 1973-74. This was largely due to the traditionally active promotional work carried out by IPL in the area supplemented by MFL for its complex fertilisers and mixture manufacturers for their material.

The annual consumption has been consistently increasing at the range varying from 18.9 per cent in 1969-70 to 34.0 per cent in 1971-72. Thereafter, the growth rate slumped to 9.6 per cent in 1972-73 and nil growth in the following year. This resulted in an overall increase in consumption of 80 per cent. The consumption is likely to increase by 28 per cent to 190 thousand tonnes.

*West Zone*

The highest growth in consumption during the review period of 210 per cent was recorded in 1969-70. This was followed during the subsequent 3 years by an annual growth rate of 35, 21.4 and 15.7 per cent respectively. In 1973-74, consumption dropped by 28.9 per cent. This coupled with the extremely high growth rate in the base year (1969-70) of the review period reduced the overall increase during the review period from 490 per cent recorded in the previous year's review to 35.5 per cent.

The fairly rapid growth rate of West zone brought its consumption closer to that in the Central zone in which consumption at the beginning of the review period was twice that of West zone.

The consumption in 1974-75 is likely to be 70 thousand tonnes recovering growth rate of 67 per cent over the previous year.

*Central Zone*

The Central zone continued to remain the second largest consumer during the review period. Its rate of growth was, however, very erratic resulting in an overall drop in consumption of 20 per cent.

The consumption is estimated to pick up in 1973-74 by 98 per cent to a level of 95 thousand tonnes.

*North Zone*

North zone recorded the highest growth rate of 262.5 per cent over the review period. Barring a drop in consumption of 42.9 per cent in 1969-70, there was a consistent growth in consumption during the review period. This increased its zonewise share from 4 per cent in 1969-70 to 9 per cent in 1973-74. The corresponding increase in the share of 'N' was from 15 to 24 per cent. The N to  $P_2O_5$  ratio also improved from 25 : 1 to 14:1 over the same period. This represented a healthy sign towards better balance in fertiliser use. The consumption is likely to increase by 21 per cent in 1973-74 to 35 thousand tonnes.

*East Zone*

Maximum growth in annual consumption of 66.1 per cent was recorded in 1969-70. This was followed by a drop of 10.7 per cent in 1970-71. The trend changed for the better in 1971-72 with 40 per cent increase in consumption over the previous year. The growth rate diminished in the subsequent two years to 20 and 4.8 per cent respectively. The



overall increase in consumption during the review period reduced from 147 per cent recorded in the last year's review to 57.1 per cent.

East zone share of all-India consumption improved marginally during the review period. The corresponding increase in the share of N was less than 0.5 per cent. The N : P ratio remained more or less unchanged.

The consumption is likely to reach a level of 70 thousand tonnes in 1974-75 recording an increase of 59.0 per cent over the previous year.

#### Statewise Consumption

##### *South Zone*

*Andhra Pradesh* : The consumption pattern was uneven. During the first year of the review period consumption dropped by 31 per cent. This was followed by an annual growth rate of 30 and 59 per cent respectively during the two subsequent years. The trend changed again in 1972-73 with a drop of 11 per cent due to drought and political instability in the State. This trend continued through 1973-74 with a further drop in consumption of 12 per cent.

The overall increase in consumption during the review period was 61 per cent.

*Kerala* : The review period began with 31 per cent increase in consumption in 1969-70. This was followed by a drop of 24 per cent in 1970-71 with an actual consumption of 16 thousand tonnes, i.e., the same as in 1968-69. Thereafter, there was a consistent growth of 12, 5 and 21 per cent during 1971-72, 1972-73 and 1973-74, respectively. The overall increase in consumption during the review period was 10 per cent—a poor performance indeed.

*Karnataka* : The consumption consistently increased over the first 4 years of the review period recording an overall growth of 178 per cent. The consumption remained stationary in 1973-74. Compared to the overall growth of 80 per cent in the South zone as a whole, the performance of Karnataka was commendable.

*Tamil Nadu* : Here again there was a continuous growth during the first four years of the review period recording an overall increase in consumption of 94 per cent. The consumption in 1973-74 remained at the previous year's level of 64 thousand tonnes. Tamil Nadu continued to be the largest consuming State in the country.

*West Zone*

*Gujarat* : A consistent growth in consumption during the review period resulted in an increase in consumption from 4 thousand tonnes in 1969-70 to 13 thousand tonnes in 1973-74 recording an overall growth of 225 per cent. The N:P ratio also improved from 10 : 1 in 1969-70 to 5 : 1 in 1973-74. This is a welcome development.

*Maharashtra* : The consumption increased rapidly from 1969-70 to 1972-73 recording a growth of 74 per cent. The trend reversed in 1973-74 recording a drop in consumption of 42 per cent over the previous year. Consequently, the overall growth was less than 4 per cent.

*Central Zone*

*Madhya Pradesh* : Here again, the consumption continued to show consistent growth in the first four years of the review period recording an overall increase of 167 per cent. Trend reversed in 1973-74 when consumption dropped by 12 per cent. This reduced the overall growth to 133 per cent.

The absolute consumption of 7 thousand tonnes in 1973-74 was very low. Persistent promotional efforts of both the Government and the Industry would be needed to further improve the situation.

*Uttar Pradesh* : The pattern showed high and low consumption in alternate years during the first four years of the review period. The increase of 31 per cent in 1969-70 was followed by a drop of 18 per cent in 1970-71. There was again an increase of 25 per cent in 1971-72 followed by a drop of 13 per cent in 1972-73. There was a further drop of 30 per cent in 1973-74. This resulted in an overall decrease in consumption during the review period of 34 per cent and its status as the second largest consuming State in the country changed to the third position (Karnataka moved into the second position).

The N:K<sub>2</sub>O ratio also worsened from 6 : 1 in 1969-70 to 8 : 1 in 1973-74.

*Rajasthan* : The consumption of potash in Rajasthan doubled during the review period and increase a third during the year under review. But at 4 thousand tonnes per annum it is rather low and steps need to be taken to popularise its use.

*North Zone*

*Punjab* : The consistent growth in consumption resulted in an increase of 283 per cent during the review period. Barring Rajasthan,

Punjab recorded the highest increase in consumption of 27.8 per cent in 1973-74 during the year under review. This increase was gratifying in the face of the earlier belief that the soils in the area hardly needed any potash. There had been a gradual realisation that potash deficiency was in fact adversely affecting certain crops.

The consumption in Haryana, Himachal Pradesh and Jammu and Kashmir was too small to call for any comments.

*East Zone*

*Bihar* : The consumption pattern was very erratic. An increase of as much as 225 per cent in 1969-70, was followed by a drop of 46 per cent in 1970-71. It stayed at the same level in 1971-72. An increase again of 55 per cent in 1972-73 was followed by once again by a drop of 31 per cent in 1973-74 resulting in an overall drop in consumption of 46 per cent during the review period. The consumption at 7 thousand tonnes in 1973-74 was very low compared to the potential in the State.

*West Bengal* : Effective promotional efforts resulted in a consistent growth of consumption over the review period. The consumption increased from 11 thousand tonnes in 1969-70 to 27 thousand tonnes in 1973-74, i.e., an overall growth of 145 per cent. The N:P ratio also improved from 3 : 1 to 2 : 1.

**(C) Consumption Comparison with other Countries : 1972-73**

India beat West Germany in fertiliser consumption and became the sixth largest fertiliser consuming country in the world. The position nutrientwise, however, continued to be different. It maintained its fourth position in terms of 'N' consumption but dropped from 9th to 10th and from 10th to 11th position in respect of P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O consumption respectively.

West Germany lost its ranking above India because of drop in consumption for the first time since at least from 1969-70 of about 2 per cent in 1972-73 over the previous year.

*Countrywise ranking in fertiliser consumption (1972-73)*

Ranking	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total
				N + P <sub>2</sub> O <sub>5</sub> + K <sub>2</sub> O
1.	USA (7,551.3)	USA (4,589.4)	USA (3,991.7)	USA (16,132.4)
2.	USSR (5,606.0)	USSR (3,516.0)	USSR (3,238.0)	USSR (12,360.0)
3.	China (3,460.4)	France (2,090.6)	France (1,635.3)	France (5,383.6)
4.	India (1,778.9)	Australia (1,096.6)	Poland (1,285.2)	China (4,789.5)
5.		China (998.8)	Germany West (1,147.5)	Poland (3,045.7)
6.		Germany West (902.6)	Japan (600.0)	India (2,698.3)
7.		Brazil (874.9)	Czechoslovakia (585.2)	
8.		Poland (781.6)	Germany West (529.3)	
9.		Japan (717.0)	Brazil (460.0)	
10.		India (587.4)	U.K. (353.2)	
11.			India (332.0)	
World	35,737.3	23,819.2	18,647.2	78,203.7

(Figures in brackets denote consumption in '000 tonnes.)

India's share of the total world consumption gradually rose from 3.2 per cent in 1969-70 to 3.7 per cent in 1971-72. It, however, dropped to 3.4 per cent (inspite of gaining a position in world ranking) in 1972-73 due to comparatively higher rate of growth in consumption in some other countries specially in the developing category.

The rate of growth in consumption in India, over the previous year, dropped sharply from 20.8 per cent in 1971-72 to 2.9 per cent in 1972-73 due to drought and limited availability of fertilisers. Several other countries also showed drop in the rate of growth in consumption but the drop in their cases was not as sharp as in India. The overall rate of growth in world consumption also declined from 7.7 per cent in 1971-72 to 6.6 per cent in 1972-73.

On the other hand, Australia was conspicuous with the sharp increase in the rate of growth in consumption from 0.7 per cent in 1971-72 to 25.5 per cent in 1972-73. The following comparison will be of interest.

*Countrywise annual growth rate of fertiliser consumption  
(N + P<sub>2</sub>O<sub>5</sub> + K<sub>2</sub>O) (1970-71 to 1972-73)*

Country	(percentage)		
	1970-71	1971-72	1972-73
India	9.4	20.8	2.9
Egypt	(-)-0.5	15.4	12.0
Philippines	11.4	(-)-8.5	(-)-2.5
Japan	(-)-5.0	(-)-10.0	7.1
Korea Republic of	5.4	11.5	(-)-2.5
The Netherlands	5.7	(-)-7.7	0.5
U.S.S.R.	17.0	20.9	9.9
U.S.A.	5.8	1.9	3.5
Canada	6.6	10.0	16.7
China Mainland	19.6	15.4	11.8
Australia	11.5	0.7	25.5
France	10.2	6.6	9.0
West Germany	5.6	2.1	(-)-1.8
Italy	8.7	8.4	6.3
Developing Countries	11.8	14.7	17.8
Developed Countries	7.5	7.1	3.0
World	8.5	7.7	6.6

### CHAPTER III

## PLANT NUTRIENTS CONSUMPTION PER HECTARE AND ITS RATIO

### (A) Plant Nutrients Consumption

Data on consumption of plant nutrients ( $N + P_2O_5 + K_2O$ ) per hectare of agricultural land in the country for a period of five years (1969-70 to 1973-74) and estimates for 1974-75 are presented in Table 11.

Consumption of plant nutrients per unit of land registered a sizeable annual increase until 1971-72. The increase in consumption thereafter has been only marginal, 0.4 kg/ha. in 1972-73 over 1971-72 and a further 0.2 kg/ha in the year under review over the previous year.

The actual consumption in 1973-74 at 15.1 kg/ha is much lower than the estimate of 19.0 kg/ha. The acute shortage of fertilisers both from domestic sources and from imports during the year under review was the primary constraint on the growth of fertiliser use. The fertilisers availability was further affected by the railway transport bottlenecks consequent in November—December which coincided with the wheat sowing period. These depressed considerably the consumption of fertilisers in the country.

There is tremendous potential for increase in consumption levels if enough supply is available. The consumption during 1974-75 under adequate supply situation is estimated at 22.1 kg/ha and 16.9 kg/ha under constrained supply.

India ranks perhaps the lowest in consumption of plant nutrients per unit area amongst the agriculturally developed countries of the world (Table 15). So is our productivity per unit area of land. This is partially because of averaging. Rates of application by adoptors are no doubt low. Besides, 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 the prime

objectives of the Fifth Five Year Plan, consumption of plant nutrients both horizontally and vertically has to be stepped up.

There is considerable disparity in consumption of plant nutrients per hectare of agricultural land between different Zones and States of the country (Table 12 and Illustration III). Zone-wise consumption figure followed a trend similar to that of last year (1972-73) though there has been a noticeable change in the magnitude.

#### *North Zone*

North Zone comprising States of Punjab, Haryana, Himachal Pradesh and Jammu & Kashmir leads all other Zones and within it Punjab ranks first. Consumption of NPK during 1973-74 has registered sizeable increase of about 10, 4 and 3 kg/ha in Punjab, Jammu & Kashmir and Haryana, respectively over 1972-73. However, in Himachal Pradesh there has been a drop of about 1 kg/ha.

This Zone leads in respect of nitrogen and phosphate consumption. Comparatively large acreage under assured irrigation and extensive areas under HYVs and multiple cropping are the main contributory factors. There is a further sizeable increase in consumption rate in this Zone during the year under review due to increasing cultivation of HYV wheat during Rabi in Jammu & Kashmir and general consciousness of benefits of fertiliser use.

#### *South Zone*

South Zone continues rank second amongst the Zones in consumption of plant nutrients and is far ahead of the remaining three Zones. Cultivation of HYV rice and intensive fertilisation of plantation crops like tea, coffee, rubber, arecanut, coconut, etc., and effective promotion work by the industry explain this high level of consumption.

Pondicherry had the highest consumption of NPK (112.4 kg/ha) not only within the Zone but also within the country, despite a drop of about 11 kg/ha in the year under review over the previous year. Consumption remained almost unchanged over the previous year in other States except in Kerala where an increase in consumption level of 2.5 kg/ha was recorded.

This Zone leads all other Zones in potash consumption due to widespread known deficiency of potash. Promotion efforts of marketers of complex fertilisers, fertiliser mixtures and potash and the cultivation of plantation crops, account mainly for the high consumption of potash in this region.

*West Zone*

This Zone ranks third in consumption of NPK per hectare despite the fact that only about 10 per cent of the area is irrigated (the rest being totally dependent on S-W monsoon). There has been an increase (2.0 kg/ha) in consumption level in 1973-74 over the previous year due to the increased consumption of both N and P. Consumption of NPK in this Zone is slightly lower than the all-India average.

Within the Zone consumption levels in all the States increased substantially. Increased acreage under hybrid jowar and cotton in Gujarat and Maharashtra contributed significantly to the increased level of consumption. Goa recorded an increased consumption of 10 kg/ha. The level of potash consumption is fairly high in Goa, and Dadra and Nagar Haveli.

*Central Zone*

The Central Zone comprising Madhya Pradesh, Uttar Pradesh, Rajasthan and Delhi stands fourth in plant nutrient consumption. The average consumption is far lower than the all-India average.

Application of nitrogen is dominant in this Zone, especially in Uttar Pradesh and Delhi. This is primarily due to the wide spread deficiency of N in the soil and cultivation of vegetables in Delhi territory and of HYVS in Delhi and U.P. The States of M.P. and Rajasthan have a very low level of NPK consumption, may be due to averaging the consumption figures for the whole state in which considerable areas are arid lands growing fodder crops which are rarely fertilised or mono crop areas. Another reason, particularly in the case of M.P., is the poor communication system which hinders promotional efforts and distribution of fertilisers.

Plant nutrients consumption has decreased marginally in all the States except in Rajasthan, during the year under review over the preceding year.

*East Zone*

The East zone comprising the Union territories and four States has the lowest level of nutrients consumption per hectare and 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, good to heavy rainfall and tea plantations. Floods, drought and cyclonic storms in Orissa; floods in West Bengal and Assam; poor promotional activities; problems of



fertiliser movement; slow 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.

As if consumption in the Zone was not low enough it further dropped even though marginally (0.5 kg/ha) over the previous year due to a substantial drop in Assam, West Bengal and Bihar. The HYV wheat area in West Bengal dropped by about 40,000 hectares due to non-availability of fertilisers and seeds which may be one of the reasons for the drop in consumption level in this State. However, there has been considerable increase in consumption level over the previous year in Manipur and marginal increase in Orissa and Tripura.

