

# REPORT

OF THE

## FERTILISER DISTRIBUTION ENQUIRY COMMITTEE



सत्यमेव जयते

MINISTRY OF FOOD & AGRICULTURE  
(DEPARTMENT OF AGRICULTURE)  
GOVERNMENT OF INDIA

1960

1959-60

lisers

tons of fertilisers

**FERTILISER DISTRIBUTION ENQUIRY COMMITTEE**  
(SYMBOL. AGRI 71)

**B R R A T A**

<i>Page No.</i>	<i>Reference</i>	<i>For</i>	
3	Table—II Results etc.	(1953-59)	(1953-56)
18	<i>Pcol price</i> —2 Departmental charges etc.	1% of C & L	1½% of C. & F.
	—5 Interest etc.	} (b), (2&3) 14, 19,000	(b) & (2 & 3) 14, 91,000
	—6 Incidental etc. ....per ton		} 25,11,200
19	Table VIII—Qty etc. against year 1958-59, Profit/loss Rs.....	} 3, 5, 50,140*	3.50,50,140*
25	Table IX Numbers etc. against Rajasthan under Total No. Ix of fertilisers Depots 1959-60		} 51,83
25	Ware housing Facilities 3rd line	} Warehousing	Warehouses.
26	Table X. Prices etc. against Kerala—under colm. 3 (Urea)	} 725(—10)	725(—15)
26	Last line	hypotheticates	hypothecates
35	Foot notes	Existing entries	*Source : efficient use of fertilisers, F.A.O. August, 1949. (The Committee is aware of the controversial nature of the advantages and disadvantages referred to above)
47	Delhi		No administrative charges is retained. (para ends) (Next para) In all the etc.
52	7.20—statement column 2 against Punjab	0.622 cwt. bags	0.62 (2 cwt. bags)
	against Uttar Pradesh	0.6 per maund.	0.06 per md.
57	Table XVIII—against Bombay under opening stock.	1958-59— 1959-60—3,108	1958-59 3,108 1959-60
74	3rd line from top	tons for fertilisers	tons of fertilisers

83	para 8-49, 3rd line	grant of 1½ per cent	grant of 12¼ per cent
84	Table XX. Relative positions under last colm. kilo of rice <i>regd etc.</i> P <sub>2</sub> O <sub>5</sub> against—U.K.	1·33	1·35
	against—India	2·85	2·83
90	General. Para (1) last line.	terms of O (1·9 to 1·21, 8·53)	in terms of P <sub>2</sub> O <sub>5</sub> (1·19 to 1·21, 8·53)
95	Para (9)	Add at the end after the word rail heads"—	(7·13)
97	Pa-ra (17) End.	(7·40, 8·94, 8·10)	(7·40, 8·9, 8·10)
	Para 20 End.	(8·2, 2·8, 2·3)	(8·22, 8·23)
98	Para (21) End.	(8·7)	(8·17)
101	Appendix I against Sl. No. 14-West Bengal under 1953-54—	248.	Nil
104	Appendix IV	Against from 1-8-53 to 31-12-53	Delete the word <i>su 12</i>
	do.	For 1-1-53 to 18-1-54 and opposite to this for "as above".	1-1-54 to 18-1-54 "Same as above"
105	Appendix IV	<i>Under Nitrophosphate add</i> 1954-55 against (i) and (ii)	
107	Against Madhya Pradesh	Satda	Satna
108	Against Rajasthan	Bundi	Budni
113	(i) Appendix VII against Himachal Pradesh— 1953-54 under July.	16	15
	(ii) Against total Decem- ber, 1953-54	12424	13424
	(iii) Against total Oct., 1954-55.	3554	36504
114	Appendix VIII—under year ending 31st March 1960.	Cal. Sul. nitrate	Am. Sul. nitrate
	„ Against Bombay under 1958—Urea	889	339
	„ Against Kerala under 1960 and total.	1490	1490**
	„ Against Madhya Pra- desh under Total (last column)	2972	29792
	„ Against Punjab—under 1958-Am. Sul. nitrate	985	895

114	Against Punjab—under 1960-Sul. of Am.	13366	11366
115	Against U.P. under 1960—Urea	31	31**
	Against Delhi—under 1960—Urea	13	137**
	Against Manipur—under 1960-Sul. of Amm.	40	40**
	Against Andaman and Nicobar Islands under 1960-Sul. of Amm.	6@	1@
	Urea	1@	6@
	Against Foot Note	***	@
116	<i>Appendix IX</i> Against Madras Against Orissa	Karthikayan Rebitramohan	Karthikeyan Pabitrामohan
117	Against Delhi	Multani Assistant Development Commissioner, Delhi.	Mamtani Assistant Development, Commissioner, Delhi.

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**D. O. No. 21-2/60-M (FDEC)**  
**GOVERNMENT OF INDIA**  
**MINISTRY OF FOOD & AGRICULTURE**  
**(Department of Agriculture)**  
**Fertiliser Distribution Enquiry Committee**  
**NEW DELHI: August 31, 1960.**

**Dear Shri Damle,**

The report of the Fertiliser Distribution Enquiry Committee, appointed by the Government of India in Department of Agriculture letter No. 20-55/59-M, dated 19th November, 1959 is submitted herewith.

Yours sincerely,

**J. S. Patel**  
(Chairman)

**K. C. Chetty**  
(Member)

**Veda P. Sethi**  
(Member)

**C. R. Ranganathan**  
(Member)

**R. H. Engle**  
(Co-opted Member)

**O. P. Sharma**  
(Secretary)

**To**

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**Secretary to the Government of India,**  
**Ministry of Food & Agriculture,**  
**(Department of Agriculture)**  
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# CHAPTER I

## INTRODUCTORY

### **Role of Fertilisers in Agriculture**

1.1. Agriculture may be viewed as an industry in which crops are used to convert the water and various plant nutrients present in the soil into foodgrains, fruit, fodder, fibre and other commodities needed by man and his domestic animals. In any system of intensive agriculture, the harvesting of the crops takes place in succession, often several times a year. This involves a recurring drain of nutrients from the soil, and sustained agricultural production at a high level will be impossible unless the nutrient elements removed from the soil are regularly returned to it.

1.2. Water occupies a special place in plant nutrition. Where the annual rainfall is adequate the replenishment of soil water takes place naturally. Where, however, the rainfall is too scanty for the type of crops desired to be grown, artificial irrigation has to be resorted to. Water may, therefore, be classed as the most important plant nutrient but the regulation of its supply, which includes irrigation, drainage and moisture conservation techniques, constitutes a separate subject which is not dealt with in this report.

1.3. The restoration of plant foods to the soil may be effected by manuring which consists of adding plant and animal residues or by applying chemical fertilisers. Nitrogen, phosphorus and potash are the nutrient elements which are taken up by plants in the largest quantities and are removed from the soil during cropping. It is principally these elements which have to be returned to the soil if crop yields are to be maintained.

1.4. Manures, of which farmyard manure and compost are typical examples, contain all these three elements, but not necessarily in the right proportions for a particular crop. Their main limitation, however, is that they are bulky and are of low concentration and it usually takes many tons per acre of such manures to make good the drain of nutrients caused by a single crop.

1.5. Organic manures have a beneficial effect on the physical properties of the soil and on its moisture-holding capacity. It is necessary, therefore, that organic manures should be carefully conserved and applied to the soil in the maximum available quantities. But the total quantity of bulky organic manures available in the

country will not suffice to supply the soils with the amounts of plant food which need to be supplied even for maintaining the existing relatively low productivity of the soil. According to a recent estimate about 982 million tons of bulky organic manures will be required merely to maintain the fertility level of our soils at the end of the Third Plan. The actual availability of such manures at that time is expected to be of the order of 309 million tons.

1.6. It is imperative that our yields per acre for cereal as well as for other crops should be doubled, if not in some cases tripled in order to feed our growing population and raise its standard of living, without recourse to imported foodgrains. This entails a many-sided campaign for developing agriculture by the application of modern science and technology. In its technical aspects the campaign will involve the expansion of irrigation, the use of disease-free high-yielding seeds, better plant protection and the application of fertilisers on a very extensive scale. Within limits, the supply of nutrients determines the yields obtained. The dosages of fertilisers to be applied will of course vary according to the nutrient status of the soil and uptake of nutrients by the crops. Agricultural scientists have worked out approximate doses for large tracts of land on the basis of fertiliser trials. The average results of a large number of such trials on paddy and wheat conducted by the Indian Council of Agricultural Research in representative soil types all over the country over a period of three cropped years (1953—56) are summarised in the following two tables:—

TABLE I

*Results of fertiliser trials with paddy (1953—56)*

Fertiliser treatment	No. of expts.	Cost of fertilisers Rs. per acre	Response lb/acre.	Net profit per acre at paddy prices (Rs./Md.)		
				10	12	14
20 lb N	1596	17	370.3	28 (165)	37 (218)	46 (271)
40 lb N	780	34	543.1	32 (94)	45 (132)	58 (171)
20 lb P <sub>2</sub> O <sub>5</sub>	860	15	296.2	21 (140)	28 (187)	35 (233)
20 lb N+	1784	32	543.1	34 (106)	47 (147)	60 (188)
20 lb P <sub>2</sub> O <sub>5</sub>						
40 lb N	965	49	650.1	30 (61)	46 (94)	62 (127)
20 lb P <sub>2</sub> O <sub>5</sub>						
20 lb N+	674	47	641.8	31 (66)	47 (100)	62 (132)
40 lb P <sub>2</sub> O <sub>5</sub>						

NOTE: Percentage net return on investment in fertiliser is given in brackets.

TABLE II

Results of fertiliser trials with wheat (1953—1956)

Fertiliser treatment	No. of expts.	Cost of fertilisers Rs. per acre	Response lb/acre	Net profit per acre at wheat prices (Rs./Md)		
				14	16	18
20 lb N	1911	<del>32</del> <sup>17</sup>	246.9	25 (147)	31 (182)	37 (218)
40 lb N	832	34	386.7	32 (94)	41 (121)	51 (150)
20 lb P <sub>2</sub> O <sub>5</sub>	634	15	189.3	17 (113)	22 (147)	26 (173)
20 lb N+	1229	32	345.6	27 (84)	35 (109)	44 (138)
20 lb P <sub>2</sub> O <sub>5</sub>	398	47	427.9	26 (55)	36 (77)	47 (100)
40 lb N+	760	49	485.5	34 (69)	45 (92)	57 (116)

NOTE: Percentage net return on investment is given in brackets.

Vide Fertiliser Trials on Wheat and Fertiliser Trials on Paddy, published by the I.C.A.R. 1956.

1.7. The net profit per acre as well as the percentage net return on investment on fertiliser is obviously dependent on the price per maund of the produce as well as on the ratio between the cost of the fertiliser and the price of the produce. Thus, from the farmer's point of view the best conditions for the use of fertiliser exist when the cost of fertiliser is low and the price of foodgrains is high.

1.8. It should be explained that the figures given in the above tables relate to different fields in each year and do not bring out the effects of injudicious continued fertilisation with a single nutrient over the three-year period. Nor do they show the residual effect of the fertilisers applied on crop yields in the following years. They cannot, therefore, be utilised for drawing any conclusions as to the relative value of single nutrient *versus* mixed fertilisation. This question has to be decided on general grounds and on the basis of experience in other countries.

1.9. It will be seen that the response to 20 lb. N + 20 lb. P<sub>2</sub>O<sub>5</sub> is substantially the same as that to 40 lb. N with both wheat and paddy. It is probable that continued use of 20 lb. N+20 lb. P<sub>2</sub>O<sub>5</sub> on the same land will prove superior to the continued use of 40 lb. N alone. This will have the further advantage of stretching the limited supplies of nitrogen over larger areas.

1.10. The targets of agricultural production proposed for some important agricultural commodities are as follows:—

TABLE III

*Targets of agricultural production for Third Five Year Plan*

Commodity]	Unit	Expected production 1960-61	Target of total production 1965-66	Percentage increase at end of Third Plan
Foodgrains	mill. tons	75.0	100—105	33—40
Oilseeds	Do.	7.2	9.2—9.5	28—32
Sugarcane	Do.	7.2	9.0—9.2	25—28
Cotton	mill. bales	5.4	7.2	33
Jute	Do.	5.5	6.5	18

1.11. Extensive systematic and intelligent use of fertilisers in areas where they are likely to produce good responses is one of the most effective steps for realising the food targets of the Third Five Year Plan.

### The Growth of Fertiliser Use

1.12. Prior to the Second World War the fertiliser industry was mainly developed to meet the requirements of plantation crops. In due course, the leading import houses operating in India, turned their attention to developing the use of fertilisers for general agriculture. The consumption of fertilisers which was gradually increasing, received a set back during the war owing to import difficulties. The fall of Burma and the Bengal famine brought to the fore the importance and necessity of producing more food in the country. Consequently, a G.M.F. campaign was initiated by the Government of India in 1942. It was realised that the use of fertilisers was one of the surest and quickest means of increasing agricultural production. As a part of the G.M.F. campaign, therefore, it was decided to popularise the use of fertilisers and to import and distribute them at reasonable prices. Then the world supply of fertilisers was limited and the quantities available for export from the surplus countries were being allotted on a global basis by the International Emergency Food Council. The quota of fertilisers allotted by this Council to India together with the small indigenous production, was administered

by the Government under a trading scheme which is now popularly known as the Central Fertiliser Pool. The following figures show that the available supplies of ammonium sulphate fell short of the requirements:—

<i>Year</i>	<i>Demand tons</i>	<i>Supply tons</i>
1947-48	2,30,000	1,11,000
1948-49	2,50,000	1,16,000

1.13. The Foodgrains Policy Committee (1943) recognised the importance of manuring and deplored the inadequacy of fertiliser supplies in the country. It, therefore, recommended the setting up of a factory for the manufacture of 3.5 lakh tons of sulphate of ammonia per annum. As a result, the first large factory, viz., Sindri Fertilisers & Chemicals, Ltd., came into production in November, 1951 with an installed capacity of 3.5 lakh tons of sulphate of ammonia.

1.14. Shortly before the Sindri factory went into production the world supply position improved and in 1950, the International Emergency Food Council gave up the practice of allotting fertilisers to needy countries. About 4 lakh tons of sulphate of ammonia were purchased directly from abroad during that year. With the starting of production at Sindri during 1951, the supply position improved considerably and the problem of disposal assumed greater importance.

1.15. Besides various measures taken by the Central and State Governments to popularise the use of fertilisers, the distribution machinery was also geared up. Farmers were allowed credit facilities and a provision of Rs. 2 crores was made in the Central Budget in the year 1950-51 for advancing short term loans to them. This allocation rose to Rs. 10 crores in the year 1954-55 and Rs. 15 crores in 1959-60. For 1960-61, the provision is Rs. 27 crores.

1.16. Conferences were held from time to time in the recent past at which recommendations were adopted that the number of depots selling fertilisers should be increased and the distribution of fertilisers should be progressively entrusted to co-operative societies.

1.17. The price at which sulphate of ammonia was sold by the Pool was reduced in 1953 from Rs. 365 to Rs. 290 per ton F.O.R. despatching station. In the following year, a uniform F.O.R. destination Pool price of Rs. 315 per ton, including the railway freight was introduced. A ceiling amount of Rs. 30 per ton towards the cost of distribution was also allowed to be added to the Pool price. Thus, the

price to the farmers was Rs. 345 per ton. In March, 1957 the Pool price was raised to Rs. 350 per ton F.O.R. destination, thus raising the price to the farmers to Rs. 380 per ton.

1.18. A concerted campaign of fertiliser demonstrations on cultivators' fields all over the country was launched under the Indo-U.S. Technical Assistance Programme in 1953-54. Under this, it was visually demonstrated to the farmers that urea, ammonium sulphate nitrate and calcium ammonium nitrate were as good as sulphate of ammonia as a source of nitrogen. Through these demonstrations and educative programme, consumer resistance to the use of these fertilisers, which are proposed to be manufactured, is being overcome.

1.19. The consumption of nitrogenous fertilisers in terms of ammonium sulphate during the years 1951-52 to 1956-57 when the supplies were adequate, was as follows:—

TABLE IV

*Consumption of N. fertilisers in tons of ammonium sulphate*

Plan period	Local production	Imports	Consumption
1951-52	52,705	1,39,725	2,82,400
1952-53	2,20,302	2,15,621	2,76,800
1953-54	3,19,616	87,725	3,28,000
1954-55	3,40,222	85,068	4,62,150
1955-56	3,93,095	2,35,947	5,14,950
1956-57	3,87,542	2,70,363	6,40,560

Since 1956-57 the demand for nitrogenous fertiliser has increased considerably and the quantity available for distribution has been much less than the demand due to limited imports on account of paucity of foreign exchange. In 1958-59, 8 lakh tons were distributed against the demand of 15 lakh tons in terms of sulphate of ammonia. In 1959-60, the demand was of the order of 18.8 lakh tons and the quantity distributed was about 11 lakh tons. While the demand for 1960-61 for nitrogenous fertilisers has risen to well over 23 lakh tons in terms of sulphate of ammonia, the supply is not likely to be more than that in the previous year, viz., 11 lakh tons.

1.20. To meet the large increase in the demand of nitrogenous fertilisers and to achieve the targets of agricultural production, steps



have been taken to increase the production of fertilisers according to the programme given below:—

**TABLE V**  
*Production programme for nitrogenous fertilisers*  
*(In terms of tons of Nitrogen)*

I Plan	Expansion of Sindri Factory		47,000
II Plan	(i) Nangal . . . . .	80,000	
	(ii) Neyveli † . . . . .	70,000	
	(iii) Rourkela . . . . .	80,000	
	(iv) Sahu Jain (Varansi) . . . . .	10,000	
	(v) Expansion of FACT . . . . .	9,000	
	(vi) By-product Expansion . . . . .	12,000	2,61,000
III Plan	(i) Trombay Plant . . . . .	90,000	
	(ii) Madhya Pradesh (Itarsi) . . . . .	46,000	
	(iii) Naharkotiya . . . . .	32,000	
	(iv) Durgapur . . . . .	75,000	
	(v) FACT (Expansion) . . . . .	12,000	
	(vi) Andhra (Kothagudam) . . . . .	80,000	
	(vii) Rajasthan (Hanumangarh) . . . . .	80,000	4,15,000
<b>TOTAL . . . . .</b>			<b>7,23,000</b>

At the end of the Second Five Year Plan, against an additional capacity of 2.61 lakh tons of nitrogen planned, the capacity likely to be installed is 1.11 lakh tons of nitrogen, and the actual production may well be less.

1.21. The consumption of phosphatic fertilisers has also increased considerably during the Second Five Year Plan. The production and consumption of phosphatic fertilisers since 1951 and the targets of consumption during the Second and Third Plans are as given below:—

**TABLE VI**  
*Production and consumption of phosphatic fertilisers*  
*(In terms of tons of P<sub>2</sub>O<sub>5</sub>)*

Year	Production	Consumption
1951 . . . . .	9,780	6,880
1952 . . . . .	7,484	4,592
1953 . . . . .	7,427	8,131
1954 . . . . .	17,587	14,790
1955 . . . . .	12,593	12,812
1956 . . . . .	13,323	15,624
1957 . . . . .	23,206	21,576
1958 . . . . .	26,784	27,212
1959 . . . . .	39,420	38,887
1960-61 . . . . . target		1,20,000
1965-66 . . . . . target		4,00,000

1.22. Till recently very little potash was being consumed in India. The large number of field trials conducted in Bihar by the Agriculture Department and elsewhere by the Potascheme\* have established that many of our soils which were thought to be naturally well supplied with potash are now actually found to be deficient in it. The continued use of nitrogen and  $P_2O_5$  tends to deplete the potash reserves in the soil. The figures of consumption of potash from 1951 to 1959 are given below:—

TABLE VII

*Consumption of potash fertilisers (In terms of tons of  $K_2O$ ).*

Year	Consumption
1951 . . . . .	7,669
1952 . . . . .	3,123
1953 . . . . .	8,545
1954 . . . . .	14,244
1955 . . . . .	10,826
1956 . . . . .	10,940
1957 . . . . .	15,528
1958 . . . . .	16,503
1959 . . . . .	28,986

Statewise figures of consumption of nitrogen, phosphatic and potassic fertilisers are given in Appendix I, II and III respectively. These figures show how the sales of fertilisers have stagnated in some States indicating a lack of efforts and presence of bottle-necks in the distribution agencies.

#### Terms of Reference

1.23. The existing distribution system has been developed in an *ad hoc* manner largely during a period of fertiliser shortages. Complaints of imperfect working of the system have been received from time to time and attempts have been made to patch it up. A comprehensive review of the distribution system has become necessary. Further, to achieve the high targets of agricultural production, greatly increased quantities of fertilisers will have to be used. It is essential that the fertilisers are made available to the farmer in time over the whole country. This calls for an overhaul of the existing distribution system to cope with the greatly increased tonnage of fertilisers. With these objects in view the Government of India set up a Committee with the following terms of reference:—

- (1) To study the system followed for assessing the demand of nitrogenous fertilisers, the mode of distribution in vogue

\* Potascheme is an agricultural organisation sponsored by the International Potash Institute, Berne, Switzerland. They have done considerable research work in India for popularising the use of potash.

and to recommend steps for improvements, wherever necessary;

- (2) to study the role of the distribution agencies employed and their share in the distribution margin allowed and to recommend such adjustments as may be necessary in the distribution margin;
- (3) to recommend steps that should be taken to ensure that the cultivators get the fertilisers of the required quality and at the notified price; and
- (4) to study the system in vogue for the distribution of superphosphate and the cost of distribution and to suggest such improvements as may be considered necessary.

1.24. The Committee issued a questionnaire to elicit information on the existing systems, and suggestions for improvement, and visited the following States. During their tour they interviewed the State Government officials, the persons concerned with distribution of fertilisers, manufacturers and farmers.

1. Andhra Pradesh
2. Assam
3. Bihar
4. Madras
5. Punjab
6. Uttar Pradesh
7. West Bengal

### Acknowledgements

1.25. The Committee would like to thank the State Governments for furnishing replies to the questionnaire and for providing supplementary information as and when required subsequently. One State did not reply to the questionnaire issued and in the case of two other States the reply was received after the finalisation of the draft report. The Committee is also indebted to the State Governments and to a very large number of State officials at all levels, for arranging visits and for extending their valuable help, assistance and hospitality. The Committee would also like to thank Shri K. Sachidanandam, Deputy Financial Adviser, Ministry of Food & Agriculture, (Department of Agriculture), for helping the Committee in its enquiries and deliberations held in some of the States. The Commit-

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tee would like to place on record its appreciation of the services rendered by Shri O. P. Sharma, Secretary of the Committee and the staff\* without whose conscientious efforts and devotion such a comprehensive study of the mass of information would not have been possible in such a short time.

1.26. The Committee is grateful to Sarvashri D. V. Reddy, E. B. Raghviah, B. N. Duara, Anandeswar Barua, Bhubaneswar Prasad, Ramchandra Singh, V. Karthikeyan, V. S. Thiagaraja Mudaliar, Baldev Bakshi, Jagjit Singh, Ramsurat Singh, Padam Singh, A. Bhattacharya and Rashbehari Chowdhury, who were nominated members of this Committee, two each by the States of Andhra Pradesh, Assam, Bihar, Madras, Punjab, Uttar Pradesh and West Bengal respectively for the assistance given by them in studying the problems on the spot.

1.27. The Committee appreciates the assistance rendered by the manufacturers by furnishing replies to the questionnaire and by discussing the distribution problems with the members of the Committee during its tours.

1.28. The Committee is grateful to the Fertiliser Association of India and its staff for very valuable assistance rendered during the Committee's deliberations.

## CHAPTER II

### THE CENTRAL FERTILISER POOL

#### Origin of Fertiliser Pool

2.1. The widespread use of fertiliser in the country is of recent growth; before the Second World War only small quantities (about 1.0 lakh tons of sulphate of ammonia) of fertiliser was consumed and much of it was applied to plantation and cash crops, very little fertiliser being applied to other crops. After the fall of Burma and the consequent cessation of imports of rice from that country, it became necessary to adopt measures to increase rapidly the production of food. As a result of decisions taken by a high level conference held in Bombay in 1942 a Grow More Food Campaign was launched. Increased use of fertilisers was one of the special features of this campaign.

2.2. At that time the nitrogenous fertilisers were being produced only to a small extent (about 28,000 tons) by one factory in the South and a few steel plants in Bengal and Bihar as a by-product. The country was thus dependent largely on imported fertilisers, the supplies of which dwindled during the War owing to curtailed production in the exporting countries. The shipping difficulties further affected supplies. To meet these and other problems, an International Emergency Food Council of the Allies was set up. The Council which acted as a co-ordinating agency for various commodities including fertilisers, allotted supplies of fertilisers from the surplus to deficit countries. India became a member of the Council. It was roughly estimated that the potential demand of nitrogen in undivided India would be of the order of one million tons per annum. No estimates of demand, however, appear to have been framed for phosphates and potash, as at that stage, the deficiency of nitrogen only was known to be wide spread in Indian soils. As the allocations of the International Emergency Food Council were made only to Governments, a Central Pool for import and distribution of nitrogenous fertilisers was established in 1943-44. In order to ensure equitable distribution it became necessary for the Government of India to bring the nitrogenous fertilisers produced in the country within the Pool which is run by the Ministry of Food and Agriculture as a State Trading Scheme.

2.3. The supplies from the Central Fertiliser Pool to the consuming points were routed through the Provincial (State) Governments. The local Governments effected the distribution of fertilisers through department depots operated by their Agricultural Departments or through private agents.

### Price and Distribution Policies

2.4. The Foodgrains Policy Committee appointed in 1943, recommended the setting up of fertiliser factories in the country, if necessary by securing plants from U.S.A. under lease/lend arrangements. They further observed as follows:—

"It need hardly be added that one of the essential conditions for granting the necessary facilities would be the acceptance of strict control over the price and distribution of the finished product so as to ensure that it is utilised to the best advantage in increasing food production in India".

2.5. The final report of the (Bengal) 'Famine Inquiry Commission' published in 1945, observed, (paragraph 12 of Chapter II):—

"The price factor is a (most) important element in the use of both organic and inorganic manures. The financial gain to the cultivator must be substantial; it is not sufficient that there should be some gain. If the gain is small it is certain that the cultivator, particularly the small cultivator, will refuse to go to the expense of buying the manure and take the trouble of applying it to the land. There are several ways in which Government can come to the assistance of the cultivator. First, railway freights should be periodically reviewed with the object of determining whether further concessions in freights are possible. As the Royal Commission on Agriculture pointed out, any increase in the crops yield, as a result of the use of manures and fertilisers, must eventually lead to an increase in traffic and thus benefit railway revenues. Secondly, the quality of manures and fertilisers supplied by the trade should be kept under close watch to guard against adulteration. Thirdly, Government should, if necessary, arrange preferably through co-operative societies, for the distribution of manures and fertilisers. And fourthly, co-operative credit societies should be organised in those areas where they do not now exist, with a view to financing the small cultivator in the purchase of manures and fertilisers".

