Chapter VI :

A MODEL FOR TRANSPORT COST MINIMISATION.

The transportation of fertilisers, prior to the mid of 1960's, did not pose any serious problem because fertilisers were produced and consumed in small quantities, imports were not substantial and wagons were adequately available. Only a negligible quantity was moved by modes other than railways. However, with the introduction of fertiliser responsive dwarf high yielding variety of crops, in the country, the demand for fertilisers have increased very rapidly. Production and imports have also increased, as a result of which, the movement of fertilisers, by railways, has increased significantly since 1965-66. Table 6.1 shows that the movement of fertilisers on Indian railways have increased from 2.45 million tonnes in 1965-66 to 8.20 million tonnes in 1979-80. The annual rate of growth in fertiliser traffic on railways was to the tune of 7.34%, between 1965-66 to 1979-80. Due to regional disparity in the consumption and production, fertilisers have been transported over longer distances. Table 6.1 also shows that average lead has increased from 752 kms. in 1965-66 to 1129 kms. in 1979-80.

Table 6.1 : Fertiliser movement by railways in India.

Year	Traffic originating		Average lead (in kms.)
	Quantity (in million tonnes)	Total traffic (in million tonne-kms.)	
1965-66	2.45	1843	752
1966-67	3.51	2371	675
1967-68	4.37	3438	787
1968-69	4.97	4115	828
1969-70	4.65	3760	809
1970-71	4.70	3808	810
1971-72	5.24	4358	832
1972-73	5.39	4355	808
1973-74	5.32	4001	752
1974-75	5.98	4788	801
1975-76	7.17	6158	859
1976-77	7.78	7225	929
1977-78	8.20	8366	1020
1978-79	8.56	8901	1040
1979-80	8.20	9256	1129

Source: Railway Board, Annual Report - Statistical Supplement.

Although, the allocation of fertilisers by the Government (i.e. Fertiliser Pool) are made at the ECA zonal conferences, the cross movement of fertilisers is still

continuing. According to Rail India Technical and Economic Services Ltd. (RITES), there could be two possible reasons for cross-movement as well as long lead of fertilisers. They are :[1]

(i) Locational pattern continued to have adverse effect on the lead of fertilisers and, consumption and production areas continued to be unevenly distributed in the country;

(ii) Serious efforts at rationalisation have yet to be made.

It can be seen from table 6.1 that the average lead keep on fluctuating. This may be due to occasional diversion of ships to distant ports because of port congestions or labour problem at the ports. The long lead pattern, cross-movement as well as transhipment has reduced the net availability of wagons, which causes major bottlenecks to fertiliser transportation. In this chapter we have attempted to examine, by applying a simple linear programming model (i.e., transport cost minimisation model), the saving in total transport cost as well as lead which would result from rationalisation in the prevailing system of fertiliser distribution, in India.

Transportation model for fertiliser distribution

In our problem fertiliser r is supplied from m sources (factories/ports/buffer godowns) to n demand regions and the object is to minimize the total cost of transportation. In the

1 "Report on Fertiliser and Raw Material Transportation in India - an optimization study", by Rail India Technical and Economic Services Ltd., New Delhi, Vol.I, p.VIII/3.

general linear programming format, it will be written as

Minimize $Z = \sum_{i=1}^{m} \sum_{j=1}^{n} c_{ij}^{r} x_{ij}^{r}$

subject to

(1) $\sum_{j=1}^{n} x_{ij}^{r} \leqslant a_{i}^{r}$ $\quad i = 1,2, \ldots m$, $r = 1,2, \ldots k$

(2) $\sum_{i=1}^{m} x_{ij}^{r} \geqslant b_{j}^{r}$ $\quad j = 1,2, \ldots n$, $r = 1,2, \ldots k$

(3) $\sum_{i=1}^{m} a_{i}^{r} = \sum_{j=1}^{n} b_{j}^{r}$ $\quad r = 1,2, \ldots k$

(4) $x_{ij}^{r} \geqslant 0$ for all i,j.

where x_{ij}^{r} denotes the shipment of fertiliser r from source i to region j.

a_{i}^{r} is the total production/capacity of fertiliser r at source i

b_{j}^{r} is the total demand of fertiliser at region j

c_{ij}^{r} is the per unit transport cost of fertiliser r from source i to region j .

Condition 1 states that, the shipments of fertiliser r from source i to all the demand regions j should not exceed the availability at source i. Condition 2 states that the shipments of fertiliser r from all the sources i must meet the demand at region j.

Condition 3 states that the supplies from all the sources i must be equal to the demands at all the regions j and Condition 4 states that negative shipments are not permitted.

Since transport cost of fertiliser distribution constitutes a substantial part of total delivery cost to the farmer, the minimization of transport cost is of considerable importance. Also since the indigenous production is insufficient to meet the domestic requirements, large quantities of fertiliser are imported. Hence, in our model a dummy factory will be introduced which will represent ports/buffer godowns.

Due to limitation of data pertaining to actual demand[2] for fertiliser in different regions, we assume that total demand in a particular region is equal to total quantity of fertiliser shipped from various sources to that region and, the availability/capacity at the source is equal to actual shipments from that particular source to various regions.

Since transportation method requires homogeneity of units and fertilisers of different grades are heterogenous in nature, the problem pertaining to allocation of each type of fertiliser grade will be dealt separately. In the transportation model, total demand in a region, total supply at the source and freight rate are considered fixed for a given time and also

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2 Assessment of fertiliser demand is made in terms of nutrients which can be met through the supply of any type of fertiliser.

(as in general limear programming), all the relations are assumed to be linear.

Economics of rationalisation in the distribution system

Rationalisation in the distribution system necessitates the avoidance of product preferences among the consumers. Fertiliser, having similar characteristics should not be distinguished on the basis of trade mark. For example, all urea fertilisers contain 46 per cent nitrogen. Therefore, urea produced by one manufacturer would certainly not provide more nutrients than the urea produced by any other manufacturer.

Our results demarcates the marketing region for indigenous as well as pool fertilisers. The demarcation of marketing regions for pool fertilisers is done with the object of finding an economical region or regions to be served by a particular port.

Rationalisation in the distribution system can be done either with the object of minimizing the total lead or freight cost. We have examined the problem keeping in view both the objectives and found very interesting results. In our study for rationalisation of fertiliser movement, we have selected six types of fertilisers, which are moved in large quantities throughout the country. They are urea, NP/NPK complex fertilisers of various grades, diammonium phosphate (DAP), single

superphosphate (SSP), ammonium sulphate (AS) and calcium ammonium nitrate (CAN). Since data pertaining to district-wise despatches of fertilisers, from factories, ports and buffer godowns were not available, actual despatches of fertilisers to States, Union Territories and Commodity Boards were collected for the year 1978-79.

The marketing regions and their focal points were discussed in Chapter IV. A list of these focal points as well as the sources of origin of fertilisers (i.e., the factories for indigenous production and ports for imported fertilisers) is shown in Appendix tables. The results of the models for each type of fertiliser are presented in Appendices 6.I to 6.VI.

Table 6.2 presents in a summary form a comparison of actual and optimised transportation of fertiliser for the year 1978-79. The figures in parenthesis indicate the share of a particular fertiliser material in the total despatches of fertilisers. Urea alone constituted 52 per cent of total fertiliser despatches. Total estimated lead covered by fertilisers during 1978-79 was 8335.31 million tonne-kilometers and total estimated freight cost paid for the same was Rs.673.78 million.

Rationalisation in the distribution system has remarkably reduced the total lead as well as total freight cost. It should

Table 6.2 : A comparison of actual and optimised transportation of fertilisers - summary of results for 1978-79.

Fertiliser material	Total quantity despatched ('000 tonnes)	Total Lead (million tonne-kms.)			Total freight cost (Rs.million)		
		Actuals	Optimised for distance minimisation	Optimised for freight cost minimisation	Actuals	Optimised for distance minimisation	Optimised for freight cost minimisation
Urea	5144.39 (52.10)	4651.74	3729.11	3906.84	379.82	322.44	308.72
NP/NPK Complex	1707.79 (17.30)	1416.58	1180.27	1181.12	118.61	103.41	103.14
DAP	753.38 (7.63)	992.41	925.99	946.35	73.12	68.98	67.54
SSP	947.84 (9.60)	466.99	401.21	403.35	39.37	35.41	35.24
AS	710.11 (7.19)	408.39	302.15	349.70	31.96	25.81	25.78
CAN	610.28 (6.18)	399.20	354.71	354.71	30.90	28.57	28.56
All fertilisers	9873.79 (100.00)	8335.31	6893.44	7142.07	673.78	584.62	568.98

Note: Figures in parentheses indicate the percentage share of each fertiliser to total fertiliser despatches.