**(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 (1969-70 to 1973-74) and estimates for 1974-75 are presented in Table 13.

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 the increase in consumption of fertilisers and progress made in various developmental programmes such as IADP, IAAP, HYVP, MCP, etc. There is considerable lack of balance between overall consumption of nitrogen, phosphate and potash in the country. At the end of the Fourth Plan period a ratio of 4 : 2 : 1 (N:P:K) was envisaged, however, the ratio actually attained was 5.4 : 1.8 : 1.

In the year under review the ratio of consumption is 5.8 : 2.0 : 1. The projections for 1974-75 i.e., 5.7 : 2.0 : 1 (under conditions of free availability) and 5.5 : 1.9:1 (if availability is a constrained) do not present a happy picture either. However, with the growing consciousness of balanced use of fertilisers, compulsory stocking of phosphatic and potassic fertilisers along with nitrogenous fertilisers by the dealers, increasing domestic production of NPK complex and mixed fertilisers and relatively limited availability of nitrogenous fertilisers, the situation may improve in future.

To maintain soil fertility and optimise agricultural production in present context of limited availability of fertilisers in the country, balanced fertiliser application is essential. Besides the imbalance in the use of N : P : K, micronutrient deficiencies, especially that of zinc, are widely noticed in areas where HYVS of wheat and paddy are grown. They are also limiting yields. Vigorous efforts aimed at promoting balanced use of plant nutrients, including micronutrients on soil test basis (to arrest soil fertility depletion, increase yields on a sustained level and increase the food production per unit of plant nutrient used) should prove useful 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, the choice of fertilisers use and even more so the type of fertilisers available. The Zone-wise and State-wise N : P : K consumption ratios are presented in Table 14.

From the point of view of the balanced use of N : P : K fertilisers South continued to rank first among the zones during 1973-74 also with a ratio of 3.49 : 1.53 : 1, followed by West (6.61 : 3.05 : 1), East

(3.95 : 1.15 : 1), Central (9.17 : 2.55 : 1) and North (13.55 : 3.6 : 1). The ratios in South, West and East are comparatively better balanced and nearer to the targeted ratio of 4 : 2 : 1 than in the remaining two Zones i.e., Central and North. In the latter the ratios are even below the all-India average which in itself is far below the desired ratio of 4 : 2 : 1.

A critical analysis of the consumption data indicates that proportionately to nitrogen phosphate use is low in Central, North and East Zones and of potash in North, West and Central Zones. To bring the consumption ratio towards the targeted level of 4 : 2 : 1 increasing use of potash in West, both phosphate and potash in Central and North, phosphate in East Zone are warranted. Promotional and marketing efforts will have to be channelised accordingly.

The States of Kerala, Karnataka, Tamil Nadu, Pondicherry, Maharashtra, Goa, Dadra and Nagar Haveli, West Bengal, Nagaland and Meghalaya have a well balanced ratio of consumption. The ratio is far below the all-India average in all other States. The consumption is very imbalance in Haryana (22.67 : 3.75 : 1), Delhi (16.85 : 3.62 : 1), Manipur (12.33 : 2.08 : 1), Rajasthan (13.13 : 2.71 : 1), Punjab (12.43 : 3.70 : 1) and Assam (1.55 : 0.24 : 1). These are then the areas where corrective action needs to be taken.

## **TABLES**

**(on April-March basis)**

T-1

**Table 1**

*Percentage increase in production, distribution and consumption  
of N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O (1969-70 to 1974-75)*

Nutrient	Percentage increase over previous year					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75
<b>Production</b>						
Nitrogen	32.3	18.9	12.9	11.1	(—) 0.5	45.5
Phosphate	5.1	1.3	27.2	13.8	(—) 1.5	29.2
(N + P <sub>2</sub> O <sub>5</sub> )	24.9	14.6	5.6	11.7	(—) 0.7	41.7
<b>Distribution</b>						
Nitrogen	(—) 17.0	26.0	27.1	4.4	(—) 7.9	35.2
Phosphate	(—) 26.7	30.2	54.5	11.5	(—) 1.3	12.1
Potash	(—) 23.8	47.0	29.9	21.9	26.2	9.6
(N + P <sub>2</sub> O <sub>5</sub> + K <sub>2</sub> O)	(—) 19.6	28.7	32.1	7.7	(—) 1.5	26.5
<b>Consumption**</b>						
Nitrogen	20.2	9.3	18.4	1.0	3.2	42.2
Phosphate	7.7	10.0	22.3	4.1	8.0	47.5
Potash	35.7	9.0	33.3	9.2	(—) 5.5	46.5
(N + P <sub>2</sub> O <sub>5</sub> K <sub>2</sub> O)	18.8	9.5	20.8	2.6	3.8	43.9

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

\* Year under estimation.

\*\* For regionwise and seasonwise details, see Tables 7 (a), 8 (a), 9 (a), & 10.

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 1-4-1974)
(i) 1906	Single superphosphate	E.I.D.-Parry Ltd. Ranipet	30
(ii) 1906	Fertiliser mixtures		661
(iii) 1933	Ammonium sulphate		12
	(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	2
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	13
	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., Ambarnath	1
	Urea ammonium phosphate	Coromandel Fertilisers Ltd., Vizag	1
	NPK complex fertilisers	FCI Ltd., Trombay	3

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 I (b)].

\* One factory is using both sulphuric acid and gypsum for the manufacture of ammonium sulphate.



Table 4

## Forms in which fertilisers are produced

Kind of fertiliser	Production ('000 tonnes)						Percentage $\mp$ increase over previous year					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*	1970-71	1971-72	1972-73	1973-74	1974-75	1969-70 to 1973-74
Ammonium sulphate (20.6% N)	582 (17.0)	638 (15.6)	582 (12.7)	554 (10.1)	574 (11.2)	592 (8.0)	11.0	(-) 8.9	(-) 5.5	3.6	3.1	(-) 1.4
Ammonium sulphate nitrate (26% N)	43 (1.6)	42 (1.3)	30 (0.8)	58 (1.4)	48 (1.1)	50 (0.8)	(-) 2.3	(-) 28.6	93.3	(-) 17.3	4.0	11.6
Urea (46% N)	773 (50.5)	1,096 (60.1)	1,237 (60.1)	1,413 (61.1)	1,408 (61.8)	2,345 (70.4)	41.8	12.9	14.0	(-) 0.1	66.5	82.1
Calcium ammonium nitrate (20.5% N) (25% N)	3 (0.1) 437 (15.5)	— — 315 (9.4)	— — 412 (10.9)	— — 412 (9.8)	— — 431 (10.3)	— — 428 (7.0)	— — (-) 27.9	— — 30.8	— — —	— — 4.6	— — (-) 0.7	— — (-) 1.4
Ammonium chloride (25% N)	13 (0.4)	22 (0.7)	18 (0.5)	14 (0.4)	14 (0.3)	16 (0.3)	9.2	(-) 18.2	22.2	—	14.3	7.7
Ammonium phosphate sulphate (16-20-0) (20-20-0)	87 4 (2.0)	88 — (1.7)	103 — (1.7)	94 3 (1.5)	104 20 (2.0)	110 35 (1.6)	(-) 3.4	17.0	(-) 5.9	27.8	16.9	36.3
Nitrophosphate (15-15-15)	110 <sup>1</sup> (2.6)	139 <sup>1</sup> (3.0)	200 <sup>1</sup> (4.2)	240 (3.4)	213 (3.0)	240 (2.4)	26.4	43.9	20.0	(-) 11.3	12.7	93.6
Diammonium phosphate (18-46-0)	45 (1.1)	55 (1.2)	50 (1.0)	69 (1.1)	60 (1.0)	65 (0.8)	22.2	(-) 9.1	38.0	(-) 13.0	8.3	33.3
Urea ammonium phosphate (28-28-0) (20-20-0)	207 24 (8.9)	160 20 (6.8)	195 36 (6.6)	175 17 (4.9)	172 — (4.6)	180 — (3.3)	(-) 4.8	5.0	(-) 4.4	(-) 11.5	4.6	(-) 25.5
NPK complex fertilisers												
17-17-17	—	—	55	242	209	285	—	—	340.0	(-) 13.6	36.4	—
18-27-3	—	—	5	—	—	—	—	—	—	—	—	—
14-28-14	—	—	13	44	59	61	—	—	228.0	34.0	3.4	—
14-35-14	9 $\phi\phi$	7 $\phi\phi$	37 $\phi\phi$	28	37	45	—	—	833.0	32.1	21.6	—
14-36-12	—	—	—	—	—	80	—	—	—	—	—	—
10-26-26	—	—	—	—	—	39	—	—	—	—	—	—
12-32-16	—	—	—	—	—	34	—	—	—	—	—	—
	(0.3)	(0.2)	(1.5)	(4.9)	(4.7)	(5.4)						
<b>Total N</b>	<b>705</b> (100.0)	<b>838</b> (100.0)	<b>946</b> (100.0)	<b>1,054</b> (100.0)	<b>1,050</b> (100.0)	<b>1,528</b> (100.0)	<b>18.9</b>	<b>12.9</b>	<b>11.1</b>	<b>(-) 0.4</b>	<b>45.5</b>	<b>48.9</b>

(Continued)



Table 4

## Forms in which fertilisers are produced (Concluded)

Kind of fertiliser	Production ('000 tonnes)						Percentage $\mp$ increase over previous year					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*	1970-71	1971-72	1972-73	1973-74	1974-75	1969-70 to 1973-74
Superphosphate (16% w.s. P <sub>2</sub> O <sub>5</sub> )	616 (44.0)	613 (43.0)	773 (42.7)	789 (38.1)	772 (38.2)	815 (31.0)	(-) 0.5	26.1	2.0	(-) 2.2	5.6	25.3
Higher grades of superphosphate	12 (1.0)	8 (0.6)	3 (0.2)	— (0.6)	10 <sup>2</sup> (0.6)	12 <sup>3</sup> (0.5)	(-)33.3	(-)62.5	—	—	20.0	—
Triple superphosphate (45% P <sub>2</sub> O <sub>5</sub> )	7 (1.4)	6 (1.2)	8 (0.6)	5 (0.5)	3 (0.3)	28 (3.1)	(-)14.3	33.3	(-)37.5	(-)40.0	833.3	(-)328.5
Ammonium phosphate sulphate (16-20-0)	87 (8.0)	88 (7.9)	103 (7.2)	94 (5.8)	104 (7.7)	110 (6.9)	(-) 3.4	17.0	(-) 5.9	27.8	16.9	36.3
(20-20-0)	4 (11.0)	— (7.9)	— (7.2)	3 (5.8)	20 (7.7)	35 (6.9)						
Nitrophosphate (15-15-15)	110 <sup>1</sup> (6.9)	139 <sup>1</sup> (10.5)	200 <sup>1</sup> (13.7)	240 (10.9)	213 (9.8)	240 (8.6)	26.4	43.9	20.0	(-)11.3	12.7	93.6
Diammonium phosphate (18-46-0)	45 (9.8)	55 (11.1)	50 (7.8)	69 (9.7)	60 (8.6)	65 (7.1)	22.2	(-)9.1	38.0	(-)13.0	8.3	33.3
Urea ammonium phosphate (28-28-0)	207 (28.0)	160 (25.0)	195 (21.3)	175 (15.8)	172 (14.8)	180 (11.9)	(-) 4.8	5.0	(-) 4.4	(-)11.5	4.6	(-)25.5
(20-20-0)	24 (28.0)	60 (25.0)	36 (21.3)	17 (15.8)	— (14.8)	— (11.9)						
NPK complex fertilisers (17-17-17)	—	—	55	242	209	285	—	—	340.0	(-)13.6	36.4	—
(18-27-3)	—	—	5	—	—	—	—	—	—	—	—	—
(14-28-14)	—	—	13	44	59	61	—	—	228.0	34.0	3.4	—
(14-35-14)	9 $\phi\phi$	7 $\phi\phi$	3.7 $\phi\phi$	28	37	45	—	—	833.0	32.1	21.6	—
(14-36-12)	—	—	—	—	—	80	—	—	—	—	—	—
(10-26-26)	—	—	—	—	—	39	—	—	—	—	—	—
(12-32-16)	—	—	—	—	—	34	—	—	—	—	—	—
	(0.9)	(0.7)	(5.9)	(19.1)	(20.0)	(30.9)						
<b>Total P<sub>2</sub>O<sub>5</sub></b>	<b>225</b>	<b>228</b>	<b>290</b>	<b>330</b>	<b>325</b>	<b>420</b>	<b>1.3</b>	<b>27.2</b>	<b>13.8</b>	<b>(-) 1.5</b>	<b>29.2</b>	<b>44.4</b>

Note : \* Estimated.

 $\phi\phi$  Of grade (22-22-11).

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

2. "Pelofos" (5% W.S. P<sub>2</sub>O<sub>5</sub>).

*Production of fertilisers in States  
(nitrogen & phosphates)*

('000 tonnes)

Zone/State	Nitrogen (N)						Phosphates (P <sub>2</sub> O <sub>5</sub> )					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>150</b>	<b>146</b>	<b>174</b>	<b>224</b>	<b>253</b>	<b>406</b>	<b>119</b>	<b>111</b>	<b>134</b>	<b>170</b>	<b>175</b>	<b>200</b>
Andhra Pradesh	68	75	65	59	54		73	67	74	71	72	
Kerala	29	30	36	29	50		15	16	15	14	22	
Karnataka	—	—	—	—	—		a	a	1	1	a	
Tamil Nadu	53	41	73	136	149		31	28	44	84	81	
<b>West</b>	<b>155</b>	<b>201</b>	<b>253</b>	<b>264</b>	<b>282</b>	<b>442</b>	<b>66</b>	<b>80</b>	<b>104</b>	<b>104</b>	<b>100</b>	<b>157</b>
Gujarat	111	147	184	203	161		28	34	39	42	38	
Maharashtra	44	54	69	61	56		38	46	65	62	62	
Goa	—	—	—	—	65		—	—	—	—	—	
<b>Central</b>	<b>180</b>	<b>300</b>	<b>321</b>	<b>363</b>	<b>298</b>	<b>363</b>	<b>28</b>	<b>27</b>	<b>40</b>	<b>39</b>	<b>33</b>	<b>45</b>
Madhya Pradesh	6	6	5	6	5		8	9	14	11	10	
Rajasthan	82	114	107	127	110		7	8	8	8	4	
Uttar Pradesh	93	180	209	230	183		4	2	5	5	5	
Delhi	—	—	—	—	—		9	8	13	15	14	
<b>North</b>	<b>80</b>	<b>55</b>	<b>57</b>	<b>54</b>	<b>62</b>	<b>57</b>	—	—	—	—	—	—
Punjab	80	55	57	54	62		—	—	—	—	—	—
<b>East</b>	<b>139</b>	<b>136</b>	<b>141</b>	<b>146</b>	<b>155</b>	<b>260</b>	<b>12</b>	<b>10</b>	<b>12</b>	<b>17</b>	<b>17</b>	<b>18</b>
Assam	26	28	30	34	36		4	2	1	—	—	
Bihar	74	77	56	57	61		2	1	2	2	1	
Orissa	32	25	50	51	48		—	—	—	—	2	
West Bengal	7	6	5	4	10		6	7	9	15	14	
<b>All-India</b>	<b>705</b>	<b>838</b>	<b>946</b>	<b>1,051</b>	<b>1,050</b>	<b>1,528</b>	<b>225</b>	<b>228</b>	<b>290</b>	<b>330</b>	<b>325</b>	<b>420</b>

\* Estimated.

a= Less than 500 tonnes.