2.6. In September, 1947, the Government of India appointed a Second Foodgrain Policy Committee under the Chairmanship of Shri Purshotamdas Thakurdas. One of the terms of reference to the Committee was to suggest the measures which should be taken to increase domestic production. The Committee made important recommendations which may be grouped under four heads:

- (1) Greater attention to minor irrigation works, development of local manurial resources and distribution of improved seeds;
- (2) plans for production of fertilisers;
- (3) survey of ground water resources with a view to undertaking tubewell construction; and
- (4) setting up of a central organisation for undertaking reclamation and development of large blocks of cultivable waste lands.

The Committee suggested an organisational set up based on village panchayats and co-operative societies to help in the production drive.\*

2.7. In the First Five Year Plan (1951-52 to 1955-56) it was observed as follows:—

“The emphasis of the Plan is on augmenting agricultural production. In this sphere co-operation has a very significant contribution to make. Co-operatives can help to increase the effectiveness of extension work. Other services which a cultivator needs for efficient utilisation of his land can also be made available through co-operative agencies. Such aids as seeds, fertilisers, and implements on which depends the profitable exploitation of the resources of the soil can be effectively placed at the disposal even of the small farmer by co-operative societies. In fact, in the field of agriculture, co-operatives comprise almost every activity that is connoted by the term agricultural organisation. It is the best medium for promoting a progressive agriculture. Major items of agricultural development e.g. consolidation of holdings, soil conservation and provision of facilities for irrigation as well as current needs such as protection of crops from pests, diseases and animals can be most effectively served through co-operative organisation.”

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\*Source: Report of the Grow More Food Enquiry Committee, June, 1952.

The State Governments were, therefore, advised by the Ministry of Food and Agriculture in 1953 to utilise the services of co-operative societies for the distribution of fertiliser to the maximum extent possible.

2.8. The National Co-operative Development and Warehousing Board at its meeting held in March 1957, decided that the co-operative organisations should be associated to a greater extent with the scheme of distribution of fertilisers and that steps should be taken to strengthen co-operative organisations in the areas where co-operatives were not handling the entire distribution of fertilisers. This recommendation was communicated to the State Governments in April 1957 and they were requested that the work should be transferred to the co-operatives to the maximum extent possible within a year. Subsequently, at its meeting held in November, 1958, the National Development Council adopted a resolution which, while emphasising the role of the co-operative movement in intensifying agricultural production, proposed that the co-operative should arrange to distribute the fertilisers to farmers and to provide credit facilities. Therefore, the Working Group on Co-operative Policy which was set up in 1959 for considering the administrative and organisational arrangements required for the success of the movement suggested that this work should, throughout the country, be handled by co-operative societies only. It recognised that it might not be possible to do so all at once but stressed that efforts to achieve this within a specified period, say three years, should be made. The Agricultural Administration Committee (Nalagarh Committee, 1958) also recommended that the time had come when the entire organisation for the supply of fertilisers, improved seeds, insecticides and agricultural implements must be separated from the extension and technical function of the Agriculture Department and transferred to the co-operative organisations in the States.

2.9. As a result of these recommendations, the distribution of nitrogenous fertilisers has been progressively entrusted to the co-operative societies in the States.

### **Superphosphate Pool**

2.10. It was soon realised that intensive use of nitrogenous fertilisers alone would deplete the soils of their phosphate reserves. Some bonemeal was already being produced and used in the country, particularly in plantations. By 1949, a number of factories had sprung up in the country for producing single superphosphate containing 16 per cent water-soluble  $P_2O_5$ . The manufacturers were apprehensive of competition from imported superphosphate and



feared that superphosphate will not be as popular as ammonium sulphate with the farmer and, therefore, would not sell in sufficient quantity. They, therefore, asked for tariff protection. In order to allay these apprehensions, the Government of India instituted a Superphosphate Pool in 1949. In 1952 the Superphosphate Pool was abolished so as to leave the manufacturers free to distribute and develop sales. The production of superphosphate had increased and so also the demand for it. There was no room for any apprehension by the manufacturers that superphosphate would be imported from abroad. It was considered that further development of the consumption of superphosphate might well be stimulated by the promotional work of the manufacturers as well as of the Agricultural Departments.

2.11. In the case of phosphatic fertilisers, the distribution had developed also on lines similar to those of nitrogenous fertilisers but after the disbandment of the Pool, the distribution of superphosphate was left to be developed by the trade.

#### **Balanced Fertilisation**

2.12. Phosphatic fertilisers were comparatively new to the farmer and he was often unaware of their residual benefits. It was also considered necessary to promote balanced N and P fertilisation. The Government of India, therefore, decided to grant subsidy for phosphatic fertilisers in order to lower their cost and thereby popularise them.

2.13. Initially a subsidy of 50 per cent of cost price to the farmers was granted which was later reduced to 25 per cent. Grant of subsidy is subject to the condition that it is shared equally between the Central Government and the State Government concerned. It was left to the State Governments to arrange for the sale of the fertiliser to the farmers at the subsidised price.

2.14. At the Conference of the State Ministers for Agriculture held at Srinagar in November, 1957 complaints of short supply of superphosphate and of high prices were made. The Central Government instituted a system of half-yearly meetings in the four fertiliser zones of the country. At these meetings superphosphate manufacturers and representatives of Central and State Governments discuss production and consumption prospects and allocate the production of factories to the various States in the zones. This arrangement worked well till 1960 when the offtake by the State Governments fell below the production of superphosphate and left considerable surpluses in some of the zones.

2.15. It was only towards the end of the First Five Year Plan that the need for larger use of potash came to be recognised. The use of potash had been confined mainly to plantations. Almost all the potash used has to be imported as muriate and sulphate of potash. Imports of potash are handled by the State Trading Corporation of India through the Indian Potash Supply Agency which is in charge of distribution also.

### **Role of the Pool in the Distribution of Fertilisers**

2.16. In order to ensure an equitable distribution of nitrogenous fertilisers, the Central Government is running a Trading Scheme known as the 'Central Fertiliser Pool'. It collects the estimated demands of fertilisers from the State Governments and also from such corporate bodies as control the plantations (i.e. Tea, Coffee and Rubber Boards) and industrial users. The estimated indigenous production is ascertained from the producers. As the indigenous production is sufficient to meet only a part of the demand, imports are arranged (with the concurrence of the Ministry of Finance) by placing an indent on the Ministry of Works, Housing & Supply. Due to restricted availability of foreign exchange and the consequent limited imports, the total available supplies since 1957 have been less than the demand in the country. The indigenous production as well as the imported stocks are pooled together and allotted to the State Governments, etc. once a quarter in accordance with the estimated availability of supplies and the demand from the States during the period. The sources of supplies are indicated in the allocation letter. The allottees send despatch instructions indicating the destination rail-heads direct to the indigenous manufacturers or the Regional Directors (Food) at ports who handle imported materials.

### *Organisational Set-up*

2.17. The work relating to the 'Central Fertiliser Pool' is handled by a Division in the Department of Agriculture consisting of three Sections namely, Planning, Trading and the Accounts Sections of the Fertiliser Division. The Division is in charge of a Joint Secretary who is assisted by a Deputy Secretary. Both these officers attend to this work only part-time as they have also to look after the work of other sections. A whole-time Under Secretary is, however, in charge of all the three sections of the Fertiliser Division. The role played by the three Sections of the Division is described below:—

**(a) Fertiliser (Planning) Section**

This Section deals with (i) All the policy matters relating to fertiliser distribution in the country including framing of the targets of consumption to be achieved in the Plan periods, (ii) The types of fertilisers to be manufactured in the country, (iii) Administration of the Fertiliser (Control) Order, 1957, (iv) Procurement of fertilisers from indigenous and foreign countries and (v) All matters relating to non-pooled fertilisers and local manures like compost, sewage, bonemeal, etc.

**(b) Fertiliser (Trading) Section**

This Section deals with the allocation and distribution of the pooled fertilisers both indigenous and imported. It looks after shipments of fertilisers and their clearance, despatch and diversion. A monthly forward shipping programme is issued by the Section which keeps a watch on actual arrivals. The Section also watches the movements, and the progress of consumption of fertilisers in the States on the basis of quarterly returns of stocks and distribution received from them.

**(c) Fertiliser (Accounts) Section**

This Section handles all the correspondence in connection with the settlement of bills for supplies received into the Pool (from indigenous and foreign sources) and recovery of value from the allottees.

2.18. In the Department itself, the entire work relating to the pooled fertilisers (leaving aside staff handling work not relating to pooled fertilisers in the Fertiliser (Planning) Section) is handled by the following staff, which the Committee considers inadequate:—

(1) Section Officer	..	1½
(2) Accountant	..	1
(3) Assistants	..	5
(4) Upper Division Clerks	..	5
(5) Junior Accountants	..	6
(6) Clerks	...	8

Besides the above staff, some staff is provided in the organisations of the Regional Directors (Food) at the ports of Bombay, Madras and Calcutta to work in connection with the clearance of fertiliser shipments received from abroad. The organisation of the Pay & Accounts Officer has its own staff to handle work relating to pay-

ments and recoveries. The pay and allowances of all the staff is accounted for in the Pool.

### Financial Control

2.19. On the basis of demands received from State Governments and other bodies and also on the basis of anticipated procurement from indigenous sources and import, provision is made in the annual budget estimates of the Central Government for the procurement of fertilisers and for recoveries by sale. These recoveries are taken directly to the General Revenues. Thus the Pool does not have any fund of its own to operate upon. For each item of expenditure, financial concurrence is required to be obtained in the usual manner in which it is required for any Government expenditure.

### Pool Price

2.20. The Central Pool, with the concurrence of the Finance Ministry, fixes the price chargeable for different fertilisers from different types of allottees, namely the States, the plantations and the industrial users after pooling all the expenses, e.g., in connection with the review of the Pool price for sulphate of ammonia for the year 1960-61, the following were accounted for:—

#### 1. Value of purchases:

	Rs.
(a) indigenous . . . . .	4,56,000 tons 13,41,96,000
(b) imports . . . . .	4,21,800 tons 8,52,00,000
2. Departmental charges on imports levied by the purchasing organisations (D.G.S. & D.I.S.M. Washington and I.S.D. London at 1% of C & L) . . . . .	12,78,000
3. Handling charges incurred by R.Ds.(F) at the ports on imports at Rs. 10 per ton <i>ad-hoc</i> . . . . .	42,18,000
4. Sales tax on indigenous purchases at 2% . . . . .	26,84,000
5. Interest for 6 months on capital invested on imports items (b), (2&3) at the current Government rate . . . . .	14,19,000
6. Incidentals (overhead charges on staff employed, shortages, losses, etc. on <i>ad-hoc</i> basis at Rs. 4 per tons) . . . . .	25,11,200
7. Equated railway freight from the despatching points in India (factories, depots, ports, etc.) to the destination railway stations, at Rs.35 per ton . . . . .	3,07,23,000
<b>Total expenses on 8,77,800 tons. . . . .</b>	<b>26,33,01,200</b>

Average per ton: Rs.300.00

2.21. Normally no margin for profit as such is kept in the price structure but some profit or loss does occur every year due to marginal adjustments. A statement showing the quantities and value of fertilisers handled by the Central Fertiliser Pool during the year

1951-52 to 1958-59 and the amount of profit accrued to or loss suffered by it during those years is furnished below:—

TABLE VIII

*Quantity and value of fertilisers handled by the Central Fertiliser Pool during the years 1951-52 to 1958-59 and profit/loss accrued*

Year	Quantity tons	Value Rs.	Profit/Loss Rs.
1951-52 . .	1,85,535	5,08,87,773	4,44,627
1952-53 . .	3,27,208	12,87,65,740	3 40,152
1953-54 . .	3,63,334	8,77,38,671	68,70,760
1954-55 . .	4,55,817	10,40,17,681	(—) 45,47,472 Loss
1955-56 . .	5,59,981	16,73,46,562	8,75,985
1956-57 . .	6,16,284	18,68,97,631	22,58,216
1957-58 . .	7,56,362	23,84,19,844	1,54,78,413*
1958-59 . .	6,70,827	21,15,33,872	3,55,50,140*

2.22. It has to be realised that the scheme is run by the Government of India as a commercial undertaking and firstly, sale price has to be fixed keeping some margin for unforeseen items of expenditure such as demurrage, loss of the material during ocean transport, etc., and secondly to provide a cushion for possible losses that may be suffered in future or to wipe off losses suffered in the past. There have also been occasions when profits have been utilised for such purposes as granting of rebates to States on unsold high priced stocks when the Central Pool price was reduced, keeping the actual Pool price low when the economic price worked lower than the Pool price calculated by normal standards and providing subsidy to States to meet high cost of internal transportation and/or other expenses of distribution in special circumstances.

2.23. Upto 1953, the Pool price was fixed on F.O.B. Works/Depots basis i.e., the consignees had to bear the railway freight. In certain cases the quantum of railway freight was very high. This led to inequity of price and was not conducive to development of consumption in distant places. With a view to charging a uniform price to the cultivators throughout the country, the railway freight from each despatching centre to various stations was estimated and an equated

\*During the years 1957-58 and 1958-59 larger profits accrued to the Pool due to the fact that some amount was saved from the margin kept in the Pool price structure for meeting higher incidence on Ocean Freight anticipated on account of blockade of the Suez Canal and subsequently it was found possible to procure fertilisers from abroad at unusually lower rates.

freight was arrived at and included in the structure of the Pool price.

2.24. Government and other bodies who obtain direct quota are normally expected to add the following amounts to the Pool prices of various fertilisers to meet their handling and distribution charges to arrive at the prices chargeable to the consumers:—

	<i>Rs. per ton.</i>
Sulphate of ammonia	.. 30·00
Urea	.. 45·00
Ammonium sulphate nitrate	.. 35·00
Calcium ammonium nitrate	.. 30·00

The above margin had to be increased in the case of certain States (U.P. & Orissa) due to their inability to keep the expenses within the above mentioned limits. A statement showing the Central Pool prices to various interests during the different periods is appended (Appendix IV). Owing to higher incidence of freight on the movement of fertilisers to plantations, higher prices than those charged to the States are charged to the plantations.

### *Payments*

2.25. The procedure for payment for the purchases made into the Pool by the Government of India is as under:—

- (a) *for imports*: The purchasing organisation pays the value, ocean freight, etc. in the first instance and subsequently passes on the debit through the Pay & Accounts Officer, Ministry of Food and Agriculture.
- (b) *for indigenous purchases*: The suppliers send their bills for the value of stores despatched to allottees, to the Government of India in two instalments for payment. Ninety per cent of the value is paid on proof of despatch; payment of the balance of the value is made on production of certificates of receipts.

### *Recovery*

2.26. Recovery of the value of stores supplied to the allottees is effected in two ways, namely:—

- (a) From parties other than State Governments and Government bodies (Kirkee Factory, Government Institutes, etc.) value is received *in advance*. In the case of

supplies from indigenous sources, (other than Sindri) the allottees (private parties) pay a portion of the price representing the difference between the Pool price and the manufacturers' price, to the Government in advance and the balance to the manufacturers on delivery of R/R. As regards supplies from Sindri factory, the allottees pay the entire value to the manufacturers (Sindri Factory) on delivery of R/R. The Sindri Factory remits to Government periodically, the difference between the Pool price and the manufacturers' price.

As regards supplies from imported materials, the allottees pay the entire value to the Central Pool in advance.

- (b) From State Governments and other Government bodies value is recovered by book-adjustment. For supplies from indigenous sources, the debit is raised for the full value at the Pool price against the Accounts Officer of the consignee State simultaneously with the payment of the bill of the suppliers for 90 per cent value. For supplies from the imported stock the debit is raised on receipt of monthly accounts from the Regional Directors (Food).

### **Role of Central Government in the Distribution of Phosphatic Fertilisers**

2.27. The Central Government occasionally imports small quantities of concentrated phosphatic fertilisers or compound fertilisers for demonstration and trial purposes. The procedure followed in distributing these is the same as for the imported nitrogenous fertilisers.

2.28. As regards indigenous superphosphate the Central Government is not directly concerned with its distribution. As stated earlier, zonal meetings are convened every six months where representatives of the Government of India, the States and the manufacturers situated in the zone, review the demand and supply position and the areas of supply by each of the manufacturers are decided at these meetings.

## CHAPTER III

### DISTRIBUTION ARRANGEMENTS IN THE STATES

#### Nitrogenous Fertilisers

3.1. In most of the States, the Department of Agriculture administers the distribution of fertilisers, the actual distribution however being done by the Cooperative Societies. This is, however, being gradually taken over by the Cooperation Department. In Bihar, Madhya Pradesh, Orissa, Uttar Pradesh and Delhi, beside the State Departments, the Apex Cooperative Societies also function as co-ordinating agencies. In Madras, the distribution of fertilisers is dealt with by the Board of Revenue acting through the District Collectors. The indents of fertilisers are, however, passed on to the Central Government by the Agriculture Department.

3.2. The Apex Organisation compile estimates of demand of fertilisers received from their District Organisations, nearly a year in advance and transmit them to the State Government for transmission to the Central Government. With the taking over of the distribution work by the Cooperative Societies there is a growing tendency to act independently of the Agriculture Officers and for the Agriculture Officers themselves to lose interest in this important work.

3.3. *There appears to be no justification for more than one agency at the State level for the work of coordination. There is no necessity for both the State Department and Apex Organisation to coordinate distribution and allocate supplies. The State Agriculture Department should be closely associated with the estimation of demand, and the District Agriculture Officers should be consulted while preparing the seasonal estimates.*

3.4. When allocations are received from the Central Government, these are apportioned amongst the different Districts by the State Government or at their instance by the Apex Organisations, wherever they exist. The District Cooperative Society or the Collector (as in Madras State), allocate the fertiliser within the district. As nitrogenous fertilisers are in short supply, complaints about the allocation of quotas are received from different areas.

3.5. Loans are not always granted with due regard to the availability of fertilisers, with the result that loan permits quite often remain unutilised. Information as to stock position in the retail depots



does not appear to be collected and studied and in general is not forthcoming. The stacking of fertiliser bags in depots often leaves much to be desired and makes the task of physical verification difficult. In fact it does not appear that such verification is regularly done.

### **Phosphatic Fertilisers**

3.6. Superphosphate is generally used in all the States. In certain States like Andhra Pradesh (Andhra area), Bombay, Kerala and Madras, the manufacturers themselves distribute this fertiliser either through their own depots or their appointed agents. In Telangana area of Andhra Pradesh, Assam, Rajasthan, Uttar Pradesh, West Bengal and in all Union Territories, the State Governments procure this fertiliser from the manufacturers and distribute either through the Co-operative Societies or through their own depots. In other States, namely Bihar, Madhya Pradesh, Mysore, Orissa and Punjab, the Apex Cooperative Societies procure this fertiliser from the manufacturers and distribute this through the Primary Societies or agents. In Kerala, however, the State Government procures and distributes hyperphosphate and bonemeal through departmental depots. In this State superphosphate is distributed through M/s. FACT, Alwaye.

### **Potassic Fertilisers**

3.7. Almost the entire requirements of the country are imported by the State Trading Corporation through the Indian Potash Supply Agency and distributed through their agents. In several States like Orissa, Punjab, Delhi and other Union Territories, the consumption of potassic fertilisers is negligible.

### **Mixtures**

3.8. Some of the State Governments allot nitrogenous fertilisers to mixing firms for preparation of mixtures. The distribution of mixtures is done by the manufacturers themselves either through their own depots or their agents. Each kind of mixture has to be registered with the State Government under the provision of the Fertiliser (Control) Order. The maximum prices of mixtures are fixed by the State Government on the basis of the composition of the mixtures. At present mixtures are popular in Andhra Pradesh, Kerala, Madras, Mysore and West Bengal. Small quantities are also used in Bombay, Punjab and Uttar Pradesh. No mixture has been registered or is produced in Madhya Pradesh, Orissa, Rajasthan and Union Territories excepting Delhi.

## Duties of Fertiliser Distributing Agents

3.9. The agents are generally required to:—

- (a) Provide proper storage for the fertilisers entrusted to them for distribution.
- (b) Open adequate number of depots in all important centres.
- (c) Stock adequate quantities at all times.
- (d) Keep proper accounts of the stocks received and sold.
- (e) Render periodical accounts and reports etc. required by the State Governments.

In Bombay (now Maharashtra and Gujarat), Kerala, Orissa, Rajasthan, West Bengal, Delhi and Himachal Pradesh, the agents are required to furnish securities which may be either a fixed sum or equivalent to the value of fertilisers allotted. The agents pay the value of fertilisers in advance in Andhra Pradesh, Assam, Kerala, West Bengal and Pondicherry. In Uttar Pradesh, Bihar and Punjab, the Cooperative Societies get the fertilisers on credit and remit the value to Government as and when materials are sold. In Madras and certain parts of erstwhile Bombay State, the Primary Co-operative Societies pay the value before taking delivery of the fertiliser from the District Wholesale Societies, which act only as Government stock holders.

### Distribution Depots

TABLE IX

*Number of distribution depots in operation in each State*

States	No. of villages in '000	Total area cultivated in lakhs of acres 1955-56	Total area irrigated in lakhs of acres 1955-56	Total No. of fertiliser depots 1959-60
1	2	3	4	5
Andhra Pradesh . . . . .	29.0	304.0	79.10	3,406 ✓
Assam . . . . .	26.6	60.0	15.30	50
Bihar . . . . .	77.5	245.0	44.10	1,092
Bombay. . . . .	59.9	699.0	40.20	1,905

	1	2	3	4	5
Kerala . . . . .		1.6	54.7	11.00	1,247
Madhya Pradesh . . . . .		74.0	443.9	20.70	1,278
Madras . . . . .		18.4	169.7	73.10	1,516
Mysore . . . . .		30.1	252.0	16.90	1,517
Orissa . . . . .		48.4	149.6	28.20	1,375
Punjab . . . . .		22.9	235.0	90.40	51,831
Rajasthan . . . . .		34.7	310.0	39.40	923
Uttar Pradesh . . . . .		124.9	519.3	132.60	1,299
West Bengal . . . . .		37.9	153.2	30.50	1,837
Jammu & Kashmir . . . . .		7.0	18.4	7.40	462
Delhi . . . . .		0.4	3.2	0.80	203
Himachal Pradesh . . . . .		11.8	10.5	1.60	230
Manipur . . . . .		1.9	2.2	1.50	27
Tripura . . . . .		3.6	5.6	0.04	36
Andaman, Nicobar & Lacadive Islands . . . . .		0.2	0.2	..	2

### Warehousing Facilities

Apparently no State has found it necessary so far to use the warehouses constructed by the State or Central Warehousing Corporations. A list of the warehousing is appended (Appendix V). Only Andhra Pradesh (Telangana area), Assam, Punjab, Uttar Pradesh and Tripura have reported shortage of storage space. In other States the existing accommodation is considered sufficient to meet the present needs. The Assam Government propose to construct 23 additional godowns to meet the present shortage as well as the future needs. Likewise the Tripura Administration proposes to undertake the construction of godowns. The Pondicherry Administration has plans to construct two godowns during 1960-61. The Punjab State Warehousing Corporation has undertaken to make additional storage space available when its 12 new warehouses under construction are ready. Madras, West Bengal, and Delhi have not faced any problems of storage space as the distribution agents are expected to find necessary accommodation.

**Farmers' Prices of Fertilisers**

3.12. The following table shows the prices charged to farmers for nitrogenous fertilisers in the various States. The deviations from the standard and ceiling prices are also indicated.

TABLE X  
Prices per ton of fertiliser in rupees

State	Ammonium sulphate	Urea	Ammo. sulphate nitrate	Cal. ammonium nitrate
I	2	3	4	5
Standard ceiling prices . . . . .	380	740	450	360
Assam . . . . .	377(-3)	722(-18)	442(-8)	357(-3)
Andhra Pradesh . . . . .	380	740	450	360
Bihar . . . . .	*390(+10)	740	450	360
Bombay . . . . .	380	740	450	360
Kerala . . . . .	380	725(-10)	445(-5)	360
Madhya Pradesh . . . . .	380	740	450	360
Madras . . . . .	390.80(a)	761.61(a)	462.90(a)	370.20(a)
Mysore . . . . .	380	740	450	360
Orissa . . . . .	390(+10)	725(-15)	445(-5)	360
Punjab . . . . .	380	740	450	360
Rajasthan . . . . .	380	725(-15)	445(-5)	360
Uttar Pradesh . . . . .	386(+6)	760(+20)	458(+8)	365(+5)
West Bengal . . . . .	380	740	450	N.A.
Jammu & Kashmir . . . . .	N.A.	N.A.	N.A.	N.A.
Delhi . . . . .	380	740	450	..
Himachal Pradesh . . . . .	380	..	..	..
Manipur . . . . .	201.6 (178.4)b	416 (-324)b	..	..
Tripura . . . . .	380	..	..	360
Andaman, Nicobar Islands etc. . . . .	N.A.	N.A.	N.A.	N.A.

N.A. Not available \*Not yet approved by the Central Govt. †

(a) Inclusive of sales tax at 3 per cent. (b) Subsidised at 50 per cent.

**Credit Facilities to Farmers****(i) Basis for Granting Loan**

3.13. The farmers who are unable to purchase fertilisers for cash may obtain loans for this purpose from two sources viz., (i) Taccavi from Government and (ii) Cooperative loans from Cooperative Societies of which they are members. The basis for granting such loans is usually the land possessed by the applicant or cultivated by him on tenancy basis. In Rajasthan, Uttar Pradesh, and Himachal Pradesh, no limit for the loan has been fixed. The applicant either hypothecates his property or furnishes surety to the extent required.

The loan granted on taccavi is usually limited to about two-thirds of the amount of security or surety furnished. The amount of loan also differs from crop to crop as in Madras loan given for paddy cultivation is only Rs. 50 per acre whereas loan given for sugarcane cultivation is Rs. 165.00 per acre (of which Rs. 15 in each case is for superphosphate). In West Bengal also a paddy cultivator gets Rs. 28 per acre while a potato cultivator gets Rs. 84 per acre. In Andhra Pradesh (Andhra area) a special loan for "Intensive Manuring" can also be availed of.

In Andhra Pradesh, Assam and Kerala loans are granted both in cash and kind while in Bihar, West Bengal and Delhi cash loans only are available. In other States loans are granted only in kind.

(ii) *Duration of Loan*

3.14. The loans are returnable in one year in Andhra Pradesh, Assam, Madras, Mysore and Uttar Pradesh, but in Bombay, Kerala, Madhya Pradesh, Rajasthan, West Bengal and Himachal Pradesh, the loans are received after the harvest of the crop. In Punjab the loan has to be returned in six months.