Source: Appendix tables 6.I to 6.VI.

be noted that in case the rationalisation is made with the object of minimizing total lead, total lead is minimized but total freight cost, although reduced, is not minimum. On the other hand, if rationalisation is made with the object of minimizing total freight cost, the freight cost is minimized but total lead, although reduced, is not minimum.

Table 6.2 shows that if the rationalisation is made for lead minimization, total lead is cut down from 8335.31 million tonne kilometers to 6893.44 million tonne-kilometers as a result of which, freight cost is reduced from Rs.673.78 million to Rs.584.62 million. This saves lead and freight cost to the tune of 1441.87 million tonne-kilometers and Rs.89.16 million respectively. In this case reduction in total lead is direct and, reduction in total freight cost is resultant. Similarly if rationalisation is made for freight cost minimization, total freight cost is reduced to Rs.568.98 million as a result of which total lead is reduced to the level of 7142.07 million tonne-kilometers. This saves the freight cost as well as lead to the tune of Rs.104.8 million and 1193.24 million tonne - kilometers respectively. In this case the reduction in total freight cost is direct and, reduction in total lead is resultant.

If the rationalisation in the distribution system is made with the object of minimizing total lead, saving in total

freight cost is somewhat lower. Similarly if the rationalisation is made with the object of minimising total freight cost, saving in total lead is somewhat lower. The reason for this variation is that the railway freight rate is telescopic in nature. This means that for shorter distances the railway freight rate per tonne per kilometer of fertiliser material is comparatively higher than that for longer distances. This can be seen from Table 6.3. In this table we have computed the freight cost per tonne-per kilometer over different slabs of distance.

Fertilisers (which we have selected for this study) are classified in two categories for railway freight charges. Urea, NP/NPK complex fertilisers and DAP are included in the General classification. No.52.5 and SSP, AS and CAN are included in the General Classification No.45 for similar distances. Fertilisers included under General Classification No.52.5 have to bear slightly higher freight cost than fertilisers included under General classification No.45. This discrimination may be due to the fact that, urea, NP/NPK's and DAP are high analysis fertilisers and SSP, AS and CAN are low analysis fertilisers. High analysis fertilisers contain large quantities of nutrients and low analysis fertilisers contain lower quantity of nutrients.

Table 6.3 : Railway freight rate for fertilisers during 1978-79.

(Figures in paise per tonne per kilometer)

Distance (Kms.)	General Classification	
	No. 45	No. 52.5
40	23	26
100	15	17
200	14	17
500	8	9
750	8	9
1000	7	8
1250	7	8
1500	7	8
2000	6	7
2500	6	6
3000	5	6
3500	5	5
4000	4	5
4500	4	4
5000	4	4

Source: Based on Indian Railway Conference Association Goods Tariff, No.34, Part II, Table-1.

Table 6.4 shows percentage reduction in total lead as well as freight cost after rationalisation. When the rationalisation is made for lead minimisation, there is saving in total lead to the tune of 17.3% as a result of which freight cost is reduced by 13.24%. Percentage savings in the total leads for urea, NP/NPKs, DAP, SSP, AS and CAN are respectively to the tune of 19.83%, 16.68%, 6.69%, 14.09%,

Table 6.4 : Percentage reduction in distance (lead) and freight-cost through rationalisation in distribution system for the year 1978-79.

Fertiliser material	Distance minimisation		Freight-cost minimisation	
	% Reduction in lead (distance)	% Reduction in freight cost	% Reduction in lead (distance)	% Reduction in freight cost
1. Urea	19.83	15.11	16.01	18.72
2. NP/NPK complex fertilisers	16.68	12.81	16.62	13.04
3. DAP (Diammonium phosphate)	6.69	5.67	4.64	7.63
4. SSP (Single superphosphate)	14.09	10.07	13.63	10.50
5. AS (Ammonium sulphate)	26.01	19.23	14.37	19.33
6. CAN (Calcium ammonium nitrate)	11.14	7.56	11.14	7.57
All fertilisers	17.30	13.23	14.32	15.55

Source: Appendix tables 6.I to 6.VI.

26.01% and 11.14%, and this results in savings in total freight cost to the tune of 15.11%, 12.81%, 5.67%, 10.07%, 19.23% and 7.56% respectively for the same fertilisers. Similarly, when the rationalisation is made with the object of freight cost minimisation, total freight cost is reduced to the tune of 15.55% as a result of which total lead is

saved by 14.32%. Percentage savings in total freight cost for urea, NP/NPKs, DAP, AS and CAN fertiliser are respectively to the tune of 18.72%, 72%, 13.04% 7.63%, 10.50%, 19.33% and 7.57% and this results in total savings in leads by 16.01%, 16.62%, 4.64%, 13.63%, 14.37% and 11.14% respectively for the same fertilisers.

Table 6.5 shows average lead and average freight cost for different fertilisers during 1978-79. For all fertilisers, the estimated average lead is 844 kms and estimated freight cost for the same lead is Rs.68.24 per tonne. Estimated average leads for urea, NP/NPKs, DAP, SSP, AS and CAN fertiliser respectively are 904.24 kms, 829.48 kms, 1317.28 kms, 492.68 kms, 575.11 kms and 654.13 kms. and, for the same leads, the estimated average freight costs are Rs.73.83, Rs.69.45, Rs.97.06, Rs.41.54, Rs.45.01 and Rs.50.64 per tonne respectively.

The rationalisation system has drastically cut down the average lead as well as average freight cost. When rationalisation is made with the object of minimizing total lead, average lead for all fertilisers is reduced from 844.19 kilometers to 698.16 kilometers as a result of which, average freight cost is reduced from Rs.68.24 per tonne to Rs.59.21 per tonne for the same distance. Average leads for urea, NP/NPK's, DAP, SSP, AS and CAN fertilisers are reduced respectively to the level of 724.29 kms, 691.11 kms, 1229.11 kms, 423.28 kms

Table 6.5 : Average lead (distance) and average freight-cost for fertiliser materials during 1978-79.

Fertiliser material	Actuals		Computed for distance(lead)minimisation.		Computed for freight cost minimization	
	Average lead (kms)	Average freight cost (Rs.)	Average lead (kms.)	Average freight cost (Rs.)	Average lead (kms.)	Average freight cost (Rs.)
Urea	904.24	73.83	724.89	62.68	759.44	60.01
NP/NPK complex fertilisers	829.48	69.45	691.11	60.55	691.62	60.39
DAP (Diammonium phosphate)	1317.28	97.06	1229.11	91.57	1256.14	89.65
SSP (single super-phosphate)	492.68	41.54	423.28	37.36	425.54	37.18
AS (Ammonium sulphate)	575.11	45.01	425.5	36.35	492.45	36.31
CAN (Calcium ammonium nitrate)	654.13	50.64	581.23	46.81	581.23	46.80
All fertilisers	844.19	68.24	698.16	59.21	723.34	57.63

Source: Appendix Tables 6.I to 6.VI.

425.5 kms and 581.23 kms as a result of which, the freight costs are reduced to the level of Rs.62.68, Rs.60.55, Rs.91.57, Rs.37.36, Rs.36.35 and Rs.46.81 per tonne respectively for the respective leads.

Similarly, when the rationalisation is made with the

object of minimising the total freight cost, average freight cost for all fertilisers is reduced to the level of Rs.57.63 per tonne as a result of which, average lead is reduced to the level of 723.34 kilometers. In this case the average freight costs for urea, NP/NPKs, DAP, SSP, AS and CAN fertiliser respectively are Rs.60.01, Rs.60.39, Rs.89.65, Rs.37.18, Rs.36.31 and Rs.46.80 and this results in the reduction of their average leads to the level of 759.44 kms, 691.62 kms, 1256.14 kms, 425.54 kms, 492.45 kms and 581.23 kms respectively.

Table 6.5 shows that urea, NP/NPK complex fertilisers and DAP travel over longer distances compare to other fertilisers. Although, rationalisation in distribution has cut down the average lead significantly still fertilisers will have to cover long leads. This is due to the prevalance of disparity in the fertiliser producing and consuming regions. Pool urea and DAP have been moved over very longer distances.