Forms in which fertilisers are consumed (April-March)

Kind of fertiliser	Distribution ('000 tonnes)						Percentage $\pm$ over previous year					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1970-71	1971-72	1972-73	1973-74	1969-70 to 1973-74	1974-75*
Ammonium sulphate 20.6% N	969 (19.2)	1044 (16.5)	877 (10.9)	774 (9.3)	629 (8.0)	700 (6.6)	7.8	(-)16.0	11.7	(-)18.7	(-)35.1	11.3
Calcium 20.5% ammonium 25% N nitrate 26% N	1 447 65	— 319 241	— 412 323	— 417 297	— 421 178	— 440 205	10.0	31.3	(-)2.9	(-)16.1	16.8	7.7
Urea 46% N	1308 (57.9)	1701 (59.7)	2234 (61.8)	2424 (64.2)	2280 (65.0)	3350 (70.7)	30.0	31.3	8.5	(-)6.0	74.3	46.9
Ammonium (26% N) sulphate nitrate	41 (1.0)	70 (1.4)	44 (0.7)	56 (0.8)	50 (0.8)	55 (0.6)	70.1	(-)37.2	27.3	(-)10.7	21.9	10.0
Ammonium chloride (25% N)	10 (0.2)	27 (0.5)	20 (0.3)	14 (0.2)	14 (0.2)	16 (0.2)	170.0	(-)26.0	(-)30.0	—	40.0	14.3
Ammonium (16-20-0) phosphate (20-20-0)	94 7	86 2	101 36	99 2	103 22	107 30	(-)12.9	55.7	(-)26.3	23.8	23.8	9.6
Ammonium sulphate	88 (1.4)	156 (1.0)	344 (1.4)	429 (0.9)	401 (1.3)	350 (1.1)	77.3	120.5	24.7	(-)20.3	288.6	-12.7
Diammonium phosphate (18-46-0)	77 (1.6)	168 (2.3)	206 (3.7)	211;36+ (4.4)	214;190+ (4.5)	240;150+ (2.9)	118.2	22.6	19.9	63.6	424.6	21.3
Nitrophosphate	— (1.2)	— (2.3)	— (2.4)	12 (0.1)	9 (0.1)	20+++ (0.2)	—	—	—	(-)25.0	—	—
Mono-ammonium phosphate (11-55-0)	133 (4.0)	142 (3.7)	226 (4.3)	175 (3.1)	173 (3.0)	180 (2.3)	(-)2.0	84.8	(-)27.3	(-)11.3	15.3	4.0
Urea ammonium (28-28-0) phosphate (20-20-0)	17 (4.0)	5 (3.7)	42 (4.3)	20 (3.1)	— (3.0)	— (2.3)	—	—	—	—	—	—
NPK complex fertilisers												
15-15-15@	62	162	296	178	22	50	201.5	79.2	34.3	(-)29.9	408.9	26.0
17-17-17	—	—	45	238	221	275						
18-27-3	—	—	3	—	—	—						
14-28-14	—	—	12	44	59	60						
14-35-14	5@@	40@@	6@@	26	39	45						
10-26-26	—	—	—	—	—	39						
14-36-12	—	—	—	—	—	80						
12-32-16	—	—	—	—	—	34						
	(1.1)	(1.7)	(3.3)	(4.3)	(3.4)	(4.0)						
<b>Total N</b>	<b>1040</b> <b>(100.0)</b>	<b>1310</b> <b>(100.0)</b>	<b>1665</b> <b>(100.0)</b>	<b>1739</b> <b>(100.0)</b>	<b>1613</b> <b>(100.0)</b>	<b>2182</b> <b>(100.0)</b>	<b>26.0</b>	<b>27.1</b>	<b>4.4</b>	<b>(-)7.9</b>	<b>54.0</b>	<b>35.3</b>

(Continued)

Table 6

## Forms in which fertilisers are consumed (April-March) (Continued)

Kind of fertiliser	Distribution ('000 tonnes)						Percentage $\mp$ over previous year					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*	1970-71	1971-72	1972-73	1973-74	1969-70 to 1973-74	1974-75*
Superphosphate (16% w.s. P <sub>2</sub> O <sub>5</sub> ) 'pelofos'	675;3+	684	750	794	835	830	1.3	9.6	5.9	5.2	23.1	(-)0.6
Triple superphosphate (45% w.s. P <sub>2</sub> O <sub>5</sub> )	5	8	7	4	5	24	60.0	(-)12.5	(-)42.9	25.0	—	380.0
Ammonium 16-20-0 phosphate 20-20-0 sulphate	94	86	101	99	103	107	12.9	55.7	(-)26.3	23.8	23.8	9.6
Diammonium 18-46-0 phosphate	7	2	36	2	22	30	(8.5)	(5.7)	(5.7)	(3.7)	(4.6)	(4.4)
Nitrophosphate	88	156	344	429	401	350	(17.0)	(23.2)	(33.0)	(37.0)	(34.2)	(26.4)
	77	168	206	211;36+	214;190+	240	118.2	22.6	19.9	63.6	424.6	21.3
	(6.5)	(10.8)	(8.6)	(7.3)	(12.9)	250+						
Mono-ammonium phosphate (11-55-0)	—	—	—	12	9	20+++	—	—	—	(-)25.0	—	—
Urea (28-28-0)	133	142	226	175	173	180	(-)2.0	84.8	(-)27.3	(-)11.3	15.3	4.0
Ammonium 20-20-0 phosphate	17	5	42	20	—	—						
NPK 15-15-15@	62	162	296	178	22	50						
Complex 17-17-17	—	—	45	238	221	275						
fertilisers 18-27-3	—	—	3	—	—	—						
14-28-14	—	—	12	44	59	60						
14-35-14	5@@	40@@	6@@	26	39	45	201.5	79.2	34.3	(-)29.9	408.9	26.0
10-26-26	—	—	—	—	—	39						
14-36-12	—	—	—	—	—	80						
12-32-16	—	—	—	—	—	34						
	(4.4)	(10.7)	(12.0)	(16.7)	(31.1)	(22.5)						
<b>Total P<sub>2</sub>O<sub>5</sub></b>	<b>238</b>	<b>310</b>	<b>479</b>	<b>534</b>	<b>541</b>	<b>610</b>	<b>30.2</b>	<b>54.5</b>	<b>11.5</b>	<b>(-)3.8</b>	<b>115.9</b>	<b>3.5</b>
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)						

(Continued)

Table 6

## Forms in which fertilisers are consumed (April-March) (Concluded)

Kind of fertiliser	Distribution ('000 tonnes)						Percentage $\pm$ over previous year					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1970-71	1971-72	1972-73	1973-74	1969-70 to 1973-74	1974-75*
Muriate of Potash (60% K <sub>2</sub> O) (straight use)	191 (85.8)	256 (78.2)	292 (68.3)	335 (64.4)	506 (77.1)	496 (69.0)	34.0	14.1	14.7	51.0	164.9	(-)-2.0
Sulphate of potash (50% K <sub>2</sub> O) (straight use)	5 (2.2)	13 (3.2)	3 (0.8)	4 (0.6)	8 (1.0)	10 (1.1)	160.0	(-)-76.9	33.3	100.0	60.0	25.0
NPK Complex fertilisers (imported) (15-15-15)@	62 (6.6)	162 (12.2)	296 (17.2)	179 (8.7)	22 (0.8)	50 (1.7)	161.3	82.7	(-)-39.5	(-)-87.7	(-)-64.5	127.3
NPK Complex fertilisers of various grades (indigenous)	60 (6.0)	98 (6.4)	244 (13.7)	521 (26.3)	533 (21.1)	773 (28.2)	63.3	149.0	113.5	2.3	788.3	45.0
NPK complex fertilisers all grades (indigenous & imported)	122 (12.6)	260 (18.6)	540 (30.9)	700 (35.0)	555 (21.9)	823 (29.9)	113.1	107.7	29.6	(-)-20.7	354.9	48.3
<b>Total K<sub>2</sub>O</b>	<b>134</b> <b>(100.0)</b>	<b>197</b> <b>(100.0)</b>	<b>256</b> <b>(100.0)</b>	<b>312</b> <b>(100.0)</b>	<b>394</b> <b>(100.0)</b>	<b>432</b> <b>(100.0)</b>	<b>49.2</b>	<b>29.9</b>	<b>21.9</b>	<b>26.3</b>	<b>198.5</b>	<b>9.6</b>

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).

+ Higher grade superphosphate.

Table 7 (a)

## Consumption of nitrogen (N) by States

Zone/State	('000 tonnes)					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>505</b>	<b>494</b>	<b>542</b>	<b>512</b>	<b>517</b>	<b>745</b>
Andhra Pradesh	237	207	196	179	173	
Kerala	30	26	31	33	37	
Karnataka	87	93	98	107	107	
Tamil Nadu	148	165	214	190	197	
Pondicherry	3	3	3	3	3	
<b>West</b>	<b>158</b>	<b>218</b>	<b>247</b>	<b>229</b>	<b>276</b>	<b>353</b>
Gujarat	65	106	115	114	139	
Maharashtra	92	111	130	114	134	
Goa	1	1	2	1	2	
Dadra, Nagar Haveli	NA	NA	NA	NA	1	
<b>Central</b>	<b>373</b>	<b>385</b>	<b>478</b>	<b>515</b>	<b>438</b>	<b>667</b>
Madhya Pradesh	34	51	79	92	77	
Rajasthan	31	41	50	48	57	
Uttar Pradesh	306	291	346	373	302	
Delhi	2	2	3	2	2	
<b>North</b>	<b>198</b>	<b>243</b>	<b>306</b>	<b>331</b>	<b>392</b>	<b>489</b>
Haryana	45	61	73	83	90	
Himachal Pradesh	3	3	4	5	4	
Jammu & Kashmir	3	4	4	8	11	
Punjab	147	175	225	235	286	
Chandigarh	NA	NA	NA	NA	1	
<b>East</b>	<b>126</b>	<b>147</b>	<b>187</b>	<b>190</b>	<b>172</b>	<b>356</b>
Assam	3	5	5	7	2	
Bihar	70	75	88	89	68	
Orissa	18	20	37	40	44	
West Bengal	34	47	56	52	54	
Manipur	1	+	1	1	1	
Tripura	+	+	+	1	1	
Nagaland	+	+	NA	+	+	
Maghalaya	NA	NA	NA	NA	1	
<b>All-India</b>	<b>1,360</b>	<b>1,487</b>	<b>1,760</b>	<b>1,778</b>	<b>1,835**</b>	<b>2,610</b>

\* Estimated. + Less than 500 tonnes. N.A. = Not available.

Note: For seasonwise/zonewise details, see Table 10.

φ For the 12 months Feb. Jan.

\*\* It includes 40,000 tonnes of N, consumed by plantation crop and others.

@ It includes kharif 1975 actuals and rabi 1973-74 estimated (presumably for December 1973 and January 1974).

Table 7 (b)

## Distribution of nitrogen (N) by States

Zone/State	('000 tonnes)					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>365</b>	<b>375</b>	<b>439</b>	<b>472</b>	<b>453</b>	<b>612</b>
Andhra Pradesh	209	102	129	170	155	
Kerala	53	9	17	28	32	
Karnataka	29	32	74	82	85	
Tamil Nadu	59	75	111	174	161	
Pondicherry	a	a	1	3	2	
U.P.A.S.J.	6	8	5	8	5	
Coffee Board	6	5	8	8	7	
Rubber Board	2	2	—	—	5	
Cardamom Board	—	a	—	a	a	
<b>West</b>	<b>156</b>	<b>166</b>	<b>259</b>	<b>228</b>	<b>248</b>	<b>360</b>
Gujarat	71	110	148	116	128	
Maharashtra	84	56	44	111	118	
Goa	1	a	—	a	2	
Dadra, Nagar Haveli	a	a	—	a	a	
<b>Central</b>	<b>198</b>	<b>269</b>	<b>390</b>	<b>468</b>	<b>442</b>	<b>549</b>
Madhya Pradesh	47	50	66	85	74	
Rajasthan	21	33	43	51	58	
Uttar Pradesh	127	183	276	329	309	
Delhi	3	3	5	3	1	
<b>North</b>	<b>182</b>	<b>198</b>	<b>273</b>	<b>319</b>	<b>274</b>	<b>407</b>
Haryana	43	50	70	81	78	
Himachal Pradesh	3	4	4	3	3	
Jammu & Kashmir	1	—	4	15	7	
Punjab	135	144	196	220	185	
Chandigarh	—	—	—	a	1	
<b>East</b>	<b>113</b>	<b>149</b>	<b>187</b>	<b>196</b>	<b>193</b>	<b>254</b>
Assam	15	15	17	18	6	
Bihar	32	59	50	74	69	
Orissa	18	19	25	41	40	
West Bengal	44	38	35	54	55	
Manipur	a	a	—	1	a	
Tripura	a	a	—	1	1	
Nagaland	1	a	—	—	a	
Mizoram	—	—	—	a	—	
Andamans	a	a	—	—	—	
Tea N.E. India	3	a	3	6	20	
Meghalaya	—	—	—	1	1	
<b>Total</b>	<b>1,015</b>	<b>1,257</b>	<b>1,548</b>	<b>1,684</b>	<b>1,609</b>	<b>2,182</b>
Others	25	53	120	54	4	—
<b>All-India</b>	<b>1,040</b>	<b>1,310</b>	<b>1,668</b>	<b>1,738</b>	<b>1,613</b>	<b>2,182</b>

\* Estimated.

a = Less than 500 tonnes.

Table 8 (a)

Consumption of phosphates ( $P_2O_5$ ) by States

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>158</b>	<b>166</b>	<b>204</b>	<b>223</b>	<b>227</b>	<b>324</b>
Andhra Pradesh	63	59	74	72	81	
Kerala	20	14	16	22	24	
Karnataka	31	37	42	56	48	
Tamil Nadu	42	54	71	71	72	
Pondicherry	2	2	2	2	2	
<b>West</b>	<b>70</b>	<b>105</b>	<b>129</b>	<b>92</b>	<b>127</b>	<b>200</b>
Gujarat	39	53	61	54	60	
Maharashtra	30	52	67	37	65	
Goa	1	+	1	1	1	
Dadra, Nagar Haveli	NA	NA	NA	NA	+	
<b>Central</b>	<b>121</b>	<b>111</b>	<b>126</b>	<b>144</b>	<b>122</b>	<b>180</b>
Madhya Pradesh	14	25	34	39	42	
Rajasthan	8	11	16	7	12	
Uttar Pradesh	98	75	76	97	67	
Delhi	+	+	+	1	+	
<b>North</b>	<b>27</b>	<b>41</b>	<b>63</b>	<b>81</b>	<b>104</b>	<b>150</b>
Haryana	4	7	7	8	15	
Himachal Pradesh	1	2	2	2	1	
Jammu & Kashmir	1	1	1	2	3	
Punjab	21	31	53	69	85	
Chandigarh	NA	NA	NA	NA	—	
<b>East</b>	<b>44</b>	<b>39</b>	<b>42</b>	<b>48</b>	<b>50</b>	<b>81</b>
Assam	2	2	2	2	—	
Bihar	27	18	14	19	18	
Orissa	4	6	8	10	12	
West Bengal	11	12	18	16	18	
Manipur	+	+	+	+	—	
Tripura	+	+	+	+	+	
Nagaland	+	+	NA	+	+	
Meghalaya	NA	NA	NA	NA	1	
<b>All-India</b>	<b>420</b>	<b>462</b>	<b>564</b>	<b>587</b>	<b>634**</b>	<b>935</b>

\* Estimated.

+ Less than 500 tonnes.

Note : For seasonwise/zonewise details, see Table 10.

φ For the 12 months Feb./Jan.

\*\* It includes four thousand tonnes of  $P_2O_5$  consumed by plantation crops and others.

@ Includes kharif 1973 actuals and rabi 1973-74 estimates (presumably for December 1973 and January 1974).