(iii) *Interest on Loans*

3.15. The Cooperative loans bear a higher rate of interest (8½ per cent in U.P. and 7½ per cent in Assam) while the taccavi loans are available at cheaper rates of interest as detailed below:—

TABLE XI  
*Rates of interest on taccavi loans*

Name of State	Normal rate of interest (per cent)	Penal rate (per cent)
Andhra Pradesh		
(a) Andhra area . . . . .	5½	
(b) Telangana area . . . . .	Nil for one year	6
Bihar . . . . .	6½	
Bombay . . . . .	6½	
Kerala . . . . .	6	8
Madhya Pradesh . . . . .	4-11/16	6½
Madras . . . . .	5½	6
Punjab . . . . .	5½	6½
Rajasthan . . . . .	Nil (if paid within the harvest season)	6½
Uttar Pradesh . . . . .	5½	
West Bengal . . . . .	6½	
Himachal Pradesh . . . . .	4	

*(iv) Procedure for Obtaining Loan*

3.16. Applications for taccavi loans have to be verified by the village officer in respect of solvency and identity of the applicant. The applications are then sent to the loan sanctioning authorities for further action. In Punjab the loan is generally sanctioned on the spot by the touring officers. In Uttar Pradesh touring officers carry application forms, get them filled and send them to Tehsildars for verification and onward transmission to the S.D.O. for issue of permits. The time taken for sanctioning loans differs from State to State. While in Kerala, Madhya Pradesh, Madras and Himachal Pradesh it takes about a week or two to sanction the loan, in Bombay, Mysore and U.P., it takes two to three months.

## CHAPTER IV.

### FERTILISER (CONTROL) ORDER

4.1. Frequent complaints of adulteration of fertilisers sold in the market came to the notice of the Government in the early fifties. If adulteration were to become common it would shake the confidence of farmers in the effectiveness of fertilisers. To protect a very large number of illiterate farmers against the malpractices of the trade, it was considered essential to regulate the trade in fertilisers and to enforce the quality control. The Standing Committee on Manures and Fertilizers of the Ministry of Food and Agriculture which considered this matter, recommended in 1953 that the Government of India should take steps to prepare a model fertiliser Act on the lines of the U.K. Fertiliser and Feeding Stuff Act, 1926. The Central Government promulgated in May, 1957 the Fertiliser (Control) Order 1957 under clause 3 of the Essential Commodities Act, 1955.

4.2. This Order has been given effect to in all the States except Assam, Jammu and Kashmir and Union Territory of Manipur. The order provides for the following:—

1. Control of prices of fertilisers.
2. Licencing of dealers in fertilisers.
3. Registration of fertiliser mixtures.
4. Restrictions on manufacture, sale and distribution of fertilisers.
5. Prescription of specifications of fertilisers in relation to the maxima and minima of the various important constituents.

4.3. As a rule the District Agricultural Officers, Agricultural Extension Officers and Agricultural Inspectors have been vested with the powers of inspection and enforcement under the Order. No separate staff is generally employed for this purpose. Officers at various levels have been authorised to issue dealers' licences and register mixtures. For hearing any complaints, appellate authorities have been designated in each State.

4.4. Under the provisions of the Fertiliser (Control) Order, powers for fixing prices of fertilisers vest with the Government of India. The State Governments have, however, been concurrently

authorised to fix prices at which fertiliser mixtures may be sold by a manufacturer or a dealer. The Government of India have notified through the Gazette, the maximum prices at which the fertilisers handled by the Central Fertiliser Pool may be sold by a manufacturer or a dealer to a farmer and to the owners of tea or coffee plantations. By subsequent notifications the rates were enhanced in certain States like Uttar Pradesh, Orissa, Madras (to accommodate the element of sales tax levied at mid-point). The old Bombay State was authorised to charge a higher price for sales in small lots not exceeding 196 lb.

4.5. The information received by the Committee in regard to the number of Inspectors appointed or nominated, the number of dealers' licences issued and the number of registrations for mixtures is given below:—

TABLE XII

*Details of establishment and dealers' licences, etc. for fertilisers*

State	No. of Inspectors	Dealers' licences issued			No. of registrations for mixtures
		Whole-salers	Retailers	Total	
Andhra Pradesh . . . . .	438	180	1,615	1,795	243
Assam . . . . .	N.E.		N.E.		N.E.
Bihar . . . . .					4
Bombay . . . . .	42			2,161	179
Kerala . . . . .				1,300*	7
Madhya Pradesh . . . . .	396			469	Nil
Madras . . . . .	352	42	3,221	3,263	395
Mysore . . . . .	19	134	1,299	1,433	221
Orissa . . . . .	16	34	1,375	1,419	Nil
Punjab . . . . .	3	140		2	1
Rajasthan . . . . .	Nil			2	Nil
Uttar Pradesh . . . . .	51			3,000*	4
West Bengal . . . . .					
Jammu & Kashmir . . . . .	N.E.				
Delhi . . . . .	1			11	4
Himachal Pradesh . . . . .				239	Nil
Manipur . . . . .	N.E.		N.E.		N.E.
Tripura . . . . .	1				
Andaman and Laccadive Islands . . . . .					

N.E. Not enforced.

\*Approximate.

4.6. The Fertiliser (Control) Order provides for the sampling of fertilisers and mixtures and analysing them to ensure the standard of quality. Adequate attention does not seem to have been



given to this important work as is apparent from the following statement:—

TABLE XIII

*Dates from which Fertiliser (Control) Order enforced in State and number of samples drawn*

State	Date from which F.G. Order enforced	No. of samples drawn
Andhra Pradesh	1-10-58	35
Assam	N.E.	N.E.
Bihar	1-11-57	N.A.
Bombay	1-7-58	1,066
Kerala	1-1-58	10
Madhya Pradesh	15-5-58	..
Madras	1-9-57	824
Mysore	1-2-58	188
Orissa	1-10-57	30*
Punjab	5-5-58	Nil
Rajasthan	1-11-57	Nil**
U.P.	1-2-59	N.A.
W. Bengal	No information	N.A.
Jammu & Kashmir	N.E.	N.E.
Delhi	1-6-57	Nil
Himachal Pradesh	1-2-58	Nil
Manipur	N.E.	N.E.
Tripura	15-11-57	Nil**

\* Superphosphate only.

\*\* None drawn because of departmental distribution.

N.A. Not available.

N.E. Not enforced.

4.7. *In order to ensure the purpose for which the Fertiliser (Control) Order was promulgated, it is necessary that State Governments draw regular samples of straight fertilisers and mixtures at various stages such as at the time the fertiliser leaves the factory, during storage with distributor and after sale to consumers before the bags are opened by them. Adequate number of samples should invariably be taken and analysed so that the malpractices are detected quickly. It may be necessary to prescribe the number of samples to be collected by each inspecting officer. It is necessary in some cases to appoint additional staff. Delays in analysis, which sometimes occur, need to be eliminated. The inspecting staff should be trained in sampling and inspection work.*

4.8. The fees prescribed in the various States for dealers' licences and for registering the mixtures are indicated below:—

TABLE XIV

*Fees for dealers' licences and registering mixtures*

State	Dealers' licencing		Registration fee per mixture
	Wholesale	Retail	
I	2	3	4
	Rs.	Rs.	Rs.
Andhra Pradesh	250	10	100
Bihar	30	10	30
Bombay	30*	30*	50
Kerala	10	5	25
Madhya Pradesh	10	5	50
Madras	100	10	50
Mysore	100	10	50
Orissa	25	5	50
Punjab	50	5	50
Rajasthan			
W. Bengal	N.A.		
Delhi	5	5	50
Himachal Pradesh		5	N.A.
Tripura	10	5	10
U.P.	Annual turn over		500
	(i) up to 50 tons Rs. 5		
	(ii) over 50 and upto 1,000 tons Re.1 per ton.		
	(iii) 1,000 tons and above Rs. 1,000/- (fixed).		

\* Reduced fee of Rs. 10 only for Coop. Societies. N. A. Not available.

4.9. State Governments have adopted different definitions for the wholesalers and the retailers. In some States the definitions of wholesaler and retailer accord with their generally accepted meanings, viz., a wholesaler is one who sells the material to the retailer, and a retailer is one who sells the material to the consumers. The State Governments who have defined the wholesalers and retailers to accord with the popular understanding of the terms are Andhra Pradesh, Bihar, Madhya Pradesh, Madras, Mysore and Orissa. U.P. has adopted a definition based on turn over, wholesalers being defined as those whose annual turn over is above a certain figure

while retailers are those whose turn over is below that figure. *In the view of the Committee, the definition of the wholesaler and the retailer should be uniform throughout the country.*

4.10. Unless the retail licence fee is relatively small it would limit the number of people interested in selling fertiliser, particularly in the villages where the volume of sales is small. *The Committee, therefore, recommends that the retail licence fee should be small and considers Rs. 5 as sufficient for the purpose.*

4.11. The annual licencing fees prescribed for the wholesale dealers are Rs. 250 in Andhra Pradesh, Rs. 100 in Madras and Mysore, Rs. 30 in Bihar and Bombay and Rs. 10 in Kerala and Madhya Pradesh. U.P. has prescribed the licencing fees on a slab basis depending on the quantity handled. *In the opinion of the Committee, the licence fees should not be treated as a measure of general taxation but only as an instrument for regulation of trade and commerce in fertilisers. The Committee considers that the licencing fee for the wholesalers should not be more than Rs. 50 per annum.*

4.12. Uniform prices for nitrogenous fertilisers have been fixed by the Central Government and are operative with minor exceptions throughout the country. The Fertiliser (Control) Order is a Central instrument which applies throughout the country. The order requires that the licencing fee should be fixed by the Governments in consultation with the Controller of Fertilisers. In these circumstances it is desirable that a measure of uniformity should prevail in the fees fixed. *The Committee, therefore, recommends that the licencing fees for the wholesalers and the retailers should be brought to uniform level. This recommendation also applies to the fees charged for the registration of mixture which now vary from Rs. 10 in Tripura to Rs. 500 in U.P.*

4.13. The Fertiliser (Control) Order prescribes that the dealers' licences issued by the State Governments will expire on the 31st December every year. This was presumably because the fertiliser year ended on 31st December. The fertiliser year now coincides with the financial year. Some difficulties arising out of the dealers' licences ending on 31st December and the financial year ending on 31st March, have been brought to notice by the State Governments. It was also pointed out that a licencing period of one year tended to hamper the activities of licencees. *The Committee recognises the force of these objections and recommends that the licencing year may now be made the same as financial year and the State Governments*

*may be authorised to issue licences for periods upto three years if they see fit and if licencees so desire.*

4.14. In order to bring about uniformity in matters relating to the application of Fertiliser (Control) Order, and to resolve difficulties that may be experienced in this connection and with a view to facilitate inter-State trade by adopting uniform procedures, it would be desirable for the Central Government to discuss these matters at a meeting with the officials concerned.

## CHAPTER V

### IMPORTANCE OF MIXTURES

5.1. The application of balanced proportions of plant nutrients is very important for raising the yield and for maintaining the quality of crops and productivity of the soil. The fertiliser mixtures offer one of the simple methods for balanced fertilisation. In some advanced countries of the world the major portion of fertilisers is consumed in the form of mixtures. In U.S.A., 64.7 per cent of the fertiliser consumed in 1956-57 was in the form of mixtures. In U.K., in 1953-54, the mixtures constituted 52 per cent of the consumption of fertilisers. As stated in Bulletin No. 36 of the U.K. Ministry of Agriculture, Fisheries and Food, "rather more than half the  $P_2O_5$ , rather less than half the N, and no less than 85 per cent of potash used on British farms passes through mixing plants."

5.2. Equally good or better agronomic results can be obtained by applying fertiliser materials separately, but the use of mixed fertilisers has these advantages: \* (1) Fewer man hours are required to apply a mixture than to apply its various materials separately—an important factor in areas where farm labour is scarce and expensive; (2) mixtures may have better physical condition and are more easily applied than separate fertiliser materials; (3) the residual acidity of fertilisers can be conveniently and effectively controlled by the use of a proper quantity of dolomitic liming material in the mixtures; (4) plant nutrients required in small amounts can be applied more evenly by being incorporated in mixed fertilisers; and (5) if a proper mixture is used for the particular soil type and crop, less care on the part of the farmer is needed to assure the right proportion of plant nutrients in the soil than when individual materials are applied separately.

†The disadvantages of mixed fertilisers are; (1) their use does not permit application of individual nutrients at specified times which may best suit the needs of the crops; (2) since fertiliser materials are not easily recognised in mixtures, the farmer usually has no way

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\*The Committee is aware of the controversial nature of the advantages and disadvantages referred to above.

†The Committee is aware of the controversial nature of the advantages and disadvantages referred to above. Source : Efficient use of Fertilisers, F. A. O. August, 1949.

of prejudging the quality of the plant nutrients in relation to his specific conditions of crop and soil; (3) the total concentration of plant nutrients in a mixture is usually much less than that in the materials from which it is made, so that for a given weight of nutrients more fertiliser must be handled and transported in the form of a mixture than in the ingredient materials; (4) the unit cost of plant nutrients in mixture is usually higher than in the ingredient materials; and (5) farmers are often led to use some mixture without careful study of their exact needs, thus, using too little of some nutrients and more than necessary of others.

5.3. It would, of course, be cheaper for ryots to prepare their own mixtures but in order to prepare the mixture they must have the basic knowledge of the subject to understand what to mix and what not to mix, the proportions in which the ingredients have to be mixed, and the ingredients required may not be readily available in the market. One clear advantage of the prepared compounds is that most farmers do not have the facilities for preparing mixtures. The usual constituents of the mixtures are dissimilar in density and in size and shape of grain or crystal and consequently it is difficult during compounding to prevent a certain amount of segregation of like particles unless an efficient mixing machine is used or where the mixing is manually done the persons doing the job are experienced enough to prepare a homogeneous mixture. Some separation of the different ingredients takes place even in a good mixture when it is subjected to the vibration of a distributor. The granulated compound possesses undeniable merits in this respect because granules of approximately the same size and hard enough to resist crushing before they reach the soil are likely to be very uniform in constitution and composition. It is, therefore, *clear that it would be preferable if ready-made mixtures are used by the cultivators.*

5.4. Balanced fertilisation may be effected either by applying the several plant nutrients individually or by applying them in the form of mixtures or complex fertilisers which serves the same purpose. Under Indian conditions where the average farmer has a small holding and commands limited financial resources, it may be too much to expect him to buy the various plant foods and to apply them to the fields. It is essential that balanced fertilisation should be made easy for him by enabling him to buy recommended mixtures, and to ensure that they are sold at a reasonable price. The production and marketing of mixtures of standard quality are, therefore, of great importance in the present circumstances. *In order to protect the farmer against fraud and adulteration, it is desirable that the fertiliser mixtures are marketed in granulated form. The additional cost*

*of granulation should be, perhaps, met by the saving in losses by wind-action during its application to the field.*

5.5. There are a number of mixing firms in the country but they are mostly concentrated in Madras and Andhra Pradesh. In other areas the mixing business is not so well developed and in the State of U.P., Punjab and Bihar it is more or less non-existent. The manufacturers in U.P. and Bihar told the Committee that they would be prepared to start the mixing and push up the use of mixtures in these States provided they are assured by the State Governments concerned of being allowed to mix and market the mixture. They were willing to utilise the Cooperative Societies for the distribution of mixtures. *The Committee recommends that adequate steps to encourage and promote the use of mixtures should be taken. It is necessary to extend suitable assurances to the mixing firms and the manufacturers.*

5.6. *Practically all States have established fertiliser recommendations. Some of the States have fixed up the composition of their mixtures in conformity with fertiliser recommendations so as to protect their farmers. The Committee recommends that this wholesome practice should be extended to the remaining States and these recommendations should be reviewed annually.*

## CHAPTER VI

### NEW FERTILISERS

#### Complex Fertilisers

6.1. Less than ten years ago ammonium sulphate and superphosphate were the only two chemical fertilisers generally used in India. Since then three new nitrogenous fertilisers have been introduced—ammonium sulphate nitrate, urea and calcium ammonium nitrate. At present these three and ammonium sulphate are in general use and eventually they will all be produced by fertiliser plants in India. Superphosphate fertiliser (16 per cent) was the only chemical phosphatic fertiliser sold at the beginning of the First Five Year Plan. Both the nitrogenous and phosphatic fertilisers usually move in the fertiliser trade as separate materials. Only in certain areas have mixed fertilisers been popular.

6.2. Indian fertiliser study teams have visited fertiliser producing areas throughout the world and have reported that chemical fertilisers can be obtained and produced cheaper when nitrogen and phosphatic fertilisers are combined as high analysis complex fertilisers.

6.3. Complex fertilisers can be designed as two, or three major plant nutrients (nitrogen, phosphorus and potassium) which are combined chemically in the process of manufacture. This definition is in contrast to the definition of mixed fertilisers now in use in India. The definition of mixed fertiliser would be a combination of two or three of the three major plant nutrients (nitrogen, phosphorus and potash) which are combined physically in process of production.

6.4. The chemical combination of plant nutrients has many advantages.

1. The product is usually granulated.
2. The fertiliser is free flowing.
3. It has good storage qualities.
4. It is difficult to adulterate.
5. Farmers can apply two or three nutrients in one application.
6. It is usually cheaper per unit of plant nutrient and;
7. When a farmer uses mixed fertiliser he is sure of having the plant food essential for his crops; when he buys the



materials separately or decides what nutrients are necessary, he may not apply what the crop requires.

6.5. These are the facts which will have to be carried to the farmer so that he is familiar with the new product called 'high analysis complex fertiliser'. The complex type fertiliser has been used in experimental work in India in years past and has shown good crop response.

6.6. *In most parts of India farmers do not know how to make the best use of mixed or complex fertilisers. It is a matter for education and will require careful work to acquaint the farmer with this type of fertiliser.*

6.7. A study by the States of the number of mixed fertiliser grades shows that in some there are even more than 200 such grades and are far too many to serve the best interests of agriculture. They tend to confuse the farmer and create misunderstanding. With the advent of the high analysis complex fertilisers, it is anticipated that their number will be materially reduced. *The crop requirements in any State can be supplied adequately with a maximum of six grades of mixed fertilisers to include both complex fertiliser and straight fertiliser materials.*

6.8. The advent of complex fertiliser does not necessarily mean that mechanically mixed ones will be out-dated but their grades will have to be standardised and more emphasis placed on formulation so that the cost will be more nearly in line with the price of the complex fertilisers.

6.9. Indian scientists are studying the quality of the plant nutrients in mixed and complex fertilisers. An example is the intensive study which has been conducted on the value of water soluble phosphorus and citrate soluble phosphorus. At the present time it is generally conceded that approximately 50 per cent of the water soluble and citrate soluble in phosphatic fertilisers will serve most farm crops. As the farmers of India learn how to use fertiliser more efficiently, distributors will need better trained men to sell these materials. It is anticipated that this job will require the services of men with college education to serve the farmer more effectively. Persons with lesser training cannot do the job adequately. *To develop men with adequate qualifications, training courses should be planned and put into operation at an early date.*

### **Liquid Fertiliser**

6.10. Liquid fertilisers have been used in India on an experimental basis and have shown similar results to those obtained in

other parts of the world. With the advent of the new types of nitrogen fertilisers manufactured in India, liquid fertiliser will also be produced.

6.11. Anhydrous ammonia is a gas and must be transported in cylinders with a working pressure of 250 lb. per square inch. It is the basic material from which the aqueous solutions are prepared in various strengths of nitrogen. As aqueous ammonia solution, the nitrogen can be transported and applied without the containers that will withstand pressure. The volume of the material is larger with a lower nitrogen content and therefore may entail higher freight charges per unit of plant food.

6.12. Anhydrous ammonia 82 per cent is injected into irrigation water since it is quickly soluble or injected directly into the soil with special equipment attached to the tanks.

6.13. Urea-ammonia solution consists of urea, ammonia and water. The low water content is claimed to be useful in rapid curing of fertiliser mixture.

6.14. *The first priority for liquid fertiliser should be for use in the manufacture of mixed fertilisers. In this way liquid fertiliser can be utilised to produce mixed fertiliser at a lower cost.*

6.15. The second priority for the use of liquid fertiliser should be on crops like sugarcane and even so in areas where there is sufficient acreage to warrant establishing distribution centres. The cost of establishing storage and distribution equipment in the case of sugarcane may require special application equipment. *To warrant the setting up of liquid fertiliser distribution units, the price of the liquid fertiliser must be considerably below the price of dry mixed fertiliser to make the operation profitable.*

6.16. It is questionable whether liquid fertiliser will become popular with the small farmers. The cost of establishing distribution centres and the application cost of liquid fertiliser may be too high. *The use of liquid fertiliser on small farms is a problem which must be studied and developed during the Third and probably Fourth Five Year Plans.*

6.17. The equipment required for handling liquid fertiliser must be of a metal which resists corrosion. This applies to storage as well as applicator equipment.

6.18. Because of the special equipment required and its cost, the application of liquid fertiliser should be done by a trained operator. As is usually the case, the dealer in liquid fertiliser makes the application himself for which a charge is made.

6.19. Liquid fertilisers kept under pressure may create a hazard on the farm unless the operator is familiar with the handling of these materials. The safer method would be to make a solution and apply it in that form.

6.20. In addition to the problems of distribution at the farmer's level, special railway tank cars must be developed to carry this material from the point of production to the point of consumption. If these tank cars remain on the siding or are not returned to the point of production rapidly, the cost of the material increases quickly. When this occurs the low price advantage usually attributed to liquid fertiliser is lost.

#### **Micro-nutrients**

6.21. The use of micro-nutrients is a fascinating and interesting subject among scientists. On the farm, under practical conditions, there may be areas where micro-nutrients will produce increased yields. When an area is known to be deficient in one of these micro-nutrients, boron, magnesium, manganese, iron, zinc, copper and sometimes molybdenum, the required element should be supplied with the advice of a qualified agricultural scientist.

6.22. *As a general practice it is not advisable to mix micro-nutrients with fertilisers.* This can be illustrated by the use of boron. Boron varies in its benefits as well as its toxicity to various plants. If boron is mixed with all fertilisers and applied to a crop sensitive to boron it will cause damage due to an over dose of boron. *It is, therefore, advisable that micro-nutrient elements be applied only on the recommendation of a qualified scientist.*

6.23. Unscrupulous people combine or mix a number of the micro-nutrients together and offer them for sale as a mixed plant food and recommend extremely small application to obtain high yields. This is known as the shotgun procedure. Plant food required by crops does give double, treble and sometimes more yield than unfertilised crops but this response is well known to agricultural scientists and is known to be a good agricultural practice. Promotional advertisements making exorbitant claim of high yield with small quantities of fertilisers should be viewed upon with suspicion. Three such promotional operations have been investigated in India and in each one, the materials offered for sale were extremely questionable. The distribution of micro-nutrient materials should, therefore, be done under the guidance and recommendation of accredited agricultural scientists.

#### **Trained Personnel**

6.24. *The new developments in the fertiliser industry demand well-trained men and new procedures of distribution. There must be*

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*a definite understanding of the salesman's duties. This man must be well trained in salesmanship and have a thorough and complete understanding of the fertiliser which he is selling as well as how the farmer must use it. On the other hand, the research, extension and educational group in the agricultural field must work diligently to develop information as to the value of these materials and educate the farmer to use fertiliser economically through demonstrations in the field and the use of soil testing laboratories.*

*6.25. An understanding between the sales organisation and education group can be best attained by yearly joint meetings to discuss the fertiliser problems which have arisen during the year. The programme has been inaugurated in nine States and should be extended to include all States in India.*

## CHAPTER VII

### DISTRIBUTION COSTS

7.1. Nitrogenous fertilisers are supplied by the Government of India from the Central Fertiliser Pool at a uniform price, for each type of fertiliser. The price is inclusive of freight from the factory/depot to the rail-head destination anywhere in the country. In principle, however, the delivery is deemed to have been effected by the Central Fertiliser Pool at the factory or the depot, as the case may be, and ordinarily the Pool accepts no responsibility for any transit loss.

7.2. After a study of data furnished by the State Governments in 1954, the charges to be incurred from the rail-head to the selling point, including the cost of handling, storage, shortage and commission, etc., were estimated at Rs. 30 per ton for sulphate of ammonia, it being the only fertiliser then under distribution by the Pool. Subsequently when new fertilisers, namely, urea, calcium ammonium nitrate and ammonium sulphate nitrate, were introduced by the Pool the distribution cost for these fertilisers was also estimated to be Rs. 30 per ton, but it soon became necessary to raise this figure to Rs. 35 per ton of ammonium sulphate nitrate and to Rs. 45 per ton of urea to cover the higher interest charges on the increased investment involved as well as to provide an adequate margin of profit to retailers, having regard to the smaller tonnages of the more concentrated fertilisers involved.

7.3. Supplies of phosphatic fertilisers are obtained either by the State Governments or the State Co-operative Societies directly from the factories. The delivered costs differ according to the distance from the supplying factory. Charges on account of road transport, handling, storage are much the same as for nitrogenous fertilisers although some rebagging of superphosphate may have to be done because of bag rot caused by the free acid in it. The sale price of superphosphate in some of the States has been fixed at a uniform level at rail-head destinations and to this end the State Governments maintain a pool to equalise the railway freight. In the other States the sale price is arrived at after taking into consideration the actual railway freight, and other expenses mentioned earlier. Where the distribution of phosphatic fertilisers is handled by the manufacturers themselves through their own agents, some of

whom are Co-operative Societies, the State Government, usually in consultation with the manufacturers, indicates the maximum price at which the fertiliser may be sold in the Districts.

7.4. Many States were unable to indicate the detailed break-up of expenditure incurred on various items connected with distribution and only indicated an aggregate figure. Appendix VI furnishes the information received from the State Governments in this connection.

7.5. The expenses incurred in the internal distribution of fertilisers may be classified as follows:—

- (a) Administrative charges of the State Government.
- (b) Distribution expenses consisting of the following:—
  - (i) Expenses incurred on handling, transport, storage.
  - (ii) interest on investment; and
  - (iii) commissions to the agents at various levels.

7.6. Information relating to the various States is presented below:—

### Administrative Charges

1. *Andhra Pradesh*: Government does not levy any administrative charge.

2. *Assam*: In this State too, no administrative charge is levied. Assam is unique in that it sells the fertiliser to the consumers at the Central Pool price plus Rs. 27 per ton instead of the permissible supplement of Rs. 30 per ton.

3. *Bihar*: The State Government itself does not appropriate any charge for administration but the State Cooperative Marketing Union which is the sole distributing agent retains Rs. 4 per ton for over-head and Rs. 6 per ton for establishment charges making a total of Rs. 10 per ton.

4. *Bombay*: Where the fertilisers are distributed through Government depots the Government retains the full margin of Rs. 30 per ton and the element of administrative charge cannot therefore be isolated. For the fertilisers distributed through the District Wholesale Societies, the Government retains the following amounts towards

administrative charges and for meeting unforeseen expenses, losses, etc.

	Rs. per ton
Ammonium sulphate and Calcium ammonium nitrate	1.50
Urea	11.50
Ammonium sulphate nitrate	6.50

When supply is made directly to Primary Co-operative Societies the following amounts are retained by the State Government. They include distance rebates as well as pooled transport charges from the rail-head to the distribution point.

	Rs. per ton
Ammonium sulphate and Calcium ammonium nitrate	10.00
Ammonium sulphate nitrate	15.00
Urea	Not indicated

There appears to be little justification for any variation in the administrative charges for different types of fertilisers, since road transport charges and the cost of administration are independent of the kind of fertiliser.

5. *Kerala*: In Kerala, all fertilisers are sold at the Central Pool. Price plus a sum of Rs. 30 per ton for incidental expenses. The agents are paid commission at the rate of Rs. 25 per ton for sulphate of ammonia and five per cent for other fertilisers to meet all distribution expenses and their remuneration. For urea this will amount to Rs. 36.25 per ton. The State Government apparently does not utilise in full the sum of Rs. 45 per ton allowed for urea. Presumably, therefore, the State Government makes Rs. 5 per ton of sulphate of ammonia and loses Rs. 6.25 per ton of urea. Since much more ammonium sulphate is distributed than urea, it appears likely that some amount accrues to the Government in these transactions.