The despatches of fertilisers from various sources to the consuming regions are shown in the Appendices. Urea fertiliser was moved from Kandla (in Gujarat) to Tamil Nadu, Andhra Pradesh, Bihar etc. From Bombay (Maharashtra) it was moved to Himachal Pradesh, Jammu & Kashmir, Assam and other North Eastern States, Tamil Nadu, Andhra Pradesh, etc. From Cochin urea was moved all the way to Punjab. From Madras it was

moved to Punjab, Haryana, Uttar Pradesh, Bihar, etc. From Calcutta it was moved to Punjab, Haryana etc., and from Uttar Pradesh it was moved to Punjab, Haryana, M.P. etc. Similarly NP/NPK complex fertilisers travelled all the way from Gujarat to Punjab, U.P., Bihar, Tamil Nadu, Andhra Pradesh etc. From Tamil Nadu to Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Andhra Pradesh, Orissa, etc. From Andhra Pradesh, it was despatched to Uttar Pradesh, Madnya Pradesh, Karnataka etc. DAP fertiliser was moved from Gujarat to Punjab, Haryana, Uttar Pradesh, Maharashtra, etc. From Maharashtra, it was moved to Himachal Pradesh, Jammu & Kashmir, Punjab, Uttar Pradesh, etc. From Tamil Nadu it was moved to Punjab, Rajasthan, Gujarat, Maharashtra, etc. The appendices also show that even after rationalisation, these fertilisers would move over long distances.

Table 6.6 compares our results with RITES results. It shows the recommended areas to be served by pool fertilisers from various ports on the basis of our results as well as RITES Report. Our recommendations differ from RITES recommendations due to three important reasons. They are :-

(1) In our study, rationalisation in distribution is made after taking into account the demand for different types of fertilisers in the respective regions whereas, RITES rationalisation is based on the demand for fertiliser nutrients, leaving it for the manufacturers as well as

fertiliser pool to decide the type of fertiliser they would supply.

(2) In our study, linking of supply sources and demand regions is attempted on the basis of principle of least distance movement and least freight cost. In other words, it is not based on any market research whereas, RITES recommendations are based on market research.

(3) We have selected only 17 focal points due to limitations imposed by the availability of data while RITES has selected 140 focal points as detailed data were supplied to it for the purpose of working out an optimum supply plan.

Our recommendation for the supply of different fertilisers from factories/ports/buffer godowns to the respective consuming areas have been shown in the Appendices of this chapter. An important finding of our study is that, whether the rationalisation in distribution system is done with the objective of total lead minimisation or total freight cost minimization, in both cases, total lead as well as total freight cost get reduced. In the lead minimisation problem reduction in lead is direct and reduction in freight cost is resultant whereas in the freight cost minimisation problem reduction in freight cost is direct and reduction in lead is resultant. From the national point of view, it is the reduction in lead which is more important as it will reduce the burden on the transport system.

Table 6.6 : Regions to be served by ports under rationalisation plan.

Name of the port	RITES RECOMMENDATIONS	OUR RECOMMENDATIONS
Kandla	Jammu & Kashmir, Himachal Pradesh, Punjab, Chandigarh, Haryana, Delhi, Madhya Pradesh, (West of Katni), Western U.P., Gujarat (except South of Vadodara)	Punjab, Chandigarh, Haryana, Delhi, Rajasthan and Gujarat.
Bhavnagar & Navlakhi	Meter Guage(MG), destinations in Gujarat lying south of the Kandla, Ahmedabad section.	Punjab, Chandigarh and Gujarat. Navlakhi would also serve Rajasthan.
Kozi (Jamnagar)	N.A.	Punjab, Chandigarh and Gujarat.
Bombay	Maharashtra Broad Guage (BG) and MG, Gujarat BG South of Vadodara, MP destinations West of Katni and West of Nagpur, Punjab Chandigarh, Haryana, Western UP, J&K, Himachal Pradesh, and Rajasthan.	Punjab, Chandigarh, MP and Maharashtra.
Marmagoa	Karnataka(MG), Andhra Pradesh(MG) except Katpadi, Gauntkal section.	Rajasthan, Gujarat, and Goa, Daman and Diu and Punjab and Chandigarh.
Mangalore	Karnataka(MG), Kerala(MG) and Tamilnadu(BG)	UP, Karnataka, Himalchal Pradesh, J&K, Tamilnadu, Pondichery, and Commodity Boards (South).
Cochin	Kerala(BG), Tamilnadu(BG)	MP, UP, Karnataka and Andhra Pradesh.
Calicut	NA	Tamilnadu, Pondichery and commodity Boards (South)
Madras	(BG) distinations of Tamil Nadu and Karnataka and A.P. (except stations east of Vijayawada)	MP, UP, Tamilnadu, commodity Boards(South) Pondichery, Andhra Pradesh and Karnataka.

cont...

Table 6.6 (contd.)

Name of the port	RITES recommendations	Our Recommendations
Tuticorin Nagapattinam Cuddalore Pondichery	MG destinations of Tamil Nadu, Kerala, Karnataka and Andhra Pradesh upto Guntakal	Tuticorin and Nagapattinam ports to serve Tamilnadu, Pondichery & commodity Boards. Tuticorin port would also serve Andhra P. and Cuddalore and Pondichery ports to serve Andhra Pradesh & Karnataka.
Visakhapatnam and Kakinada	MP and Maharashtra, destination east of Katni and east of Nagpur, Orissa(except Kharagpur-Cuttak section), BG desinations in AP upto Vijay awada.	Viasakhapatnam port to serve AP, Orissa, Bihar West Bengal, Assam, Sikkim, Bhutan, Meghalaya, Himachal Pradesh, Nagaland, Manipur, Tripura, Mizoram, Karnataka, U.P., Haryana, Delhi, Punjab & Chandigarh, Kakinada port to serve U.P., A.P., M.P., Karnataka, Haryana and Delhi.
Machlipattinam	NA	Andhra Pradesh and Madhya Pradesh.
Pradip Port	NA	Andhra Pradesh, Orissa and Uttar Pradesh.
Haldia Port	NA	Orissa, West Bengal, and Uttar Pradesh.
Calcutta		Uttar Pradesh and West Bengal.

Conclusion :

The distribution of fertilisers, although, made by the Government of India (i.e. Fertiliser Pool) at the ECA zonal Conferences, cross-movement of fertilisers is still continuing. This results in higher transport cost as well as lead of fertilisers movement in the country. The bottlenecks of transportation caused due to scarcity of wagons and, the burden of subsidy which is incurred by the public exchequer by subsidising the fertiliser transportation, can be reduced substantially by rationalising the prevailing system of fertiliser distribution.

APPENDIX 6.I : Despatches of Urea Fertiliser For the year 1978-79 (Figures in MTs.)

	Himachal P.& J&K.	Punjab& Chandigarh	Haryana & Delhi	Rajasthan	Madhya Pradesh	Uttar Pradesh	Gujarat	Maharashtra	Goa, Daman Diu	Karnataka	Kerala &Laksh adweep	Tamil Nadu& Pandichery	Andhra Pradesh	Orissa	West Bengal & Andaman-Nicobar islands	Bihar	Assam, Sikkim, Manipur Tripura Meghalaya, Arunachal, Nagaland Mizoram	Total supply
	Pathankot	Ludhiana	Jind	Phulera	Bhopal	Shahjahanpur	Ahmedabad	Manmad	Kolamb	Hospet	Shoranur	Trichinopalli	Vijaywada	Cuttak	Azimgunj	Lucknesarai	Lumding	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Total Demand	28116	614293	295165	178364	257030	1028758	307969	379121	2203	303823	93044	622263	525120	30922	222056	189706	66435	5141388
1. NFL Nangal (Punjab)																		
ACL	2816	58272	32456	5896	-	-	-	-	-	-	-	-	-	-	-	-	-	
CDM	28116	71304	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CCM	-	99420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99420
2. Shriram Chemical Industries(Rajasthan)																		
ACL	-	35330	28205	96098	30405	51548	271	-	-	-	-		-	-	-	-	-	
CDM	-	241857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CCM	-	-	241857	-	-	-	-	-	-	-	-	-	-	-	-	-	-	241357
3. IEL (Utta. Pradesh)																		
ACL	-	57215	51262	-	1429	278843	-	-	-	-	-	-	-	-	-	14052	-	
CDM	-	-	-	-	-	402801	-	-	-	-	-	-	-	-	-	-	-	
CCM	-	-	-	-	-	402801	-	-	-	-	-	-	-	-	-	-	-	402801
4. FCI Gorakhpur(U.P.)																		
ACL	-	-	-	-	-	194460	-	-	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	194460	-	-	-	-	-	-	-	-	-	-	-	
CCM	-	-	-	-	-	194460	-	-	-	-	-	-	-	-	-	-	-	194460
5. GSFC Baroda (Gujarat)																		
ACL	-	20057	16369	7841	10757	31581	139792	22963	-	-	-	-	-	-	-	-	-	
CDM	-	-	62262	-	187098	-	-	-	-	-	-	-	-	-	-	-	-	
CCM	-	-	-	-	249360	-	-	-	-	-	-	-	-	-	-	-	-	249360
6. IFFCO Kandla/Kalol (Gujarat)																		
ACL	-	50946	18699	22031	21828	70811	83075	1924	-	6360	-	6938	5926	-	-	-	-	
CDM	-	-	232903	55635	-	-	-	-	-	-	-	-	-	-	-	-	-	
CCM	-	-	-	86124	-	-	202414	-	-	-	-	-	-	-	-	-	-	288538
7. Roziport (Gujarat)																		
ACL	-	480	-	-	-	1006	25134	-	-	-	-	-	-	-	-	-	-	
CDM	-	26620	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CCM	-	-	-	-	-	-	26620	-	-	-	-	-	-	-	-	-	-	26620