Table 8 (b)

Distribution of phosphates ( $P_2O_5$ ) by States

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>102</b>	<b>73</b>	<b>117</b>	<b>183</b>	<b>208</b>	<b>242</b>
Andhra Pradesh	56	21	44	72	88	
Kerala	8	6	7	12	15	
Karnataka	18	17	20	42	33	
Tamil Nadu	20	20	18	56	70	
U.P.A.S.I.	—	—	—	—	—	
Pondicherry	b	b	b	1	1	
Coffee Board	—	—	—	—	a	
<b>West</b>	<b>56</b>	<b>74</b>	<b>123</b>	<b>86</b>	<b>110</b>	<b>131</b>
Gujarat	31	48	63	49	53	
Maharashtra	25	26	16	37	57	
Goa	b	b	—	b	b	
Dadra, Nagar Haveli	—	b	—	b	b	
<b>Central</b>	<b>35</b>	<b>43</b>	<b>83</b>	<b>102</b>	<b>96</b>	<b>118</b>
Madhya Pradesh	14	21	31	30	35	
Rajasthan	6	12	10	15	11	
Uttar Pradesh	15	10	41	57	49	
Delhi	b	b	b	b	a	
<b>North</b>	<b>16</b>	<b>13</b>	<b>60</b>	<b>53</b>	<b>64</b>	<b>62</b>
Haryana	b	b	9	5	14	
Himachal Pradesh	1	b	b	b	a	
Jammu & Kashmir	—	—	—	1	a	
Punjab	15	13	51	47	50	
Chandigarh	—	—	—	b	—	
<b>East</b>	<b>14</b>	<b>15</b>	<b>34</b>	<b>36</b>	<b>43</b>	<b>46</b>
Assam	2	1	1	2	2	
Bihar	2	3	15	9	11	
Orissa	1	2	10	6	12	
West Bengal	9	9	8	18	17	
Meghalaya	—	—	—	1	a	
Manipur	b	—	b	b	b	
Tripura	b	b	b	b	1	
Nagaland	—	b	b	—	b	
Andamans	b	—	—	b	—	
Tea N.E. India	b	—	—	—	—	
<b>Total</b>	<b>224</b>	<b>247</b>	<b>417</b>	<b>460</b>	<b>521</b>	<b>599</b>
Others	11	58	65	7	9	—
<b>Used in mixtures</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>67</b>	<b>11</b>	<b>11</b>
<b>All-India</b>	<b>235</b>	<b>305</b>	<b>482</b>	<b>534</b>	<b>541</b>	<b>610</b>

\* Estimated.

a Less than 500 tonnes but more than 250 tonnes.

b Less than 250 tonnes.

Table 9 (a)

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

Zone/State	('000 tonnes)					
	1969-70	1970-71	1971-72	1972-73 <sup>φ</sup>	1973-74 <sup>@</sup>	1974-75*
<b>South</b>	<b>82</b>	<b>100</b>	<b>135</b>	<b>148</b>	<b>148</b>	<b>190</b>
Andhra Pradesh	13	17	27	24	21	
Kerala	21	16	18	19	23	
Karnataka	14	26	28	39	34	
Tamil Nadu	33	40	61	64	64	
Pondicherry	1	1	1	1	1	
<b>West</b>	<b>31</b>	<b>42</b>	<b>51</b>	<b>59</b>	<b>42</b>	<b>70</b>
Gujarat	4	6	7	11	13	
Maharashtra	27	36	44	48	28	
Goa	+	+	+	+	1	
Dadra, Nagar Haveli	NA	NA	NA	NA	+	
<b>Central</b>	<b>60</b>	<b>51</b>	<b>67</b>	<b>60</b>	<b>48</b>	<b>95</b>
Madhya Pradesh	3	4	6	8	7	
Rajasthan	2	2	5	3	4	
Uttar Pradesh	55	45	56	49	36	
Delhi	+	+	+	+	+	
<b>North</b>	<b>8</b>	<b>10</b>	<b>16</b>	<b>22</b>	<b>29</b>	<b>35</b>
Haryana	2	1	2	2	4	
Himachal Pradesh	+	1	1	1	1	
Jammu & Kashmir	+	1	+	1	1	
Punjab	6	7	12	18	23	
Chandigarh	NA	NA	NA	NA	+	
<b>East</b>	<b>28</b>	<b>25</b>	<b>35</b>	<b>42</b>	<b>44</b>	<b>70</b>
Assam	1	2	2	2	1	
Bihar	13	7	7	11	7	
Orissa	3	2	4	6	7	
West Bengal	11	14	22	23	27	
Manipur	+	+	+	+	+	
Tripura	+	+	+	+	+	
Nagaland	+	+	NA	+	+	
Meghalaya	NA	NA	NA	NA	+	
<b>All-India</b>	<b>209</b>	<b>228</b>	<b>304</b>	<b>332</b>	<b>314**</b>	<b>460</b>

## Notes :

For seasonwise/zonewise details, see Table 10.

\* Estimated.

+ Less than 500 tonnes.

φ For the 12 months Feb., Jan.

\*\* It includes 4,000 tonnes of K<sub>2</sub>O, consumed by plantations and other crops.

@ It includes kharif 1973 actuals and rabi 1973-74 estimated presumably for December 1973 and January 1974.

Table 9 (b)

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

Zone/State	('000 tonnes)					
	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>56</b>	<b>89</b>	<b>110</b>	<b>131</b>	<b>187</b>	<b>204</b>
Andhra Pradesh	7	15	11	16	32	
Kerala	19	22	22	18	27	
Karnataka	8	16	14	16	33	
Tamil Nadu	21	26	50	81	94	
Pondicherry	—	b	b	b	1	
<b>West</b>	<b>33</b>	<b>41</b>	<b>71</b>	<b>69</b>	<b>93</b>	<b>102</b>
Gujarat	3	8	7	10	19	
Maharashtra	30	33	41	59	73	
Goa	b	b	b	b	1	
<b>Central</b>	<b>16</b>	<b>32</b>	<b>35</b>	<b>32</b>	<b>48</b>	<b>51</b>
Madhya Pradesh	1	6	7	4	5	
Rajasthan	2	6	1	b	5	
Uttar Pradesh	13	19	27	27	38	
Delhi	b	1	—	b	b	
<b>North</b>	<b>12</b>	<b>5</b>	<b>8</b>	<b>10</b>	<b>24</b>	<b>27</b>
Haryana	b	b	1	1	4	
Himachal Pradesh	—	b	b	b	—	
Jammu & Kashmir	—	—	b	b	b	
Punjab	12	5	7	9	20	
<b>East</b>	<b>14</b>	<b>26</b>	<b>30</b>	<b>46</b>	<b>43</b>	<b>48</b>
Assam	1	4	4	12	6	
Bihar	1	6	7	9	8	
Orissa	1	3	2	5	7	
West Bengal	10	13	17	20	21	
Manipur	b	b	—	b	b	
Tripura	b	b	—	b	b	
Nagaland	—	b	—	b	—	
Andamans	b	—	—	b	b	
Tea N.E. India	b	—	—	—	—	
<b>Total</b>	<b>131</b>	<b>193</b>	<b>254</b>	<b>288</b>	<b>394</b>	<b>432</b>
Others	3	4	2	24	—	—
<b>All-India</b>	<b>134</b>	<b>197</b>	<b>256</b>	<b>312</b>	<b>394</b>	<b>432</b>

## Notes :

\* Estimated.

b Less than 250 tonnes.



Table 10

Seasonwise/regionwise consumption of N, P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O—1969-70 to 1974-75

('000 tonnes)

Region/Season	1969-70			1970-71			1971-72			1972-73 <sup>φ</sup>			1973-74 <sup>φ@</sup>			1974-75*		
	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total	Kharif	Rabi	Total
<b>South</b>																		
N	262	243	505	230	264	494	256	286	542	227	285	512	257	260	517	343	402	745
P <sub>2</sub> O <sub>5</sub>	89	69	158	90	76	166	111	93	204	109	114	223	113	114	227	136	188	324
K <sub>2</sub> O	34	48	82	48	42	100	64	71	135	79	69	148	74	74	148	105	85	190
<b>West</b>																		
N	87	71	158	108	110	218	115	132	247	124	105	229	135	141	276	185	168	353
P <sub>2</sub> O <sub>5</sub>	40	30	70	59	46	105	63	66	129	61	31	92	71	56	127	94	106	200
K <sub>2</sub> O	12	19	31	19	23	43	29	22	51	31	24	59	32	10	42	46	24	70
<b>Central</b>																		
N	146	227	373	148	237	385	184	294	478	159	356	515	169	270	439	217	450	667
P <sub>2</sub> O <sub>5</sub>	37	84	121	36	75	111	40	86	126	32	111	144	44	78	122	45	135	180
K <sub>2</sub> O	17	43	60	14	37	51	14	53	67	12	48	60	16	32	48	18	77	95
<b>North</b>																		
N	57	141	198	76	167	243	97	209	306	111	220	331	133	259	392	150	339	489
P <sub>2</sub> O <sub>5</sub>	5	22	27	6	35	41	10	53	63	15	66	81	24	80	104	27	123	150
K <sub>2</sub> O	1	7	8	2	8	10	4	12	16	4	18	22	9	20	29	10	25	35
<b>East</b>																		
N	67	59	126	64	83	147	83	104	187	60	130	190	92	80	172	118	238	356
P <sub>2</sub> O <sub>5</sub>	18	26	44	13	26	39	14	28	42	15	33	48	23	27	50	31	50	81
K <sub>2</sub> O	11	17	28	10	15	25	10	25	35	16	26	42	11	32	43	18	52	70
<b>All-India</b>																		
N	619	741	1,360	626	861	1,487	735	1,025	1,760	682	1,096	1,778	786	1,009	1,835 <sup>@@</sup>	1,013	1,597	2,610
P <sub>2</sub> O <sub>5</sub>	189	231	420	204	258	462	238	326	564	231	356	587	275	355	634 <sup>@@</sup>	333	602	935
K <sub>2</sub> O	75	135	209	93	135	228	121	183	304	146	186	332	141	169	314 <sup>@@</sup>	197	263	460

<sup>φ</sup> For the 12 months—February-January.

<sup>@@</sup> It includes 40,000 tonnes of N, 4,000 tonnes of P<sub>2</sub>O<sub>5</sub> and 4,000 tonnes of K<sub>2</sub>O, consumed by plantation and other crops.

\* FAI estimates (under normal supply situation).

<sup>@</sup> It includes kharif 1973 actuals and rabi 1973-74 estimates for December 1973 and January 1974.

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

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**Table 11**

*All-India consumption of plant foods ( $N + P_2O_5 + K_2O$ )  
per hectare of agricultural land (kg.)  
(1967-68 to 1974-75)*

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	15.1
1974-75 (Estd.)	22.1 (under adequate supply) 16.9 (under constrained supply)

Table 12

*Plant food consumption in kilogram per hectare of agricultural land (1972-73 and 1973-74)*

Zone/State	Consumption in kg per hectare of agricultural land*							
	1972-73				1973-74			
	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	Total
<b>South</b>	<b>13.41</b>	<b>5.83</b>	<b>3.87</b>	<b>23.11</b>	<b>13.42</b>	<b>5.89</b>	<b>3.84</b>	<b>23.15</b>
Andhra Pradesh	12.23	4.90	1.66	18.79	11.77	5.50	1.40	18.67
Kerala	10.84	7.31	6.27	24.42	11.88	7.72	7.34	26.94
Karnataka	8.39	4.38	3.08	15.85	8.35	3.77	3.08	15.20
Tamil Nadu	24.66	9.18	8.33	42.17	25.12	9.18	8.16	42.46
Pondicherry	64.58	37.50	21.61	123.69	57.96	31.67	22.78	112.41
<b>West</b>	<b>7.08</b>	<b>2.85</b>	<b>1.83</b>	<b>11.76</b>	<b>8.58</b>	<b>3.96</b>	<b>1.30</b>	<b>13.84</b>
Gujarat	10.14	4.80	0.95	15.89	12.51	5.45	1.15	19.11
Maharashtra	5.44	1.79	2.30	9.53	6.45	3.12	1.35	10.92
Goa	8.60	6.11	2.60	17.31	13.48	9.00	4.82	27.30
Dadra, Nagar Haveli	N.A.	N.A.	N.A.	N.A.	20.40	12.00	5.20	37.60
<b>Central</b>	<b>8.08</b>	<b>2.26</b>	<b>0.95</b>	<b>11.29</b>	<b>6.53</b>	<b>1.82</b>	<b>0.71</b>	<b>9.06</b>
Madhya Pradesh	3.90	1.65	0.35	5.90	3.23	1.77	0.30	5.30
Uttar Pradesh	15.68	4.11	2.06	21.85	12.30	2.74	1.47	16.51
Rajasthan	2.97	0.41	0.21	3.59	3.09	0.64	0.24	3.97
Delhi	18.39	4.78	1.15	24.32	18.56	3.98	1.10	23.64
<b>North</b>	<b>24.09</b>	<b>5.88</b>	<b>1.65</b>	<b>31.62</b>	<b>28.06</b>	<b>7.46</b>	<b>2.07</b>	<b>37.59</b>
Haryana	16.62	1.64	0.52	18.78	17.99	2.98	0.79	21.76
Himachal Pradesh	2.28	0.84	0.52	3.64	1.66	0.54	0.32	2.52
Jammu & Kashmir	7.30	1.54	0.59	9.43	9.77	2.64	1.03	13.44
Punjab	42.71	12.57	3.33	58.61	50.29	14.95	4.04	69.28
<b>East</b>	<b>5.85</b>	<b>1.46</b>	<b>1.29</b>	<b>8.60</b>	<b>5.23</b>	<b>1.52</b>	<b>1.32</b>	<b>8.07</b>
Assam	2.06	0.53	0.59	3.18	0.66	0.11	0.43	1.20
Bihar	7.80	1.65	0.95	10.40	5.98	1.60	0.61	8.19
Orissa	4.25	1.05	0.61	5.91	4.54	1.25	0.78	6.57
West Bengal	9.71	2.23	3.16	15.10	7.01	2.39	3.49	12.89
Manipur	5.44	1.17	0.33	6.94	6.98	1.18	0.57	8.73
Tripura	2.22	1.09	0.32	3.63	2.41	0.62	0.65	3.68
Nagaland	N.A.	N.A.	N.A.	N.A.	0.49	0.29	0.29	1.07
Meghalaya	N.A.	N.A.	N.A.	N.A.	0.78	0.30	0.17	1.25
<b>All-India</b>	<b>9.85</b>	<b>3.25</b>	<b>1.84</b>	<b>14.94</b>	<b>9.93</b>	<b>3.43</b>	<b>1.70</b>	<b>15.06</b>

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

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 13

*All-India ratio of plant nutrients consumed  
(1967-68 to 1974-75)*

Year	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> 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	5.8	2.0	1
1974-75 (Est.)	5.7	2.0 (Under adequate supply)	1
	5.5	1.9 (Under constrained supply)	1

Table 14

Ratio of N, P<sub>2</sub>O<sub>5</sub> & K<sub>2</sub>O consumption  
(1972-73 and 1973-74)

Zone/State	1972-73			1973-74		
	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
<b>South</b>	<b>3.46</b>	<b>1.50</b>	<b>1</b>	<b>3.49</b>	<b>1.53</b>	<b>1</b>
Andhra Pradesh	7.38	2.96	1	8.41	3.93	1
Kerala	1.73	1.17	1	1.62	1.05	1
Karnataka	2.72	1.42	1	2.71	1.22	1
Tamil Nadu	2.96	1.10	1	3.08	1.13	1
Pondicherry	2.99	1.73	1	2.54	1.39	1
<b>West</b>	<b>3.87</b>	<b>1.56</b>	<b>1</b>	<b>6.61</b>	<b>3.05</b>	<b>1</b>
Gujarat	10.71	5.07	1	10.87	4.73	1
Maharashtra	2.37	0.78	1	4.78	2.32	1
Goa	3.31	2.36	1	2.79	1.86	1
Dadra, Nagar Haveli	N.A.	N.A.	N.A.	3.92	2.31	1
<b>Central</b>	<b>8.50</b>	<b>2.38</b>	<b>1</b>	<b>9.17</b>	<b>2.25</b>	<b>1</b>
Madhya Pradesh	11.22	4.75	1	10.60	5.82	1
Uttar Pradesh	7.63	2.00	1	8.38	1.87	1
Rajasthan	14.19	1.96	1	13.13	2.71	1
Delhi	15.96	4.15	1	16.85	3.62	1
<b>North</b>	<b>14.56</b>	<b>3.55</b>	<b>1</b>	<b>13.55</b>	<b>3.60</b>	<b>1</b>
Haryana	31.82	3.13	1	22.67	3.75	1
Himachal Pradesh	4.38	1.61	1	5.22	1.69	1
Jammu & Kashmir	12.37	2.60	1	9.52	2.57	1
Punjab	12.80	3.77	1	12.43	3.70	1
Chandigarh	N.A.	N.A.	N.A.	9.50	1.20	1
<b>East</b>	<b>4.55</b>	<b>1.14</b>	<b>1</b>	<b>3.95</b>	<b>1.15</b>	<b>1</b>
Assam	3.50	0.89	1	1.55	0.24	1
Bihar	8.25	1.75	1	9.74	2.61	1
Orissa	6.92	1.70	1	5.82	1.60	1
West Bengal	2.26	0.71	1	2.01	0.69	1
Manipur	16.26	3.48	1	12.33	2.08	1
Tripura	6.98	3.44	1	3.73	0.97	1
Nagaland	N.A.	N.A.	N.A.	1.67	1.00	1
Meghalaya	N.A.	N.A.	N.A.	4.47	1.71	1
<b>All-India</b>	<b>5.35</b>	<b>1.77</b>	<b>1</b>	<b>5.84</b>	<b>2.02</b>	<b>1</b>

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

N.A : Not available.