6. *Madhya Pradesh*: The State Government does not collect any administrative charge but the Madhya Pradesh State Co-operative Marketing Society which is the sole distributor indicates a sum of Rs. 2.25 per ton towards establishment and other items such as printing, stationery, postage, etc.

7. *Madras*: The State Government retains towards administrative charges and interest on investment a sum of Rs. 5 per ton of sulphate of ammonia, Rs. 20 per ton of urea and Rs. 10 per ton of

ammonium sulphate nitrate. The State Government suffered losses amounting to Rs. 12,41,330 in fertiliser operations during the period 1954 to 1957 and therefore it proposes to wipe off the accumulated losses by fixing this high charge. In consequence it made a profit of Rs. 4.37 lakhs in 1957-58 and Rs. 4.03 lakhs in 1958-59. At this rate the balance of the loss of Rs. 3.92 lakhs must have been wiped off during 1959-60. Hence the way is now clear for the State to reduce the administrative charge, especially on urea and ammonium sulphate nitrate.

8. *Mysore*: In Mysore no administrative charge is made for supplies made to Co-operative Societies in wagon loads at rail-head destination, but a sum of Rs. 5 per ton is charged to a private dealer for deliveries of sulphate of ammonia in wagon loads. When the delivery is made from the State Government's godown, a sum of Rs. 10 per ton is charged to co-operative societies and Rs. 15 per ton to private dealers, irrespective of the type of fertiliser. These charges, however, include, in addition to the administrative charges, the cost of handling, transport and storage. It is understood that from 1st May 1960, the Mysore State Co-operative Marketing Society has been given monopoly of distribution and the State Government no longer levies any charge for administration. The standard distribution allowance of Rs. 30 per ton has been raised to Rs. 40 per ton by the State Government and is shared as follows:—

	Rs.
(a) Apex Marketing Society	6.00
(b) Taluqa Marketing Society . . . . .	18.00
(c) Primary Village Society	16.00
	<hr style="width: 100%;"/>
	40.00

The price of sulphate of ammonia to the cultivator will, however, remain the same as before at Rs. 380 per ton, the difference of Rs. 10 being subsidized by the State Government.

9. *Orissa*: The State Government has fixed a distribution allowance of Rs. 40 per ton over the Central Pool price of sulphate of ammonia. This was permitted in view of the poor system of communications in the State and consequent high cost of transport. Out of this amount of Rs. 40 per ton, a sum of Rs. 25 per ton is earmarked for meeting the expenses on handling and road-transport etc. for which a pool is run. A sum of Rs. 15 per ton is given to Grain Golas and Cooperative Societies towards their commission and other expenses.



10. *Punjab*: The State Government retains a sum of Rs. 3·37 per ton towards administrative charges.

11. *Rajasthan*: No specific administrative charge as such is levied in Rajasthan. Agents who undertake retail distribution are allowed a sum of Rs. 15 per ton of sulphate of ammonia. When the distribution is effected departmentally, the entire allowance of Rs. 30 per ton is retained by the Government.

12. *Uttar Pradesh*: In Uttar Pradesh nothing is retained on account of administrative charges. However, a sum of Rs. 10·94 per ton is provided for interest on capital and a sum of Rs. 3·81 for shortages and publicity of sulphate of ammonia, and amounts of Rs. 28·75 and Rs. 16·95 for urea and ammonium sulphate nitrate respectively for both these items.

13. *West Bengal*: No administrative charge is levied by the State Government. The distributing agents are allowed to avail themselves of the entire allowance of Rs. 30 per ton.

14. *Himachal Pradesh and Pondicherry*: The distribution is entirely through Government depots and the total amount of Rs. 30 per ton is made use of by the administration. In fact the sale of fertilisers has to be subsidised owing to high cost of transportation.

15. *Delhi*: No administrative charge is retained. In all the States except Punjab, the amounts shown as administrative charges include other items, such as the long distance rebates in Bombay, interest charges of Madras, and Uttar Pradesh transportation and warehousing charges in Mysore, and transport charges in Orissa. The Committee was informed during its tour in Bihar that the Apex Organisation incurred an expenditure of Rs. 6 per ton on establishment in addition to Rs. 4 per ton for over-heads. In Punjab the administrative charge of Rs. 3·37 per ton includes a cushion for unforeseen expenses.

7.7. The Co-operative Societies as well as the private merchants would naturally expect to be rewarded for the services rendered by them in connection with the distribution of fertilisers. Commission or the profits allowed should obviously be related to the service rendered and the risk undertaken.

7.8. The State Governments entered the field of fertiliser distribution because of special circumstances as normally they are not expected to take up trade in fertilisers. While they would not like

to suffer any loss through fertiliser transaction they should not look upon the fertiliser business as an opportunity for making profits. They should, therefore, only charge the actual cost of establishment and see that only minimum necessary staff is employed for this work and charged to the Fertiliser Distribution Scheme. The Committee considers that the cost of administrative charges should not ordinarily exceed rupee one per ton particularly in view of the increasingly large quantities of fertilisers to be handled hereafter.

### Expenses on Transport

7.9. The expenses incurred in moving and handling nitrogenous fertilisers may be classified under the following heads:—

1. Road transport from the railhead to the selling point.
2. Handling viz., unloading, loading and stacking;
3. Warehousing charges; and
4. Shortage.

The average distances over which the fertiliser has to move from the railhead to the selling point, as furnished by the State Governments, are given below:—

	Miles
1 Andhra Pradesh . . . . .	30
2 Assam . . . . .	20
3 Bihar . . . . .	20
4 Bombay . . . . .	15—20
5 Kerala . . . . .	10
6 Madhya Pradesh . . . . .	37
7 Madras . . . . .	5
8 Mysore . . . . .	40—80
9 Orissa . . . . .	40
10 Punjab . . . . .	12
11 Rajasthan . . . . .	15—20
12 Uttar Pradesh . . . . .	10
13 West Bengal . . . . .	7
14 Delhi . . . . .	10
15 Himachal Pradesh . . . . .	20—60
16 Manipur . . . . .	130
17 Tripura . . . . .	115
18 Pondicherry . . . . .	12

No uniform basis appears to have been adopted in working out these averages, as will appear from wide variations in the figures for contiguous States, e.g. Madras, Andhra Pradesh, Mysore and Kerala.

7.10. Only five State Governments and one Union Territory have furnished the figures for the average cost of transport from

railhead to the wholesale godown and from wholesale godowns to the retail depot.

These are given below:—

TABLE XV

*Average cost of transport of fertilisers in States*

State Government	Average distance for internal road transport, miles	Transport cost per ton		Average per mile cost of internal transports Rs. per ton/mile
		From railway station to wholesale godown	From the wholesale godown to retail depot	
		Rs.	Rs.	Rs.
1. Bihar	20	2.20 @	10.00	0.50 £*
2. Bombay	15—20	8.25	N.A. ,	0.50**
3. Madhya Pradesh	37	N.A.	18.50	0.50**
4. Mysore	40—80	1.00 to 3.00	20.00 to 40.00	0.50*by cart
5. Uttar Pradesh	10	0.94	24.00	0.26†
6 Delhi	10	2.50 to 5.00		0.25 to 0.50

\*As indicated by the State Government.

\*\*Calculation made by the Committee.

£In Bihar, actually 35 % of the total sales are transported to villages over an average distance of 20 miles.

@Inclusive of handling costs.

7.11. The cost of distribution which was worked out in 1954 at Rs. 30 per ton, included a sum of Rs. 10 towards internal road transport costs. This provision was then considered liberal enough to permit transport of fertilisers to many more interior points than was being done earlier. Some State Governments, however, apprehended that this allowance would not be sufficient to meet the high cost of internal road transport in their areas. On examination it was found that this difficulty arose from the fact that many States did not operate a transport pool for equalising the transport charges. Accordingly, the Ministry of Food and Agriculture, stressed in 1956 the desirability of operating such a pool in order to ensure that the depots which were far away from the railheads were not placed in

a disadvantageous position. The device adopted for neutralizing the high transport costs to remote areas are described below:—

1. *Bombay*: Long distance rebates are given to the Primary Co-operative Societies for all distances over five miles from the railway stations. The scale of rebates is as follows:—

	Rs. per ton/mile
(i) for 6-10 miles . . . . .	0·50
(ii) for 11-20 miles . . . . .	0·37
(iii) for 21 and over miles . . . . .	0·25

2. *Kerala and Orissa*: Details have not been furnished but the transport charges have been pooled for all the places in these States.

3. *Punjab*: Out of the pool formed by setting apart a sum of Rs. 10 per ton the actual expenses incurred on transportation are paid.

4. *West Bengal*: There is no pool for the nitrogenous fertilisers but a pool is operated for superphosphate and mixtures. A figure of Rs. 15 per ton is adopted as the average cost of transport. Where the actual cost exceeds this figure, distributors are reimbursed the excess amount on application. When the actual cost is less they have to refund the difference to the Government.

5. *Himachal Pradesh, Manipur and Tripura*: The Administration itself distributes the fertiliser and therefore in effect there is a transport pool.

7.12. Two procedures are in vogue for neutralizing the variations in transport cost—one in which a rebate is granted and the other in which actual expenses are paid as in Punjab. The procedure adopted in these *ex-post-facto* adjustments involves cumbersome delays and avoidable book-keeping. A system of rebates as in Bombay is easier of operation. Under this system a reduced cost, graded according to the distance of the retail depot from the wholesale depot is charged. *The Committee recommends this system and considers it essential to allow the rebate at the time of payment for the fertiliser and not post-facto. The figures adopted in the Bombay State may be taken as the model.*

7.13. There are a number of taluk (tehsil) and mandi towns served by railways which are not at present being utilised for locating wholesale depots. If use is made of such towns for this purpose, it would have the effect of creating a wider wholesale distribution net-work and thereby reducing road transport costs to retail depots in the villages.

7.14. In hills the distances to be covered by road are often long and in many cases the fertiliser has to be transported by mules or

in head-loads. In such tracts the cost of transport is necessarily high and has to be covered under the scheme for subsidising the high transport cost. In fact advantage of this scheme is being already taken by Himachal Pradesh, Manipur and Tripura. These arrangements which are of *ad hoc* character at present should be put on a regular basis and financed by the Central Fertiliser Pool. This facility should be made available to all States with hill tracts which are not easily accessible.

7.15. To reduce the incidence of transport cost in hill areas, it is desirable to supply concentrated fertilisers such as urea. Special efforts should be made to popularise these fertilisers in such tracts. Since the Central Fertiliser Pool meets the high cost of transport in hill areas, it will be proper for the Pool to eliminate gradually the supply of low-analysis fertilisers to these areas. In States where it is found necessary to introduce this concession it may be limited to the transport of high-analysis fertilisers only.

7.16. In certain cases the cost of ferrying the fertiliser across rivers is high. The Committee is of the opinion that this cost should be added to the cost of road transport and should be allowed for in the distance rebates. It would be necessary to tabulate officially the distances of the retail depots from the railheads for operating the system of rebates.

### Cost of Handling

7.17. According to the present distribution arrangements, in most cases the stocks are handled at three stages, *viz.*, (i) unloading from the wagons, and loading into trucks, (ii) unloading from trucks and stacking at the wholesale depots, and (iii) reloading at the wholesale godown and unloading at the retail depot. Normally a charge of one anna (6 nP) per bag of two cwt. is incurred for unloading from the wagon and a like amount for each unloading, loading and stacking. Some figures given to the Committee are furnished below:—

TABLE XVI  
*Cost of handling of fertilisers in States*

State	Wholesale stage		Retail stage	Total of three stages
	First stage	Second stage	Third stage	
	Rs.	Rs.	Rs.	Rs.
1 Bihar . . . . .	0.50	0.40	0.40	1.30
2 Bombay . . . . .	Details not furnished			2.00
3 Mysore . . . . .	0.75	0.75	0.75	2.25
	to	to	to	to
	1.00	1.00	1.00	3.00
4 U.P. . . . .	0.31	0.62	0.62	1.55
5 Delhi . . . . .	0.62	0.62	0.62	1.86

7.18. Later the Committee have recommended a commission of Rs. 2.50 per ton for the stockist which is exclusive of expenses in taking delivery of fertiliser, handling, transporting it to his warehouse and storage, shortage and interest.

### Warehousing Charges

7.19 The State Governments named below have reported the following charges for warehousing.

- 1 Madhya Pradesh . . . Rs. 2.50 per ton incurred by the Apex Society in 1957-58.
- 2 Mysore . . . . . About Rs. 2.00 per ton on the basis of total actual expenses incurred during 1958-59 excluding the use of departmental godowns.
- 3 Himachal Pradesh . . . Rs.3.00 per ton at retailer's end
- 4 Bombay . . . . . Rs. 4.00 per ton at retailer's end

7.20. Available information on storage charges as levied by recognised agencies like the Warehousing Corporation is furnished below:—

State	Rate indicated for storage per month	Average rate per ton per month (for storage in 2 cwt bags)
		Rs.
Bombay. . . . .	Rs. 0.40 per sq. ft.	2.28
Madhya Pradesh . . . .	Rs. 1.00 per ton of 2 cwt.bags	1.00
Punjab . . . . .	Rs. 0.62 2 cwt bags	0.62
Uttar Pradesh . . . . .	Rs. 0.6 per maund	1.63

7.21. The cost of warehousing will obviously depend upon the quantities to be stored, the period of storage and the number of places at which they are stored. As the fertiliser demand is seasonal\*, it would be advantageous if different commodities are stored in the same godown. It would also be advantageous for the farmer to have all his requirements stocked in one place. Seasonal pressure at the wholesale depot can be lightened by distributing stocks to the selling points. Setting up of depots exclusively for dealing with fertilisers is to be discouraged as this raises the cost of distribution.

\*In Andhra Pradesh, the demand for fertilisers is slack during November, December, January and April. In Madras it is slack during January and February, but the demand appears to reach its peak during December. In Mysore demand appears to be high during the months of May and June, and September to November. In Punjab the demand appears to reach its peak in August/September. In Bihar and Uttar Pradesh, the demand is brisk during May, June and July and again in September-October. For India as a whole, the demand is at its peak during the months of May and June and low during November, December and January, as may be seen from Appendix VII.

## Shortage

7.22. Information furnished by the State Governments on shortage is presented below:—

1 Bihar . . . . .	1.5 per cent for 3 stages	
2 Bombay . . . . .	0.50 per cent	
3 Madhya Pradesh . . . . .	0.37 per cent	
4 Mysore . . . . .	2 to 3 per cent	
5 Punjab . . . . .	Negligible	
6 Uttar Pradesh for 1958-59 . . . . .	Sulphate of ammonia . . . . .	1.696 per cent
	Urea . . . . .	0.970 per cent
	Ammonium sulphate nitrate . . . . .	0.840 per cent
	Superphosphate . . . . .	1.920 per cent
7 Delhi . . . . .	1 to 2 per cent	

7.23. From the figures presented above and the fact that many States have not reported shortages, it will appear that the problem of shortage is a minor one. In general, shortages are due either to pilferage or leakage in transit and handling. Pilferage does not seem to be significant enough to be considered. Leakage is probably due, in the case of nitrogenous fertilisers, to use of hooks during loading and unloading. This is a very damaging practice which is difficult to eradicate. It is to be hoped that when packaging is done in smaller bags of 50 kilograms the needs to use hooks will vanish. The Committee found that in many cases there was "overage", meaning increase in weight, rather than shortage in bags of nitrogenous fertilisers which is, no doubt, due to moisture absorption.

7.24. Shortages in the weight of superphosphate bags were often found to be due to bag rot caused by careless filling and stitching of bags. Superphosphate is now generally packed in jute bags with an inner bag of polythylene. In this case too the protection afforded by the inner bags will be lost if they are punctured by hooks.

## Sales Tax

7.25. In Andhra Pradesh, Bihar, Kerala, Madras, Orissa and U.P. sales tax is levied at a single point. Except for Madras and Andhra Pradesh where sales tax is levied at a midpoint when the stocks are made available to the retailers, in other States it is levied at the point of sale to the farmers and is charged for separately. In other States, sales tax is not at present levied on fertilisers. It may also be mentioned here that although previously multipoint sales tax was leviable on fertilisers in Madras, since 1959 they have been levying it at

only one point. The Government of Uttar Pradesh has introduced sales tax on fertiliser since last year. The rate and incidence of sales tax on sulphate of ammonia are given below:—

TABLE XVII  
*Rate and incidence of sales tax in States*

State	Rate of sales tax	Incidence of sales tax of sulphate of ammonia	per ton
	Per cent		Rs.
Andhra Pradesh . . . . .	3		10.50@
Bihar . . . . .	2		7.80
Kerala . . . . .	2		7.80
Madras . . . . .	3		10.80*
Mysore . . . . .	1		3.80
Orissa . . . . .	5		19.50
Uttar Pradesh . . . . .	3		11.58

@Sales tax is levied at the stage of first sale by Government.

\*Sales tax is levied at the first stage of sale by wholesale stockists.

7.26. The question of sales tax is outside the terms of our reference. The Committee, however, noticed that the sales tax raised the cost of fertilisers to cultivators in some States by as much as, for instance, Rs. 20 per ton of sulphate of ammonia. This may act as a deterrent to the increased use of fertilisers. It is, of course, recognised that sales tax is an important source of State revenues and exemptions from it may not be lightly granted. Fertilisers, however, are not a commodity consumed by citizens but rather a raw material utilised in agricultural production. Where agricultural produce is subject to sales tax, levying of sales tax on fertilisers would in effect amount to double taxation. Elsewhere we have shown that the prices of fertilisers are higher in India than in other parts of the world and since the object of both the Central and State Governments is to make fertilisers available at as low a cost as possible the abolition of sales tax on fertilisers needs to be considered.

7.27. It may also be pointed out in this connection that while enacting the Central Sales Tax Act, 1956, the Union Government considered certain commodities to be of special importance in inter-State trade or commerce. These commodities are coal, cotton, cotton



fabrics, cotton yarn, hides and skins, iron and steel, jute, oilseeds, rayon or artificial silk fabrics, sugar, tobacco and woollen fabrics. Furthermore clause 15 of the Act provides as under:—

“Every sales tax law of a State shall, in so far as it imposes or authorises the imposition of tax on the sale or purchase of declared goods, be subject to the following restrictions and conditions, namely:—

- (a) the tax payable under that law in respect of any sale or purchase of such goods inside the State shall not exceed two per cent of the sale or purchase price thereof, and such tax shall not be levied at more than one stage;
- (b) where a tax has been levied under that law in respect of the sale or purchase inside the State on any declared goods and such goods are sold in the course of inter-State trade or commerce, the tax so levied shall be refunded to such person in such manner and subject to such conditions as may be provided in any law in force in that State.”

7.28. The Committee considers that fertilisers, which will be produced in a limited number of factories and will be consumed over wide areas, should be classed as ‘goods of special importance’ in inter-State commerce and recommends that appropriate action be taken accordingly.

### Interest on Investment

7.29. In the following States interest on capital investment is included in the distribution costs.

State	Interest on sulphate of ammonia Rs.
1 Bihar . . . . .	11·26
2 U.P. . . . .	10·94
3 Madras . . . . .	2·17
4 Delhi . . . . .	4·50

7.30. In Madras the administrative charge of Rs. 5 per ton (*vide* para 7.6) includes an unspecified element of interest on the investment. This is meant to cover the interest payable to the Central

Government on the short term loans obtained for the purpose of acquisition and distribution of fertilisers.

7.31. In U.P. and Bihar, the incidence of interest is calculated for one full year at the rate of interest paid on the Central short-term loan. They supply the materials to the wholesale agents on consignment basis. In Bihar, the fertilisers are supplied on a consignment basis for a period of nine months whereafter interest is charged. In U.P. the material is supplied to the retailers on consignment basis and payment has to be made within 45 days of the last date of the month in which the sale is effected or within nine months from the date of supply, whichever is earlier. Under such circumstances there is a tendency to over-stock the materials without making efforts to dispose it off quickly. In certain cases, as in Punjab\*, it has come to notice that even after the materials have been sold, the payment to Government is delayed and the money is diverted to finance other business of the retailers. The Central Government effects recoveries for supplies of nitrogenous fertilisers from indigenous sources by raising a debit for the full value at the pool price against the Accounts Officer of the consignee State simultaneously with the payment of bill of the suppliers for 90 per cent value. For supplies from the imported stock, the debit is raised on receipt of monthly accounts from the Regional Director (Food). There is always a time lag between the receipt of bills and the raising of the debits against State Accountants General. Thus, on the whole there is always a time lag of about two months before the State Government pays the value of the stocks to the Central Fertiliser Pool.

7.32. It will be seen from the above discussion that the provision made for the recovery of interest charges varies considerably from State to State. In some cases these charges have been fixed at Rs. 11.26 and the result of this is to increase the cost of distribution rather heavily.

7.33. The closing stocks of fertilisers are furnished in Appendix VIII. In the table below, the annual sales as well as opening stocks of fertilisers have been shown. It will be seen that the opening stocks have often been as large as the previous years' sales in the States of Bihar, Orissa, Punjab, U.P. and fairly large in Madhya Pradesh. Carry over of large stocks increases the incidence of interest and storage charges and thus enhances the cost of distribution. Moreover, the fertiliser which should have immediately produced food is unnecessarily locked up.

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\*The Cooperative Societies complained that their dues for handling, transport and commission are outstanding for considerable time with the State Government.

TABLE XVIII

*Annual sales of nitrogenous fertilisers in terms of sulphate of ammonia as compared with the opening stocks in tons*

State	Years	Sales	Opening stocks
Andhra Pradesh . . .	1957-58	1,07,825	35,618
	1958-59	1,22,150	25,478
	1959-60		20,191
Assam . . . . .	1957-58		1,052
	1958-59		1,347
	1959-60		2,592
Bihar . . . . .	1957-58	25,120	21,069
	1958-59	35,675	15,354
	1959-60	39,383	31,039
Bombay . . . . .	1957-58		5,881
	1958-59		
	1959-60		3,108
Kerala . . . . .	1957-58	17,760	428
	1958-59	18,655	946
	1959-60		1,490
Madhya Pradesh . . .	1957-58	24,200	12,840
	1958-59	28,965	11,780
	1959-60	26,441	29,792
Madras . . . . .	1957-58	1,14,735	38,363
	1958-59	1,33,570	25,883
	1959-60	1,52,108	25,861
Mysore . . . . .	1957-58	35,245	11,693
	1958-59	47,335	16,578
	1959-60	56,156	12,383
Orissa . . . . .	1957-58	14,700	*
	1958-59	16,230	11,543
	1959-60		10,181
Punjab . . . . .	1957-58	36,555	28,354
	1958-59	34,335	39,414
	1959-60		30,462
Rajasthan . . . . .	1957-58		3,409
	1958-59		*
	1959-60		*
Uttar Pradesh . . . .	1957-58	96,245	81,608
	1958-59	1,41,755	81,634
	1959-60	1,19,074	1,26,037
Delhi . . . . .	1957-58		443
	1958-59		303
	1959-60		137
Himachal Pradesh . .	1957-58	1,700	200
	1958-59	1,500	452
	1959-60		*
Manipur . . . . .	1957-58	*	2
	1958-59	*	13
	1959-60	34	40

1	2	3	4
Tripura . . . .	1957-58	145	397
	1958-59	170	592
	1959-60		486
Andaman & Nicobar Islands . . . .	1957-58		*
	1958-59		*
	1959-60		40
Pondicherry . . . .	1957-58	1,010	130
	1958-59	1,400	355
	1959-60	2,090	42

\*No information is available

N.B. 1. Sales figures for 1959-60 and the figures of opening stocks for all the three years have been compiled from the information furnished by States to the Union Ministry of Food and Agriculture.

2. Figures of sales of fertilisers during 1957-58 and 1958-59 have been compiled from the information received by the Committee.

3. No information is available regarding West Bengal and Jammu and Kashmir.

7.34. The Committee considers it desirable to make the incidence of interest charges uniform in all the States by standardizing the procedure. For this purpose it would be useful to consider the case of an actual consignment from Sindri to a remote railway station. On despatch of the consignment, the Railway Receipt is sent to the consignee. The consignment itself may take three to four weeks to reach its destination. It may then lie with the wholesale depot for a period of four to five months before it is lifted and taken to retail depots. In the retail depots it may remain unsold even as long a period as two months. In theory, payment to the Central Government becomes due from the State Government on receipt of the Railway Receipt. In practice, however, as has been shown above, the State Government enjoys a period of two months' grace. Allowing for the period of transit by rail and for half the period taken to clear the stocks in the wholesale depot the total period for which the State Government could claim interest is  $1+2\frac{1}{2}-2=1\frac{1}{2}$  months. (Half the period taken for clearing the stocks of the wholesaler is based on the assumption that the sales will be spread out). In the most unfavourable cases the State Government would have to incur interest charges for a period of  $1\frac{1}{2}$  months and, therefore, if the debit is raised at the end of three months from the date of consignment no provision need be made for interest on the investment so far as the State Government is concerned.

7.35. The Committee has elsewhere recommended that the fertiliser should not be provided on a consignment basis to the retailer who should pay cash at the time of lifting the stocks from the wholesale depot. As indicated above the stocks may not be fully disposed

of for a period estimated at two months in unfavourable cases. Therefore, interest charges on the investment by the retailer would be chargeable for half the period, viz., one month, again on the assumption that the sale of stocks will be spread out. At the rate of six per cent interest, this charge will not exceed Rs. 2 in the case of ammonium sulphate. *The distribution allowance should, therefore, provide only Rs. 2 on account of interest charges for ammonium sulphate.*

7.36. The retailer should be requested to deposit the cost of the fertiliser he wishes to purchase in the local treasury to the credit of the State Government or the local co-operative bank in favour of the Apex Body as the case may be and fertiliser should be released to him on production of the receipted challan.

7.37. In the arrangements now proposed it will be observed that the State Governments are to be given a period of grace of three months before paying for the fertiliser. This means an increase of one month in the *de-facto* position of two months' grace. The Committee considers that this period is so short that it is unnecessary for the Government of India to make any extra charge on account of interest charges, but if it is considered necessary to do so this can be easily done by adding it as an element in the pool price.

### **Commission to Agents**

7.38. The procedures in vogue in several States are described below:—

1. *Andhra Pradesh:* The District Wholesale Cooperative Marketing Societies have been appointed as the wholesale distributors and they, in turn, appoint Primary Societies as the retail dealers. They, however, also undertake retail distribution at various centres in the district. The commission admissible to the District Wholesale Societies and to the Primary Societies is not fixed and it varies from district to district. In many cases, the Wholesale Societies, with a view to earning a large margin, discourage the primary societies from taking up the retail distribution. It is understood that an Apex Cooperative Marketing Organisation for the State has already come into being and it will act as sole agent for fertilisers.