cont...

Appendix 6.E (contd.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
8. Navlakhi Port (Gujarat)																		
ACL	-	-	-	80	-	710	12798	-	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	13588	-	-	-	-	-	-	-	-	-	-	-	-	-	13588
CCM	-	-	-	-	-	-	13588	-	-	-		-	-	-	-	-	-	
9. Kandla Port(Gujarat)																		
ACL	-	126400	70300	15900	16300	61000	2800	44400	-	-	-	-	-	-	-	-	-	
CDM	-	274512	-	66588	-	-	-	-	-	-	-	-	-	-	-	-	-	337100
CCM	-	191552	53308	92240	-	-	-	-	-	-	-	-	-	-	-	-	-	
10. Ahmedabad Godown (Gujarat)																		
ACL	-	7293	6307	623	-	26806	-	-	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	41029	-	-	-	-	-	-	-	-	-	-	41029
CCM	-	-	-	-	-	-	41029	-	-	-	-	-	-	-	-	-	-	
11. Bhavnagar Port (Gujarat)																		
ACL	-	-	687	-	-	993	22638	-	-	-			-	-	-	-	-	
CDM	-	-	-	24318	-	-	-	-	-	-	-	-	-	-	-	-	-	24318
CCM	-	-	-	-	-	-	24318	-	-	-	-	-	-	-	-	-	-	
12. R.C.F. Trombay(Maharashtra)																		
ACL	-	-	-	-	6786	-	7289	79462	-	885	-	-	1680	-	-	-	-	
CDM	-	-	-	-	-	-	-	96102	-	-	-	-	-	-	-	-	-	96102
CCM	-	-	-	-	-	-	-	96102	-	-	-	-	-	-	-	-	-	
13. Bombay Port (Maharashtra)																		
ACL	25300	93800	34900	10400	18900	13100	-	93600	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	6981	-	-	283019	-	-	-	-	-	-	-	-	-	290000
CCM	-	-	-	-	6981	-	-	283019	-	-	-	-	-	-	-	-	-	
14. Zauri Agro Chemical Ltd. (Goa)																		
ACL	-	-	-	11095	19521	-	6867	37176	1903	49046	-	5939	83131	-	-	-	-	
CDM	-	-	-	-	-	-	214678	-	-	-	-	-	-	-	-	-	-	214678
CCM	-	212475	-	-	-	-	-	-	2203	-	-	-	-	-	-	-	-	
15. Marmagoa Port(Goa)																		
ACL	-	-	-	6800	-	-	-	20900	-	28100	-	-	20900	-	-	-	-	
CDM	-	-	-	22235	-	-	52262	-	2203	-	-	-	-	-	-	-	-	76700
CCM	-	76700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
16. Mangalore Chemicals & Fertilisers Ltd., Mangalore (Karnataka)																		
ACL	-	-	-	-	865	-	-	-	-	125878	7067	32993	64978	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	231781	-	-	-	-	-	-	-	231781
CCM	-	34146	-	-	-	197635	-	-	-	-	-	-	-	-	-	-	-	
17. Mangalore Port (Karnataka)																		
ACL	-	-	-	-	25700	1900	-	53100	-	12300	-	-	11000	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	72042	-	31958	-	-	-	-	-	104000
CCM	28116	-	-	-	-	75884	-	-	-	-	-	-	-	-	-	-	-	

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Appendix 6.I (contd.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
18. FACT Udyog Mandal (Kerala)																		
ACL	-	-	-	-	-	-	5406	-	-	17032	36305	50705	36946	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	93044	27853	25517	-	-	-	-	146414
CCM	-	-	-	-	-	-	-	-	-	55370	93044	-	-	-	-	-	-	-
19. Cochin Port (Kerala)																		
ACL	-	5800	-	-	7200	20600	-	-	-	2000	12300	7400	9600	-	-	-		
CDM	-	-	-	-	-	-	-	-	-	-	-	-	64900	-	-	-	-	64900
CCM	-	-	-	-	689	13892	-	-	-	50319	-	-	-	-	-	-	-	-
20. Calicutt Port (Kerala)																		
ACL	-	4100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	4100	-	-	-	-	-	4100
CCM	-	-	-	-	-	-	-	-	-	-	-	4100	-	-	-	-	-	
21. Madras Fertilisers Ltd. (Tamil Nadu)																		
ACL	-	-	-	-	-	-	-	1297	-	25928	7566	51119	36428	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	122338	-	-	-	-	122338
CCM	-	-	-	-	-	-	-	-	-	52527	-	59811	-	-	-	-	-	
22. SPIC Tuticorin (Tamilnadu)																		
ACL	-	-	-	-	-	-	-	19499	-	36474	17800	315885	67888	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	457352	-	-	-	-	-	457352
CCM	-	-	-	-	-	-	-	-	-	-	-	457352	-	-	-	-	-	
23. Neyveli Lignite Corporation (Tamil Nadu)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	60884	20443	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	81327	-	-	-	-	81327
CCM	-	-	-	-	-	-	-	-	-	81327	-	-	-	-	-	-	-	
24. Madras Port (Tamil Nadu)																		
ACL	-	19200	5500	-	15100	23300	-	4800	300	-	-	10500	53500	-	-	24100	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	156300	-	-	-	-	156300
CCM	-	-	-	-	-	-	-	-	-	29780	-	-	126520	-	-	-	-	
25. Tuticorin Port (Tamil Nadu)																		
ACL	-	-	-	-	-	27500	-	-	-	-	-	38000	3900	-	-	800	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	70200	-	-	-	-	-	70200
CCM	-	-	-	-	-	-	-	-	-	-	-	70200	-	-	-	-	-	
26. Nagapattinam Port (Tamil Nadu)																		
ACL	-	-	-	-	-	6200	-	-	-	-	-	22200	2400	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	30800	-	-	-	-	-	30800
CCM	-	-	-	-	-	-	-	-	-	-	-	30800	-	-	-	-	-	-
27. Cuddelore Port (Tamil Nadu)																		
ACL	-	-	-	-	-	3400	-	-	-	-	-	19700	900	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	24000	-	-	-	-	24000
CCM	-	-	-	-	-	-	-	-	-	24000	-	-	-	-	-	-	-	-

cont....