Table 15

*Fertiliser consumption per hectare of agricultural land in  
selected countries 1970-71 and 1971-72*

(kg/ha)

Sl. No.	Country	Consumption (N+P <sub>2</sub> O <sub>5</sub> +K <sub>2</sub> O)	
		1970-71	1971-72
1.	Japan	329.1	331.9
2.	Belgium	313.2	307.2
3.	Netherlands	296.3	282.5
4.	China	14.0	15.3
5.	Germany East	244.6	255.1
6.	Korea Rep. of	241.6	256.8
7.	Germany West	237.9	244.5
8.	Denmark	250.8	213.8
9.	France	140.2	150.2
10.	Egypt	121.8	140.1
11.	Austria	105.6	113.0
12.	United Kingdom	96.9	103.0
13.	Italy	66.4	82.2
14.	Israel	46.2	49.0
15.	U.S.A.	35.2	35.8
16.	New Zealand	33.0	35.0
17.	Philippines	21.8	18.0
18.	U.S.S.R.	15.4	17.1
19.	<b>India</b>	<b>12.3</b>	<b>14.5</b>
20.	Canada	12.2	12.7
21.	Australia	2.0	2.0
	<b>World</b>	<b>11.4</b>	<b>16.2</b>

Source : Annual Fertiliser Review—1971 and 1972 FAO.

## **APPENDICES**

**(on April-March basis)**

## End-productwise capacity installed before and during plan periods 1906 to 1974-75 (April-March)

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					I Year of Fifth Plan 1974-75**
					1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	
.....tonnes of material.....													
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 <sup>1</sup> (8)	690,930 (9)	870,830 <sup>2</sup> (10)	970,830 (11)	970,830 (11)	970,830 (11)	932,510 <sup>3</sup> (11)	939,110 (12)	945,710 (12)	945,710 (12)
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)	1656,000 (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 <sup>4</sup> (10)	1780,420 (10)	2780,420 (13)	4436,420 (16)
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 <sup>5</sup> (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 <sup>6</sup> (2)	560,000 <sup>7</sup> (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 <sup>8</sup> (1)	17,000* 40,640	—	—	—	—	—	—	—	—	—
Cumulative total	—	—	8,000 <sup>8</sup> (1)	65,640 (2)	65,640 (2)	65,640 (2)	65,640 (2)	65,640 (2)	65,640 (2)	64,750 <sup>9</sup> (2)	64,750 (2)	64,750 (2)	64,750 (2)
Single superphosphate (16% w.s. P <sub>2</sub> O <sub>5</sub> )	492,230 (11)	—	281,060 (6)	345,440 (8)	108,530 (2)	22,500 (1)	—	—	—	—	9,000 (1)	116,990* (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)	1375,750 (29)	1375,750 (29)
'Pelofos' (18% P <sub>2</sub> O <sub>5</sub> )	—	—	—	—	—	—	—	—	—	—	—	45,000 (1)	45,000 (1)
Triple superphosphate (45% P <sub>2</sub> O <sub>5</sub> )	—	—	—	—	—	27,000 (1)	—	—	—	—	—	—	200,000 (1)
Cumulative total	—	—	—	—	—	27,000 (1)	27,000 (1)	27,000 (1)	27,000 (1)	27,000 (1)	27,000 (1)	27,000 (1)	227,000 (2)
Ammonium phosphate sulphate	—	—	16,500 (1)	118,500 51,480 (1)	—	—	—	—	—	46,000*	—	—	—

(Continued)



## Appendix I (a) (Concluded)

End-productwise capacity installed before and during plan periods 1906 to 1974-75 (April-March)

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					I Year of Fifth Plan 1974-75**
					1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	
.....tonnes of material.....													
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 <sup>φ</sup> (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)
Nitrophosphate	—	—	—	270,000 (1)	—	180,000 <sup>@@</sup> (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)
NPK complex fertilisers	—	—	—	—	—	—	—	—	—	360,000 <sup>3</sup> (1)	—	—	375,500 <sup>4</sup> (1)
Cumulative total	—	—	—	—	—	—	—	—	—	360,000 <sup>3</sup> (1)	360,000 (1)	360,000 (1)	735,500 <sup>3,4</sup> (2)

\* Expansion.

@@ On account of change over of grade from 16-13-0 to 20-20-0.

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

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 Constitute grade 17-17-17 and grade 14-28-14.

4 Constitutes grade 10-26-26, 12-32-16 and 14-36-12.

+ Not meant for agricultural purposes.

\*\* Anticipated by 31.3.75.

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

φ Due to aging of plant, the capacities of some units have been revised.

## Factorywise, productwise licensed capacity of fertilisers existing as on April 1, 1974

(tonnes)

Region/State/Factory	Ammonium sulphate (20.6% N)	Ammonium sulphate nitrate (26% N)	Calcium ammonium nitrate (25% N)	Urea (46% N)	Ammonium chloride (25% N)	Ammonium phosphate (16-20-0) & (20-20-0)φ	Diammonium phosphate (18-46-0)	Nitro-phosphate (20-20-0)	Urea ammonium phosphate (28-28-0) & NPK mixtures (17-17-17) & (14-28-14)	Super-phosphate (16% P <sub>2</sub> O <sub>5</sub> )	Triple phosphate super-phosphate (45% P <sub>2</sub> O <sub>5</sub> )	Total	
												N	P <sub>2</sub> O <sub>5</sub>
<b>SOUTH</b>	<b>236,610</b>	—	—	<b>710,500</b>	<b>24,750</b>	<b>171,500φ</b>	—	—	<b>360,000\$</b>	<b>526,610</b>	—	<b>564,320</b>	<b>287,580</b>
<b>Andhra Pradesh</b>	—	—	—	(16,500)	—	51,480	—	—	260,000**	(166,230)	—	(80,260)	(99,590)
Coromandel Fertilisers Ltd., Visakhapatnam	—	—	—	16,500	—	—	—	—	260,000**	—	—	80,260	73,000
Hyderabad Chemicals & Fertilisers Ltd., Maula Ali	—	—	—	—	—	—	—	—	—	41,900	—	—	6,700
Andhra Fertilisers Ltd., Tadepalli	—	—	—	—	—	—	—	—	—	40,000	—	—	6,400
Andhra Sugars Ltd., Tanuku	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
Krishna Industrial Corpn., Nidadavole	—	—	—	—	—	—	—	—	—	50,800	—	—	8,130
<b>Kerala</b>	(198,000)	—	—	(330,000)	(24,750)	(171,500)φ	—	—	—	(44,700)	—	(233,870)	(41,450)
The Fertilisers & Chemicals Travancore Ltd., Alwaye	198,000	—	—	—	24,750*	171,500φ	—	—	—	44,700	—	82,070	41,450
The Fertilisers & Chemicals Travancore Ltd., Cochin Unit Ambelamedu	—	—	—	330,000	—	—	—	—	—	—	—	151,800	—
<b>Karnataka</b>	—	—	—	—	—	—	—	—	—	(74,170)	—	—	(11,860)
Mysore Chemicals & Fertilisers Ltd., Belagula	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
Chamundi Chemicals & Fertilisers Ltd., Munirabad	—	—	—	—	—	—	—	—	—	40,640	—	—	6,500
<b>Tamil Nadu</b>	(38,610)	—	—	(364,000)	—	(51,480)	—	—	(360,000)\$	(241,510)	—	(250,190)	(134,680)
Neyveli Lignite Corpn. Ltd., Neyveli	—	—	—	154,000	—	—	—	—	—	—	—	70,000	—
E.I.D.—Parry Ltd., Ennore & Ranipet	38,610	—	—	—	—	51,480	—	—	—	40,000	—	16,190	16,700
Kothari (Madras) Ltd., Ennore	—	—	—	—	—	—	—	—	—	44,700	—	—	7,150
Coimbatore Poiner Fertilisers Ltd., Coimbatore	—	—	—	—	—	—	—	—	—	40,640	—	—	6,500
Premier Fertilisers Ltd., Cuddalore	—	—	—	—	—	—	—	—	—	40,640	—	—	6,500
Shaw Wallace & Co. Ltd., Avadi	—	—	—	—	—	—	—	—	—	40,640	—	—	6,500
Madras Fertilisers Ltd., Manali	—	—	—	210,000	—	—	—	—	360,000\$	—	—	164,000	85,000
<b>WEST</b>	<b>148,000</b>	—	—	<b>803,000</b>	—	—	<b>(108,000)</b>	<b>(180,000)</b>	—	<b>(310,820)</b>	<b>(27,000)</b>	<b>(455,690)</b>	<b>(149,710)</b>
<b>Gujarat</b>	(148,000)	—	—	(364,000)	—	—	(108,000)	—	—	(99,530)	—	(218,290)	(51,840)
Gujarat State Fertilisers Co. Ltd., Baroda	148,000	—	—	364,000	—	—	108,000	—	—	—	—	218,290	51,840
Adarsh Chemicals & Fertilisers Ltd., Udhna	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
Paushak Ltd., Baroda	—	—	—	—	—	—	—	—	—	23,470	—	—	3,760
Anil Starch Product Ltd., Bhavnagar	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
Anish Chemicals Ltd., Ahmedabad	—	—	—	—	—	—	—	—	—	9,000	—	—	1,440

(Continued)

Factorywise, productwise licensed capacity of fertilisers existing as on April 1, 1974

(tonnes)

Region/State/Factory	Ammonium sulphate (20.6% N)	Ammonium sulphate nitrate (26% N)	Calcium ammonium nitrate (25% N)	Urea (46% N)	Ammonium chloride (25% N)	Ammonium phosphate sulphate (16-20-0) & (20-20-0)φ	Diammonium phosphate (18-46-0)	Nitro-phosphate (20-20-0)	Urea ammonium phosphate (28-28-0) & NPK mixtures (17-17-17) & (14-28-14)	Super-phosphate (16% P <sub>2</sub> O <sub>5</sub> )	Triple superphosphate (45% P <sub>2</sub> O <sub>5</sub> )	Total	
												N	P <sub>2</sub> O <sub>5</sub>
<b>Maharashtra</b>	—	—	—	(99,000)	—	—	—	(180,000)	—	(211,290)	(27,000)	(81,000)	(81,950)
The Fertilizer Corporation of India Ltd., Trombay	—	—	—	99,000	—	—	—	180,000	—	22,500	—	81,000	36,000
Bharat Fertilizer Ind. Ltd., Bombay	—	—	—	—	—	—	—	—	—	146,320	27,000	—	35,560
Dharamsi Morarji Chemical Co. Ltd., Ambernath	—	—	—	—	—	—	—	—	—	5,590	—	—	890
Eastern Chemical Co. Ltd., Bombay	—	—	—	—	—	—	—	—	—	3,350	—	—	540
Western Chemical Industries Ltd., Bombay	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
West India Chemicals Ltd., Loni-Kalbhore	—	—	—	—	—	—	—	—	—	—	—	(156,400)	—
<b>Goa</b>	—	—	—	(340,000)	—	—	—	—	—	—	—	156,400	—
Zuari Agro Chemicals Ltd., Goa	—	—	—	340,000	—	—	—	—	—	—	—	—	—
<b>CENTRAL</b>	32,600	—	—	863,920	40,000	—	—	—	—	362,960	—	407,120	58,070
<b>Madhya Pradesh</b>	(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
<b>Rajasthan</b>	—	—	—	(240,000)	—	—	—	—	—	(75,000)	—	(110,400)	(12,000)
Hindustan Zinc Ltd., Debari	—	—	—	—	—	—	—	—	—	75,000	—	—	12,000
Shriram Chemical Industries, Kota	—	—	—	240,000	—	—	—	—	—	—	—	110,400	—
<b>Uttar Pradesh</b>	—	—	—	(623,900)	(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	—
<b>Delhi</b>	—	—	—	—	—	—	—	—	—	(132,000)	—	—	(21,120)
D.C.M. Chemical Works, Delhi	—	—	—	—	—	—	—	—	—	132,000	—	—	21,120
<b>NORTH</b>	—	—	320,000	—	—	—	—	—	—	—	—	80,000	—
<b>Punjab</b>	—	—	(320,000)	—	—	—	—	—	—	—	—	(80,000)	—
The Fertilizer Corpn. of India Ltd., Nangal	—	—	320,000	—	—	—	—	—	—	—	—	80,000	—

(Continued)

## Appendix I (b) (Concluded)

Factorywise, productwise licensed capacity of fertilisers existing as on April 1, 1974

(tonnes)

Region/State/Factory	Ammonium sulphate (20.6% N)	Ammonium sulphate nitrate (26% N)	Calcium ammonium nitrate (25% N)	Urea (46% N)	Ammonium chloride (25% N)	Ammonium phosphate sulphate (16-20-0) & (20-20-0)φ	Diammonium phosphate (18-46-0)	Nitro-phosphate (20-20-0)	Urea ammonium phosphate (28-28-0) & NPK mixtures (17-17-17) & (14-28-14)	Super phosphate (16% P <sub>2</sub> O <sub>5</sub> )	Triple superphosphate (45% P <sub>2</sub> O <sub>5</sub> )	Total	
												N	P <sub>2</sub> O <sub>5</sub>
<b>EAST</b>	<b>528,500</b>	<b>50,000</b>	<b>480,000</b>	<b>403,000</b>	—	—	—	—	—	<b>45,000</b> φφ	—	<b>427,440</b>	<b>35,660</b>
<b>Assam</b>	(100,000)	—	—	(55,000)	—	—	—	—	—	(33,530)	—	(44,800)	(5,360)
The Fertilizer Corpn. of India Ltd., Namrup	100,000	—	—	55,000	—	—	—	—	—	—	—	44,800	—
Associated Ind. (Assam) Ltd., Chandrapur	—	—	—	—	—	—	—	—	—	33,530	—	—	5,360
<b>Bihar</b>	(356,300)	(50,000)	—	(18,000)	—	—	—	—	—	(23,470)	—	(95,960)	(3,760)
The Fertilizer Corpn. of India Ltd., Sindri	320,000	50,000	—	18,000	—	—	—	—	—	—	—	88,480	—
Tata Iron & Steel Co. Ltd., Jamshedpur	23,100	—	—	—	—	—	—	—	—	—	—	4,760	—
Bihar State Superphosphate Factory, Sindri	—	—	—	—	—	—	—	—	—	23,470	—	—	3,760
Bokaro Steel Ltd., Bokaro	13,200	—	—	—	—	—	—	—	—	—	—	2,720	—
<b>Orissa</b>	(28,000)	—	(480,000)	—	—	—	—	—	—	(45,000)φφ	—	(125,770)	(7,600)
Hindustan Steel Ltd., Rourkela	28,000	—	480,000	—	—	—	—	—	—	—	—	125,770	—
Orissa Ferts. & Chems. Ltd., Rourkela	—	—	—	—	—	—	—	—	—	45,000φφ	—	—	7,600
<b>West Bengal</b>	(44,200)	—	—	(330,000)	—	—	—	—	—	(118,360)	—	(160,910)	(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	—	—	—	—	—	—	—	—	—	61,000	—	—	9,760
The Fertilizer Corpn. of India Ltd., Durgapur	—	—	—	330,000	—	—	—	—	—	—	—	151,800	—
<b>All-India</b>	<b>945,710</b>	<b>50,000</b>	<b>800,000</b>	<b>2,780,420</b>	<b>64,750</b>	<b>222,980</b>	<b>108,000</b>	<b>180,000</b>	<b>260,000**</b> <b>360,000§</b>	<b>1,375,750</b> <b>(45,000)φφ</b>	<b>27,000</b>	<b>1,943,539</b>	<b>530,810</b>

\* This material is not used for agricultural purposes.