2. *Assam:* At present, the State Government has appointed private parties as well as Co-operative Societies as agents for the distribution of fertilisers in the State, the former having jurisdiction over the whole State and the latter in specific areas of the State. These agents effect distribution through their own depots or through private agents or Co-operative Societies who act as sub-agents.

A consolidated margin of Rs. 27 per ton is allowed by the State Government which is divided in the case of private agents between the wholesaler and the retailer. Two Primary Co-operative Societies which have been appointed cater to limited areas.

**3. Bihar:** The Bihar State Co-operative Marketing Union, which is the sole selling agent for the State has established its own depots at 124 centres through which the major part of the retail distribution is carried out. Where the Primary Co-operative Societies or private dealers take up retail distribution as sub-agents to the Bihar State Co-operative Marketing Union, a commission of only Rs. 4.70 per ton and Rs. 4.50 per ton respectively, is allowed which is exclusive of handling charges, but includes warehousing and storage loss, etc.

The margin allowed to the Apex organisation is Rs. 40 per ton which includes an establishment cost of Rs. 6 per ton and overhead charges of Rs. 4 per ton for a staff of 75 persons employed at headquarters for looking after 124 depots employing 120 field-men and handling about 40,000 tons of fertilisers. A sum of Rs. 3.21 per ton is indicated as a profit margin. This profit, which may be regarded as a commission for all purposes, accrues to the Bihar State Co-operative Marketing Union.

**4. Bombay:** The District Wholesale Societies and the Taluka Marketing Societies which act as wholesalers retain a sum of Rs. 3.50 per ton which consists of a commission of Rs. 2.00 per ton, cost of bank guarantee at Re. 1 per ton and bank commission at Rs. 0.50 per ton. The Primary Village Societies, which act as retailers get a commission of Rs. 5.81 per ton. Thus a total commission of Rs. 7.81 per ton is allowed. An additional commission of Rs. 5 per ton is allowed for Urea.

In areas where the individual co-operative societies are appointed as agents, a consolidated margin of Rs. 20 per ton is allowed towards commission, handling and transportation within five miles.

**5. Kerala:** The distribution of ammonium sulphate is entrusted to M/s. FACT Limited, Alwaye as agents of the Department. Rs. 25 for every ton of sulphate of ammonia distributed by them is paid as consolidated distribution charges inclusive of their sub-distributors' commission. Commission at 5 per cent of the sale proceeds is paid for all other nitrogenous fertilisers like Urea, A.S.N., C.A.N., etc. distributed by the Department through its agency depots.

6. *Madhya Pradesh*: In Madhya Pradesh, the Apex Co-operative Marketing Society, which is the sole distributor, has appointed the District Societies as its agents but where District Societies are not available, Tehsil Societies are entrusted with this work. Primary Societies act as retail distributors. The Apex Organisation meets all the expenses on account of the handling and transport of fertilisers right to the villages. The District and Tehsil Societies are paid Rs. 5 per ton as commission and Rs. 2.50 per ton as godown charges which they share half and half with the retail distributors. Thus, the District or the Tehsil level societies and the Primary Societies each get a commission of Rs. 2.50 per ton. As for the Apex Organisation, it does not take any commission as such but a margin of Rs. 1.94 is left with it which may be considered as its commission. The other expenses (particularly the internal road transportation cost) are rather high and the total cost of internal distribution comes to Rs. 35 per ton.

7. *Madras*: In Madras the State Government appoints the District Wholesale Marketing Societies as its stockists. These stockists have to handle the fertilisers on arrival at rail destinations, move them to the godowns and store them till they are sold to the primary societies or transferred to their own retail depots. For all these services and expenses they are paid a consolidated margin of Rs. 5 per ton. The Primary Societies get Rs. 20 per ton which includes a commission of Rs. 5 per ton which covers handling charges also. It is stated that the District Wholesale Societies in fact lose in the wholesale business but cover up the loss by making a profit in the retail business. It appears that there is profit of about Rs. 6.51 per ton in the retail business conducted by stockists.

8. *Mysore*: In Mysore there are both the Co-operative Societies and the private dealers handling fertilisers. Where the Co-operative Society takes delivery of the material, it is allowed the full consolidated margin of Rs. 30 per ton but when it takes the delivery from the godowns of the State Government it is allowed a consolidated margin of Rs. 25 per ton. Private dealers get a consolidated margin of Rs. 25 per ton when they take delivery from the wagon and Rs. 15 per ton when they take delivery from the godowns of the State Government. The sum allowed is shared by the societies or the private dealers with their retail distributors on a mutually agreed basis. No fixed amount of commission is given.

From 1st May, 1960, a distribution allowance of Rs. 40 per ton inclusive of commission is permitted to the Apex Marketing Organisation which has been appointed as the sole-agent. This is being

shared as follows:—

	Rs. Per ton
(a) Apex Marketing Society . . . .	6
(b) Taluk Marketing Society . . . .	18
(c) Primary Village Society . . . .	16
	<hr/>
	40
	<hr/>

9. Orissa: The Orissa State Co-operative Marketing Society obtains fertilisers and stocks them in its depots in the districts. From that point, distribution is taken over by the Regional Marketing Societies, one of which is situated in every sub-division. The Regional Marketing Society receives the allotted quota from the nearest depot of the State Co-operative Marketing Society and carries the same to the different Grain Golas situated in each Gram Panchayat. The Grain Golas distribute the fertilisers to the cultivators. As stated earlier, the State Government retains out of the margin of Rs. 40 per ton allowed, a sum of Rs. 25 per ton and makes the balance of Rs. 15 per ton available to the distributing agents. The amount is shared equally by the

Orissa State Co-operative Marketing Society,

The Regional Co-operative Marketing Society or area representative,

and the Grain Gola or large sized Co-operative Society or sub-depot.

Out of the margin of Rs. 5 per ton which the Grain Golas get, they have to pay interest for the capital borrowed, warehousing charges, accounting charges and shortages, etc. The Regional Marketing Societies have to keep a sufficiently large godown at their headquarters and have to employ sufficient staff for delivering the goods at the appropriate Grain Gola headquarters. The function of the State Co-operative Marketing Society is to prepare a programme of distribution for the entire State in consultation with the supplying firm. They may have to maintain a liaison office at Sindri and large godowns at important railheads.

During 1957-58, a sum of Rs. 1,94,612 was spent on the transport of 7,976 tons of sulphate of ammonia. Thus the transportation charges alone came on an average to Rs. 24.40 per ton. About 50 per cent of the Gram Panchayats are situated at distances of over 30 miles from the railheads.



10. *Punjab*: In Punjab, the Punjab State Co-operative Supply and Marketing Federation is the sole agent of the State Government. They get a commission of Re. 1 per ton. The District Wholesale Co-operative Societies get a commission of Rs. 2 per ton. The retail distributors get a commission of Rs. 9 per ton, thus making a total commission of Rs. 12 per ton besides the sum of Rs. 3.37 retained by the Government for establishment and other charges. In this case, there are three intermediaries between the State Government and the farmers.

11. *Rajasthan*: In Rajasthan 50 per cent of the material is distributed through Government Depots and, therefore, the question of commission in their case does not arise. The State Government stocks the material at convenient points at its own cost. Wherever distributors are appointed they are paid a lump sum of Rs. 15 per ton towards transport, storage, handling and commission.

12. *Uttar Pradesh*: In U.P. the Provincial Co-operative Federation and the Cane Unions Federation are the sole agents, the latter working only in cane growing areas. The sole agents get a commission of Rs. 5 per ton. The Cane Unions are directly affiliated to the Cane Unions' Federation and they get a commission of Rs. 10 per ton. In the case of the P.C.F., however, a commission of Rs. 5 per ton is given to the District Wholesale Societies and another commission of Rs. 5 per ton is given to the Primary Co-operative Societies. It may be stated in this connection that the cost of internal distribution in U.P. comes to Rs. 36 per ton against Rs. 30 per ton normally admissible. The figure of Rs. 36 includes transport charges within a radius of five miles from the railhead and the transport charges beyond this have to be paid by the cultivators.

13. *West Bengal*: In West Bengal, the State Government has appointed 22 distributors who in turn operate through wholesalers functioning in important towns. These wholesalers appoint retail agents in the villages. The distribution margin of Rs. 30 per ton is shared between all these agents according to terms mutually agreed upon.

The Committee, however, understood that the agents retain a margin of Rs. 10 per ton (in one case as much as Rs. 15 per ton) which includes interest charges on the capital invested by them. The distributors informed the Committee that they have to prepay for the supplies and their capital remains blocked for a considerable period.

No information is available as to what exactly is paid to the wholesale and retail dealers as their remuneration but the Committee

understood that it amounts to only about Rs. 1.25 to Rs. 2.00 per ton and in certain cases even the wholesalers and retailers suffer a loss but they carry on with the distribution of State controlled fertilisers only because along with these they can sell larger quantities of mixtures (which are usually supplied by the same manufacturers who are the agents of the State Government) on which they make larger profits.

14. *Delhi*: In Delhi, there are two intermediaries between the Administration and the farmers, viz., the Apex Co-operative Society and the retail distributors. The Apex Organisation gets a commission of Rs. 9 per ton and the retail distributors get a commission of Rs. 8 per ton. The balance of Rs. 13 is spent on other expenses. The sum of Rs. 9 per ton retained by the wholesalers appears to be excessive.

15. *Himachal Pradesh*: In Himachal Pradesh, the wholesale distribution is carried on departmentally, and the retailers are paid a sum of Rs. 16 per ton consisting of the following items:—

	Rs. Per ton
1 Commission . . . . .	10
2 Storage charges . . . . .	3
3 Shortages . . . . .	3
	<hr style="width: 100%;"/>
	16
	<hr style="width: 100%;"/>

In view of the heavy cost of transport involved in this area, the transport is subsidised with a sum of Rs. 98 per ton by the Central Government. The average cost of internal transportation, however, comes to Rs. 112 per ton. The difference between the average and the subsidy is found from the distribution allowance of Rs. 30 per ton. Thus, the ammonium sulphate is supplied to cultivators at the all-India price of Rs. 380 per ton.

16. *Manipur and Tripura*: The entire distribution is done departmentally and the question of commission does not arise.

17. *Pondicherry*: The wholesale and retail agents are appointed in the territory but the commissions payable to them are not specified. The wholesalers are allowed a sum of Rs. 10 per ton and the retailers get Rs. 20 per ton to meet their expenses and profit.

7.39. The foregoing clearly points out the necessity of isolating the commission from expenses on account of interest and other charges. The commission should be commensurate with the degree of initiative and enterprise required to be shown at various levels in

the distribution chain. In some cases it is observed that the commission allowed to the District and Apex levels is considerably higher than that allowed at the retail level. The rate of commission should increase from the Apex level to the village level in order that adequate remuneration is provided at these levels having regard to the fact that the quantities of fertilisers handled, progressively diminish from the Apex to the village. Further a strong reason for giving liberal commission at the retail level is to provide an incentive to the retailers to promote sale of fertilisers and to make sure that they carry adequate stocks of fertilisers at all times for meeting the requirements of the area served by them.

7.40. The Co-operative Societies at present, when the supply of nitrogenous fertilisers is limited, may undertake the retail distribution for helping their members. When the supply of fertilisers becomes plentiful and distribution is thrown open, they may not find it worthwhile to handle the fertiliser business unless the remuneration is adequate. For this reason too, it is desirable that the commission allowed to retailers is made attractive. At the same time, it is essential to keep the cost of distribution low. *It, therefore, follows that the number of intermediary agencies to whom the commission would be payable should be reduced to the minimum. The Committee considers that this number should ordinarily be not more than two viz., the wholesale agency at the taluk level and the retail agency at the village level. At the State or Apex Marketing Society level, there should be no commission but only a small administrative charge to cover expenses. Where the work of co-ordination of distribution is entrusted by the State Government to the Apex Marketing Organisation, the Committee feels that it is desirable that the State should withdraw from these operations.*

7.41. The same principle will apply in the case of fertilisers of high analysis. The quantities handled of such fertilisers will be proportionately less and it is reasonable that the rates of commission allowed on them should be correspondingly higher.

7.42. In order to encourage the use of new or comparatively less popular fertilisers, it would be expedient to allow a larger commission than in the case of popular fertilisers of equivalent nutrient value.

7.43. On the whole, the Committee feels that it is possible to manage within the margin of Rs. 30 per ton for sulphate of ammonia as under:—

	Administration charges	Rs.
	Wholesaler	1.00
Commission	Retailer	2.50
		7.00

<i>Transport</i>	From railway station to godown	Rs.
	From wholesale godown to the retail depot . . . . .	1.50
		8.50
<i>Loading and unloading</i>	At wholesale . . . . .	1.50
	At retail . . . . .	1.00
<i>Warehousing</i>	At wholesale . . . . .	2.00
	At retail . . . . .	1.50
<i>Interest</i>	Wholesaler . . . . .	Nil.
	Retailer . . . . .	2.00
<i>Shortage</i>	Wholesaler . . . . .	0.50
	Retailer . . . . .	1.00
	<b>TOTAL</b> ..	<b>30.00</b>

## CHAPTER VIII

### IMPROVEMENTS IN DISTRIBUTION

8.1. At present while there is an acute shortage of nitrogenous fertilisers, the supply of phosphatic fertilisers exceeds the demand. The country has also to prepare for a change over from a situation of shortage to that of more plentiful supplies and naturally the distribution arrangements to be visualised for the latter eventuality are different from those being experienced now.

8.2. A system of distribution should suit the stage of development of a State. In the States where the fertiliser consumption is well developed, the problems of distribution are different from those in the States where the consumption is low and yet to be built up. The efficiency of distribution is also dependent upon the organisational stage reached by the Co-operative movement of the State. Where this movement is advanced, a ready facility is available for fertiliser distribution but in the States where it is still in its infancy, the organisational effort required to gear up the fertiliser distribution will be proportionately greater.

#### **Assessing of Demand**

8.3. It may be that a particular State has registered a relatively low level of consumption but it may have a very high potential for consumption. The agency connected with the distribution, which in many cases is the Co-operative Department, may naturally base its estimate of demand on the past sales record whereas the agronomist who is responsible for agricultural production would also take into account the potential of production from the land. It is obviously necessary to associate both the Co-operative and Agriculture Departments in the preparation and examination of the estimates of demand.

8.4. Realistic estimates of demand can be framed by ensuring that the estimates at the Tehsil/Taluk level are duly framed in consultation with not only the Departments of Co-operation and Agriculture, but also with the influential farmers, and the traders dealing in these commodities. This process will have to be repeated at the district level.

8.5. During periods of shortages the demand tends to be inflated whereas it is under-estimated during the glut period. In several States the Committee observed that the stocks with the States during its visit were equal to the whole year's consumption. it is

desirable that States are encouraged to develop a system of realistic assessment and this can be done only if the States are made to realise that their demands will be carefully examined with due regard to the actual consumption and that the allocations made would not necessarily be on a uniform pro-rata basis. The Committee has elsewhere made a recommendation in this connection.

8.6. The Central Fertiliser Pool while allocating the fertiliser to the States should, in addition to the consumption of the fertiliser in the past, take into consideration the achievements of the State in respect of increased production so as to promote larger application of fertiliser to those areas where best responses are to be achieved. When the supplies of fertilisers are rather liberal the areas which consume relatively less quantities of fertilisers will need special attention for promoting the consumption.

### **Despatch Instructions**

8.7. *It is suggested that the States should be given in the beginning of the year an indication of the likely allocation of fertilisers quarter by quarter.* On the basis of these indications, the States should collect despatch instructions for each quarter. At the headquarters of the State, the despatch instructions for the next quarter should be available at the end of the previous quarter so that the delays in communicating them are avoided. Since it is not possible to forecast very accurately the arrival of stocks from abroad, there will be a small carry over of despatch instructions from one quarter to another. If foreign exchange allocation for the purchase of fertiliser is made in one lot annually instead of in piece-meal as at present, it would be conducive to better planning of supplies to the States.

8.8. In one State, on the receipt of allocation from the Central Pool, the primary societies are asked to intimate their requirements which are co-ordinated at the district and apex levels before they are forwarded to the Director of Agriculture who again refers them back to the District Committees. This lengthy process can be avoided if proper arrangements are made for consultation at the District level by all interests at a time and if advance indents are collected and kept ready. The entire process can be streamlined by adopting the recommendations made in the paragraph above.

### **Role of Taluk and Primary Societies**

8.9. It has already been recommended that at the State level where the Apex Marketing body functions as the central co-ordinating agency, there is no need for the State Government Departments

to duplicate this role. In these circumstances the functions of the State Government need be only to act as a channel of communication between the Apex Marketing body and the Central Fertiliser Pool and to undertake financial responsibility for the supply of fertilisers from the Pool to the State.

8.10. It has been observed that in some States all the three, the District Wholesale Marketing Societies, the Taluk Marketing Societies and the Primary Societies are concerned with the distribution of fertilisers. The Committee recommends that the District Wholesale Marketing Societies should withdraw from the picture as the Taluk Marketing Societies are in fact performing all the functions connected with the wholesale distribution of fertilisers and the District Co-operatives have no useful service to render.

8.11. In some of the States like Andhra Pradesh, Bihar and Madras, the Committee observed that the District Wholesale Societies or the Apex Marketing body have opened their own retail sale depots thus usurping the function of the Primary Co-operative Societies. Since under the present arrangements, the District Wholesale Societies are in a dominant and influential position to dictate the commission permissible to the Primary Co-operative Societies, the former are at times effectively able to block the expansion of distribution of fertilisers through the Primary Societies. The effect of this has been to restrict the number of selling points and to locate them in the more readily accessible places, thus compelling the farmer to cart his fertiliser over a longer distance. *The Committee has, therefore, recommended that the commission that is allowed to the Primary Co-operative Societies should be much more liberal and should be fixed at the State level.*

8.12. In certain States like Punjab, Bihar, Orissa, etc. fertilisers are supplied to the Co-operative agencies on consignment basis. The Committee noted that there were considerable outstanding recoveries on this account in the States of Punjab and Orissa. In certain cases, it is apprehended that the stocks have been disposed of by the Co-operative Societies and the value thereof has been utilised in their other business such as distribution of sugar or for advancing loans to their members. A proper checking of stocks did not also appear to have been done. *The supply of fertilisers on consignment basis to the primary co-operative societies is, therefore, not recommended.*

### **Rebate on Road Transport**

8.13. In some cases, the distribution of fertilisers is confined to points near the railheads so as to save the expense of road transport

over a longer distance. To prevent this tendency of converting the provision for road transport as a commission, the Committee has recommended that a system of rebate be established whereby the fertiliser could be taken delivery of at the Taluk Marketing depot by paying the price less the rebate which will depend upon the distance to which the fertiliser has to be transported. In order to facilitate the grant of the rebate and to avoid disputes in this connection, the Committee has recommended that a table of accepted distances be prepared in advance and supplied by the District Collector or a suitable authority to all Taluk Marketing Societies as well as the Primary Co-operative Societies. The Primary Society will pay in cash to the Taluk Marketing Society its charges on account of handling, storage and commission as fixed by the State Government. The balance amount to be paid by the Primary Co-operative Society is to be deposited in the Treasury or the designated bank in favour of the State Government which supplies the fertiliser on a consignment basis to the Taluk Marketing Society. Thus in effect the State runs a transport pool for subsidising the cost of transport. Where the Apex Marketing Society handles the distribution it would run the transport pool.

#### Differential Road Transport Subsidy

8.14. In the hill areas, the major difficulty in promoting consumption of fertilisers is the high cost of transportation by road and even on headloads. From the figures given below, it is observed that distribution depots are often situated 80 to 130 miles away from the nearest railheads. Similar difficulties, no doubt, occur in Jammu and Kashmir and Assam and also in hill areas of Uttar Pradesh, Punjab and Mysore. Recommendations have already been made to subsidise the transport of fertiliser over difficult terrain. It would be worthwhile in these cases to introduce a system of differential subsidies so that higher subsidies are allowed on high analysis fertilisers on which the freight cost is saved. For example, if a subsidy of Rs. 90 is allowed per ton of sulphate of ammonia, it will be profitable to allow a subsidy of Rs. 135 per ton of urea as this would still lead to a saving of Rs. 45 per ton. It would be worthwhile to make a special effort to promote the use of these high analysis fertilisers in such areas:—

	Miles
1 Himachal Pradesh . . . . .	20—60
2 Manipur . . . . .	130
3 Tripura . . . . .	115

#### Sales-Promotion

8.15. The demand for nitrogenous fertiliser at present is in excess of supplies and there is, therefore, little, if any, sales effort. With



the starting of new plants a situation is, however, likely to develop when the supplies may temporarily exceed the demand. To meet the targets of agricultural production, it is necessary to keep both the production and consumption at appropriately high levels. Even in the present situation of shortage, the Co-operative Organisations which distribute fertilisers in U.P., Bihar and Punjab are reluctant to accept for sale fertilisers other than sulphate of ammonia. In U.P., the other fertilisers like urea, ammonium sulphate nitrate and calcium ammonium nitrate are sold through the Seed Stores of the Agriculture Department since the co-operatives are unwilling to handle these relatively new fertilisers which will hereafter be provided in larger quantities than sulphate of ammonia. The Committee noticed in Punjab, reluctance to take larger quantities of calcium ammonium nitrate, in spite of the fact that when the Nangal factory is likely to go into production this year, the State will have to mainly depend on this fertiliser. *In these circumstances, the Committee feels that the distributing agents in the States, which are mainly Co-operative Organisations, need to develop an aggressive sales programme if they wish to stay in the fertiliser business.* Again, in these circumstances, there will no longer be any justification for giving the Co-operative Organisations the monopoly of fertiliser trade. *On the contrary, the interests of agricultural production as well as of farmers would be best served by throwing the trade open to competition.*

8.16. In the case of phosphatic fertilisers, we are already facing a situation in which the supply exceeds the demand while both the production and consumption are well below their respective targets. It is interesting to note that this disparity between supply and demand is either not present or is not acute in the areas where the distribution is handled by the agents of manufacturers who provide the necessary sales drive, incentives and supervision. It is only in the areas where the State Governments have undertaken distribution in general through co-operative societies or through their own depots that the stagnation in the sales of superphosphate has occurred. *In such areas the manufacturers should be encouraged to build up their sales organisation utilizing the Co-operative Societies to the maximum extent possible, and to develop sales by providing incentives.* It would be an obvious convenience to the farmer if all his fertiliser requirements, including the mixtures, could be made available from the same depot in each village. Since it is the Government policy to allot the sales of nitrogenous fertilisers to the Co-operatives, it is desirable that manufacturers of phosphatic fertilisers and mixtures should use the same co-operatives as their selling agents.

8.17. It has already been recommended that the co-operatives should develop business methods and aggressive sales approach in order to sell fertilisers. *This suggestion applies particularly to the adoption by the co-operatives of working hours that are convenient to the villagers.* Repeated complaints were made to the Committee that the co-operatives generally worked during the usual office hours and were closed in the evenings when actually the farmers are free to attend to the purchase of fertilisers.

8.18. To induce the salesmen of the societies to make greater efforts to promote the sale of fertilisers, the *Committee considers that a commission, say, at the rate of twenty naya paise per bag of two cwt., be given to the salesmen in addition to their pay for exceeding the previous year's performance or for popularizing new brands of fertilisers.*

8.19. *The Fertiliser Pool should draw up a scheme for awarding of bonuses for encouraging sales of unpopular or new fertilisers or less popular fertilisers like fertiliser mixtures and superphosphate.* The bonuses may be awarded on a slab system according to the business secured by the sale of fertilisers and this should be in turn passed on by the States to the Primary Societies according to the sales effected.

8.20. For promoting the consumption of fertilisers and specially of new types and balanced fertilisers, it is necessary that the people who sell the fertilisers should have a working knowledge of the merits and properties of the fertilisers. They should also know the results of fertiliser trials and demonstrations and should be able to advise and even show the farmers how to use the fertilisers. *Periodic short training courses for the sales personnel should be organised by the Co-operative Departments with the help of Agricultural Extension Officers.*

8.21. Demonstrations to convince the farmers of the fertiliser recommendations and other educational measures need to be stepped up particularly for the new types of fertilisers. Fertiliser costs money and its proper use, according to the best technical advice is essential if the maximum benefits are to be obtained. It is, therefore, important that the farmer is instructed as to how, when and where the fertiliser is best used. This work, which is the main function of the extension staff, should be planned in collaboration with the fertiliser producers, distributors and selling agencies.

### **Fertiliser Loans**

8.22. It need hardly be emphasised that in general terms the Indian cultivator is poor. A good number do not have the necessary

finance to purchase fertilisers, even though they might be willing to use them. Credit facilities are therefore, a "must" for stepping up the consumption of fertilisers and for increasing agricultural production. Hitherto almost all the State Governments have been giving taccavi loans to the farmers for the purchase of fertilisers and from the replies received to the questionnaire, the Committee concludes that the rise in demand for fertilisers is due, in no small measure, to the credit facilities made available to the cultivators. Certain State Governments such as Punjab and Uttar Pradesh, however, propose to totally stop the taccavi credit facilities to the farmers and change over entirely to co-operative credit. While the Committee considers that this is in keeping with the national policy for the well-being of the farmers, certain sections of the cultivators complained to the Committee that the total stoppage of taccavi loans will not only make the credit dearer due to the higher rates of interest charged by the co-operative, but also insufficient due to inadequacy of loan amount for all their other agricultural operations including the purchase of fertilisers.

8.23. *The Committee considers that the loan arrangements for fertilisers should be such as to provide adequate credit quickly and at a reasonable rate of interest to all the farmers. The loans should be in kind, and not in cash, that is to say, an authorisation to the retailer to supply fertilisers upto a specified value. Payments to the retailers against these authorisation should be made locally and without irksome formalities which involve delay. The Committee recommends that the existing loan arrangements for fertilisers should be reviewed by the State Government with reference to the principles stated above.*

### **Warehousing**

8.24. It is understood that 2,000 Taluk Marketing Co-operative Societies have already been established and 400 more are to be established during the Third Five Year Plan. These are to serve as stocking points for villages. An estimate has been framed of the quantity of fertilisers that an average Taluk Marketing Co-operative Society is likely to handle towards the end of the Third Five Year Plan.

8.25. Estimating that 70 per cent of nitrogen and phosphoric acid will be sold in straight form, 1,400 tons of ammonium sulphate and 600 tons of superphosphate are likely to be handled by each Taluk Society per annum. Only about 10 per cent of potash amounting to about 16 tons per annum will be handled by a Taluk Society. It is assumed that the remaining 90 per cent of potash and 30 per cent

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of nitrogen and phosphoric acid will be used in the form of mixtures. Thus each Taluk Marketing Society is likely to handle about 2,000 tons for fertilisers per annum which it would distribute through between 80 and 100 Primary Co-operative Societies. It is estimated that a Taluk Marketing Society should be able to manage with a storage space of about 500 to 600 tons at any time and the primary co-operative society of 5 to 6 tons.

8.26. In a number of States complaints of non-availability of stocks during fertiliser season and arrival of stocks out of season which necessitate storage for a long period were received by the Committee. Some of the States which received considerable quantity of the off-take from imported fertilisers have expressed difficulties as the arrivals of imports could not be regulated to meet the requirements of the fertiliser season for various reasons. To get over these difficulties the State Governments have suggested that the Central Fertiliser Pool should stock fertilisers at important and convenient centres in the State, where-from the supplies could be drawn by the State Governments. If the Central Fertiliser Pool were to hold stocks in its own godowns, the distributing agencies in the States would not be called upon to meet the cost of storage and interest charges for the duration of the storage.