	1	2	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
28. Pondicherry Port (Union Territory)																		
ACL	-	900	-	1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	2500	-	-	-	-	2500
CCM	-	-	-	-	-	-	-	-	-	2500	-	-	-	-	-	-	-	-
29. Vizag Port (Andhra Pradesh)																		
ACL	-	49200	17200	-	28500	173000	-	-	-	-	-	-	49100	4300	-	10200	-	-
CDM	-	-	-	-	-		-	-	-	-	-	-	44639	30922	66763	139706	-	33,500
CCM	-	-	-	-	-	-	-	-	-	-	-	-	331500	-	-	-	-	
30. Kakinada Port (Andhra Pradesh)																		
ACL	-	-	-	-	-	7400	-	-	-	-	-	-	35800	-	-	-	-	
CDM	-	-	-	-	43200	-	-	-	-	-	-	-	-	-	-	-	-	43200
CCM	-	-	-	-	-	-	-	-	-	-	-	-	43200	-	-	-	-	
31. Machilipattinam Port (Andhra Pradesh)																		
ACL	-	-	-	-	-	[illegible]	-	-	-	-	-	-	2060	-	-	-	-	
CDM	-	-	-	-	19751	-	-	-	-	-	-	-	4149	-	-	-	-	23900
CCM	-	-	-	-	-	-	-	-	-	-	-	-	23900	-	-	-	-	
32. Paradip Port (Orissa)																		
ACL	-	7500	-	-	2600	-	1899	-	-	-	12000	-	-	14700	-	-	-	
CDM	-	-	-	-	-	38699	-	-	-	-	-	-	-	-	-	-	-	38699
CCM	-	-	-	-	-	7777	-	-	-	-	-	-	-	30922	-	-	-	
33. HFC Durgapur (West Bengal)																		
ACL	-	-	-	-	2368	-	-	-	-	-	-	-	-	9716	44616	9727	-	
CDM	-	-	-	-	-	66447	-	-	-	-	-	-	-	-	-	-	-	66447
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66447	-	
34. Calcutta Port (West Bengal)																		
ACL	-	77800	13300	-	1480	31300	-	-	-	-	-	-	-	638	141171	6989	-	-
CDM	-	-	-	-	-	117405	-	-	-	-	-	-	-	-	155273	-	-	272678
CCM	-	-	-	-	-	26624	-	-	-	-	-	-	-	-	222056	23998	-	
35. Haldia Port (West Bengal)																		
ACL	-	-	-	-	416	-	-	-	-	-	-	-	-	-	180	392	-	
CDM	-	-	-	-	-	988	-	-	-	-	-	-	-	-	-	-	-	988
CCM	-	-	-	-	-	988	-	-	-	-	-	-	-	-	-	-	-	
36. HFCL Barauni (Bihar)																		
ACL	-	-	-	-	29569	-	-	-	-	-	-	-	-	-	-	69660	-	-
CDM	-	-	-	-	-	99229	-	-	-	-	-	-	-	-	-	-	-	99229
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99229	-	
37. FCI Sindri (Bihar)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	-	
CDM	-	-	-	-	-	32	-	-	-	-	-	-	-	-	-	-	-	32
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	- 32		
38. HFCL Namrup (Assam)																		
ACL	-	-	-	-	17286	-	-	-	-	-	-	-	-	1568	36089	53754	66435	
CDM	-	-	-	-	-	108697	-	-	-	-	-	-	-	-	-	-	66435	175132
CCM	-	-	-	-	-	108697	-	-	-	-	-	-	-	-	-	-	66435	

Note: ACL = Actual Despatches; CDM = Computed for Distance Minimisation; CCM = Computed for freight cost Minimisation.

APPENDIX 6.II : Despatches of NP/NPK Complex Fertilisers of various grades during 1978-79 (Figures in MTs)

	Hima-chal P.& J&K	Pun-jab& Chan-di-garh	Harya-na & Delhi	Raja-sthan	Madh-ya Pra-desh	Utta-r Pra-desh	Guja-rat	Maha-rash-tra	Goa, Daman, Diu	Kar-na-taka	Kerala &Laksh adweep	Tamil Nadu& Pondi-chery	Andhra Pra-desh	Oris-sa	West Bengal &Anda-man-Ni cobar islands	Bihar	Assam, Sikkim, Manipur, Tripura, Megha-laya, Aruna-chal, Nagaland, Mizoram.	Total supply
	Path-ankot	Ludhi-ana	Jind	Dhul-lera	Bho-pal	Shah jahan pur	Ahme-dabad	Man-mad	Kola-mb	Hos-pet	Shora nur	Tr.chi nopal-li	Vijay-wada	Cut-tak	Azim gunj	Lucke esarai	Lumd-ing	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Total Demand (MTs)	0	85436	21234	19525	45590	145331	119088	170770	3676	232257	74058	270063	463227	28867	18261	8657	1746	1707786
1. IFFCO Kandla (Gujarat)																		
ACL	-	81380	19719	17087	17968	110425	112123	13583	-	9742	-	21723	6237	3172	-	8657	-	-
CDM	-	85436	21234	19525	45590	130943	119088	-	-	-	-	-	-	-	-	-	-	42186
CCM	-	85436	21234	19525	45590	129197	119088	-	-	-	-	-	-	-	-	-	1746	-
2. RCF Trombay (Maharashtra)																		
ACL	-	-	-	2438	2070	25372	6965	123165	-	38522	-	15505	24757	-	-	-	1746	-
CDM	-	-	-	-	-	14386	-	170770	-	55382	-	-	-	-	-	-	-	240540
CCM	-	-	-	-	-	16134	-	170770	-	53636	-	-	-	-	-	-	-	-
3. ZACL Sancoale (Goa)																		
ACL	-	-	-	-	597	-	-	20203	3676	21131	-	7793	58535	-	-	-	-	
CDM	-	-	-	-		-	-	-	3676	-	-	-	108259	-	-	-	-	111935
CCM	-	-	-	-	-	-	-	-	3676	-	-	-	108259	-	-	-	-	-
4. FACT Alway (Kerala)																		
ACL	-	48	-	-	-	-	-	4707	-	22797	32531	29058	32992	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	48075	74058	-	-	-	-	-	-	122133
CCM	-	-	-	-	-	-	-	-	-	90494	31639	-	-	-	-	-	-	-
5. FACT Ambelamedu (Kerala)																		
ACL	-	121	-	-	359	-	-	400	-	4585	1041	38	35875	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	42419	-	-	-	-	-	-	-	42419
CCM	-	-	-	-	-	-	-	-	-	-	42419	-	-	-	-	-	-	-
6. MFL Manali. (Tamilnadu)																		
ACL	-	2887	1515	-	5332	474	-	8712	-	114074	40335	188527	129795	3238	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	86381	-	270063	139445	-	-	-	-	495889
CCM	-	-	-	-	-	-	-	-	-	88127	-	270063	137699	-	-	-	-	-
7. EID Parry Ennore (Tamilnadu)																		
ACL	-	-	-	-	-	4023	-	-	-	16347	151	7419	790	-	4840	-	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	33580	-	-	-	-	33580
CCM	-	-	-	-	-	-	-	-	-	-	-	-	33580	-	-	-	-	-
8. Coromandel Fertilisers Ltd., Visakhapatnam (Andhra Pradesh)																		
ACL	-	-	-	-	19204	5027	-	-	-	5059	-	-	174246	22457	13421	-	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	181943	28867	18261	8657	1746	239474
CCM	-	-	-	-	-	-	-	-	-	-	-	-	183689	28867	18261	8657	-	-

Note: ACL = Actual Despatches, CDM = Computed for Distance Minimisation; CCM = Computed for Freight cost Minimisation.

APPENDIX 6.III : Despatches of DAP (Diammonium Phosphate) during 1978-79 (Figures in MTs.)