\*\* This capacity is of urea ammonium phosphate of M/s. Coromandel Fertilisers Ltd., Vizag, producing two grades details of which are given in the Appendix pertaining to production.

φ Of grade 20-20-0.

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

§ Two grades of NPK complex fertilisers (14-28-14) and (17-17-17) are presently manufactured.

Note : Capacity in terms of N and P<sub>2</sub>O<sub>5</sub> is arrived at by multiplying capacity of the materials with (corresponding) nutrient contents of fertilisers.

## Appendix II

## Production of nitrogenous fertilisers

('000 tonnes)

Fertiliser	Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
Ammonium sulphate (20.6% N)	<b>South</b>	<b>119</b>	<b>120</b>	<b>151</b>	<b>117</b>	<b>122</b>	<b>132</b>
	Kerala	101	102	131	96	104	
	Tamil Nadu	18	18	20	21	18	
	<b>West</b>	<b>51</b>	<b>103</b>	<b>110</b>	<b>126</b>	<b>126</b>	<b>104</b>
	Gujarat	51	103	110	126	126	
	<b>Central</b>	<b>29</b>	<b>28</b>	<b>23</b>	<b>28</b>	<b>26</b>	<b>28</b>
	Madhya Pradesh	29	28	23	28	26	
	<b>North</b>						
	<b>East</b>	<b>382</b>	<b>377</b>	<b>298</b>	<b>271</b>	<b>300</b>	<b>328</b>
	Assam	66	63	55	60	64	
	Bihar	273	289	209	188	208	
	Orissa	12	1	7	11	11	
	West Bengal	31	27	27	20	17	
	<b>All-India</b>	<b>582</b>	<b>638</b>	<b>582</b>	<b>550</b>	<b>574</b>	<b>592</b>
Ammonium sulphate nitrate (26% N)	<b>East</b>	<b>43</b>	<b>42</b>	<b>30</b>	<b>58</b>	<b>48</b>	<b>50</b>
	Bihar	43	42	30	58	48	
	<b>All-India</b>	<b>43</b>	<b>42</b>	<b>30</b>	<b>58</b>	<b>48</b>	<b>50</b>
Urea (46% N)	<b>South</b>	<b>103</b>	<b>106</b>	<b>113</b>	<b>173</b>	<b>241</b>	<b>525</b>
	Andhra Pradesh	9	37	2	5	2	
	Kerala	—	—	—	—	32	
	Tamil Nadu	94	69	111	168	207	
	<b>West</b>	<b>257</b>	<b>317</b>	<b>393</b>	<b>411</b>	<b>465</b>	<b>769</b>
	Gujarat	199	253	332	357	270	
	Maharashtra	58	84	61	54	53	
	Goa	—	—	—	—	142	
	<b>Central</b>	<b>371</b>	<b>627</b>	<b>678</b>	<b>771</b>	<b>628</b>	<b>769</b>
	Uttar Pradesh	195	380	445	494	388	
	Rajasthan	176	247	238	277	240	
	<b>North</b>						
	<b>East</b>	<b>42</b>	<b>46</b>	<b>52</b>	<b>56</b>	<b>74</b>	<b>282</b>
	Assam	26	15	40	46	49	
Bihar	16	31	12	10	11		
West Bengal	—	—	—	—	14		
<b>All-India</b>	<b>773</b>	<b>1,096</b>	<b>1,237</b>	<b>1,411</b>	<b>1,408</b>	<b>2,345</b>	

(Continued)

## Production of nitrogenous fertilisers (Concluded)

('000 tonnes)

Fertiliser	Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*	
Calcium ammonium nitrate	<b>North</b>	1.	—	—	—	—	—	
		2.	320	221	226	216	247	228
	(i) (20.5%N)	Punjab	1.	—	—	—	—	—
			2.	320	221	226	216	247
	(ii) (25.0%N)φφ	<b>East</b>	1.	3	—	—	—	—
			2.	117	94	186	196	184
	Orissa	1.	3	—	—	—	—	—
		2.	117	94	186	196	184	
	<b>All-India</b>	1.	3	—	—	—	—	—
		2.	437	315	412	412	431	428
Ammonium chloride (25% N)φ	<b>Central</b>	13	22	18	14	14	16	
	Uttar Pradesh	13	22	18	14	14		
	<b>All-India</b>	13	22	18	14	14	16	

\* Estimated.

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

φφ 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

Region/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<i>(i) Single superphosphate (16% W.S. P<sub>2</sub>O<sub>5</sub>)</i>						
<b>South</b>	<b>231</b>	<b>222</b>	<b>235</b>	<b>219</b>	<b>235</b>	<b>250</b>
Andhra Pradesh	55	53	60	54	67	
Kerala	30	30	16	20	36	
Karnataka	1	—	8	8	1	
Tamil Nadu	145	139	151	137	131	
<b>West</b>	<b>152</b>	<b>171</b>	<b>218</b>	<b>224</b>	<b>241</b>	<b>250</b>
Gujarat	40	55	82	65	65	
Maharashtra	112	116	136	159	176	
<b>Central</b>	<b>176</b>	<b>168</b>	<b>250</b>	<b>243</b>	<b>201</b>	<b>215</b>
Madhya Pradesh	50	55	86	70	59	
Uttar Pradesh	26	12	34	33	32	
Rajasthan	43	51	47	47	27	
Delhi	57	50	83	93	83	
<b>North</b>	—	—	—	—	—	—
<b>East</b>	<b>57</b>	<b>52</b>	<b>70</b>	<b>103</b>	<b>95</b>	<b>100</b>
Assam	7	4	—	—	—	
Bihar	12	4	10	11	5	
West Bengal	38	44	60	92	90	
<b>All-India</b>	<b>616</b>	<b>613</b>	<b>773</b>	<b>789</b>	<b>772</b>	<b>815</b>
<i>(ii) Single superphosphate (18.5%, 21% W.S. P<sub>2</sub>O<sub>5</sub>)</i>						
<b>East</b>	<b>12</b>	<b>8</b>	<b>3</b>	—	—	—
Assam	12	8	3	—	—	
West Bengal	—	—	—	—	—	
<b>All-India</b>	<b>12</b>	<b>8</b>	<b>3</b>	—	—	—
<i>(iii) 'Pelofos' (5% W.S. P<sub>2</sub>O<sub>5</sub>)</i>						
<b>East</b>	—	—	—	—	<b>10</b>	<b>12</b>
Orissa	—	—	—	—	10	
<b>All-India</b>	—	—	—	—	<b>10</b>	<b>12</b>

Note : The 'Pelofos' factory was commissioned in June 1973.

\* Estimated.

## Appendix III (b)

Production of triple superphosphates (45% P<sub>2</sub>O<sub>5</sub>)

('000 tonnes)

Region/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	—	—	—	—	—	—
<b>West</b>	<b>7</b>	<b>6</b>	<b>8</b>	<b>5</b>	<b>3</b>	<b>3</b>
Maharashtra	7	6	8	5	3	
<b>Central</b>	—	—	—	—	—	<b>25</b>
<b>North</b>	—	—	—	—	—	—
<b>East</b>	—	—	—	—	—	—
<b>All-India</b>	<b>7</b>	<b>6</b>	<b>8</b>	<b>5</b>	<b>3</b>	<b>28</b>

\* Estimated.

## Production of complex fertilisers

('000 tonnes)

Fertiliser	Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
Ammonium phosphate sulphate	<b>South</b>						<b>110</b>
	Kerala						35
	(16-20-0)	50	58	60	51	65	
	(20-20-0)	4	—	—	3	20	
	Tamil Nadu						
	(16-20-0)	37	30	43	43	39	
<b>All-India</b>	(16-20-0)	87	88	103	94	104	110
	(20-20-0)	4	—	—	3	20	35
Nitrophosphate <sup>1</sup>	<b>West</b>						
	Maharashtra						
	(20-20-0)	22	4	—	—	—	—
	(15-15-15)	59	59	134	240	213	240
	(20-20-2)	—	56	45	—	—	—
	(18-18-9)	12	20	25	—	—	—
	(21-10-0)	a	—	—	—	—	—
	(15-15-7.5)	4	—	—	—	—	—
	(15-7.5-10)	a	—	—	—	—	—
	(14-10.5-14)	12	—	—	—	—	—
	<b>All-India</b>				<b>240</b>	<b>213</b>	<b>240</b>
Urea ammonium phosphate	<b>South</b>						
	Andhra Pradesh						
	(28-28-0)	207	160	195	175	172	180
	(20-20-0)	24	60	36	17	—	—
	(14-35-14)	—	—	3	28	37	45
	(22-22-11)	5	7	7	—	—	—
<b>All-India</b>							

(Continued)

## Production of complex fertilisers (Concluded)

('000 tonnes)

Fertiliser	Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
Diamonium phosphate <sup>2</sup>	<b>West</b>						
	Gujarat						
	(18-46-0)	45	55	50	69	60	65
	(18-27-3)	—	—	5	—	—	—
<b>All-India</b>	(18-46-0)	45	55	50	69	60	65
	(18-27-3)	—	—	5	—	—	—
NPK complex fertilisers	<b>South</b>						
	Tamil Nadu						
	(17-17-17)	—	—	55	242	209	285
	(14-28-14)	—	—	13	44	59	61
	<b>West</b>						
	Gujarat						
(14-36-12)	—	—	—	—	—	80	
(10-26-26)	—	—	—	—	—	39	
(12-32-16)	—	—	—	—	—	34	
<b>All-India</b>							

\* 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 Aug. 1967. Besides these two other grades were also produced during the year 1967-68 to 1973-74.

2 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.

## Appendix V

Distribution of ammonium sulphate (20.6% N)  
('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>387</b>	<b>381</b>	<b>350</b>	<b>237</b>	<b>173</b>	<b>200</b>
Andhra Pradesh	216	125	150	78	50	
Kerala	16	16	30	36	37	
Karnataka	52	71	45	36	25	
Tamil Nadu	61	66	97	77	57	
Pondicherry	a	a	1	a	b	
UPASI	26	27	10	7	1	
Coffee Board	8	13	9	3	2	
Rubber Board	8	8	—	—	1	
Cardamom Board	—	a	—	—	b	
<b>West</b>	<b>187</b>	<b>183</b>	<b>108</b>	<b>151</b>	<b>124</b>	<b>140</b>
Gujarat	48	68	68	76	91	
Maharashtra	137	28	40	75	33	
Goa	2	a	—	a	b	
Dadra & Nagar Haveli	—	—	—	a	—	
<b>Central</b>	<b>66</b>	<b>163</b>	<b>67</b>	<b>84</b>	<b>38</b>	<b>50</b>
Madhya Pradesh	36	21	23	51	15	
Rajasthan	1	1	1	9	4	
Uttar Pradesh	29	33	43	24	18	
Delhi	b	2	a	a	a	
<b>North</b>	<b>12</b>	<b>7</b>	<b>5</b>	<b>18</b>	<b>5</b>	<b>10</b>
Haryana	2	b	—	2	—	
Himachal Pradesh	b	6	b	a	c	
Jammu & Kashmir	5	—	4	—	—	
Punjab	5	1	2	16	5	
Chandigarh	—	—	—	b	—	
<b>East</b>	<b>265</b>	<b>304</b>	<b>275</b>	<b>276</b>	<b>289</b>	<b>300</b>
Assam	70	66	60	43	3	
Bihar	66	92	88	90	131	
Orissa	23	31	28	20	26	
West Bengal	89	88	86	91	88	
Andamans	a	a	—	—	—	
Nagaland	a	a	b	a	b	
Meghalaya	—	—	—	3	3	
Manipur	3	—	—	—	—	
Tripura	—	—	—	a	—	
Tea (N.E. India)	14	a	13	29	39	
<b>Total</b>	<b>917</b>	<b>1,038</b>	<b>805</b>	<b>766</b>	<b>629</b>	<b>700</b>
Others	52	6	55	8	—	—
<b>All-India</b>	<b>969</b>	<b>1,044</b>	<b>860</b>	<b>774</b>	<b>629</b>	<b>700</b>

## Notes:

\* Estimated.

a Less than 500 tonnes.

b Less than 250 tonnes.

c Less than 100 tonnes.

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



## Appendix VI

## Distribution of ammonium sulphate nitrate

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>31</b>	<b>44</b>	<b>35</b>	<b>22</b>	<b>5</b>	<b>5</b>
Andhra Pradesh	31	34	32	19	5	
Karnataka	a	1	a	1	—	
Tamil Nadu	—	2	3	2	—	
Rubber Board	—	a	a	—	—	
<b>West</b>	<b>4</b>	<b>11</b>	—	<b>3</b>	—	—
Gujarat	2	10	—	2	—	
Maharashtra	2	1	—	1	—	
<b>Central</b>	<b>2</b>	<b>8</b>	<b>6</b>	<b>3</b>	<b>13</b>	<b>15</b>
Madhya Pradesh	a	1	a	a	—	
Rajasthan	—	—	—	—	—	
Uttar Pradesh	2	6	6	3	13	
Delhi	—	a	—	—	—	
<b>North</b>	—	<b>1</b>	—	—	—	—
Haryana	—	a	—	—	—	
Punjab	—	a	—	—	—	
<b>East</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>28</b>	<b>32</b>	<b>35</b>
Bihar	1	1	1	15	13	
Orissa	1	5	1	3	5	
West Bengal	—	—	a	10	14	
Tea (N.E. India)	—	—	—	—	—	
<b>Total</b>	<b>39</b>	<b>70</b>	<b>44</b>	<b>56</b>	<b>50</b>	<b>55</b>
Others	2	—	a	—	—	—
<b>All-India</b>	<b>41</b>	<b>70</b>	<b>44</b>	<b>56</b>	<b>50</b>	<b>55</b>

## Notes :

- \* Estimated.
- a Less than 500 tonnes.

## Appendix VII

## Distribution of urea (46% N)

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>433</b>	<b>514</b>	<b>528</b>	<b>557</b>	<b>536</b>	<b>800</b>
Andhra Pradesh	226	110	81	171	155	
Kerala	96	5	5	19	29	
Karnataka	22	20	49	88	120	
Tamil Nadu	84	118	164	256	202	
Pondicherry	1	1	1	5	2	
UPASI	1	a	2	10	6	
Coffee Board	3	2	1	8	11	
Rubber Board	a	a	a	—	11	
Cardamom Board	—	—	a	—	b	
<b>West</b>	<b>213</b>	<b>316</b>	<b>386</b>	<b>349</b>	<b>369</b>	<b>575</b>
Gujarat	112	167	234	188	197	
Maharashtra	100	78	76	161	168	
Goa	1	—	—	a	4	
Dadra & Nagar Haveli	a	—	a	a	b	
<b>Central</b>	<b>333</b>	<b>469</b>	<b>665</b>	<b>799</b>	<b>799</b>	<b>1,000</b>
Madhya Pradesh	80	93	124	139	127	
Rajasthan	35	56	66	88	101	
Uttar Pradesh	217	304	473	568	569	
Delhi	1	2	2	4	2	
<b>North</b>	<b>219</b>	<b>256</b>	<b>356</b>	<b>507</b>	<b>413</b>	<b>700</b>
Haryana	63	71	86	125	114	
Himachal Pradesh	—	3	—	1	1	
Jammu & Kashmir	—	—	7	31	15	
Punjab	156	174	263	350	283	
Chandigarh	—	—	—	a	a	
<b>East</b>	<b>91</b>	<b>145</b>	<b>190</b>	<b>182</b>	<b>162</b>	<b>275</b>
Assam	2	3	5	19	10	
Bihar	35	80	49	86	65	
Orissa	4	5	6	15	16	
W. Bengal	48	34	27	40	41	
Tripura	a	—	1	3	1	
Nagaland	—	a	—	—	—	
Manipur	—	1	—	—	1	
Mizoram	—	—	—	1	—	
Tea (N.E. India)	—	—	—	17	26	
Meghalaya	—	—	—	1	1	
Arunachal	—	—	—	—	b	
<b>Total</b>	<b>1,289</b>	<b>1,700</b>	<b>2,127</b>	<b>2,394</b>	<b>2,280</b>	<b>3,350</b>
Others	19	1	107	30	b	—
<b>All-India</b>	<b>1,308</b>	<b>1,701</b>	<b>2,234</b>	<b>2,424</b>	<b>2,280</b>	<b>3,350</b>
Bangladesh	—	—	16	—	—	

Notes : \* Estimated.

a Less than 500 tonnes.

b Less than 250 tonnes.