8.27. In most major States new nitrogen fertiliser factories will be set up during the Third Five Year Plan and the distribution of the fertiliser would, therefore, after some years, not involve transport of fertilisers over long distances and it would be possible for the factories located within the States to rush supplies in emergencies. The transport bottlenecks will also be reduced to some extent as the distance to be transported becomes reduced as there would not be many points where there would be booking difficulties. In relatively short distances even road haulage may prove economical.

8.28. The figures furnished in the table below show the advantage of through-booking without a break. When a break is made, as is inevitable in the case of fertiliser stocked in the regional godowns, the cost of rail transport increases by Rs. 5—10 per ton, since the benefit of telescopic rates is sacrificed.

TABLE XIX

Statement showing the total railway freight for various fertilisers

Distance in miles	S/A, C.A.N., A.S.N. & Superphos				Bone	Meal	Urea			
	(W/550/BG	W/350/MG	W/220/NG)	Single	With break at 400 miles	With break at 600 ms.	(W/400/BG/300/MG/180/NG)			
	Single run	With break at 400ms	With break at 600ms	Single run			Single run@	With break at 400ms	With break at 600ms	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	(Concessional)			
							Rs.	Rs.	Rs.	Rs.
100	8.71	..	..	7.35	..	..	24.23	10.62	..	..
200	13.34	..	..	11.48	..	..	41.93	16.61	..	..
300	17.96	..	..	15.25	..	..	59.08	22.32	..	..
400	22.05	..	..	18.51	..	..	74.59	26.95	..	..
500	25.86	30.76**	..	21.78	25.86**	..	90.39	31.85	37.57**	..
600	29.13	35.39	..	24.50	29.99	..	102.37	35.66	43.56	..
700	32.40	40.01	37.84	27.23	33.76	31.85	114.89	39.75	49.27	46.28
800	35.39	44.10	42.47	29.95	37.02	35.98	127.69	43.56	53.90	52.27
900	38.12	47.91	47.09	32.40	40.29	39.75	138.85	47.10	58.80	57.98
1000	41.11	51.18	51.18	34.85	43.01	43.01	150.28	50.64	62.61	62.61

N.B. 1. The rates are approximate rounded upto the nearest N. P.

2. The rates are for long tons.

\* As a chemical,

@When urea is moved as a fertiliser under certificates from States regarding its agricultural use, concessional rates apply.

\*\*Freight for first 400 miles plus that for 100 miles etc, rebooked.

8.29. An additional intermediary storage involves additional handling and storage costs which must ultimately fall on the consumer even though it may temporarily be borne by the Central Fertiliser Pool. As the use of mixtures develops it is expected that fertiliser mixing firms will be willing to accept supplies of fertilisers, at least upto a certain extent, during the season when the demand for fertiliser is slack in the States. The Committee has elsewhere recommended that a system of off-season rebates should be instituted to promote the off-take of fertilisers when the demand is slack. In view of these considerations the Committee feels that the creation of buffer stocks in regional warehouses is not very necessary now and still less so when the new factories come up. There are, however, a few exceptional situations in the country where the constitution of fertiliser dumps may be justified in consideration of special problems such as transshipment, inability to supply to large areas during the rainy season, etc. In the areas served by the imported fertilisers, some part of the difficulty experienced is due to irregular timings of arrivals of ships. This requires special attention by the Fertiliser Pool. The Committee understands that the need for obtaining piecemeal sanction for fertiliser purchases abroad and the attendant delays in doing so are partly responsible for lack of control over shipping. If the Committee's proposals for reorganisation of the Central Fertiliser Pool are implemented these difficulties should disappear.

8.30. The godowns which are now being used leave much to be desired. Warehouses have to be carefully designed with a view to reducing handling costs and ensuring storage under dry conditions. Even the new godowns which are being constructed do not appear to be free from shortcomings. There is a need for evolving suitable type designs for godowns and warehouses. *It would be useful if the Central Warehousing Corporation were to bring out type-designs for warehouses to suit different climatic conditions.*

8.31. In our view it would be both economical and convenient to design warehouses so as to accommodate not only fertiliser but also other common agricultural requirements and commodities. For the same reasons of economy and convenience, warehouses should as far as possible, be located in close proximity of railway stations with access to good all-weather roads.

#### Tea

8.32. At Tocklai Tea Experimental Station, the Committee was informed that urea besides being hygroscopic had a lower efficiency than ammonium sulphate. The cheapness of urea was more than

off-set by its low efficiency which has been observed as a result of experiment over eight years. From one year's experiment, the ammonium sulphate nitrate appears to be as good as sulphate of ammonia though the former is hygroscopic. As the bushes have become old, it has become necessary to apply larger quantities of fertilisers but the supply of fertilisers to the tea gardens had remained stationary during the last several years. They need the fertilisers during the months of November, December, January and February. The supplying firms were charging on the basis of F.O.R. Calcutta delivery and the tea gardeners desired direct allocations. It was suggested that they may draw up a scheme in which the Central Pool would deal only with their representative bodies and submit it for the consideration of the Government of India through the Central Tea Board.

The Committee was informed that they did not require mixtures though the supply firms had some time ago made it a condition that they should lift mixtures along with the straight fertiliser. In view of the small off-take of the fertilisers by the tea industry, the Committee felt that the differential price charged to the tea garden owners was not any longer justified.

### **Bulk Purchases**

8.33. In the State of Bombay, special quotas are allotted by the State Government to sugarcane farms for purchases in bulk. The Committee considers that bulk purchasers should be encouraged to obtain wagon loads by using the stockists as clearing and forwarding agents. The price payable by them should be a little less than that payable by the Primary Co-operative Society.

### **Reliable Mixing**

8.34. The Committee has already stressed the importance of promoting the use of mixtures in the interest of increasing production and maintaining soil productivity. At the same time it cannot be denied that in the mixture trade opportunities for malpractice are great and are not easily detected by the farmer. To some extent these malpractices can be controlled by instituting a good system of sampling and analysis under the Fertiliser (Control) Order, but it is feared that for every case of adulteration of mixture detected there may be many cases which go undetected. *It is, therefore, essential that manufacture of mixtures should be entrusted to reliable and reputable firms and parties who, having a reputation to lose, would ensure that the agents who handle their mixtures are persons of responsibility and integrity.*

8.35. Contrary to common belief the making of mixtures is not a job that can be undertaken by anybody. Skill and knowledge of the properties of ingredients employed and their mutual compatibility as well as technical equipment in the shape of weighing scales, mixing vessels and analytical arrangements are necessary if the professed analysis of the mixtures is to be maintained. Qualified technicians are required to compound the mixtures and maintain their standards. We have come across cases where the mixtures have been declared to contain 7.4N, 5.6 P<sub>2</sub>O<sub>5</sub> and 6.2 K<sub>2</sub>O. Such fractional grades tend to confuse the farmer. This degree of accuracy is of no practical significance. It is, on the other hand, indicative that the persons compounding the mixture have not got adequate control over the mixing operation. *If the regulation that the grades of mixtures should be expressed in whole numbers is enforced, it would have the salutary effect of excluding from the mixture business a large number of unqualified persons.*

8.36. *A further measure to prevent fraud and adulteration would be to market mixture in the form of granules.* It is noteworthy that in Europe and America there is a strong trend towards the marketing of mixtures in granulated form. It is hoped that a similar trend will manifest itself in India. The effect of this would be to localise mixture manufacture in a limited number of factories equipped for the purpose.

8.37. In the present circumstances when the price of nitrogenous fertiliser is uniform at all railhead destinations, there is an obvious economy in locating mixing centres at a number of points in each State. Great care, therefore, has to be taken in licensing such mixing centres in order to make sure that they are in the charge of men of integrity and responsibility. At the same time it is necessary that the number of inspectors appointed under the Fertiliser (Control) Order to draw samples and check malpractices is strengthened adequately so as to deal effectively with a large number of mixture manufacturers.

#### **Promotion of Mixing**

8.38. As has been pointed out earlier, the use of fertiliser mixtures has not made much headway in the country as a whole except for the Southern States. In analysing the reasons for the poor consumption of fertiliser mixtures, the Committee came to the conclusion that the following factors tend to limit its consumption: Firstly, the spectacular effect on crops of straight nitrogen and its relative lower price have favoured the exclusive use of nitrogen by the farmer. Secondly, the farmer is unaware of the dangers of



single nutrient fertilisation and shows a disinclination to use mixed fertilisers. Thirdly, even when he is inclined to use mixed fertilisers he finds that it is not easy for him to secure the various nutrients required for the purpose. The Committee has made recommendations elsewhere for tackling this particular aspect of the problem by propaganda, demonstration, etc. The second set of factors relates to the high price of mixed fertilisers and the increased risks of their being adulterated. The relatively high price of mixed fertilisers as compared to the sum of the prices of the ingredients in them is due to mixing costs and the mixture manufacturers' profits as well as to the element of double haulage involved so far as nitrogenous fertiliser is concerned.

8.39. In the States where fertiliser mixtures are fairly popular the restricted supplies of nitrogenous fertiliser to the mixture manufacturers has operated as a brake on the use of mixtures. Madras and Kerala allot 25 per cent of their supplies of nitrogenous fertiliser to mixture manufacturers. Though Bombay has also agreed to this percentage, it has found itself unable to supply more than 10 per cent. In Andhra Pradesh the percentage allotted for mixtures is 10. The Mysore Government allots 25 per cent of its supplies of urea and calcium ammonium nitrate to mixture manufacturers.

8.40. Under the arrangements of the Central Fertiliser Pool, nitrogenous fertiliser is sold at a standard price at all railhead destinations; and the nitrogenous fertiliser used in the mixtures compounded at some distance from the point of consumption has often got to cover additional haulage charges\* from the mixing centre to the point of consumption. There is also the additional cost on account of packing charges. The incidence of this double haulage can of course be reduced to some extent by licensing mixing centres in each District. Nevertheless the fact has to be faced that mixed fertilisers are more expensive and that if their use is to be promoted on any worthwhile scale some means must be devised to lower their cost to the farmer.

8.41. It has been observed that in several States the price of nitrogenous fertiliser supplied to mixture manufacturers at railhead destinations is higher than the Pool price by a varying margin. *One way of reducing the cost of mixtures is to make nitrogenous fertilisers available to mixture manufacturers at the Central Pool price and the Committee recommends that this should be done. An important method of promoting the use of mixtures is to arrange*

\*Please see Table XIX.

that the supplies of nitrogenous fertilisers to mixture makers are in all cases adequate to meet the demand for mixtures. In other words, the supply of nitrogen should not be allowed to be a limiting factor in the production and consumption of mixed fertilisers.

8.42. A further step for promoting the use of mixtures is to extend loan facilities for the purchase of approved mixtures. In several States this facility already exists and the Committee recommends that it should be extended to all the other States. Reference has already been made to the stagnation in the sale and consumption of phosphatic fertiliser during the current year. The need for using greatly increased quantities of phosphatic fertiliser to balance the nitrogen that is being used and to preserve the productivity of the soil is compelling. One effective way of securing increased consumption of phosphatic fertiliser is to encourage and extend the use of mixtures. This step would have the further advantage of extending the coverage of our limited supplies of nitrogenous fertilisers. Fertiliser trials have shown good responses to the application of phosphates and in many cases responses have been nearly equal to those of nitrogen. Experience in other countries has also shown that the uptake of phosphorus by crops is increased when phosphatic fertiliser is applied in mixture with nitrogenous fertiliser.

### Rebates for Mixing

8.43. The incidence of double haulage referred to above is a consequence of the present system under which the Central Fertiliser Pool puts together the transport costs over the whole country and supplies nitrogenous fertiliser at uniform prices at railhead destinations. When the proposed new factories go into production by the end of the Third Five-Year Plan period, there will probably be a factory in each of the bigger States to meet to a substantial extent the fertiliser needs of the surrounding areas. When this situation is reached, it may no longer be necessary to operate the present system of pool freight. In such circumstances the advantage which exists today in dispersing mixing plants within a State will disappear as there will be no question of double haulage. It may then become economical and expedient to locate mixing plants in the neighbourhood of fertiliser plants and indeed many fertiliser plants may be producing complex fertilisers or may take up the production of mixed fertilisers. Whatever measures may be taken to reduce the price of mixed fertilisers\* by Government or by manufac-

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\*This does not apply to complex

turers themselves, the fact remains that they will still be comparatively more expensive than all the ingredients in them put together. After careful consideration of all the factors involved, *the Committee has come to the conclusion that an effective reduction in the price of mixed fertilisers delivered to the farmer cannot be made except under a system of rebates or subsidies.* Subsidies are in operation in India for superphosphate. In England the Agriculture (Fertilisers) Act, 1952 provides for subsidies for nitrogenous and phosphatic fertilisers to the extent of 50 per cent. Out of 18 O.E.E.C. countries, the following nine, grant subsidies in one form or another.

1. Austria
2. Germany
3. Greece
4. Ireland
5. Italy
6. Norway
7. Portugal
8. Spain
9. U.K.

8.44. The Committee considers that the case for granting subsidies for fertilisers rests on solid grounds. To some extent the subsidy granted for phosphates will in effect be a subsidy for mixed fertilisers. But what the Committee has in mind is not petty price reduction here and there but a substantial reduction in the price of mixed fertilisers which will give them a favoured position in relation to straight fertilisers. It is not intended that any subsidy granted for mixed fertilisers should be a charge on the public revenues. It should be possible for the Central Fertiliser Pool to so fix the prices for nitrogenous fertilisers as to build up a fund for operating the subsidy scheme. In other words, by making a small profit on the sale of straight nitrogenous fertilisers, the Pool should be able to finance the subsidy scheme for mixtures. In effect this means that the users of straight nitrogenous fertilisers help to promote a balanced fertilisation.

8.45. The Committee does not wish to go into the details of how the proposed subsidy scheme should be operated. This is a matter which will have to be considered carefully by a separate committee for working out the details of the scheme. At the same time the Committee thinks that it may be useful to set down its broad views

on this subject. It feels that perhaps the best way of operating the subsidy scheme would be to institute a system of rebates to be paid to mixture manufacturers under specified conditions. The danger of possible black-marketing of nitrogenous fertiliser has to be specially guarded against. This could be done by appointing an officer in each district for the purpose of regularly inspecting the mixture manufacturing establishments and satisfying himself that the nitrogenous fertiliser supplied to them has been properly accounted for in the mixtures prepared and that the standards prescribed for the mixtures have been maintained.

### Pricing of Mixtures

8.46. The power to fix the prices of mixtures has now been delegated to State Governments. The basis on which these prices are fixed varies. In Madras and Andhra Pradesh, it is based on the unit costs of nitrogen in ammonium sulphate regardless of the actual chemical fertilisers used such as urea, ammonium sulphate nitrate and calcium ammonium nitrate. In West Bengal, the manufacturer is required to disclose the particular chemical fertilisers used by him in mixture and the unit cost of nitrogen is based on the price of the fertiliser used. *It is desirable that the method of fixing the prices of mixtures should be standardised and made uniform for the whole country. The Committee considers that the price should be based on the unit costs of the various fertiliser elements in the mixtures and that so far as nitrogen is concerned the unit cost of organic and inorganic nitrogen should be based on the average cost of all the nitrogenous fertilisers of each category that are in current supply.* These prices should be reviewed from time to time in consultation with the mixture manufacturers.

8.47. The Committee has not been able to obtain adequate data regarding the break-up of the cost of mixtures and cost of their distribution. It has, therefore, not been possible for the Committee to make any recommendations regarding the various items of the cost as they have done in the case of sulphate of ammonia. The prices for the mixtures and the cost of their distribution should be carefully scrutinised by the State Governments with a view to make the mixtures available to the farmers at as low a cost as possible.

### Subsidy on Phosphates

8.48. Reference has been made in an earlier paragraph to the stagnation in the sale and consumption of phosphate. The proposals made above for promoting the use of mixtures will have the effect

of increasing the off-take of superphosphate to a considerable extent. It is understood that the scheme of subsidy which has been in force in some States under which the State Government and the Central Government each contribute 12½ per cent of the price is likely to be continued in those States where the off-take is poor. *The Committee considers that even in the States where superphosphate is used fairly freely much leeway has to be made to meet the targets of consumption laid down in the Third Five Year Plan and it is desirable that any scheme of subsidy approved by the Government should be applied to all the States. This is especially so in view of the fact that the price of superphosphate in India is high when compared to the prices ruling in other countries.*

8.49. One of the obstacles to the subsidy scheme being freely availed of is the proviso that the States have to make a matching grant of 1½ per cent before the Centre will agree to pay a like amount. So long as the cost of subsidy falls on the General Revenues there may be a case for insisting that the States should furnish matching grants. *The Committee views that the subsidy scheme could be operated much more efficiently and easily if it is financed by the Central Fertiliser Pool out of profits from the sale of nitrogenous fertilisers. It, therefore, recommends that subsidy of 25 per cent be granted on all purchases of superphosphate and that this could be operated in the form of rebates granted to manufacturers on the same lines as those indicated for nitrogen in mixtures and that the cost of this subsidy be borne by the Central Fertiliser Pool*

### **Cheaper Fertilisers**

8.50. Complaints were made by the Governments of Bombay, Punjab and Andhra Pradesh as well as by farmers in many places that the prices of fertilisers were high. In order that a cultivator or a farmer may be induced to buy and apply fertilisers to his fields, it is necessary that he should be assured of a reasonable minimum price for the grain he produces and that his investment on fertilisers should be amply repaid. Conditions in India in respect of these matters are not altogether satisfactory. The following table presents the position obtaining in a number of countries as regards the price of wheat, rice and fertiliser nitrogen. It shows the number of units of grain that a farmer in these countries has to sell in order to buy a unit of nitrogen. It would be seen that the prices of nitrogen and  $P_2O_5$  are the highest in India and because of this, it takes more grain to buy a unit of fertiliser in India than it does in any other country.

TABLE XX

*Relative positions of prices of wheat, rice and fertiliser N and P<sub>2</sub>O<sub>5</sub> in different countries*

Name of the country	Price per k.g. in U. S. cents			Kilos of wheat needed to buy a kg. of plant food	Kilos of rice required to buy a kg. of plant food
	Wheat	Rice	Price of plant food		
<b>A. Nitrogen</b>					
1. Japan	10.20	13.90	29.40	2.92	2.12
2. U.S.A.	7.90	21.50	31.30	4.00	1.46
3. U.K.	7.80	16.80	27.80	3.56	1.65
4. W. Germany	10.00	..	28.60	2.86	..
5. Belgium	9.30	..	32.10	3.45	..
6. India	8.50	12.00	38.60	4.54	3.22
<b>B. P<sub>2</sub>O<sub>5</sub></b>					
1. Japan	10.20	13.90	22.80	2.24	1.64
2. U.S.A.	7.90	21.50	20.30	2.57	0.94
3. U.K.	7.80	16.80	22.70	2.91	1.33
4. W. Germany	10.00	..	21.40	2.14	..
5. Belgium	9.30	..	18.00	1.93	..
6. India	8.50	12.00	34.00	4.00	2.85

SOURCE: Columns 1, 2, 3 and 4. "FAO Production Year Book—1958". The figures relate to the year 1957. Nitrogen and P<sub>2</sub>O<sub>5</sub> represent plant nutrients.

2. Calculation in col. 5 and 6 made by the Committee.

8.51. The figures in the table on next page show that absolute prices of all fertilisers are considerably higher in India than in most countries of the world.

**TABLE XXI**

*Prices of fertilisers in rupees per metric ton of plant nutrients*

Country	Sulphate of ammonia	Ammonium nitrate	Sodium nitrate	Calcium nitrate	Urea	Single superphosphate	Potassium sulphate	Potassium chloride
1	2	3	4	5	6	7	8	9
Austria	1209.40	1065.09	..	1921.90	..	602.87*	484.12*	..
Belgium	1397.88	1411.08	1944.69	1731.76	..	901.08	567.10	..
Denmark	1230.11	..	1703.16	1273.43	..	782.47	609.19	378.86
France	1473.36	1430.56	2034.00	1884.37	..	1008.09	574.09	383.18
Germany	1401.16	1434.03	1741.26	1694.80	..	1024.81	467.02	344.61
Netherlands	1219.18	1197.86	1801.77	1544.25	..	868.87	654.17	399.29
Norway	..	936.94	..	990.14	..	649.66*	616.41*	..
Portugal	1598.42*	1501.81*	1767.95*	1863.66*	..	706.18*	567.67*	432.82*
Spain	1710.10	1853.59	2287.32	2287.32	..	965.01	..	..
Sweden	1462.15	1381.40	1835.73	1485.09	..	783.85	610.38	437.81
Switzerland	1252.00	1351.76	..	1639.80	..	1318.51	..	..
Turkey	1266.40	..	..	..	..	1249.54	2195.17	..
United Kingdom]	702.24*	935.56*	1590.30*	..	..	504.26*	634.70	480.18
U.S.A.	824.19	979.89	..	..	1104.94	448.95	..	144.82
Japan	1264.40	..	..	..	..	..	..	..
India	1679.92	1589.39	..	1583.93	1552.47	1229.95	747.81	583.81

**Notes:**

Period : European countries : 1958-59 ; U.S.A. and India : 1960; Japan : 1957-58.

Price : Delivered in bags at farmers nearest railway station except in Netherlands, U. S. A. and Japan; Netherlands : Bulk delivery at farmers nearest railway station;

U.S.A. : Ammonium sulphate : domestic price : Ammonium nitrate : F. O. B. shipping point : Urea.

F. O. B. price single superphosphate : F. O. B. Baltimore in bulk ; Potassium chloride F. O. B. Carlsbad.

Japan : Prices include packing, freight and dealers commission.

Subsidies: Germany : 20 per cent subsidy is allowed on all prices (\*)—Subsidised prices.

Sources : Europe—9th Study 1957—1960 ; O. E. B. C.

U.S.A.— International Ore and Fertilizer Corporation's Fertiliser Market Reports.

Japan— Furnished by the Japan Ammonium Sulphate Export Co., Ltd.

8.52. These figures furnish a strong argument for making fertilisers available to the farmer at considerably lower prices than is the case today in view of the fact that the prices of foodgrains in India are not high enough to justify a high level of cost on the fertilisers. A substantial reduction in fertiliser prices as delivered to the farmer would transform the economics of fertiliser use and would make it possible for fertilisers to be used to a greater extent in the areas where they are used now and to extend their use to areas where they are not in use now thereby increasing agricultural production. *The Committee considers that the prices of nitrogenous fertilisers now ruling are susceptible of substantial reductions without in any way impairing the financial position of the Central Fertiliser Pool and its ability to take the tasks of subsidy recommended in earlier paragraphs.* The prices of superphosphate which is the only phosphatic fertiliser now produced have recently been reduced from Rs. 215 per ton in 1957 to Rs. 180 per ton during the current year. The present prices of Rs. 334 per ton (ex-godown) for muriate of potash and Rs. 360 per ton (ex-godown) for sulphate of potash are considerably high in relation to their landed cost and require substantial reduction on grounds of equity as well as promoting their freer use.

### Marketing Corporation

8.53. The targets of consumption of fertilisers planned for the Second Five Year Plan are not likely to be achieved because the planned production in the country has not kept pace and the imports could not be arranged to the extent of the deficit because of foreign exchange difficulties. The targets proposed for the Third Five Year Plan are one million tons of nitrogen as against a likely achievement of 360,000\* tons of nitrogen expected to be made available during the Second Plan. The target for phosphoric acid is 0.4 million tons as against a probable consumption of 67,000\* tons of  $P_2O_5$ . The potash target is 0.2 million tons as against a likely consumption of 50,000 tons in 1960-61. In order to achieve the desired level of agricultural production in the country the Ford Foundation Team recommended for the Third Plan a consumption

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\*Chapter VIII paragraph 10 of the Third Five Year Plan—A Draft Outline. Due to limited imports, however, the actual supply of nitrogenous fertilisers in 1960-61 may not exceed 11.0 lakh tons in terms of sulphate of ammonia. Total consumption of  $P_2O_5$ , from all sources e.g., superphosphate, bonemeal and experimental fertilisers may, however, amount to 67,000 tons.



of 1.5 million tons of nitrogen, 0.75 million tons of  $P_2O_5$  and 0.20 million tons of  $K_2O$ . Thus the targets proposed for the Third Plan though they would appear to be very ambitious as compared with the likely achievement of the Second Plan are not in keeping with the needs of the country. *It is, therefore, necessary to make a large scale effort to reach our planned level of consumption during the Third Five Year Plan. The Committee feels that these targets can be achieved only if a determined effort is made (a) to popularise the fertilisers, (b) to improve the distribution system, and (c) to streamline the machinery connected with the indenting, allocation and distribution of the fertilisers.* There is of course the overriding consideration that the prices of the fertilisers and the prices of the agricultural produce should be so related that it is profitable to the farmer to use the fertiliser.

8.54. The present organisation of the Central Fertiliser Pool has already been described in Chapter II. In effect the Pool is a Section of the Department of Agriculture, Ministry of Food and Agriculture and as such has little freedom of action although it is called upon to operate a trading scheme. This is not to disparage the good work the Section has been doing with all the limitations under which it has to work. The Committee considers it important to replace these arrangements by an organisation which can handle the fertiliser distribution more effectively. In the next few years this organisation will be called upon to procure and distribute greatly increased quantities of fertiliser. If the Committee's recommendations relating to subsidies for mixtures and for phosphatic fertilisers are accepted, greatly increased responsibilities may devolve on the Central Fertiliser Pool in administering these subsidy schemes. The Pool will also have to undertake special propaganda work for promoting the use of the new fertilisers which will be manufactured and of mixed fertilisers as well as phosphatic fertilisers. *It is, therefore, considered very necessary that the duties now performed by the Central Fertiliser Pool as well as the additional responsibilities which it will be called upon to discharge should be entrusted to a successor organisation which may be called the Central Fertiliser Marketing Corporation.* This Corporation should enjoy a liberal measure of autonomy while working under the direction and superintendence of the Department of Agriculture of the Ministry of Food and Agriculture. It should have its own independent budget and the funds allotted to it by the Central Government should be recovered by the sale of fertilisers. It should be allowed to take over the profits that have so far been made in the operation of the Central Fertiliser Pool and to accumulate and carry forward any surpluses that may result from its transactions. It is important that

the income of the Corporation should not be regarded as a part of the Central revenues. It should be a registered society under the Registered Societies Act and should be regarded as a non-profit organisation since any surpluses it makes will be carried forward and utilised for the development of fertiliser consumption.