	Hima-chal P.& J&K	Pun-jab& Chan-di-garh	Harya-na & Delhi	Rajas-than	Madh-ya Pra-desh	Uttar Pra-desh	Guja-rat	Maha-rash-tra	Goa, Daman, Di	Karna-taka	Kerala &Laksh adweep	Tamil Nadu& Pondi-chery	Andhra Pra-desh	Oris-sa	West Bengal &Ande-man-Ni-cobar islands	Bihar	Assam, Sikkim, Manipur, Tripura, Megha-laya, Aruna-chal, Nagaland, Mizoram.	Total supply
	Path-ankot	Ludhi-ana	Jind	Phul-lera	Bho-pal	Shah jahan pur	Ahme-dabad	Man-mad	Kola-mb	Hos-pet	Shora nur	Trichi nopal-li	Vijay-wada	Cut-tak	Asim gunj	Lucke esarai	Lumd-ing	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Total Demand	7409	142888	20103	18804	34350	224089	76515	27563	2400	31204	1117	69256	33018	6535	38159	22524	1440	
1. GSFC Baroda (Gujarat)																		
ACL	110	762	595	6116	1963	4408	66839	919	-	-	-	-	-	-	-	-	-	
CDM	7409	36622	-	-	-	-	37681	-	-	-	-	-	-	-	-	-	-	
CCM	-	-	21773	-	13819	-	46120	-	-	-	-	-	-	-	-	-	-	81712
2. Bhavnagar Port(Gujarat)																		
ACL	-	-	-	-		2366	5909	-	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	8275	-	-	-	-	-	-	-	-	-	-	
CCM	-	8275	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8275
3. Navlakhi Port (Gujarat)																		
ACL	-	-	-	-	-	-	164	-	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	164	-	-	-	-	-	-	-	-	-	-	
CCM	-	164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164
4. Kandla Port (Gujarat)																		
ACL	-	60200	21400	4500	700	13200	2200	-	-	-	-	-	-	-	-	-	-	
CDM	-	83396	-	16804	-	-	-	-	-	-	-	-	-	-	-	-	-	
CCM	-	76066	7330	18804	-	-	-	-	-	-	-	-	-	-	-	-	-	102200
5. Ahmedabad Godown (Gujarat)																		
ACL	399	-	1620	-	-	22575	503	5298	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	30395	-	-	-	-	-	-	-	-	-	-	
CCM	-	-	-	-	-	-	30395	-	-	-	-	-	-	-	-	-	-	30395
6. Bombay Port (Maharashtra)																		
ACL	6900	22600	-	-	5100	3300	-	10200	-	-	-	-	-	-	-	-	-	
CDM	-	20537	-	-	-	-	-	27563	-	-	-	-	-	-	-	-	-	
CCM	-	-	-	-	20537	-	-	27563	-	-	-	-	-	-	-	-	-	48100
7. Marmagoa Port (Goa)																		
ACL	-	-	-	-	-	-	-	-	2400	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	2400	-	-	-	-	-	-	-	-	
CCM	-	-	-	-	-	-	-	-	2400	-	-	-	-	-	-	-	-	2400
8. FACT Cochin (Kerala)																		
ACL	-	8958	2888	2088	3280	15443	-	5604	-	8166	-	3663	3258	-	-	-	-	
CDM	-	-	-	-	-	21027	-	-	-	31204	1117	-	-	-	-	-	-	
CCM	-	-	-	-	-	52231	-	-	-	-	1117	-	-	-	-	-	-	53348

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APPENDIX 6.III (contd.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
9. Madras Fertiliser Ltd.(Tamil Nadu)																		
ACL	-	4368	2600	-	11691	4417	-	-	-	-	-	500	1254	1539	-	-	-	
CDM	-	-	-	-	-	26369	-		-	-	-	-	-		-	-	-	26369
CCM	-	-	-	-	-	18920	-	-	-	-	-	7449	-	-	-	-	-	-
10. SPIC Tuticorin (Tamil Nadu)																		
ACL	-	-	-	-	-	-	-	5542	-	10038	1117	43596	16709	-	-	-	-	
CDM	-	-	-	-	-	35925	-	-	-	-	-	41674	-		-	-	-	769
CCM	7409	28383	-	-	-	-	-	-	-	-	-	11207	-	-	-	-	-	-
11. Madras Port (Tamilnadu)																		
ACL	-	17600	-	1300	2100	11600	-	-	-	-	-	100	-		-	-	-	
CDM	-	-	-	-	32700	-	-	-	-	-	-	-	-	-	-	-	-	32700
CCM	-	-	-	-	-	1496	-	-	-	31204	-	-	-		-	-	-	-
12. Tuticorin Port (Tamil Nadu)																		
ACL	-	-	-	300	3000	7800	900	-	-	10600	-	13800	1800	4800	-	100	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	24582	23019	-	-	-	-	47600
CCM	-	-	-	-	-	-	-	-	-	-	-	47600	-	-	-	-	-	-
13. Kakinada Port (Andhra Pradesh)																		
ACL	-	-	-	-	-	12980	-	-	-	2400	-	4597	-	-	-	-	-	
CDM	-	-	7694	-	1656	10627	-	-	-	-	-	-	-	-	-	-	-	19977
CCM	-	-	-	-	-	-	-	-	-	-	-	-	19977	-	-	-	-	-
14. Vizag Port (Andhra Pradesh)																		
ACL	-	26700	-	-	5800	59900	-	-	-	-	-	-	-	-	-	-	-	-
CDM	-	2333	21409	-	-	-	-	-	-	-	-	-	-	6535	38159	22524	1440	92400
CCM	-	-	-	-	-	58860	-	-	-	-	-	-	3041	6535	-	22524	1440	-
15. Pradip Port (Orissa)																		
ACL	-	-	-	-	722	17039	-	-	-	-	-	-	-	191	-	15808	-	
CDM	-	-	-	-	-	33765	-	-	-	-	-	-	-	-	-	-	-	33765
CCM	-	-	-	-	-	33765	-	-	-	-	-	-	-	-	-	-	-	
16. Haldia Port (West Bengal)																		
ACL	-	-	-	-	-	4037	-	-	-	-	-	-	-	-	12513	2731	-	
CDM	-	-	-	-	-	19281	-	-	-	-	-	-	-	-	-	-	-	19281
CCM	-	-	-	-	-	19281	-	-	-	-	-	-	-	-	-	-	-	
17. Calcutta Port (West Bengal)																		
ACL	-	1700	-	-	-	45024	-	-	-	-	-	-	-	-	25646	3885	1440	
CDM	-	-	-	-	-	77695	-	-	-	-	-	-	-	-	-	-	-	77695
CCM	-	-	-	-	-	39536	-	-	-	-	-	-	-	-	38159	-	-	-

Note: ACL = Actual Despatches; CDM = Computed for Distance Minimisation; CCM = Computed for Freight Cost Minimisation.

APPENDIX 6.IV : Despatches of SSP (Single Superphosphate) fertiliser material during 1978-79 (Figures in MTs.)

	Hima-chal P.&	Pun-jab& Chan-di-garh	Harye-na & Delhi	Ra...-than Pra desh	Madh-ya desh	Uttar Pra-	Guja-rat	Mahe-rash-tra	Goa, Daman Diu	Karna-taka	Kerala &Laksh adweep	Tamil Nadu& Pondi chery	Andhra Pra-desh	Orie-sa	West Bengal & Ande-man-Ni-cobar islands	Bihar	Assam, Sikkim, Manipur, Tripura, Megha-laya, Arune-chal, Nagaland, Mizoram.	Total supply
	Path-ankot	Ludhi-ana	Jind	Phul-lera	Bho-pal	Shah jahan pur	Ahme-dabad	Man-mad	Kola-mb	Hos-pet	Shora nur	Trichi nopal-li	Vijay wada	Cut-tak	Azim gunj	Lucke esarai	Lumd-ing	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Total Demand	4358	90154	24335	32157	134176	66640	125279	151262	50	24613	18743	95(37	80267	9853	48885	28690	10944	9(184
1. Shriram Chemical Industries (Kota,Rajasthan)																		
ACL	4358	46340	17157	14382	11980	21899	-	-	-	-	-	-	-	-	-	-	-	
CDM	4358	62734	24335	6413	18276	-	-	-	-	-	-	-	-	-	-	-	-	116116
CCM	4358	36990	24335	32157	18276	-	-	-	-	-	-	-	-	-	-	-	-	
2. Hindustan Copper Ltd. Khetri (Rajasthan)																		
ACL	-	14179	3090	1997	1892	6202	-	-	-	-	-	-	-	-	-	-	-	
CDM	-	27420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27420
CCM	-	27420	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3. Hindustan Zinc Ltd. Udaipur,(Rajasthan)																		
ACL	-	6270	2706	9399	1220	1364	143	1118	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	22220	-	-	-	-	-	-	-	-	-	-	-	-	-	22220
CCM	-	22220	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
4. Hindustan Fertiliser Industries Udaipur (Rajasthan)																		
ACL	-	368	-	1875	1281	-	-	-	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	3524	-	-	-	-	-	-	-	-	-	-	-	-	-	3524
CCM	-	3524	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5. Dharmsi Morarji Chemical Co. Kumbari (Madhya Pradesh)																		
ACL	-	225	-	-	79141	3749	-	4653	-	-	-	-	-	2622	-	1069	-	
CDM	-	-	-	-	69130	22329	-	-	-	-	-	-	-	-	-	-	-	91459
CCM	-	-	-	-	69130	22329	-	-	-	-	-	-	-	-	-	-	-	
6. Rallis India,Nagarwara (U.P.)																		
ACL	-	7687	1382	-	4364	30209	-	-	-	-	-	-	-	-	903	1766	-	
CDM	-	-	-	-	-	46311	-	-	-	-	-	-	-	-	-	-	-	46311
CCM	-	-	-	-	-	46311	-	-	-	-	-	-	-	-	-	-	-	
7. Adarsh Chemicals & Fertilisers, Udhna (Gujarat)																		
ACL	-	8991	-	-	4726	1950	30926	11056	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	57649	-	-	-	-	-	-	-	-	-	-	57649
CCM	-	-	-	-	-	-	57649	-	-	-	-	-	-	-	-	-	-	