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

## Appendix VIII (a)

Distribution of calcium ammonium nitrate (20.5% N) and (25% N)

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>51(1)</b>	<b>36</b>	<b>71</b>	<b>39</b>	<b>25</b>	<b>30</b>
Andhra Pradesh	38(-)	31	63	32	25	
Kerala	a(-)	—	—	—	—	
Karnataka	1 (a)	3	—	—	—	
Tamil Nadu	1(-)	—	—	—	—	
UPASI	1(-)	—	—	—	—	
Coffee Board	10 (1)	2	8	7	—	
<b>West</b>	<b>1(-)</b>	<b>1</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>
Gujarat	a(-)	b	—	—	—	
Maharashtra	1(-)	1	—	—	—	
<b>Central</b>	<b>59 (a)</b>	<b>37</b>	<b>61</b>	<b>53</b>	<b>52</b>	<b>60</b>
Madhya Pradesh	1(-)	1	2	8	8	
Rajasthan	11(-)	7	12	13	18	
Uttar Pradesh	38 (a)	25	41	29	26	
Delhi	9(-)	4	6	3	—	
<b>North</b>	<b>289(-)</b>	<b>212</b>	<b>210</b>	<b>186</b>	<b>231</b>	<b>225</b>
Haryana	55(-)	64	72	76	79	
Himachal Pradesh	14(-)	4	6	2	9	
Punjab	220(-)	144	132	108	141	
Chandigarh	—(-)	—	—	a	2	
<b>East</b>	<b>37 (a)</b>	<b>31</b>	<b>70</b>	<b>136</b>	<b>113</b>	<b>125</b>
Assam	—(-)	a	—	—	—	
Bihar	3 (a)	3	2	19	15	
Orissa	42(-)	27	63	96	79	
W. Bengal	2(-)	1	5	21	19	
Tripura	a(-)	—	—	—	—	
Dandakarayana	a(-)	—	—	—	—	
<b>Total</b>	<b>447(1)</b>	<b>317</b>	<b>412</b>	<b>414</b>	<b>421</b>	<b>440</b>
<b>Others</b>	<b>a(-)</b>	<b>2</b>	<b>a</b>	<b>3</b>	<b>—</b>	<b>—</b>
<b>All-India</b>	<b>447 (1)</b>	<b>319</b>	<b>412</b>	<b>417</b>	<b>421</b>	<b>440</b>

Notes : \* Estimated.

a Less than 500 tonnes.

( ) Bracketed figures are of CAN 20.5% N grade.

## Appendix VIII (b)

Distribution of calcium ammonium nitrate (26% N)

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>11</b>	<b>22</b>	<b>80</b>	<b>94</b>	<b>92</b>	<b>100</b>
Andhra Pradesh	7	8	29	44	17	
Kerala	3	a	2	a	2	
Karnataka	—	—	20	52	17	
Tamil Nadu	—	b	1	17	38	
Pondicherry	—	—	—	b	1	
Coffee Board	a	5	15	4	7	
Rubber Board	1	a	—	—	—	
UPASI	—	9	9	7	8	
Cardamom Board	—	—	—	b	b	
<b>West</b>	<b>3</b>	<b>26</b>	<b>b</b>	<b>5</b>	<b>13</b>	<b>20</b>
Gujarat	3	8	a	b	5	
Maharashtra	—	—	—	5	8	
Goa	a	—	—	b	b	
<b>Central</b>	<b>23</b>	<b>85</b>	<b>78</b>	<b>108</b>	<b>55</b>	<b>60</b>
Madhya Pradesh	3	—	—	—	—	
Rajasthan	2	—	10	—	13	
Uttar Pradesh	15	84	65	108	41	
Delhi	3	1	3	—	1	
<b>North</b>	<b>20</b>	<b>95</b>	<b>130</b>	<b>75</b>	<b>15</b>	<b>20</b>
Haryana	—	2	36	12	2	
Himachal Pradesh	—	—	3	6	2	
Punjab	20	93	92	57	11	
FCI-Delhi	—	—	—	b	—	
<b>East</b>	<b>8</b>	<b>13</b>	<b>22</b>	<b>15</b>	<b>3</b>	<b>5</b>
Bihar	4	8	14	1	3	
Orissa	—	5	6	13	—	
W. Bengal	3	a	1	a	—	
Tripura	—	—	1	—	—	
<b>Total</b>	<b>65</b>	<b>241</b>	<b>310</b>	<b>297</b>	<b>178</b>	<b>205</b>
<b>Others</b>	<b>a</b>	<b>—</b>	<b>13</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>All-India</b>	<b>65</b>	<b>241</b>	<b>323</b>	<b>297</b>	<b>178</b>	<b>205</b>

Notes: \* Estimated.

a Less than 500 tonnes

b Less than 250 tonnes

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

## Appendix IX

## Distribution of ammonium chloride (25% N)

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>a</b>	—	—
Andhra Pradesh	1	1	1	a	—	—
Mysore	a	a	—	—	—	—
<b>West</b>	<b>2</b>	<b>6</b>	<b>1</b>	<b>a</b>	—	—
Gujarat	a	1	1	—	—	—
Maharashtra	2	5	—	a	—	—
<b>Central</b>	<b>4</b>	<b>12</b>	<b>13</b>	<b>10</b>	<b>8</b>	<b>10</b>
Madhya Pradesh	1	2	1	a	a	—
Rajasthan	—	b	a	—	—	—
Uttar Pradesh	3	9	12	10	8	—
Delhi	—	a	a	—	—	—
<b>North</b>	<b>a</b>	<b>1</b>	<b>a</b>	<b>b</b>	<b>1</b>	<b>1</b>
Haryana	a	1	a	b	1	—
Punjab	—	b	—	—	—	—
<b>East</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>4</b>
Bihar	2	2	2	3	4	—
Orissa	a	a	a	—	—	—
West Bengal	1	3	a	a	—	—
<b>Total</b>	<b>10</b>	<b>25</b>	<b>17</b>	<b>14</b>	<b>13</b>	<b>15</b>
Others	a	2	3	—	1	1
<b>All-India</b>	<b>10</b>	<b>27</b>	<b>20</b>	<b>14</b>	<b>14</b>	<b>16</b>

Notes :

\* Estimated,  
a Less than 500 tonnes.

## Appendix X (a)

Distribution of ammonium phosphate sulphate (16-20-0)  
(<sup>'000 tonnes</sup>)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>94(3)</b>	<b>86(1)</b>	<b>101</b>	<b>97(2)</b>	<b>103(21)</b>	<b>105(30)</b>
Andhra Pradesh	10(1)	12(1)	8	4(b)	4(8)	
Kerala	18(a)	21	26	31	36(b)	
Karnataka	23(1)	18(a)	26	25(1)	19(3)	
Tamil Nadu	41(1)	35(a)	41	37(1)	43(10)	
Pondicherry	a	a	a	(b)	1	
<b>West</b>	<b>a</b>	<b>a</b>	<b>a</b>	<b>2</b>	<b>b</b>	<b>2(—)</b>
Gujarat	a	—	—	—	—	
Maharashtra	a	a	a	2	b	
<b>Central</b>	<b>—</b>	<b>a</b>	<b>a</b>	<b>b</b>	<b>—</b>	<b>—(—)</b>
Uttar Pradesh	—	a	a	b	—	
<b>North</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—(—)</b>
<b>East</b>	<b>a</b>	<b>a</b>	<b>a</b>	<b>—</b>	<b>—</b>	<b>—(—)</b>
Bihar	a	a	a	—	—	
West Bengal	a	a	a	—	—	
<b>All-India</b>	<b>94(3)</b>	<b>86(1)</b>	<b>101</b>	<b>99(2)</b>	<b>103(21)</b>	<b>107(30)</b>

Notes : \* Estimated.  
a Less than 500 tonnes.  
b Less than 250 tonnes.  
Bracketed figures are of grade (20-20-0) ammonium phosphate.

## Appendix X (b)

Distribution of ammonium nitrate phosphate (20-20-0)  
(<sup>'000 tonnes</sup>)

Zone/State	1969-70 <sup>@</sup>	1970-71	1971-72 <sup>@</sup>	1972-73	1973-74	1974-75*
<b>South</b>	<b>a</b>	<b>1</b>	<b>22<sup>++</sup></b>	<b>—</b>	<b>45,1<sup>@</sup></b>	<b>60</b>
Andhra Pradesh	a	—	—	—	27	(10) <sup>@@</sup>
Karnataka	—	—	—	—	7	
Tamil Nadu	—	—	—	—	10;1 <sup>@</sup>	
Pondicherry	—	—	—	—	1	
<b>West</b>	<b>—</b>	<b>—</b>	<b>2<sup>++</sup></b>	<b>—</b>	<b>61</b>	<b>75</b>
Gujarat	—	—	—	—	20	(10) <sup>@@</sup>
Maharashtra	—	—	—	—	41	
<b>Central</b>	<b>a</b>	<b>1</b>	<b>6</b>	<b>11</b>	<b>26</b>	<b>35</b>
Madhya Pradesh	—	—	—	—	b	
Rajasthan	—	—	—	b	1	
Uttar Pradesh	a	1	6	11	25	
Delhi	—	—	—	—	—	
<b>North</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>(12<sup>+</sup>)</b>	<b>8(9)<sup>+</sup></b>	<b>15</b>
Haryana	—	—	—	—	2	
Punjab	—	—	—	(12 <sup>+</sup> )	6(9) <sup>+</sup>	
<b>East</b>	<b>4</b>	<b>9</b>	<b>4<sup>++</sup></b>	<b>14</b>	<b>50</b>	<b>56</b>
Assam	—	—	—	—	2; b <sup>@</sup>	
Bihar	—	—	—	2	5; b <sup>@</sup>	
West Bengal	4	9	—	11	42	
Orissa	—	—	—	1	a	
<b>Total</b>	<b>4</b>	<b>10</b>	<b>34</b>	<b>25</b>	<b>190;1<sup>@</sup></b>	<b>250</b>
				<b>(12)<sup>+</sup></b>	<b>(9)<sup>+</sup></b>	<b>(20)<sup>@@</sup></b>
<b>Others</b>	<b>—</b>	<b>—</b>	<b>2</b>	<b>11</b>	<b>—</b>	<b>—</b>
<b>All-India</b>	<b>4</b>	<b>10</b>	<b>36</b>	<b>36;</b>	<b>190;1<sup>@</sup></b>	<b>250</b>
				<b>(12)<sup>+</sup></b>	<b>(9)<sup>+</sup></b>	<b>(20)<sup>@@</sup></b>

Notes : \* Estimated.  
a Less than 500 tonnes.  
b Less than 250 tonnes.  
<sup>@</sup> Ammonium phosphate (20-20-0).  
<sup>(+)</sup> Mono-ammonium phosphate (11-55-0).  
<sup>++</sup> Statewise breakup is not available.  
<sup>@@</sup> Ammonium nitrate phosphate (26-14-0).

## Appendix XI

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

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72+
<b>South</b>	9,a <sup>1</sup>	14,a <sup>1</sup>	61
Andhra Pradesh	7,a <sup>1</sup>	12	34
Kerala	—	a	—
Karnataka	1	1,a <sup>1</sup>	18
Tamil Nadu	a	a	9
<b>West</b>	9	45	79
Gujarat	a	15	79 <sup>++</sup>
Maharashtra	9	30	—
<b>Central</b>	a	1	28
Madhya Pradesh	—	1	—
Uttar Pradesh	a	a	28
Delhi	—	a	—
<b>North</b>	—	—	7
Punjab	—	—	7
<b>East</b>	3	5	45 <sup>+++</sup>
Assam	—	a	—
Bihar	a	a	—
Orissa	2	2	—
West Bengal	1	2	—
<b>All-India</b>	<b>21,b<sup>1</sup></b>	<b>65,a<sup>1</sup></b>	<b>220</b>

## 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 Eastern Marketing Zone, Calcutta.

(Continued)

## Appendix XI (Continued)

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

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72+	1972-73	1973-74	1974-75*
<b>South</b>	17	30	—	69	81	100
Andhra Pradesh	1	7	—	24	30	—
Kerala	b	b	—	1	—	—
Karnataka	13	19	—	40	49	—
Tamil Nadu	2	4	—	4	—	—
Coffee plantation	—	—	—	—	2	—
<b>West</b>	12	25	—	105	117	120
Gujarat	b	5	—	5	5	—
Maharashtra	12	20	—	100	112	—
<b>Central</b>	b	2	—	22	15	20
Madhya Pradesh	b	1	—	8	10	—
Uttar Pradesh	b	b	—	14	5	—
Rajasthan	—	—	—	b	—	—
<b>North</b>	b	b	—	1	—	—
Punjab	b	b	—	1	—	—
Haryana	—	—	—	b	—	—
Himachal Pradesh	—	—	—	b	—	—
<b>East</b>	2	8	—	9	—	—
Assam	—	b	—	—	—	—
Bihar	b	1	—	b	—	—
Orissa	1	1	—	—	—	—
West Bengal	1	6	—	9	—	—
<b>Total</b>	<b>31</b>	<b>65</b>	<b>—</b>	<b>206</b>	<b>213</b>	<b>240</b>

Others — — 4 1@

**All-India** 31 65 210 214 240

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

\* Estimated.

@ Bhutan 192  
Sikkim 511

703

(Continued)

## Appendix XI (Concluded)

## (iii) Distribution of nitrophosphate during 1969-70 &amp; 1970-71

('000 tonnes)

Zone/State	(18-18-9)		(14-10.5-14)		(15-7.5-15)	
	1969-70	1970-71	1969-70	1970-71	1969-70	1970-71
<b>South</b>	1	4	9	3	3,a <sup>1</sup>	a
Andhra Pradesh	a	3	a	—	—	—
Karnataka	a	a	7	3	1,a <sup>1</sup>	a
Kerala	—	—	1	—	a	—
Tamil Nadu	—	a	1	—	2	—
Pondicherry	—	—	—	—	a <sup>1</sup>	—
<b>West</b>	11	19	—	—	—	—
Gujarat	—	2	—	—	—	—
Maharashtra	11	17	—	—	—	—
<b>Central</b>	a	1	—	—	—	—
Madhya Pradesh	—	1	—	—	—	—
Uttar Pradesh	a	a	—	—	—	—
<b>North</b>	—	a	—	—	—	—
Punjab	—	a	—	—	—	—
<b>East</b>	—	a	—	—	—	—
Assam	—	a	—	—	—	—
<b>Total</b>	<b>12</b>	<b>25</b>	<b>9</b>	<b>3</b>	<b>3,a<sup>1</sup></b>	<b>a</b>

## Note :

- 1 of grade 15-7.5-10.  
 a less than 500 tonnes.