8.55. The scale of operation which the Corporation will be called upon to handle may be gauged from the fact that the value of the annual turnover of the fertilisers distributed by it will be of the order of Rs. 150 crores by the end of the Third Plan. This furnishes a strong argument for constituting a Corporation on sound lines and for arming it with sufficient powers to deal efficiently with such a large volume of business. The Committee does not wish to spell out in detail the structure and constitution of this organisation but it would be desirable that a small Committee of experts should be set up to draft its constitution after the study of the methods adopted in advanced countries such as the U.S.A., countries of Western Europe and Japan for ensuring effective marketing and distribution of fertilisers. *The Committee considers that in view of the urgency of setting up a properly constituted Corporation for fertiliser marketing and distribution early steps should be taken to send out a Team to study this question in the countries suggested above.* The Committee understands that the Technical Cooperation Mission of the United States of America has made a generous offer to finance the expenditure involved in sending out a team for such a study. The Committee recommends that this offer should be availed of. This team should study among other things

1. Quality control arrangements and protection of farmers against supply of sub-standard materials, high prices through monopolies and combines, false and exaggerated claims for various fertilisers;
2. The financial aids to the farmer through loans, off-season rebates, etc.;
3. The systems of giving subsidy;
4. The channels of distribution;
5. Sales promotion methods;
6. Methods adopted for promoting the sales of new fertilisers;
7. The study of marketing arrangements for marketing a variety of fertilisers;
8. Methods of packaging and
9. Methods of storage.

8.56. When the new fertiliser factories now planned to go into production during the Third Five Year Plan, it is likely that a situation will arise in which fertiliser supply will temporarily be in excess of the consumer demand. It may well turn out that in such a situation the Government may consider that the present system of pooling of fertilisers is no longer necessary. The problem then will be not of equitable distribution of a commodity in short supply but of active sales promotion of a commodity in relatively abundant supply. The main duty now performed by the Central Fertiliser Pool of procuring and distributing nitrogenous fertilisers at a standard price all over the country will then become superfluous. Other problems of an equally complicated nature which concern with the marketing of new fertilisers and with the securing of consumption of fertilisers to achieve the targets prescribed will have to be faced. There will thus be plenty of work for this Central Fertiliser Marketing Corporation to do, although its nature will be very different from the present work of the Central Fertiliser Pool. The Committee is not in a position to envisage in any detail the new tasks that will await this central coordinating body. This, it feels, will have to be left over to a new Committee which may be appointed in the Fourth Year of the Third Plan to consider in detail and make recommendations.

## SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

### General

(1) The consumption of nitrogenous fertilisers in the country has gone up very rapidly from 2.82 lakh tons in 1951-52 to 11 lakh tons in 1959-60 in terms of sulphate of ammonia. It has been planned to increase this consumption to 50 lakh tons in 1965-66. Similarly the consumption of phosphatic fertilisers has gone up from 6,880 tons in 1951 to 38,887 tons in 1959 and is expected to rise to 4 lakh tons in 1965-66 in terms of  $O$  (1.9 to 1.21, 8.53).

(2) In the many pronged attack to increase rapidly the agricultural production, the fertilisers occupy a pivotal position. The large increase in consumption programmed for the Third Five Year Plan cannot be attained unless (a) the prices of fertilisers and agricultural produce are so related that it is profitable for the farmer to use the fertiliser, (b) the arrangements for distribution, including stocking and sales are orderly and adequate, (c) sales promotion is vigorously pursued by the fertiliser distributors and is actively supported by the extension work for teaching the farmers, and (d) the required quantities of fertilisers are made available both from indigenous production as well as from imports so that the consumption is steadily stepped up year after year as it would not be possible to create a very large demand all of a sudden. It has also to be recognised that so long as the shortage of fertilisers is acute, the extension and sales promotion agencies may not feel called upon to put forth their best efforts. (8.52, 8.53).

(3) There is at present an acute shortage of nitrogenous fertilisers, but the supply of phosphates exceeds the demand. The country has, however, to prepare for a situation of more plentiful supplies. (8.1).

(4) The problems of distribution differ according to the consumption level attained and the organisational stage reached by the cooperative movement in the State. (8.2).

### Mixtures and Complex Fertilisers

(1) The use of fertilisers in mixed form should be encouraged to promote balanced fertilisation and assist in stretching the limited supplies of nitrogen over larger areas. (1.9).

(2) The use of balanced fertilisers should be promoted by assisting the farmer to buy mixtures suited to his soils and crops and also ensuring reasonable prices for mixtures. (5.3, 5.4).

(3) The use of mixtures should be extended through suitable assurances to mixing firms and mixture manufacturers. (5.5).

(4) The mixtures may be marked in granulated form to safeguard the farmer against fraud and adulteration. (5.3., 5.4).

(5) To protect the farmers, all States should fix the composition of mixtures in conformity with the established fertiliser recommendations. These recommendations should be reviewed annually. (5.6).

(6) Crop requirements in any State can be supplied adequately with a maximum of six grades of mixtures including the complex fertilisers. (6.7).

(7) Since farmers generally do not know how to make the best use of mixed or complex fertilisers, it will require careful education to acquaint them with this type of fertilisers. (6.6).

(8) The first priority for liquid fertiliser should be for use in the manufacture of mixed fertilisers. (6.14).

(9) The use of liquid fertiliser on small farms is a problem which must be studied. (6.16).

(10) As a general practice it is not advisable to mix micro-nutrients with fertilisers. It is advisable that micro-nutrient elements be applied only on the recommendation of a qualified scientist. (6.22).

(11) Since in the trade of mixtures, opportunities for malpractices are great and may not be easily detected by the farmers, it is essential to institute a good system of sampling and check at the various stages. For this purpose it is necessary to appoint a sufficient number of inspectors and to see that they regularly draw a large number of samples and to ensure that analyses keep pace with the progress of checking. It is also desirable to entrust the compounding of mixtures to reliable and reputable firms and parties, who in order to maintain their reputation would not permit malpractices to prevail either at their own end or of their agents. The grades of mixtures should be expressed in whole numbers. (8.34 to 8.37).

(12) To increase the consumption of mixtures the following methods are recommended:—

(a) The prices of mixtures should be reasonable.

(b) Nitrogenous fertilisers should be made available to the mixing firms at the Pool price and in increasingly larger quantities.

- (e) Loan facilities should be extended to the farmers for purchase of approved mixtures.
- (d) Under specified conditions a rebate should be given to mixture manufacturers so as to reduce the cost of mixtures. A small profit may be made by Central Fertiliser Pool from the sale of nitrogenous fertilisers so as to finance the scheme of rebates on mixtures. (8.38 to 8.45).

(13) The price of mixtures should be fixed on a uniform basis taking into consideration the unit costs of the various fertiliser elements in the mixtures. So far as nitrogen is concerned the unit cost of organic and inorganic nitrogen should be based on the average cost of all nitrogenous fertilisers in current supply. The prices fixed should be periodically reviewed. (8.46 to 8.47).

### **Control of Quality, Licencing and Registration**

(1) Regular drawal of samples for test analysis from straight fertilisers as well as mixtures at various stages in their marketing is the only effective instrument for enforcing the control over their quality. The number of samples so far taken and examined by the States is very low. (4.7).

(2) The dealers' licensing fees should not be deterrent. The fees fixed for the issue of dealers' licences should be regarded as a means of regulation of trade and not as a measure of revenue collection. The Committee suggests a fee of Rs. 5 for the issue of a retail dealer's licence and a fee of Rs. 50 for the issue of a wholesale dealer's licence, on an annual basis. As the Fertiliser (Control) Order is a Central Order and as the fees are approved by the Controller of Fertilisers there ought to be a measure of uniformity in their fixation throughout the country. (4.10 to 4.12).

(3) The registration fee for mixtures should also be reasonable and uniform for the reasons stated above. (4.12).

(4) As the fertiliser year now corresponds to the financial year, the licensing year should be the same as the financial year and the licences may be issued for three years at a time if the licensee so desires. (4.13).

(5) The definition adopted for wholesalers and retailers should be uniform throughout the country and in accordance with the sense usually connoted. (4.9).

## **Training of Sales Personnel**

(1) As the farmers learn how to use fertilisers more effectively, distributors will need better trained men to sell these materials. To develop men with adequate qualifications, training courses should be planned and put into operation at an early date. (6.9).

(2) New developments in the fertiliser industry demand well trained men and new procedures of distribution. In addition to the knowledge of salesmanship, a thorough and complete understanding of the fertilisers in the market and how they should be used by the farmer are necessary for the salesman. (6.24).

(3) Fertiliser sales personnel should be given short training on fertilisers so that they may be able to advise farmers as to how, when and where to use the fertilisers. These courses may be organised by the Co-operative Departments with the help of Agricultural Extension staff. (8.20).

(4) The research, extension and educational groups in the agricultural field must work diligently to develop information as to the value of various fertiliser materials and educate the farmer to use them economically through demonstrations carried out in their fields. (6.24, 8. 21).

(5) An understanding between the sales organisation and extension and research groups can be best obtained by yearly joint meetings to discuss fertiliser problems which have arisen during the year. (6.25).

## **Distribution**

### *(i) Co-ordination of Distribution*

(1) Only a single agency should co-ordinate distribution and allocate supplies of fertilisers to districts. In several States, besides the State Department of Agriculture, the Apex Cooperative Society also functions as a co-ordinating agency. If this work is done by one agency at the State level it will avoid duplication of work and staff and lead to an economy in expenditure. (3.3).

### *(ii) Estimates of Demand*

(2) Wherever the work relating to distribution of fertilisers is entrusted to a Co-operative Department, the State Agriculture Department and the District Agricultural Officers should be closely associated with the estimation of demand of fertilisers. (3.3).

(3) Influential farmers and dealers in fertilisers at Taluk headquarters should also be consulted while framing the estimates. The

States should be encouraged to prepare a realistic estimate of demand. The Central Fertiliser Pool, while allocating the fertilisers to the States should take into consideration the past consumption as also the achievements in respect of increased production. (8.2 to 8.4).

(iii) *Despatch Instructions*

(4) The States should be given, in the beginning of the year an indication of the likely allocation of fertilisers, quarter by quarter, so that they may be ready with despatch instructions sufficiently in advance of the commencement of the supplies. To enable this being done, release of foreign exchange should be secured sufficiently in advance and the orders should also be placed in time. (8.7).

(iv) *Stock Returns and Checking*

(5) Information about the stocks of fertilisers in the retail depots is at present not being regularly received and analysed. The stacking of bags in the depots is often unsatisfactory which makes physical verification difficult. It is essential that arrangements should be made for regular checking of the accounts as well as the stocks at the depots. (3.5).

(v) *Administrative Charges*

(6) In most of the States, administration charges are included in the cost of distribution of fertilisers. In Madras and Bombay, administrative charges vary according to the cost of the fertiliser, the costlier the fertiliser the higher the charge. Since the cost of administration and transport by road are independent of the price of fertilisers, the Committee feels that there is little justification for linking administrative charges with the price of the fertilisers. (7.6).

(7) The State Governments have been involved in the distribution of fertilisers because of the Central Fertiliser Pool and do not look upon fertiliser business as an opportunity to make profit. The cost of establishment at the State level should be frequently reviewed and kept at the minimum. The Committee considers that the cost of administrative charges should not ordinarily exceed rupee one per ton. (7.8).

(vi) *Cost of Road Transport*

(8) The cost of transport by road should be pooled at the States' level so that the fertiliser can be sold at a uniform price throughout the State irrespective of the distance of the fertiliser depot, and so that the tendency to sell fertiliser only at the railhead is discouraged. To simplify the operation of this freight-pool, it is suggested that from out of the controlled price a rebate may be allowed to retailers



according to notified rates of transport for scheduled distances from the wholesale depot to the retail depots. Notified rates may be revised from time to time, but as a working basis the following rebates which operated in Maharashtra State may be considered:—

1. For 6 to 10 miles . . . . . Re. 0.50 per ton/mile.
2. For 11 to 20 miles . . . . . Re. 0.37 per ton/mile
3. For 21 and over miles] . . . . . Re. 0.25 per ton/mile

It will facilitate the working of rebates if distances of retail depots from the railhead depots are tabulated and communicated in advance to both the parties. Where the cost of ferrying fertilisers across rivers is high, a special rebate may be allowed for this purpose from the pooled transport cost. (7.12, 8.13).

(9) To reduce the incidence of road transport cost, arrangements should be developed for taking delivery of fertilisers in wagon loads at the largest possible number of railway stations and particularly in Taluk (Tehsil) and Mandi railheads.

#### (vii) *Transport Costs on Hills*

(10) In hill areas where the fertilisers has to be transported by mules or even on headloads the cost of transport is very high. Such high transport cost is at present being subsidised in certain areas like Himachal Pradesh, Manipur and Tripura. These *ad hoc* arrangements need to be recognised as a regular feature to be financed by the Central Fertiliser Pool and extended to all States with similar tracts which are difficult of access. (7.14, 8.14).

(11) To promote economy in the cost of transport in hilly areas, a progressive switch over to concentrated fertilisers may be planned. In areas where road transport is at present subsidised and in areas where it is contemplated to introduce this subsidy it may be restricted to concentrated high analysis fertilisers so as to transport a larger quantity of plant food at the same cost. (7.15).

#### (viii) *Shortage*

(12) Only a few States have furnished figures of shortage and spillage of fertilisers. In the Committee's view these are generally due either to pilferage or leakage in transit and handling, the former not being a significant factor. Leakage is largely due to use of hooks during loading and unloading. This damaging practice, it is hoped, will vanish when packaging is done in smaller bags of 50 kilograms. Since, however, certain shortages occur at present the Committee recommends a provision of Rs. 1.50 per ton. (7.23, 7.24).

**(ix) Sales Tax on Fertilisers**

(13) While it is recognised that sales tax is an important source of revenue to the States, its incidence in some States is as high as Rs. 20 per ton of sulphate of ammonia. As both the Central and the State Governments are endeavouring to keep the cost of fertilisers down, it is recommended that the exemption of fertilisers from the sales tax may be considered by the States. (7.26, 7.27).

(14) Certain commodities have been recognised as of special importance in inter-State trade or commerce under the Central Sales Tax Act, 1956. Since fertilisers, which are manufactured in a limited number of factories, are to be used throughout the country, the Committee considers that fertilisers should also be classed as goods of 'special importance' in inter-State trade and commerce. (7.28).

**(x) Interest Charges**

(15) In certain States, interest on capital invested is added to the cost of distribution. The incidence of interest differs from State to State. The Committee considers that in the most unfavourable circumstances, fertilisers may have to be stored by the wholesalers for five to six months and by the retailers for two months. As the lifting of the stock from the wholesale godowns will be spread over, the period of incidence of interest should not be more than three months. Taking into account the period of two months, which at present lapses before the debit is raised against the State Governments, the Committee considers that if the Central Pool raises the debit after three months from the date of consignment, no interest charges need be provided for the period for which the stock remains with the wholesalers. Presumably it would be possible to meet this additional interest for one month from the present Pool price structure of the Central Pool and if not, a suitable provision for one month may be made. As retail sales will be spread over, interest charges for not more than one month need be provided for the retailers. The Committee, therefore, recommends that:—

The Central Pool may raise the debits for the value of the stocks supplied after three months from the date of consignment. The sale of fertilisers to the retailers should be made by the wholesalers on payment of value and a provision of Rs. 2 may be made in the distribution charges on account of interest on capital employed at the retailers' end. (7.34 to 7.37).

*(xi) Commissions for Distributors*

(16) The apex distributing agents and the wholesale agents at present utilise most of the commission with the result that very little is left for the retail distributors who suffer from lack of incentive to sell fertilisers. The wholesalers should be discouraged from undertaking retail sales. The Committee recommends that in order to provide adequate incentive to the retailers to enter into this business the rate of commission should be increased from the apex level to the village level and these should be fixed by the State Governments taking the above factors into consideration. (7.39, 8.12).

(17) It is necessary to keep down the expenses of internal distribution by eliminating unnecessary intermediary functionaries. Only the Marketing Cooperative Society at the taluk level and the Primary Society at the village level have a real service to render in fertiliser distribution. If there is an Apex Co-ordinating agency at the State level, the State Government should only act as a channel of communication between the apex agency and the Central Pool and undertake financial responsibility for the supply of fertilisers from the Central Pool to the State. (7.40, 8.94, 8.10).

*(xii) Cost of Distribution*

(18) On the whole, the Committee considers that it is possible to cover the cost of distribution within a margin of Rs. 30 per ton for sulphate of ammonia. (7.43).

*(xiii) Supply on Consignment Basis*

(19) The system of supplying fertilisers on consignment basis to the Primary Cooperative Societies does not work well as the societies often fail to remit in time the sale proceeds to the State Governments and utilise them for their other business. Since the required supervision and check over the Primary Societies is not likely to be provided for some more time, the fertiliser may be supplied on a consignment basis only to the wholesalers and the retailers should be asked to lift the stocks after payment. (8.12).

*(xiv) Fertiliser Loans*

(20) The farmers should be afforded sufficient credit facilities for the purchase of fertilisers. The loans should be given in kind (not in cash) and the rate of interest should be reasonable. (8.2, 2.8, 2.3).

*(xv) Working Hours of Depots*

(21) The co-operative depots should remain open for the sale of fertilisers at hours convenient to farmers so that they are enabled to purchase fertilisers when they are free from farm work. (8.7).

*(xvi) Storage and Warehousing*

(22) As the demand for fertilisers is seasonal it would be cheaper if different commodities required by the cultivators are stored in the same godown. The Committee, therefore, recommends that the setting up of separate depots exclusively for dealing in fertilisers should be discouraged with a view to lowering the cost of their distribution. (7.21).

(23) The present difficulty about the storage of fertilisers especially in the off-season is likely to diminish when the new factories are set up during the Third Plan. In the meantime the congestion in the depots can be minimised by instituting a system of 'off-season sales rebates' so that farmers are induced to take delivery of the fertilisers during the lean months. In this manner, the farmers will also be certain of having the fertilisers in time for their needs. (8.27 to 8.29).

(24) The warehouses and godowns should be so constructed as to suit the local climatic conditions and also with a view to doing away with avoidable handling. It should be possible to store in the same godowns, besides fertilisers, other agricultural requirements and commodities so that storage expenses will be reduced and the cultivator will be able to secure most of his requirements at one and the same place. (8.30, 8.31).

*(xvii) Phosphates Promotion*

(25) The sales of superphosphate are poor in those States where there is a monopoly of distribution by the Government or Cooperative Societies. To increase its consumption, it is suggested that the State Governments may encourage the superphosphate manufacturers to build up their sales organisations and to develop sales by providing incentives. These organisations can also assist in selling fertiliser mixtures. The manufacturers would also utilise the co-operative societies for this purpose, as they are already doing in some cases. (8.16).

(26) The progress of consumption of phosphatic fertilisers is much behind the schedule envisaged in the Second Plan. In view of the urgent need to promote balanced fertilisation as well as to reduce the prevalent high costs of Indian-made superphosphates, the Committee

recommends that a subsidy of 25 per cent be granted on all purchases of superphosphate and that this be operated in the form of rebate granted to manufacturers on the lines indicated for the mixtures and that the cost of this subsidy be borne by the Central Fertiliser Pool. (8.48, 8.49)

(xviii) *Cheaper Fertilisers*

(27) Fertilisers should be supplied to farmers at as low a price as possible. When the cost of fertilisers is low, the net profit to the farmers is higher which gives him an inducement to use more fertiliser and raise agricultural production. (1.7).

(28) The present prices of nitrogenous fertilisers in India are very high as compared with the prices ruling in other countries. The prices of food grains also do not justify a high level of prices for fertilisers. The Committee considers that the prices of nitrogenous fertilisers now ruling are susceptible to substantial reduction without in any way impairing the financial position of the Pool and its ability to take the tasks of subsidy recommended for mixtures and superphosphate. (8.50 to 8.52).

(29) The present prices of muriate of potash and sulphate of potash are also very high and require a substantial reduction on grounds of equity and promoting their free use. (8.52).

(xix) *Marketing of New Brands*

(30) To promote the use of new or comparatively less popular fertilisers it is considered expedient to allow a larger commission than admissible on the basis of equivalent nutrient value of the popular brand. (7.42).

(31) Many of these societies are reluctant to undertake the sale of new and comparatively less popular fertilisers. It should be made clear to the co-operative societies that they cannot pick and choose the fertiliser which they wish to sell and that they must market the entire range of fertilisers. (8.15).

(32) To push up the sales of fertilisers the salesmen may be paid bonus (say at 20 nP per bag of two cwt.) in addition to their pay or honorarium provided they show improvement over past performance. The Central Fertiliser Pool may also consider a prize scheme for encouraging sales of unpopular or new fertilisers and mixtures. These prizes may be awarded through the State Government to the primary societies which have shown good progress. (8.18, 8.19).

**(xx) Marketing Corporation**

(33) The present organisation of the Central Fertiliser Pool is considered inadequate. In the next few years greatly increased quantities of fertilisers are to be procured and distributed. If the Committee's recommendations regarding subsidy on mixtures and phosphatic fertilisers are to be implemented, increased responsibility will rest upon the Pool. The Pool will also have to undertake propaganda work for promoting the use of new fertilisers. The Committee recommends that the duties now performed by the Central Fertiliser Pool and the anticipated additional responsibilities may be entrusted to an organisation which may be called the Central Fertiliser Marketing Corporation. This Corporation should enjoy a liberal measure of autonomy while working under the direction and superintendence of the Department of Agriculture. (8.53, 8.54).

(34) A Committee of experts may be constituted to draft a constitution of the proposed Corporation after studying the methods adopted for ensuring effective marketing and distribution of fertilisers in advanced countries, such as U.S.A., Western Europe and Japan. (8.55).

## APPENDIX I

### Consumption of nitrogenous fertilisers by States (in tons of Nitrogen)

S. No.	Name of the State	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1965-66 (Target)
1.	Andhra Pradesh	..	..	..	..	..	18,588(a)	21,565	24,430	1,15,000
2.	Assam	..	..	..	..	..	..	..	..	28,400
3.	Bihar	2,094	2,446	4,552	4,224	6,000	6,733	5,024	7,135	97,000
4.	Bombay	..	..	..	..	..	..	..	..	2,00,000
5.	J & K.	..	..	..	..	..	..	..	..	..
6.	Kerala	700	700	1,933	1,944	2,254	2,714	3,552	3,731	40,000
7.	Madhya Pradesh (b)	..	..	1,614	1,842	1,971	2,916	4,840	5,793	44,000
8.	Madras	8,002	9,352	13,507	18,087	20,670	25,405	22,947	26,714	1,16,000
9.	Mysore (c)	762	667	2,400	2,988	2,864	5,378	7,049	9,467	1,02,000
10.	Orissa	1,066	820	1,608	2,100	2,040	2,360	2,940	3,246	16,000
11.	Punjab	742	896	3,739	4,752	..	5,939	7,311	6,867	31,000
12.	Rajasthan	..	..	..	..	..	..	..	..	15,000
13.	Uttar Pradesh	..	..	..	..	..	19,307	19,249	28,351	2,18,000
14.	West Bengal	..	..	248	..	..	..	..	..	30,000
15.	Delhi	..	..	248	..	..	..	..	..	..
16.	Himachal Pradesh	..	..	6	30	34	340	340	300	600
17.	Manipur	..	..	..	..	..	..	..	..	..
18.	Tripura	..	..	..	..	..	8	29	34	..
19.	Andamans	..	..	..	..	..	..	..	..	..
20.	Pondicherry	..	..	..	..	..	..	..	..	..

(a) The State was formed in 1956-57.

(b) Does not include quantities distributed by Agriculture Department.

(c) Does not include the quantity distributed by the dealers and mixing firms either in straight form or in mixtures.

## APPENDIX II

### Consumption of phosphatic fertilisers by States (in tons of $P_2O_5$ )

S. No.	Name of State	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1965-66 (Target)
1.	Andhra Pradesh (a)	..	..	..	..	..	4,268	3,399	5,753	17,600
2.	Assam	..	..	..	..	..	..	..	..	..
3.	Bihar	704	233	353	617	1,470	1,227	1,274	1,284	38,400
4.	Bombay	..	..	..	..	..	..	..	..	88,000
5.	Jammu & Kashmir	..	..	..	..	..	..	..	..	..
6.	Kerala	1,100	1,050	1,239	1,117	1,102	1,586	1,645	1,955	35,200
7.	Madhya Pradesh (b)	..	..	..	..	151	189	295	643	20,160
8.	Madras	2,952	2,018	1,498	2,198	3,290	3,807	..	..	52,000
9.	Mysore (c)	275	130	403	293	205	303	212	490	51,000
10.	Orissa	15	17	32	33	32	81	282	320	4,800
11.	Punjab	..	..	68	76	40	72	117	154	1,600
12.	Rajasthan	..	..	..	..	..	..	..	..	4,800
13.	U.P.	..	..	..	..	..	453	697	2,379	37,600
14.	West Bengal	..	..	..	..	..	..	..	..	5,600
15.	Delhi	..	..	..	..	..	..	14	16	..
16.	Himachal Pradesh	..	..	8	41	27	152	160	140	256
17.	Manipur	..	..	..	..	..	..	..	..	..
18.	Tripura	..	..	..	..	..	..	..	..	..
19.	Andamans	..	..	..	..	..	..	..	..	..
20.	Pondicherry	..	..	..	..	..	14	18	22	..

(a) Information prior to 1956-57 is not available as the State was formed in 1956-57.

(b) Does not include figures of distribution made by Agriculture Department.

(c) Figures do not include the quantity distributed by dealers and mixing firms either in straight form or in mixtures.



### APPENDIX III

#### *Consumption of potassic fertilisers by States (in tons of K<sub>2</sub>O)*

S. No.	Name of State	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1965-66
										(Target)
1.	Andhra Pradesh	..	..	..	..	..	..	..	..	6,000
2.	Assam	..	..	..	..	..	..	..	..	..
3.	Bihar	..	..	..	..	..	..	..	..	45,000
4.	Bombay	..	..	..	..	..	..	..	..	75,000
5.	Jammu & Kashmir	..	..	..	..	..	..	..	..	..
6.	Kerala	56	55	240	240	64	386	391	456	66,000
7.	Madhya Pradesh	..	..	..	..	..	..	..	..	..
8.	Madras	..	..	..	..	..	..	..	..	..
9.	Mysore	..	..	..	..	..	..	..	..	6,060
10.	Orissa	..	..	..	..	..	..	..	..	1,800
11.	Punjab	..	..	..	..	..	..	..	..	..
12.	Rajasthan	..	..	..	..	..	..	..	..	2,400
13.	Uttar Pradesh	..	..	..	..	..	..	..	..	..
14.	West Bengal	..	..	..	..	..	..	..	..	3,000
15.	Delhi	..	..	..	..	..	..	..	..	..
16.	Himachal Pradesh	..	..	..	..	..	..	..	..	..
17.	Manipur	..	..	..	..	..	..	..	..	..
18.	Tripura	..	..	..	..	..	..	22	27	..
19.	Andamans	..	..	..	..	..	..	..	..	..
29.	Pondicherry	..	..	..	..	..	..	..	..	..