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APPENDIX 6.IV : (contd.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
8. Anil Starch Products, Bhavnagar (Gujarat)																		
ACL	-	3633	-	-	-	218	7482	-	-	-	-	-	-	-	-	-	-	-
CDM	-	-	-	-	-	-	11333	-	-	-	-	-	-	-	-	-	-	11333
CCM	-	-	-	-	-	-	11333	-	-	-	-	-	-	-	-	-	-	-
9. Anish Chemicals, Ahmedabad (Gujarat)																		
ACL	-	818	-	-	-	-	2274	-	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	3092	-	-	-	-	-	-	-	-	-	-	3092
CCM	-	-	-	-	-	-	3092	-	-	-	-	-	-	-	-	-	-	-
10. Paushak, Baroda (Gujarat)																		
ACL	-	-	-	-	831	-	27344	419	-	-	-	-	-	-	-	-	-	-
CDM	-	-	-	-	-	-	28594	-	-	-	-	-	-	-	-	-	-	28594
CCM	-	-	-	-	-	-	28594	-	-	-	-	-	-	-	-	-	-	-
11. Viraj Chemicals, Nandesari, Baroda (Gujarat)																		
ACL	-	-	-	-	-	-	218	-	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	218	-	-	-	-	-	-	-	-	-	-	218
CCM	-	-	-	-	-	-	218	-	-	-	-	-	-	-	-	-	-	-
12. Bharat Fertiliser Industries, Bombay (Maharashtra)																		
FCL	-	-	-	-	3442	-	905	15852	-	-	-	-	-	-	-	-	-	
CDM	-	-	-	-	-	-	20199	-	-	-	-	-	-	-	-	-	-	20199
CCM	-	-	-	-	-	-	20199	-	-	-	-	-	-	-	-	-	-	-
13. IMCC Ambernath (Maharashtra)																		
ACL	-	1643	-	4504	21402	-	55494	65590	-	1932	-	-	1488	-	-	-	-	
CDM	-	-	-	-	791	-	-	151262	-	-	-	-	-	-	-	-	-	152053
CCM	-	-	-	-	791	-	-	151262	-	-	-	-	-	-	-	-	-	-
14. Western Chemical Industries, Bombay (Maharashtra)																		
ACL	-	-	-	-	732	-	97	14574	-	88	-	-	-	-	-	-	-	
CDM	-	-	-	-	15491	-	-	-	-	-	-	-	-	-	-	-	-	15491
CCM	-	-	-	-	11297	-	4194	-	-	-	-	-	-	-	-	-	-	-
15. Western India Chemicals, Loni-Kalbhor (Maharashtra)																		
ACL	-	-	-	-	1990	-	396	31551	50	910	-	-	100	-	-	-	-	
CDM	-	-	-	-	30488	-	4194	-	50	265	-	-	-	-	-	-	-	34997
CCM	-	-	-	-	34682	-	-	-	50	265	-	-	-	-	-	-	-	-
16. Gammon Fertilisers & Chemicals, Belagula (Karnataka)																		
ACL	-	-	-	-	-	-	-	-	-	4438	-	83	-	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	4526	-	-	-	-	-	-	-	4526
CCM	-	-	-	-	-	-	-	-	-	4526	-	-	-	-	-	-	-	-
17. FACT Alwaye (Kerala)																		
ACL	-	-	-	-	-	-	-	6449	-	-	16571	16716	-	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	18743	20993	-	-	-	-	-	39736
CCM	-	-	-	-	-	-	-	-	-	-	18743	20993	-	-	-	-	-	-
18 EID Parry (India) Ranpet (T.Nadu)																		
ACL	-	-	-	-	-	-	-	-	-	4909	88	17402	2909	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	25308	-	-	-	-	-	25308
CCM	-	-	-	-	-	-	-	-	-	-	-	25308	-	-	-	-	-	-

cont...

APPENDIX 6.IV (contd.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
19. Coimbatore Pioneer Fertilisers, Coimbatore(Tamil Nadu)																		
ACL	-	-	-	-	-	-	-	-	-	2211	1140	1902	-	-	-	-	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	22653	-	-	-	-	-	22653
CCM	-	-	-	-	-	-	-	-	-	-	-	22653	-	-	-	-	-	-
20. Kothari(Madras) Enmore (T.Nadu)																		
ACL	-	-	-	-	-	-	-	-	-	3347	-	20152	6523	-	-	-	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	30022	-	-	-	-	30022
CCM	-	-	-	-	-	-	-	-	-	-	-	-	30022	-	-	-	-	-
21. Shaw Wallace & Co.,Ayadi (T.Nadu)																		
ACL	-	-	-	-	-	-	-	-	-	3668	944	21777	18014	316	1438	-	-	
CDM	-	-	-	-	-	-	-	-	-	19659	-	26483	-	-	-	-	-	46142
CCM	-	-	-	-	-	-	-	-	-	19659	-	26483	-	-	-	-	-	-
22. Andhra Fertilisers,Tadapalli(A.P.)																		
ACL	-	-	-	-	-	-	-	-	-	3125	-	-	1811	1466	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	6402	-	-	-	-	6402
CCM	-	-	-	-	-	-	-	-	-	-	-	-	6402	-	-	-	-	-
23. Andhra Sugers,Tanuku (A.P.)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	19027	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	19027	-	-	-	-	19027
CCM	-	-	-	-	-	-	-	-	-	-	-	-	19027		-	-	-	
24. Hyderabad Chemical & Fertilisers Kazla Ali (A.P.)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	11837	-	-	-	-	
CDM	-	-	-	-	-	-	-	-	-	163	-	-	11674	-	-	-	-	11837
CCM	-	-	-	-	-	-	-	-	-	163	-	-	11674	-	-	-	-	-
25. Krishna Industrial Corporation, Vidadavole(A.P.)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	18558	-	-	-	15	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	13142	5431	-	-	-	18573
CCM	-	-	-	-	-	-	-	-	-	-	-	-	13142	5431	-	-	-	-
26. Jayshree Chemical & Fertilisers, Khardhaw(West Bengal)																		
ACL	-	-	-	-	1175	2577	-	-	-	-	-	-	-	4324	23800	10334	1868	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	4422	39656	-	-	44078
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	4422	13228	21691	4737	
27. Phosphate Co.Rishra(W.Bengal)																		
ACL	-	-	-	-	-	412	-	-	-	-	-	-	-	1125	22663	8522	2935	
CDM	-		-	-	-	-	-	-	-	-	-	-	-	-	9229	21691	4737	35657
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35657	-	-	-
28. Bihar State Superphosphate Factory, Sindri Institute (Bihar)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6999	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6999	-	6999
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6999	-	
29. Associated Industries (Assam) Chemical Unit Chandrapur(Assam)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81	-	6126	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6207	6207
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6207	

Note: ACL = Actual Despatches; CDM = Computed for Distance Minimisation; CCM = Computed for Freight Cost Minimisation.

APPENDIX 6.V : Despatches of AS (Ammonium Sulphate) fertiliser material during 1978-79 (Figures in MTs.)