## Appendix XII

*Distribution of diammonium phosphate (18-46-0)*  
( '000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>(a)</b>	<b>1</b>	—	<b>32</b>	<b>44</b>	<b>40</b>
Andhra Pradesh	(a)	a	—	a	4	
Kerala	(—)	—	—	—	5	
Karnataka	(—)	a	—	4	b	
Tamil Nadu	(—)	a	—	26	35	
Pondicherry	(—)	—	—	1	b	
<b>West</b>	<b>a(54)</b>	<b>96</b>	<b>111</b>	<b>87</b>	<b>105</b>	<b>90</b>
Gujarat	—(41)	56	55	71	71	
Maharashtra	a(13)	a	5	16	34	
Goa	—(—)	a	—	a	—	
Dadra & Nagar Haveli	—(—)	—	—	a	b	
<b>Central</b>	<b>19(6)</b>	<b>39</b>	<b>92</b>	<b>128</b>	<b>118</b>	<b>110</b>
Madhya Pradesh	3(1)	7	17	4	20	
Rajasthan	a(5)	5	7	27	14	
Uttar Pradesh	16(—)	19	68	97	83	
Dalhi	—	—	1	a	1	
<b>North</b>	<b>6(—)</b>	<b>18</b>	<b>110</b>	<b>72</b>	<b>101</b>	<b>100</b>
Haryana	—(—)	—	16	5	26	
Himachal Pradesh	—(—)	—	—	a	a	
Jammu & Kashmir	—(—)	—	—	2	1	
Punjab	6(—)	17	94	65	74	
<b>East</b>	<b>3(—)</b>	<b>2</b>	<b>29</b>	<b>20</b>	<b>13</b>	<b>10</b>
Assam	—(—)	—	—	a	—	
Bihar	—(—)	—	25	8	10	
Orissa	—(—)	—	—	—	2	
West Bengal	3(—)	1	4	12	a	
Manipur	—(—)	—	—	a	b	
Tripura	—	—	—	—	1	
Nagaland	—(—)	—	—	—	b	
<b>Total</b>	<b>28(60)</b>	<b>156</b>	<b>342</b>	<b>339</b>	<b>381</b>	<b>350</b>
Others	—(—)	—	2	90	20	—
<b>All-India</b>	<b>28(60)</b>	<b>156</b>	<b>344</b>	<b>429</b>	<b>401</b>	<b>350</b>

## Notes :

\* Estimated. ( ) Bracketed figures are of (20-48-0) grade.

a Less than 500 tonnes. b Less than 250 tonnes

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

## Appendix XIII (a)

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

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>45</b>	<b>238</b>	<b>221</b>	<b>275</b>
Andhra Pradesh	6	62	31	
Kerala	1	14	20	
Karnataka	11	60	28	
Tamil Nadu	27	98	139	
Pondicherry	b	2	3	
<b>West</b>	—	—	—	—
<b>Central</b>	—	—	—	—
<b>North</b>	—	—	—	—
<b>East</b>	—	—	—	—
<b>All-India</b>	<b>45</b>	<b>238</b>	<b>221</b>	<b>275</b>

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

('000 tonnes)

Zone/State	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>12</b>	<b>44</b>	<b>59</b>	<b>60</b>
Andhra Pradesh	1	21	29	
Kerala	b	1	a	
Karnataka	1	7	11	
Tamil Nadu	10	15	18	
Pondicherry	b	b	1	
<b>West</b>	—	—	—	—
<b>Central</b>	—	—	—	—
<b>North</b>	—	—	—	—
<b>East</b>	—	—	—	—
<b>All-India</b>	<b>12</b>	<b>44</b>	<b>59</b>	<b>60</b>

\* Estimated.

(Continued)

## Appendix XIII (a) (Concluded)

## (iii) Distribution of NPK complex fertiliser (18-27-3)

('000 tonnes)

Zone/State	1971-72	1972-73
<b>South</b>	—	—
<b>West</b>	—	<b>2</b>
Maharashtra	—	2
<b>Central</b>	—	—
<b>North</b>	<b>3</b>	—
Haryana	1	—
Punjab	2	—
<b>East</b>	—	—
<b>All-India</b>	<b>3</b>	<b>2</b>

(iv) Distribution of NPK complex fertilisers (10-26-26),  
(14-36-12) and (12-32-16)

('000 tonnes)

Zone/State	1974-75*		
	10-26-26	14-36-12	12-32-16
<b>South</b>	<b>19</b>	<b>20</b>	<b>9</b>
<b>West</b>	<b>20</b>	<b>30</b>	<b>10</b>
<b>Central</b>	—	<b>30</b>	<b>15</b>
<b>Total</b>	<b>39</b>	<b>80</b>	<b>34</b>

\* Estimated.

## Appendix XIII (b)

## Distribution of NPK complex fertilisers (imported)

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72+	1972-73	1973-74	1974-75*
<b>South</b>	<b>21</b>	<b>78<sup>++</sup></b>	<b>91<sup>++</sup></b>	<b>55</b>	<b>20</b>	<b>35</b>
Andhra Pradesh	2	1	—	8	3	
Kerala	12	1	—	8	1	
Karnataka	2	1	—	24	2	
Tamil Nadu	5	1	—	15	14	
Pondicherry	—	—	—	c		
<b>West</b>	<b>b</b>	<b>42<sup>++</sup></b>	<b>152<sup>++</sup></b>	<b>1</b>	<b>c</b>	<b>15</b>
Maharashtra	—	—	—	1	—	
Goa	a	—	—	a	c	
<b>Central</b>	<b>29</b>	<b>35</b>	<b>46</b>	<b>19</b>	<b>1</b>	—
Madhya Pradesh	6	5	5	7	1	
Uttar Pradesh	23	30	41	9	—	
Rajasthan	—	—	—	3	—	
<b>North</b>	<b>10</b>	<b>5</b>	—	<b>5</b>	—	—
Punjab	10	3	—	—	—	
Haryana	—	2	—	2	—	
Jammu & Kashmir	—	—	—	3	—	
<b>East</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>6</b>	<b>a</b>	—
Bihar	—	1	—	—	c	
Orissa	—	1	1	c	—	
West Bengal	1	—	a	6	a	
Tea Board	2	—	—	—	—	
Nagaland	—	a	—	—	—	
<b>Total</b>	<b>62</b>	<b>162</b>	<b>290</b>	<b>86</b>	<b>22</b>	<b>50</b>
<b>Others</b>	—	—	6	92@	—	—
<b>All-India</b>	<b>62</b>	<b>162</b>	<b>296</b>	<b>178</b>	<b>22</b>	<b>50</b>

## Notes :

\* Estimated.

a Less than 500 tonnes.

c Less than 100 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 programmes &amp; others.

++ Statewise break up is not available. In the absence of gradewise break-up entire quantity is assumed to be of grade 15-15-15.



## Appendix XIV

## Distribution of urea ammonium phosphate

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>						
28-28-0	117	57	56	114	131	135
20-20-0	14	5	18	18	—	—
22-22-11	5	28	6	—	—	—
14-35-14	—	—	—	20	29	30
<b>Andhra Pradesh</b>						
28-28-0	117	57	56	100	124	—
20-20-0	14	5	18	8	—	—
22-22-11	5	28	6	—	—	—
14-35-14	—	—	—	20	27	—
<b>Kerala</b>						
28-28-0	—	—	—	b	—	—
20-20-0	—	—	—	b	—	—
<b>Karnataka</b>						
28-28-0	—	—	—	7	4	—
20-20-0	—	—	—	4	—	—
14-35-14	—	—	—	—	1	—
<b>Tamil Nadu</b>						
28-28-0	—	—	—	7	3	—
20-20-0	—	—	—	5	—	—
14-35-14	—	—	—	—	1	—
<b>West</b>						
28-28-0	—	—	—	5	—	—
20-20-0	—	—	—	2	—	—
<b>Gujarat</b>						
28-28-0	—	—	—	b	—	—
<b>Maharashtra</b>						
28-28-0	—	—	—	4	—	—
20-20-0	—	—	—	2	—	—
<b>Central</b>						
28-28-0	—	—	—	26	17	20
14-35-14	—	—	—	—	3	5
<b>Madhya Pradesh</b>						
28-28-0	—	—	—	20	17	—
14-35-14	—	—	—	—	3	—
<b>Rajasthan</b>						
28-28-0	—	—	—	b	—	—

(Continued)

## Appendix XIV (Concluded)

## Distribution of urea ammonium phosphate

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>Uttar Pradesh</b>						
28-28-0	—	—	—	5	—	—
<b>North</b>						
28-28-0	—	—	—	2	—	—
<b>Haryana</b>						
28-28-0	—	—	—	1	—	—
<b>Punjab</b>						
28-28-0	—	—	—	1	—	—
<b>East</b>						
28-28-0	—	—	—	23	25	25
14-35-14	—	—	—	6	7	10
<b>Bihar</b>						
28-28-0	—	—	—	3	1	—
14-35-14	—	—	—	—	(a)	—
<b>Orissa</b>						
28-28-0	—	—	—	11	19	—
14-35-14	—	—	—	6	6	—
<b>West Bengal</b>						
28-28-0	—	—	—	9	5	—
14-35-14	—	—	—	a	1	—
<b>Others (b)</b>						
28-28-0	15	84	169	—	—	—
20-20-0	2	—	24	—	—	—
22-22-11	—	11	—	—	—	—
<b>Total</b>						
28-28-0	133	142	226	170	173	180
20-20-0	17	5	42	20	—	—
22-22-11	5	40	6	—	—	—
14-35-14	—	—	—	26	39	45

## Notes :

\* Estimated.

a Below 500 tonnes.

b Statewise break up of these are not available.

## Appendix XV

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

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>230</b>	<b>224</b>	<b>210</b>	<b>219</b>	<b>231</b>	<b>225</b>
Andhra Pradesh	94	90	85	85	101	
Kerala	13	99	8	9	14	
Karnataka	60	62	58	64	58	
Tamil Nadu	62	63	58	60	58	
Pondicherry	1	b	1	1	a	
<b>West</b>	<b>139(2)</b>	<b>186</b>	<b>203</b>	<b>170</b>	<b>198</b>	<b>200</b>
Gujarat	66	110	121	96	98	
Maharashtra	73(2)	76	82	74	100	
Goa	b	—	—	—	a	
<b>Central</b>	<b>127</b>	<b>145</b>	<b>161</b>	<b>175</b>	<b>167</b>	<b>170</b>
Madhya Pradesh	73	104	136	128	110	
Rajasthan	25	33	10	16	21	
Uttar Pradesh	29	8	15	31	36	
Delhi	a	a	b	b	b	
<b>North</b>	<b>71</b>	<b>20</b>	<b>39</b>	<b>73</b>	<b>69</b>	<b>70</b>
Haryana	1	1	10	10	8	
Himachal Pradesh	5	1	1	b	1	
Jammu & Kashmir	—	—	—	—	—	
Punjab	65	18	28	63	60	
<b>East</b>	<b>67</b>	<b>61</b>	<b>70</b>	<b>98</b>	<b>101</b>	<b>100</b>
Assam	10	5	6	11	8	
Bihar	11	14	21	28	32	
Orissa	6	6	6	14	18	
West Bengal	40	35	37	37	40	
Tripura	b	1	b	b	1	
Nagaland	b	b	b	b	b	
Manipur	—	—	—	b	b	
Meghalaya	—	—	—	3	2	
<b>Total</b>	<b>634(2)</b>	<b>636</b>	<b>683</b>	<b>730</b>	<b>766</b>	<b>765</b>
Used in mixture	40(1)	47	67	64	69	65
<b>All India</b>	<b>674(3)</b>	<b>683</b>	<b>750</b>	<b>794</b>	<b>835</b>	<b>830</b>

Notes :

\* Estimated.

a Less than 500 tonnes but more than 250.

b Less than 250 tonnes.

Figures in brackets are of 18%  $P_2O_5$  grade superphosphate.

(Continued)

## Appendix XV (Concluded)

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

('000 tonnes)

Zone/State	1973-74	1974-75*
<b>South</b>	<b>a</b>	<b>1</b>
Andhra Pradesh	a	
<b>West</b>	<b>a</b>	<b>—</b>
Maharashtra	a	
<b>Central</b>	<b>2</b>	<b>2</b>
Madhya Pradesh	2	
<b>North</b>	<b>—</b>	<b>—</b>
<b>East</b>	<b>6</b>	<b>9</b>
Bihar	2	
Orissa	4	
<b>All-India</b>	<b>9</b>	<b>12</b>

\* Estimated.

a Less than 500 tonnes.

## Appendix XVI

Distribution of triple superphosphate (45% w.s.  $P_2O_5$ )

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
Andhra Pradesh	a	b	b	a	b	
Kerala	b	b	—	b	b	
Karnataka	b	b	b	a	1	
Tamil Nadu	b	b	a	a	b	
Pondicherry	—	—	b	b	—	
<b>West</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>3</b>
Gujarat	b	a	b	1	a	
Maharashtra	2	2	2	2	1	
<b>Central</b>	<b>b</b>	<b>b</b>	<b>2</b>	<b>a</b>	<b>1</b>	<b>15</b>
Madhya Pradesh	b	b	2	—	—	
Rajasthan	b	b	—	b	1	
Uttar Pradesh	b	b	b	b	a	
Delhi	b	—	b	a	—	
<b>North</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>—</b>	<b>b</b>	<b>5</b>
Punjab	2	4	2	—	b	
<b>East</b>	<b>—</b>	<b>—</b>	<b>b</b>	<b>—</b>	<b>a</b>	
Assam	—	—	b	—	b	
Bihar	—	—	b	—	b	
W. Bengal	—	—	b	—	b	
Orissa	—	—	—	—	b	
<b>All-India</b>	<b>5</b>	<b>8</b>	<b>7</b>	<b>4</b>	<b>5</b>	<b>24</b>

## Notes :

a Less than 5000 tonnes but more than 250 tonnes.

b Less than 250 tonnes.

\* Estimated.

## Appendix XVII

## Distribution of muriate of potash

('000 tonnes)

Zone/State	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>88</b>	<b>112</b>	<b>160</b>	<b>202</b>	<b>300</b>	<b>325</b>
	(b)					
Andhra Pradesh	11	14	16	22	48	
	(b)					
Kerala	29	36	37	28	46	
Karnataka	14	20	23	21	53	
Tamil Nadu	34	42	84	131	152	
Pondicherry	—	a	a	a	1	
<b>West</b>	<b>54</b>	<b>59</b>	<b>81</b>	<b>114</b>	<b>154</b>	<b>165</b>
Gujarat	5	12	12	16	31	
Maharashtra	49	47	69	98	122	
Goa	b	b	b	b	1	
<b>Central</b>	<b>20</b>	<b>42</b>	<b>46</b>	<b>54</b>	<b>79</b>	<b>85</b>
Madhya Pradesh	1	7	10	6	8	
Rajasthan	3	2	2	5	8	
Uttar Pradesh	16	32	34	43	63	
Delhi	b	1	b	b	a	
<b>North</b>	<b>17</b>	<b>8</b>	<b>14</b>	<b>16</b>	<b>40</b>	<b>45</b>
Haryana	b	a	1	1	7	
Himachal Pradesh	—	b	a	b	b	
Punjab	17	8	13	15	33	
<b>East</b>	<b>22</b>	<b>40</b>	<b>50</b>	<b>75</b>	<b>72</b>	<b>80</b>
Assam	2	6	6	20	10	
Bihar	2	10	11	16	14	
Orissa	2	4	4	8	12	
W. Bengal	14	20	29	31	35	
Tripura	b	b	b	a	a	
Nagaland	b	NA	NA	b	NA	
Manipur	NA	NA	a	b	b	
Andamans	NA	NA	NA	NA	b	
<b>Total</b>	<b>202</b>	<b>261</b>	<b>351</b>	<b>461</b>	<b>645</b>	<b>700</b>
	(b)					
Others	3	—	—	a	—	
<b>All-India</b>	<b>205</b>	<b>261</b>	<b>351</b>	<b>461</b>	<b>645</b>	<b>700</b>
	(b)					

## Notes :

Bracketed figures are of grade 50% K<sub>2</sub>O  
a Less than 500 tonnes but more than 250 tonnes.  
b Less than 250 tonnes.  
\* Estimated.

## Appendix XVIII

## Distribution of sulphate of potash

('000 tonnes)

Zone/State	1970-71	1971-72	1972-73	1973-74	1974-75*
<b>South</b>	<b>12</b>	<b>3</b>	<b>3</b>	<b>7</b>	<b>8</b>
Andhra Pradesh	11	2	2	5	
Kerala	b	b	b	b	
Karnataka	1	a	a	1	
Tamil Nadu	b	b	b	b	
Pondicherry	b	b	—	—	
<b>West</b>	<b>2</b>	<b>a</b>	<b>1</b>	<b>1</b>	<b>2</b>
Gujarat	1	b	b	1	
Maharashtra	1	a	1	a	
<b>Central</b>	<b>—</b>	<b>b</b>	<b>b</b>	<b>b</b>	<b>—</b>
Madhya Pradesh	—	—	—	b	
Uttar Pradesh	—	—	—	b	
Delhi	—	b	b	b	
<b>North</b>	<b>—</b>	<b>b</b>	<b>b</b>	<b>—</b>	<b>—</b>
Himachal Pradesh	—	b	—	—	
Punjab	—	—	b	—	
<b>East</b>	<b>—</b>	<b>b</b>	<b>b</b>	<b>—</b>	<b>—</b>
West Bengal	—	b	b	—	
<b>All-India</b>	<b>14</b>	<b>3</b>	<b>4</b>	<b>8</b>	<b>10</b>

Notes : a Less than 500 tonnes but more than 250 tonnes.  
b Less than 250 tonnes.  
\* Estimated.