## APPENDIX IV

### 1. Pool prices of sulphate of ammonia

Period	Price per ton	Remarks
	Rs.	
From 1-4-44 to 31-10-44	241	F.O.R. main port
„ 1-11-44 to 15-8-45	253	Do.
„ 16-8-45 to 31-5-46	245	Do.
„ 1-6-46 to 31-3-47	230	Do.
„ 1-4-47 to 3-2-48	265	Do.
„ 4-2-48 to 31-3-48	271	Do.
„ 1-4-48 to 30-9-48	290	Do.
„ 1-10-48 to 31-10-48	294	Do.
„ 1-11-48 to 31-12-48	304	Do.
„ 1-1-49 to 31-8-49	325	Do.
„ 1-9-49 to 1-4-50	330	Do. Rs. 350 per ton for tea during
„ 2-4-50 to 30-9-50	325	Do. 1950 for allotment of 40,000
„ 1-10-50 to 30-6-51	320	Do. tons in 1950.
„ 1-7-51 to 30-9-51	345	Do.
„ 1-10-51 to 31-12-51	360	Do.
„ 1-1-52 to 31-3-52	355	Do.
„ 1-4-52 to 30-9-52	380	Do.
„ 1-10-52 to 31-12-52	365	Do.
„ 1-1-53 to 31-12-53	290	F.O.R. Sindri.
	310	for imported sulphate of ammonia.
„ 1-1-53 to 31-7-53	330	for industrial consumers.
„ 1-8-53 to 31-12-53	335	Indian Coffee Board & U.P.A.S.I. same
„ 1-1-53 to 18-1-54	.	as above.
„ 19-1-54 to 31-12-54	315	per ton F.O.R. works freight paid to
		railhead destination. In the case of
		private parties the above price
		operated from 15th March and for
		industrial purposes it operated from
		3rd May, 1954.
„ 1-1-55 to 30-6-55	315	per ton F.O.R. works freight paid to
		railhead destination for State Govts.
	(ii)	325 per ton F.O.R. works freight paid to
		railhead destination for private par-
		ties like tea, coffee plantations and
		industrial concerns from 1-2-55 to
		30-6-55.
„ 1-7-55 to 25-3-57	315	per ton F.O.R. works freight paid to
		railhead destinations for State Govts.
„ 1-7-55 to 17-6-56	(ii)	320 per ton F.O.R. works freight paid to
		railhead destinations for private
		parties like tea, coffee, etc.
	(iii)	325 per ton F.O.R. works (freight upto
		Rs. 35 per ton to be borne by Govt.)
		for industrial consumers.

Period	Price per ton	Remark
From 18-6-56 to 25-3-57	(i) 315	per ton F.O.R. works freight paid to railhead destination for State Govt.
	(ii) 335	per ton F.O.R. works freight paid to railhead destinations for private parties like tea, coffee, etc.
„ 26-3-57 continuing	350	to States (FOR freight paid.)
	(ii) 375	to plantations (Except North East India and industry).
	(iii) 392	to North East Indian Tea mixtures.

## 2. Pool prices of fertilisers other than sulphate of ammonia

Urea		Rs.	
1952-53	to 1953-54 . . . . .	290	per ton (excluding freight)
1954-55	to 6-5-1956 . . . . .	570	per ton (excluding freight)
7-5-1956	to 31-3-1957 . . . . .	600	per ton (including freight)
1-4-1957	to 30-9-1958 . . . . .	710	per ton (including freight)
1-10-1958	to to-date . . . . .	695	per ton (including freight)
<i>Ammonium sulphate nitrate</i>			
1954-55	to 6-5-1956 . . . . .	380	per ton (excluding freight)
7-5-1956	to 31-3-1957 . . . . .	380	per ton (including freight)
1-4-1957	to 30-9-1958 . . . . .	420	per ton (including freight)
1-10-1958	to to-date . . . . .	415	per ton (including freight)
<i>Calcium ammonium nitrate</i>			
1954-55	to 6-5-1956 . . . . .	280	per ton (excluding freight)
7-5-1956	to 31-3-1957 . . . . .	280	per ton (including freight)
1-4-1957	to 30-9-1958 . . . . .	330	per ton (including freight)
1-10-1958	to to-date . . . . .	330	per ton (including freight)
<i>Ammonium phosphate</i>			
1952-53	. . . . .	290	per ton (excluding freight)
1959-60	. . . . .	700	per ton (excluding freight)
<i>Mono ammonium phosphate</i>			
1959-60	. . . . .	700	per ton (excluding freight)
<i>Triple superphosphate</i>			
1952-53	. . . . .	290	per ton (excluding freight)
1959-60	. . . . .	500	per ton (excluding freight)
<i>Nitrophosphate</i>			
1952-53	to 1953-54 . . . . .	290	per ton (excluding freight).
		(i) 290	per ton (excluding freight) to State Governments.
		(ii) 400	per ton (excluding freight) for private parties.
1959-60	. . . . .	575	per ton (excluding freight).
<i>Ammonium nitrate</i>			
1954-55	. . . . .	290	per ton for State Governments (Excluding freight).
		400	per ton for private parties (Excluding freight).
1959-60	. . . . .		Not yet fixed.

## APPENDIX V

### *List of Central Warehouses*

Orissa . . . . .	Bargarh. Berhampur.
Punjab . . . . .	Moga.
Uttar Pradesh . . . . .	Chandausi. Saharanpur.
Rajasthan . . . . .	Sriganganagar. Kotah.
Madhya Pradesh . . . . .	Indore.
Bombay . . . . .	Sangli. Amravati. Gondia. Kolhapur. Akola.
Andhra Pradesh . . . . .	Warangal. Jangaon. Nizamabad. Guntur.
Mysore . . . . .	Davangere. Gadag. Mangalore.
Kerala . . . . .	Kozihkode. Cochin. Alleppey.
West Bengal . . . . .	Cooch Behar.
Bihar . . . . .	Dalsingserai
Madras . . . . .	Madras. Coimbatore.
Delhi . . . . .	Delhi.

### *List of State Warehouses (Working) 1959-60*

1. Andhra Pradesh . . . . .	1. Amadala Valasa. 2. Cuddapah. 3. Viziansgaram. 4. Jadeherla. 5. Nellore. 6. Tadpatri. 7. Peddapalli. 8. Suryapet.
2. Assam . . . . .	1. Hajoi. 2. Lanka. 3. Jamunamukh.

- |                             |   |
|-----------------------------|---|
| 3. Bihar . . . . .          | <ol style="list-style-type: none"> <li>1. Buxar.</li> <li>2. Lakhisarai.</li> <li>3. Sultanganj.</li> <li>4. Janakpur Road.</li> <li>5. Forbesganj.</li> <li>6. Katihar.</li> <li>7. Purnea.</li> <li>8. Hazaribagh.</li> <li>9. Gaya.</li> <li>10. Biharsharif.</li> <li>11. Sahebganj.</li> <li>12. Jainagar.</li> <li>13. Mirganj.</li> <li>14. Bettiah.</li> <li>15. Samastipur.</li> </ol>   |
| 4. Bombay . . . . .         | <ol style="list-style-type: none"> <li>1. Karad.</li> <li>2. Jalgaon.</li> <li>3. Derol.</li> <li>4. Lasalgaon.</li> <li>5. Unjha.</li> <li>6. Barsi.</li> <li>7. Dhamangao 1.</li> <li>8. Dhulia.</li> <li>9. Nandurbar.</li> <li>10. Dendiache.</li> <li>11. Amalner.</li> <li>12. Chalisgaon.</li> <li>13. Pachora.</li> <li>14. Bodei.</li> <li>15. Barali.</li> <li>16. Parbhani.</li> <li>17. Latur.</li> <li>18. Jalna.</li> </ol> |
| 5. Kerala . . . . .         | NIL   |
| 6. Madhya Pradesh . . . . . | <ol style="list-style-type: none"> <li>1. Harda.</li> <li>2. Satda.</li> <li>3. Damoh.</li> <li>4. Rajnangao 1.</li> <li>5. Khargaon 2.</li> <li>6. Raigarh.</li> <li>7. Ashok Nagar.</li> <li>8. Piparia.</li> <li>9. Gwalior.</li> <li>10. Dhamtari.</li> <li>11. Drug.</li> <li>12. Balaghat.</li> <li>13. Neemuch.</li> <li>14. Khandwa.</li> </ol>   |

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|-------------------------|-------------------|
|                         | 15. Datia.        |
|                         | 16. Sujalpur.     |
|                         | 17. Ujjain.       |
|                         | 18. Vidisha.      |
|                         | 19. Godarwara.    |
|                         | 20. Kanai.        |
| 7. Madras . . . . .     | 1. Salem.         |
|                         | 2. Vellore.       |
|                         | 3. Madurai.       |
|                         | 4. Vriddechalam.  |
|                         | 5. Kancheepuram.  |
|                         | 6. Pollachi.      |
|                         | 7. Karur.         |
|                         | 8. Dindigul.      |
|                         | 9. Nagapattinum.  |
|                         | 10. Erode.        |
|                         | 11. Tuticorin.    |
| 8. Mysore. . . . .      | 1. Raichur.       |
|                         | 2. Hubli.         |
|                         | 3. Mysore.        |
|                         | 4. Bellary.       |
|                         | 5. Chintamani.    |
|                         | 6. Arsikere.      |
|                         | 7. Bidar.         |
|                         | 8. Bijapur.       |
|                         | 9. Jamkhandi.     |
| 9. Orissa . . . . .     | 1. Jatni.         |
|                         | 2. Kantabhanji.   |
|                         | 3. Gunupur.       |
|                         | 4. Angul.         |
|                         | 5. Kasinga.       |
|                         | 6. Khariar Road.  |
|                         | 7. Titlagarh.     |
|                         | 8. Balangir.      |
| 10. Punjab . . . . .    | 1. Jagraon.       |
| 11. Rajasthan . . . . . | 1. Bharatpur.     |
|                         | 2. Alwar.         |
|                         | 3. Hindaun.       |
|                         | 4. Baran.         |
|                         | 5. Srikeranpur.   |
|                         | 6. Raisinghnagar. |
|                         | 7. Jaipur.        |
|                         | 8. Bundi.         |
|                         | 9. Bhawani Mandi. |
|                         | 10. Gangapur.     |
|                         | 11. Jhunjhunu.    |

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|-----------------------------|-------------------|
|                             | 12. Kekri.        |
|                             | 13. Kherli.       |
|                             | 14. Mertecity.    |
|                             | 15. Fatehragar.   |
| 12. Uttar Pradesh . . . . . | 1. Orai.          |
|                             | 2. Muzaffarnagar. |
|                             | 3. Allahabad.     |
|                             | 4. Bahraich.      |
|                             | 5. Auraiya.       |
|                             | 6. Bareilly.      |
|                             | 7. Khurja.        |
|                             | 8. Baraut.        |
|                             | 9. Konpur.        |
|                             | 10. Kosi Kalan.   |
|                             | 11. Agra.         |
|                             | 12. Aligarh.      |
|                             | 13. Lucknow.      |
|                             | 14. Hathras.      |
|                             | 15. Bharthana.    |
|                             | 16. Mainpuri      |
|                             | 17. Shahjahanpur. |
|                             | 18. Bindki.       |
|                             | 19. Kasganj.      |
|                             | 20. Attara.       |
|                             | 21. Mauranipur.   |
|                             | 22. Ujhani.       |
|                             | 23. Hapur.        |
|                             | 24. Gorakhpur.    |
|                             | 25. Dhampur.      |
|                             | 26. Balrampur.    |
|                             | 27. Faizabad.     |
|                             | 28. Sitapur.      |
| 13. West Bengal . . . . .   | 1. Jiaganj        |
|                             | 2. Bongaon.       |
|                             | 3. Howrah.        |
|                             | 4. Silliguri.     |
|                             | 5. Kaliaganj.     |
|                             | 6. Shamshi.       |
|                             | 7. Dinha'a.       |
|                             | 8. Alipurduar.    |
|                             | 9. Aslampur.      |
|                             | 10. Raraghat.     |

## Distribution charges under various heads as furnished by the

State	Un-loading from wagons	Load- ing into trucks	Tran- sport from Rly. Stn. to go- down	Un- loading & stack- ing in the go- down	Transport from main depot to sub-depot by truck	Transport from main depot to sub-depot by cart	Commn. to agents at diff. levels
	a	b	c	d	e	f	g
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Bihar . . . . .	0.50	0.40	2.20	0.70	10.00	10.00	4.70
Bombay . . . . .	2.00	..	8.25	..	..	..	wholesaler 3.50 retailer 5.81
Madhya Pradesh . . . . .	*	*	*	*	11.00	7.50	Tehsil 5.00 Apex Coop. 1.94
Mysore . . . . .	0.75 to 1.00	0.75 to 1.00	1.00 to 3.00	0.75 to 1.00	Deptt. to trucks used	0.50 per mile	..
Punjab . . . . .	*	*	*	*	*	*	(a) State Coop 1.00 (b) Distt. Coop 2.00 (c) Retail 0.900
U.P. . . . .	0.31	0.62	0.94	0.62	24	24	Wholesaler 5.00 Retailer 10.00
Delhi . . . . .	0.62	0.62	2.25 to 5.00	0.62	in 'c'	2.5 to 5.00	Wholesaler 9.00 Retailer 8.00
Himachal Pradesh . . . . .	..	..	14	..	..	..	10.00
Tripura . . . . .	(Flat rate of 3 nP. per md. per mile for a, b, c, d, e, and f.)						

*Break-up of charges for individual items has not been furnished by the following States.*

- Asshra Pradesh* : Different rates for different places as mutually agreed by the  
*Assam* : A lump sum of Rs. 27.00 is allowed to the agents. The agents  
*Kerala* : Agents are given a flat commission of Rs. 25.00 on sulphate of  
*Madras* : Rs. 5.00 per ton allowed to Government stock-holders to cover items e, f, i, j and k. These margins take into account all charges.  
*Orissa* : The wholesale agents take delivery from rly. station and incur all  
*W. Bengal* : A lump sum of Rs. 30.00 is allowed to the agent. The agents sales for Khariff crops an additional Rs. 30.00 is allowed to the  
*Pondicherry* : The allottees to take delivery from rly. siding and incur all



## VI

## State Governments per ton of sulphate of ammonia

Loss in handling	Cost on A/c of cross movement	Godown charges	Short- age in stor- age	Estt. charg- es	Inter- est on invest- ment	Ins- urance char- ges	Tri- age when- ever noted	Any other charges	Remarks
h	i	j	k	l	m	n	o	p	
Rs.		Rs.	%	Rs.	Rs.	Rs.	Rs.	Rs.	
0.5%	..	61.42 per depot	0.5	6.00	..	..	0.5	4.50	
2.00	..	4.00	..	1.00	1.00	..	..	0.94	Combined charges for (c) & (f).
..	0.50	2.50	1.31	2.00	..	..	..	0.25	*Flat rate of Rs. 3.00 for a, b, c and d.
2 to 3% average	N.A.	Total about 50000	N.A.	Total 106000	..	..	NA.	2 to 3% average transit loss	Col. (i) & (j) : These charges met by Government.
Nil	10	*	Nil	3.37	Nil	..	..	..	*Flat rate of Rs. 3.12 per ton to cover items a, b, c, d & j. Items e & f at rates fixed by Dy. Commissioner.
..	..	..	0 to 3	No separate staff	3.125 %	..	3%	..	Figures indicate break-up of Dir. of Agriculture.
1 to 2% in 'c'	15.00 to 40.00 p.m. in rural & 50 to 150 in urban areas	1	4.00	4.50 p.a.	..	1%	..	..	
..	..	3.00	3.00	6.00	..	..	..	..	
									break up not worked out

However information furnished is indicated.

wholesalers and retailers.

share this margins with their sub-agents as may be mutually agreed upon.

ammonia and 5% on others.

items a, b, c, d, j, k and o and Rs. 20.00 per ton allowed to retailers to cover

expenditure.

share this margin with sub-agents as may be mutually agreed upon. For agents which is borne by the State Governments as subsidy.

expenditure.

## APPENDIX VII

*Monthly supplies in tons of sulphate of ammonia from the Central Fertiliser Pool during the years when there was no shortage :*

State	Year	April	May	June	July	August	September	October	November	December	January	February	March	Total
1. Andhra Pradesh . . . . .	1953-54	..	..	..	..	..	..	8265	..	..	..	..	..	8,265
	1954-55	2640	11879	4917	8551	9135	6538	4965	1620	1100	2252	6555	6036	66,188
2. Assam . . . . .	1953-54	1461	I	..	..	..	..	..	..	..	..	520	500	2,482
	1954-55	..	400	540	500	..	..	..	..	70	..	..	..	1,510
3. Bihar . . . . .	1953-54	8218	2110	3859	3016	2636	6205	40	96	..	..	2468	2162	30,810
	1954-55	370	2028	7023	1870	439	2669	3238	295	20	..	2394	4280	24,626
4. Bombay . . . . .	1953-54	..	11465	4908	5170	4763	13605	1655	..	..	4800	..	..	46,366
	1954-55	220	7580	320	3626	974	2	5289	4447	324	1663	1905	..	26,350
5. Kerala . . . . .	1953-54	..	..	..	..	..	..	..	..	..	..	2000	2939	4,939
	1954-55	..	40	..	1408	129	912	943	559	1240	299	1219	1078	7,827
6. Madhya Pradesh . . . . .	1953-54	4084	12302	920	..	..	..	2510	186	..	..	1500	12168	33,670
	1954-55	2832	1204	2172	314	..	..	..	..	..	..	160	3000	9,682
7. Madras . . . . .	1953-54	..	..	..	5419	6857	9559	..	4713	10043	1642	296	1220	39,749
	1954-55	6661	3518	4434	8821	5093	5393	6248	9071	13983	946	2073	4965	71,206
8. Mysore . . . . .	1953-54	1029	3099	2414	835	1959	3554	2651	312	163	78	1159	1852	19,105
	1954-55	1664	4187	1666	1162	792	1280	1555	5050	1069	166	355	1090	20,036
9. Orissa . . . . .	1953-54	..	85	96	2110	2699	2232	3698	509	1516	1210	749	988	15,892
	1954-55	..	1780	..	..	..	..	..	670	1220	1256	44	654	7,080

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10. Punjab	1953-54	14	316	4271	2693	4502	6456	1162	1866	969	1257	1480	55	25,041
	1954-55	4926	4173	1941	1135	1820	2770	3150	318	6592	419	1630	1722	30,596
11. Rajasthan	1953-54	10	2268	1868	1444	462	1442	140	1336	110	..	..	..	9,080
	1954-55	715	285	..	..	..	..	..	..	..	..	..	..	1,000
12. Uttar Pradesh	1953-54	2157	6936	6541	5439	3153	1906	1761	470	762	1339	11925	2493	44,882
	1954-55	4204	6355	4367	1639	2735	4630	8228	5645	3370	7780	3580	5320	57,853
13. W. Bengal	1953-54	8997	8505	9799	4600	2242	946	120	245	49	102	64	2577	38,246
	1954-55	1500	5345	6308	924	2054	1664	92	..	..	..	..	..	17,887
14. Delhi	1953-54	..	400	..	..	200	..	201	40	100	40	120	60	1,161
	1954-55	..	420	400	220	..	..	..	..	259	..	..	..	1,299
15. Himachal Pradesh	1953-54	9	8	9	16	2	1	3	..	18	..	..	27	93
	1954-55	..	..	..	..	50	10	..	..	5	..	1	..	81
16. Manipur	1953-54	..	..	5	..	..	..	..	..	..	..	..	..	5
	1954-55	..	..	..	..	..	..	..	..	..	..	..	..	..
17. Tripura	1953-54	..	..	..	..	..	..	..	..	..	..	..	..	..
	1954-55	..	..	..	..	..	..	..	..	..	..	..	13	13
18. Jammu & Kashmir	1953-54	20	..	..	..	..	20	..	..	..	..	20	..	60
	1954-55	22	154	400	..	..	250	..	308	..	..	..	4711	5,845
19. Hyderabad	1953-54	..	3855	8024	1197	3520	404	..	2003	..	2401	1602	1320	24,326
	1954-55	1880	2516	660	572	722	902	2094	1082	20	..	..	..	10,448
20. Madhya Bharat	1953-54	..	942	730	94	..	20	..	..	..	..	..	..	1,786
	1954-55	..	548	284	..	67	..	32	12	..	..	9	..	952
21. Vindhya Pradesh	1943-54	..	50	350	..	..	400	..	..	..	..	..	..	800
<b>TOTAL</b>	1953-54	26084	52353	45808	32622	32528	48216	19017	12783	12424	12408	24142	27373	346758
	1954-55	29414	50632	35432	30757	24010	27020	3554	29627	29308	13569	20535	33671	360479

APPENDIX VIII

Stocks of fertilisers in States at the end of the year (in tons)

STATE	Year ending 31st March, 1958				Total in terms of sul. of ammonia	Year ending 31st March, 1959				Total in terms of Sul. of ammonia	Year ending 31st March, 1960				Total in terms of sul. of ammonia
	Sul. of am.	Urea	Am. sul. nit-rate	Cal. am. nit-rate		Sul. of am.	Urea	Am-sul. nit-rate	Cal. am. nit-rate		Sul. of am.	Urea	Cal. sul. nit-rate	Cal. am. nitrate	
I. Andhra Pradesh	18473	5904	2593	196	35618	12225	3676	1988	2214	25478	9802	3080	1617	1203	20191
2. Assam	1052	..	..	..	1052	1226	..	93	..	1347	1271	68	896	..	2592
3. Bihar	18592	1077	..	..	21069	14298	459	..	..	15354	19207	3956	583	1975	31039
4. Bombay	4880	889	170	..	5881	2779	49	166	..	3108	*	*	*	*	*
5 Kerala	428	..	..	..	428	946	..	..	..	946	1490	..	..	..	1490
6 Madhya Pradesh	10643	691	468	..	12840	9079	732	752	39	11780	24917	1490	1038	99	2972
7 Madras	28457	3280	1871	..	38363	16432	3986	203	19	25883	13290	3463	2567	1269	25861
8. Mysore	7467	1734	183	..	11693	7537	3463	606	288	16578	3775	2328	362	2783	12383
9 Orissa	*	*	*	*	*	9215	183	153	1708	11543	6597	61	162	3233	10181
10. Punjab	22415	2069	985	16	28354	17428	4125	3216	8317	39414	13366	2633	1094	11618	30462
11. Rajasthan	2322	445	49	..	3409	*	*	*	*	*	*	*	*	*	1

12. Uttar Pradesh	.	.	70816	4508	310	21	81608	67734	1706	7640	*	81634	90114	5244	126037			
13. W. Bengal	.	.	*	*	*	*	*	*	*	*	*	*	*	*	*			
14. Jammu & Kashmir	.	.	*	*	*	*	*	*	*	*	*	*	*	*	*			
15. Delhi	.	.	412	2	20	*	443	282	2	12	..	303	66	31	.. .. 137			
16. Himachal Pradesh	.	.	200	..	..	..	200	452	..	..	..	452	*	*	* * *			
17. Manipur	.	.	2	..	..	..	2	13	..	..	..	13	40	..	.. .. 40			
18. Tripura	.	.	397	..	..	..	397	592	..	..	..	592	486@	..	.. .. 486@			
19. Andaman & Nicobar Islands	.	.	*	*	*	*	*	*	*	*	*	*	@6	1@	19@ * 40@			
20. L.M. & A. Islands	.	.	*	*	*	*	*	*	*	*	*	*	*	*	*			
21. Pondicherry	.	.	130	..	..	..	130	355	..	..	..	355	42	..	.. .. 42			
<b>TOTAL</b>							<b>2,41,487</b>						<b>2,34,780</b>					<b>2,90,773</b>

\*Information not received from the State.

\*\*Information as on 1-3 1960.

\*\*\*Information as on 1-2-1960.

## APPENDIX IX

### List of Nominees of the State Governments

State	Government representative	Consumers' representative
Andhra Pradesh	Shri D. Viswanatha Reddy, Director of Agriculture, Hyderabad.	Shri E.B. Raghaviah, Kunderu P.O., Distt. Krishna (A.P.).
Assam	Shri B. N. Duara, Joint Director of Agriculture (Extension), Shillong.	Shri Anandeswar Barua, B.Sc., Behali P. O., Distt. Darang (Assam).
Bihar	Shri Bhubneshwar Prasad, Managing Director, Bihar State Coop. Marketing Union, West Lawn, Patna.	Shri Ramchandra Singh, Vill. Malikpura, P. O. Goroul, Distt. Muzaffarpur.
Bombay	Shri S. N. Sapre, I.A.S., Agriculture & Forest Deptt., Bombay.	Shri S. V. Yadav, B. Agr., Canal Road, Baramati, Distt. Pooná.
Kerala	Shri M. Janardhanan Nair, Jt. Director of Agriculture (Extn.), Trivandrum.	Shri V. O. Abraham, President, Kuttanad Agr. Coop. Society, No. 3029, Alleppey.
Madhya Pradesh	Shri Devindar Nath, I.A.S., Registrar, Co-operative Societies, Indore.	Sardar Mangal Singh, Vill., Rodiya, P.O. Rodiya, Distt. Khargone.
Madras	Shri V. Karthikayan, I.A.S., Secretary, Board of Revenue (Food Production), Madras.	Shri V.S. Thiagaraja Mudaliar Thiru Aruran Sugars Ltd., Express Estate, Mount Road, Madras.
Mysore	Dr. H. R. Arkere, Joint Director of Agriculture (Extn.), Bangalore.	Shri Hutchmasti Gowda, President, Kunigal Taluk Agril. Produce Marketing Society, Kunigal.
Orissa	Shri D. Misra, Joint Director of Agriculture, Bhubaneswar.	Shri Pebitramohan Pradhan, M.L.A., Qr. No. 10/2, M.L.A. Quarters, Unit No. IV, New Capital, Bhubaneswar.
Punjab	Shri Baldev Bakshi, Officer on Spl. Duty (Fert.), Deptt. of Agriculture, Chandigarh.	Shri Jagjit Singh, B.Sc., (Agri.), Vice-President, Jullundur Co-op. Vegetable & Fruit Growers' Association, N.B. 179, Tanda Road, Jullundur City.
Rajasthan	Shri U.S. Badal, Deputy Director of Agriculture (Admn.), Jaipur.	Shri Chand Das Basund (Distt. Jodhpur).
Uttar Pradesh	Shri Ram Surat Singh, Addl. Director of Agriculture, Lucknow.	Krishi, Pandit Padam Singh, Vill. Shiampur (Hapur).

State	Government representative	Consumers' representative
*West Bengal	Shri A.K. Banerjee, M.A., WBCS, Deputy Secretary, Agriculture & Food Pro- duction Deptt., Calcutta.	Shri Rashbehari Chowdhury, Vill. Taragaon, P.O. Talandoo Hooghly Distt.
Jammu & Kashmir	Nomination not made.	Nomination not made.
Delhi	Shri B.M. Multani, Assistant Development Commissioner, Delhi.	Shri Tej Ram, Delhi State Co- operative Federation, Delhi.
Himachal Pradesh	Shri Prem Sagar, Dy. Director of Agriculture (Extn.), Simla.	Shri Rajendra Singh, Raja Baghal, Bagal House, Simla Estate, Simla.
Manipur	Shri Badan Krishna Sinha, Agricultural Officer, Imphal.	
Tripura	Shri S.K. Banerjee, Superin- tendent of Agriculture, Agar- tala.	Shri Chaitanya Das, Secretary, Farmers' Forum, Agartala.
Andamans & Nicobar Islands	No information.	
Laccadives, etc.	No information.	
Pondicherry	No information.	

\*Shri A. Bhattacharya, Under Secretary, accompanied the Committee while on tour in West Bengal.