	Himachal P.& J&K	Punjab& Chandigarh	Haryana & Delhi	Rajasthan	Madhya Pradesh	Uttar Pradesh	Gujarat	Maharashtra	Goa, Daman Diu	Karnataka	Kerala &Laksh adweep	Tamil Nadu& Pondichery	Andhra Pradesh	Orissa	West Bengal & Andaman-Nicobar Islands	Bihar	Assam, Sikkim, Manipur, Tripura Meghalaya, Arunachal, Nagaland, Mizoram	Total supply
	Pathankot	Ludhiana	Jind	Phullera	Bhopal	Shahjahanpur	Ahmedabad	Manmad	Kolamb	Hospet	Shoranur	Tuticorin	Vijaywada	Cuttak	Azimgunj	Lucknesarai	Lumding	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Total Demand	572	12093	9797	3660	28054	27155	128541	82534	0	40147	43430	37093	120222	14408	56051	60906	45.45	710114
1. SAIL Bhilai (M.P.)																		
ACL	-	-	-	-	4049	-	-	11595	-	-	-	-	19677	-	-	-	-	35321
CDM	-	-	-	-	28054	861	-	3611	-	-	-	-	2595	-	-	-	-	
CCM	-	-	-	-	28054	2384	-	-	-	-	-	-	2595	2288	-	-	-	
2. GSFC Baroda (Gujarat)																		
ACL	572	8793	3697	3660	6833	5945	128541	37739	-	-	-	93	4313	-	-	-	-	200186
CDM	572	12093	9797	3660	-	-	128541	45523	-	-	-	-	-	-	-	-	-	
CCM	572	8282	9797	3660	-	-	128541	49334	-	-	-	-	-	-	-	-	-	
3. Bombay Port (Maharashtra)																		
ACL	-	3300	300	-	4700	-	-	24900	-	-	-	-	-	-	-	-	-	33200
CDM	-	-	-	-	-	-	-	33200	-	-	-	-	-	-	-	-	-	
CCM	-	-	-	-	-	-	-	35200	-	-	-	-	-	-	-	-	-	
4. Mangelore Port(Karnataka)																		
ACL	-	-	-	-	-	-	-	-	-	6200	-	-	-	-	-	-	-	6200
CDM	-	-	-	-	-	-	-	-	-	-	-	6200	-	-	-	-	-	
CCM	-	-	-	-	-	-	-	-	-	3973	-	-	2227	-	-	-	-	
5. FACT Alwaye (Kerala)																		
ACL	-	-	-	-	-	-	-	-	-	23020	41536	-	30347	-	-	-	-	94903
CDM	-	-	-	-	-	-	-	-	-	40147	43436	9093	2227	-	-	-	-	
CCM	-	-	-	-	-	-	-	-	-	36174	43436	15293	-	-	-	-	-	
6. MADRAS Port (T.Nadu)																		
ACL	-	-	4500	-	8300	6800	-	8300	-	9500	-	19400	15300	-	-	-	-	72100
CDM	-	-	-	-	-	-	-	-	-	-	-	-	72100	-	-	-	-	
CCM	-	-	-	-	-	-	-	-	-	-	-	-	72100	-	-	-	-	
7. Tuticorin Port(T.Nadu)																		
ACL	-	-	-	-	-	-	-	-	-	-	1900	9700	1000	-	-	500	-	13100
CDM	-	-	-	-	-	-	-	-	-	-	-	13100	-	-	-	-	-	
CCM	-	-	-	-	-	-	-	-	-	-	-	13100	-	-	-	-	-	
8. Nagapattinam Port(T.Nadu)																		
ACL	-	-	-	-	-	-	-	-	-	800	-	7900	-	-	-	-	-	8700
CDM	-	-	-	-	-	-	-	-	-	-	-	8700	-	-	-	-	-	
CCM	-	-	-	-	-	-	-	-	-	-	-	8700	-	-	-	-	-	
9. Kakinada Port (A.P.)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	1800	-	-	-	-	1800
CDM	-	-	-	-	-	-	-	-	-	-	-	-	1800	-	-	-	-	
CCM	-	-	-	-	-	-	-	-	-	-	-	-	1800	-	-	-	-	

cont

APPENDIX 6.V (contd.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
10. Vizag Port (A.P.)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	40500	-	-	1000	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	41500	-	-	-	-	41500
CCM	-	-	-	-	-	-	-	-	-	-	-	-	41500	-	-	-	-	-
11. SAIL Rourkela (Orissa)																		
ACL	-	-	-	-	-	-	-	-	-	627	-	-	7285	5253	1043	-	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14208	-	4208
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9003	11205	-	-
12. Paradip Port (Orissa)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	-	3000	-	4800	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	7800	-	-	-	7800
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	7800	-	-	-	-
13. SAIL Durgapur (W.Bengal)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12504	-	-	
CDM	-	-	-		-	-		-	-	-	-	-	-	-	-	12504	-	12504
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12504	-	-
14. TISCO Burnpur Kulti.(W.Bengal)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6976	-	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	715	6201	-	6976
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6976	-	
15. Haldia Port (W.Bengal)																		
ACL	-	-	-	-	600	-	-	-	-	-	-	-	-	185	1859	280	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2924	-	-	2924
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2924	-	-	-
16. Calcutta Port (W.Bengal)																		
ACL	-	-	1300	-	571	2600	-	-	-	-	-	-	-	1308	20674	19626	4045	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50124	-	-	50124
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50124	-	-	
17. SAIL Bokaro (Bihar)																		
ACL	-	-	-	-	-	11810	-	-	-	-	-	-	-	-	-	9703	1152	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22665	-	22665
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22665	-	-
18. TISCO Jamshedpur (Bihar)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11876	-	
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	6608	-	5268	-	11876
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	4320	-	7556	-	-
19. HFCL Namrup (Assam)																		
ACL	-	-	-	-	3001	-	-	-	-	-	-	-	-	4662	12995	13121	40248	-
CDM	-	-	-	-	-	26294	-	-	-	-	-	-	-	-	2288	-	45445	74027
CCM	-	3811	-	-	-	24771	-	-	-	-	-	-	-	-	-	-	45445	

Note: ACL = Actual despatches; CDM = Computed for Distance Minimisation; CCM = Computed for Freight cost Minimisation.

APPENDIX 6.VI : Despatches of CAN (Calcium ammonium nitrate) fertiliser during 1978-79 (Figures in MTs.)

	Himachal P.& J&K	Punjab& Chandigarh	Haryana & Delhi	Rajasthan	Madhya Pradesh	Uttar Pradesh	Gujarat	Maharashtra	Goa, Daman Diu	Karnataka	Kerala &Laksh adweep	Tamil Nadu& Pondicherry	Andhra Pradesh	Orissa	West Bengal & Andaman-Nicobar islands	Bihar	Assam, Sikkim, Manipur, Tripura, Meghalaya, Arunachal, Nagaland, Mizoram.	Total supply
	Pathankot	Ludhiana	Jind	Phulera	Bhopal	Shahjahanpur	Ahmedabad	Manmad	Kolaab	Hospet	Shoranur	Trichinopalli	Vijaywada	Cuttak	Azimgunj	Lucknesarai	Lumding	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Total Demand	22597	103120	51299	31830	1499	102657	1834	2200	0	28759	0	23824	90490	89433	35680	24862	193	610277
1. NFL Nangal(Punjab)																		
ACL	22597	98620	49799	25630	-	71929	1834	-	-	-	-	-	-	-	-	-	193	-
CDM	22597	103120	51299	24364	-	69222	-	-	-	-	-	-	-	-	-	-	-	270602
CCM	22597	103120	51299	24364	-	69222	-	-	-	-	-	-	-	-	-	-	-	
2. Kandla Port (Gujarat)																		
ACL	-	2600	1500	4200	-	-	-	1000	-	-	-	-	-	-	-	-	-	-
CDM	-	-	-	7466	-	-	1834	-	-	-	-	-	-	-	-	-	-	9300
CCM	-	-	-	7466	-	-	1834	-	-	-	-	-	-	-	-	-	-	-
3. Madras Port(T.Nadu)																		
ACL	-	-	-	2000	-	-	-	1200	-	14700	-	16800	41000	-	-	1900	-	-
CDM	-	-	-	-	-	-	-	-	-	16876	0	23824	-	-	-	-	-	40700
CCM	-	-	-	-	-	-	-	-	-	16876	0	23824	-	-	-	-	-	-
4. Kakinda Port(A.P.)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	3544	-	-	3806	-	-
CDM	-	-	-	-	-	-	-	-	-	7350	-	-	-	-	-	-	-	7350
CCM	-	-	-	-	-	-	-	-	-	1183	-	-	6167	-	-	-	-	
5. Vizag Port (A.P.)																		
ACL	-	1900	-	-	-	1900	-	-	-	-	-	-	800	2200	1700	2200	-	-
CDM	-	-	-	-	-	-	-	-	0	4533	-	-	6167	-	-	-	-	10700
CCM	-	-	-	-	-	-	-	-	-	10700	-	-	-	-	-	-	-	
6. SAIL Rourkela (Orissa)																		
ACL	-	-	-	-	1499	28828	-	-	-	14059	-	7024	82046	87233	33980	16257	-	-
CDM	-	-	-	-	1499	33435	-	2200	-		-	-	84323	88834	35580	24862	193	270926
CCM	-	-	-	-	1499	33435	-	2200	0	-	-	-	84323	88834	35580	24862	193	-
7. Haldia Port (W.Bengal)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	599	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	599	-	-	-	599
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	599	-	-	-	
8. Calcutta Port(W.Bengal)																		
ACL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	-
CDM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	-	100
CCM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	-	

Note: ACL = Actual Despatches; CDM = Computed for Distance Minimisation; CCM = Computed for Freight cost Minimization.